

New Thinking - New Energy



नयी सोच । नया जोश ।

About the Cover

Transition from renewables to new energy, in consonance with nature, has been our ambition. New Energy offers energy and energy plus services through dovetailing energy management, digital technology, dispatchable energy, storage and hydrogen. Further, our ability to build regenerative assets and circular business models have accelerated the advance towards a Net Zero world. Greenko's transformational initiatives- #NayeeSoch is Making #NewEnergy Choices Possible and generating - #NayaJosh.



Red Panda Endangered Species

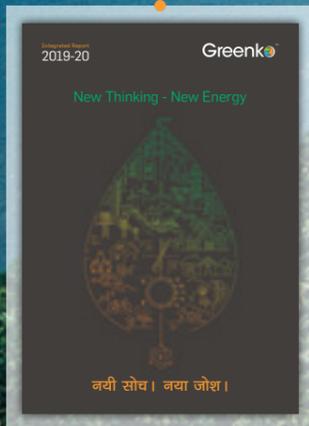


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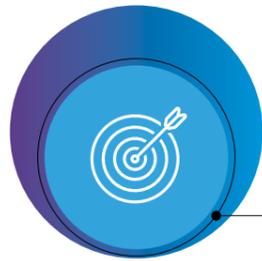


01



About the Report





Purpose

This is Greenko's third consecutive Integrated Report, which presents to the reader a comprehensive view of Greenko's value creation story, taking into account the financial, and non-financial value derived from and delivered to various stakeholders, thus sustaining the group's value creation abilities. This report was prepared through a structured effort involving internal reflection to map value creation

factors and assess the adequacy of strategy to protect and enhance value creation in the face of disruptions. Further, Greenko seeks to transform into a utility of the future by deploying digitalization and decentralization measures and makes clean, reliable, and affordable power in India flexible, thus contributing to India's energy security and economic stability. This report details Greenko's efforts in the

transformation from GKO 3.0 towards GKO 4.0 and the concurrent value creation and distribution in the journey. Greenko's position and performance on the material aspects relevant to its value creation viz., generating, retaining, distributing, protecting and enhancing sustainable value, have been included in the six capitals described in this report.



Content Orientation

This report is drawn on the basis of global as well as domestic trends in the energy sector and the technology, taking into account several challenges and its impact on value creation. A multi-disciplinary team was created to provide a comprehensive view of the company, its business model, the challenges and risks it faces, and its social, environmental, financial, and governance performance. The Indian Renewable Energy sector is experiencing tremendous pressure due to challenges of increased share of renewables to the grid and the distribution utilities, competitive bidding mechanism, falling tariffs, and other policy related changes that have slowed the industry's growth. Greenko has significantly contributed to public policy advocacy to bring visible changes in the ecosystem and has been stewarding solutions. All such snapshots have been captured in the present report.

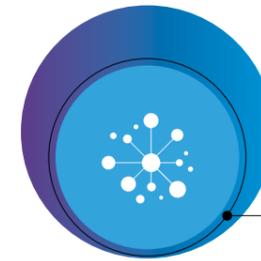
This report intends to communicate Greenko's effective transition to GKO 3.0 and 4.0 in the face of evolving

contours of regulations, technology, and ecosystems. The report details Greenko's continuing pursuit of Integrated Renewable Energy Storage Projects and digital transformation across operations including the development of an Integrated Energy Platform to make 24x7 power a near-future reality. To reinforce agility, Greenko has set in motion People, Process, and Systems across all operations and implemented the 'ownership model' of organization development. These organizational initiatives to build #Aatmanirbhar Bharat are detailed in the current report.

This report is organized into five core sections to enable our stakeholders to make an informed assessment of Greenko's ability to create sustainable value.

- The outline of Greenko's performance in the year 2019-20 is presented in Chapter 3, Performance snapshot 2019-20.

- An overview of the Greenko group, its Vision, Mission, Values, diverse portfolio, current projects, future projects, pan India presence, and journey so far is presented in Chapter 4, Greenko Today.
- How Greenko's strong leadership and governance framework is guiding the group to positioning itself for long-term value creation is explained in Chapter 5, Balancing Value-Governance Framework.
- An overview of Greenko's external and internal operating environment, Greenko's value creation model, strategic value creation framework is presented in Chapter 6, Sustainable Value Creation framework.
- Finally, Chapter 7, Creating and Sharing Value explains how the value in Greenko is created throughout the six capitals to the satisfaction of stakeholders.



Reporting Boundaries

The information and data in the report correspond to the progress made during the period 01st April 2019 to 31st March 2020 and refer to all the entities within the Greenko Group.

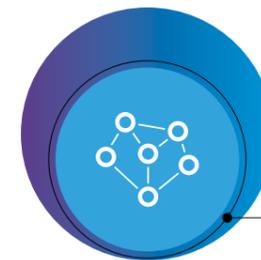
The report's contents also mention figures and events from the past to offer a background perspective. The forward-looking statements contained in this report are based on the analysis of the current context, its expected outcomes

are susceptible to change. Care is taken to ensure that all data in this report is as accurate as possible. Wherever, in the report, information relating to beyond reporting period is mentioned, the same is specified.



Reporting Guidelines and Standards

This report has been prepared in line with the framework established by the International Integrated Reporting Council (IIRC). This report also refers to GRI Standards for reporting and captures Greenko's contribution towards achieving the objectives of UNSDGs.



Connectivity

The content of this report is complemented by other corporate documents and by information on the group's website. In specific cases, the reference to such information is mentioned.



For any queries and suggestions on the data and information please write to sustainability@greenkogroup.com

02



Ghani, Andhra Pradesh

Leadership
Speaks



Chairman's Message



Dear Stakeholders,

This has been a year when a variety of events - the pandemic, global warming, destruction of ecosystems, collapse of the economy across large parts of the globe, the stress on the quality of life - have all brought to fore questions around sustainability of the planet, a different, wiser way of living, and through it all, the resilience and the relevance of renewable energy systems. India has had a fair share of all these. In response, policies have been formulated and India has largely shifted its focus towards the rapid facilitation and growth of its renewable power sector.



unwavering commitment to values in the evolution of Greenko's business activities and its business model has been a source of continued stakeholder trust in Greenko.

Transitioning to Intelligent Energy Platforms

Greenko has been a votary of these, since inception, and has provided constructive inputs and thought leadership to both regulators and policymakers. It facilitated a smoother and faster turn in this direction; from passive acceptance to active participation. Greenko's business philosophy has been to lead 'Decarbonization, Digitalization, and Decentralization' of India's Energy Sector. Towards this end, Greenko has moved from being a pure play renewable energy producer to using grid scale energy storage systems to address the challenges of delivering Renewable Power, on-demand, through a balanced combination of Intelligent Energy Platforms and Pumped Storage Systems. This will not only lead to decarbonization of the electric power system, but also provide long term energy security for economic stability. And even as we ponder on these, Greenko is already looking at adjacencies such as batteries, green hydrogen plants, and integrated delivery systems.

Environment Social and Governance focus

One constant at Greenko has been its adherence to a code of conduct and foundational values on which Greenko's edifice has been built. This unwavering commitment to values in the evolution of Greenko's business activities and its business model has been a source of continued stakeholder trust in Greenko. Our main shareholders, GIC and ADIA, both view Environmental, Social, and Governance (ESG) factors, as central to their core tenets and believe that



Greenko's business philosophy has been to lead 'Decarbonization, Digitalization, and Decentralization' of India's Energy Sector.

companies with innovative and creative mindset and good sustainability practices are more likely to perform well on multiple parameters in the long term. The company has augmented its ESG risk management by assessing and addressing climate risks, this year.

Good Governance

During 2019-20, the Board and its committees have been active in guiding the management to face the new challenges of growth and transformation. Mutual respect, trust, and candor characterized the functioning of the board. The Board has deliberated extensively on the company's transformational strategy and reviewed its deployment from time to time. As the company is trading into innovative technologies, novel partnerships, and new markets, the risks are diligently identified, mitigated and provisions are made for residual risks.

During the pandemic, the company has taken proactive and very early steps and has been able to generate electricity without any interruption. In addition, the company has also extended medical and financial support to the community and worked closely with the public health authorities.

In this report, Greenko's value creation story is delineated. The company's transition to deliver schedulable renewable electricity to power sustainable growth of India is described. The company will be keen to listen to stakeholders' concerns and suggestions.

Om Prakash Bhatt
Chairman

CEO & MD's Message



Dear Stakeholders,

I am delighted to share with you, Greenko's third Integrated Report. In this report, we present our performance accounts on financial and non-financial aspects during the reporting period FY2019-20.



Our #NayeeSoch - #NewEnergy services would, thus deliver #NayaJosh - #EnergySecurity and #EconomicStabilty to India. ↗

Stakeholder Trust

At the outset, I thank all the stakeholders who have reinforced trust in us to infuse USD 824 million of equity investment and subscribed to Green Bond issuance of USD 1035 Million. We are thankful to all partners who came forward to join our challenging endeavor in Pumped Storage and Intelligent Energy Platform. Our employees and communities have been on our side through this journey, despite weather and health emergencies. The regulators and policymakers have given us a patient hearing, understood our concerns, and responded very positively. Further, **I place my gratitude to the businesses and industry that have made us partners in their climate stewardship journey. Many of them are eagerly looking forward to our firm renewable energy generation to twine us in their NET ZERO EMISSIONS plans.**

Delivering value

At Greenko, our focus is to deliver value to all our stakeholders and contribute to the sustainable development of India and the Globe. Our business has been aligned to contribute to UNSDG 7- affordable and clean energy and UNSDG 13-climate action. We continue to deliver #MoreSmilesPerWatt as we gain shareholder trust by following good governance practices, employee commitment through practicing ownership model, community involvement through the Public-Private-People approach, and governments' support by aligning to its policies and programs. Further, we have adopted circular economic approaches to contribute to UNSDG 12-responsible production and consumption.

Despite the decelerated demand for electricity, during the reporting period, the renewable electricity generation globally rose by 6%, and wind and solar



New Energy solutions would drive 50% of our long term investments in the next 4 years and contribute to 50% of our revenues thereafter. New Energy solutions will be customer focused and add value to market to bring cost of energy down by 20% nationally from the current level. ↗

PV technologies together accounted for 64% of this growth. However, the renewable power capacity addition has to accelerate significantly to meet the Paris Climate Goal and Sustainable Development Pathways of individual nations. Despite a 7% year-on-year reduction in overall expenditures, grids became further decentralized and digitalized in 2019. Utilities around the world deployed more sophisticated technologies, including artificial intelligence and digital twinning. Nevertheless, more efforts are required to implement regulations and policy frameworks that reward the benefits of digitalizing electricity networks.

India's total renewable energy capacity was 131 GW in 2019, and it has set a target of reaching 275GW by 2027. Despite the 'must run' status of renewable power, wind and solar projects, it faced the challenge of non-adherence to contracts and large-scale grid curtailment in 2019. Even against this backdrop, in FY 20, there was an addition of 11GW of renewable capacity with solar contributing approximately 9GW.

Renewables to New Energy

As the #Decarbonization, #Digitalization, and #Decentralization is advancing, the energy sector in India is facing turbulence and this is likely to be prolonged. While this disruption will continue to challenge the policy paradigms and old business models, it is also presenting new opportunities. Adoption of better generation technologies, digitalization leading to efficient and remote management of assets, and intelligent matching of demand and supply has led to a decrease in the cost of renewable energy. New Energy is just not clean but reliable and affordable. New Energy offers energy and energy plus services through dovetailing energy management, digital technology, dispatchable energy, storage and hydrogen.

However, the renewables will not be reliable unless transformed into firm and flexible solutions. As the renewable generation becomes firm, it displaces non-renewables to meet the objectives of deep decarbonization of the economy and fulfil climate change obligations

CEO & MD's Message



Our business model of pumped storage combined with an intelligent energy platform has been deployed as a sharing platform for storage and energy management.

to keep global warming under control. Our pumped storage projects combined with an intelligent energy platform would transform the renewables into New Energy, thus paving the way for achieving energy security for India and long-term stability of electricity prices. Our #NayeeSoch - #NewEnergy services would, thus deliver #NayaJosh - #EnergySecurity and #EconomicStability to India.

New Energy- Energy and Energy Plus Services

Greenko's pumped storage combined with intelligent energy platform could offer many more grid-related solutions and deliver value to the electricity systems. The regulatory system in India has been sensitive to this value addition and is aligning the policies to incentivize the contribution. My colleagues have engaged in public policy advocacy to highlight the need for RE firming and the associated value that it delivers in grid balancing. The need for RE + Storage based power supply projects to enable RE firming was highlighted during engagements with tendering agencies. We are delighted to notice more of RE + Storage based firm, flexible power supply-based tenders. In fact, Greenko has won one such Round- The-Clock RE bid from Solar Energy Corporation of India. Further, we have contributed to highlighting the inability of thermal generation to manage ramp-up/ ramp-

down requirements in the absence of "standalone storage" / "RE + Storage" based generation projects. We believe that the regulators are sensitive to and will reward the businesses appropriately for RE arbitrage, wholesale arbitrage, frequency and voltage regulation, and Transmission & Distribution investment deferral, etc. We, at Greenko, realize that we are a salient part of electricity sector transformation that makes clean, reliable, and affordable electricity and reinforces #AtmanirbharIndia with #EnergySecurity and #EconomicStability. New Energy solutions would drive 50% of our long-term investments in the next years and contribute to 50% of our revenues thereafter. New Energy solutions will be customer focused and add value to market to bring cost of energy down by 20% nationally from the current level. Transitioning to New Energy business model is not just a business opportunity for Greenko but, it is a part of our commitment and social responsibility.

Responding to Challenge

We are certain that we are in the right place and at the right time, but this alone is not enough. I am delighted that Greenko, as always, has seized the moment and responded to the challenge. It has pooled resources, made the right moves- swiftly and diligently. Our pumped storage design is flexible enough to harness many

value pools that may be rewarded as the policy ecosystem evolves. We brought together the best and effective technology and expertise available globally through international competitive bidding. The innovative contracting structures to share risk and reward are appreciated by our partners and hence we believe that it will deliver sustainable results. Though challenging, our design, engineering procurement, contracting, and quality assurance processes have been sensitive to performance across the life cycle of the projects, while evaluating options efficiently.

Governments and businesses, across the globe, are readying themselves to harness opportunities in circular economy. The sharing economy is an important component of this. Our business model of pumped storage combined with an intelligent energy platform has been deployed as a sharing platform for storage and energy management. It would offer energy and energy plus services to multiple customer groups' viz., distribution companies, RE generators, Grid, and industry.

Growth and Capital Productivity

Despite the continuing challenges in the power sector in India, primarily due to sluggish economic growth. Investors

continue to trust our value creation model and our ability to sustain it. This is particularly exemplified by the oversubscription of our green bond offers and ratings by multiple agencies. We are sanguine that investors are keen to participate in harnessing value in transforming the energy system in India.

We have been diligently picking organic and inorganic growth opportunities. Strategically, we have improved our access to hydropower in different geographies of India. Our equity stake in Teesta Urja Limited with an underlying asset of 1,200 MW of Hydropower project in North Sikkim" and acquisition of assets of 100 MW is a part of our transformation. Besides pursuing inorganic opportunities, we continue our pursuit of developing greenfield projects.

We continue our focus on high capital productivity and accordingly we made investments in operation and maintenance through intense deployment of digitalization. We have been improving our Asset performance and reducing the O&M costs of our wind generation under the WINSOM program. Going further, besides significant investment focus on Integrated Renewable Energy Projects, we would continue with the renovation and modernization of some of our wind assets. During the reporting period, we sold 10% of our power to the B2B segment and this demonstrates our ability to access energy customers directly, which will be a salient feature in our transition to Greenko 3.0 .

Transitioning Human Capital

Each of our employees take ownership of the task and their contribution has a sense of purpose beyond the call of duty and each employee becomes our brand ambassador. This initiative is augmented further with PPS (People, Process, and System). We are proud

that these operational transformations in combination with Innovation Hub would align the organization for transition to Greenko 3.0 . Our commitment to complete the IRESP in 36 months is based on a solid edifice of committed people. During the reporting period, we have spread Integrated Thinking across the organization. Three IR conclaves held at different locations of India had the participation of more than 200 IR champions, sharing 130 success stories, of which 30 won recognitions and awards. I am excited by this groundswell of alignment with the company's strategic goals. We are already witnessing the impact of this alignment through seamless progress and agility in addressing multiple challenges.

In the reporting period, we achieved per capita training hours of 35.3 and retention rate of 93%, we strive to maintain and enhance the same in the future. This in combination with innovation hub activities, goes a long way in upskilling and aligning people to the transformational journey that the organization has undertaken. The number of hours devoted to the safety training has significantly increased over the previous year. We continue to achieve zero fatalities in this reporting period. Our turnover in the age group of younger than 30 years is high and more so amongst women and we will address this challenge.

We owe our success to our external stakeholders, including suppliers and customers. More than 80 % of our suppliers have been working with us for more than three years. As the new initiatives that we are undertaking are highly technology-intensive and require deep expertise and experience, we are joined by many new partners. We note with satisfaction that our suppliers and customers are happy with us as indicated by the respective satisfaction indices of 80% & 100%.

Our society and environment

Our community development initiatives have grown by two times, over the previous reporting period, in terms of the number of beneficiaries. Such an increase has become possible by strategically targeting and effectively investing. We would sharpen our focus by measuring social return on investment during the coming year.

We partner to contribute to sustainable development - UNSDG 17. We partnered with WWF to conserve the threatened species Olive Ridley Turtles and with the Government of India for conserving Great Indian Bustard. We have decided to add one threatened species to conserve each year, recognizing the pace at which the earth is losing the biodiversity. This year, we have initiated plans to conserve Red Panda in coordination with Government of Sikkim. We recognize the need to collaborate to effect change and thus, partnered with WEF, etc. and have received awards and recognitions in this regard. Beginning this reporting period, we have initiated the climate change risk assessment and management managing our assets.

Greenko continues to contribute to the UNSDGs and socio-economic progress of India while delivering value to all stakeholders. The success of this journey is contingent upon partnerships and engagement with stakeholders. Your suggestions & views are valuable to us in further improving our performance.

Mr. Anil Kumar Chalamalasetty
Chief Executive and Managing Director

03

Teesta Urja, Sikkim

Performance
Snapshot



Performance Highlights

In the current reporting period, Greenko has demonstrated outstanding performance in each of the capitals by maintaining a healthy financial position, attracting sustainable investments, realizing both organic and inorganic growth of assets, attracting and retaining best talents in the market, investing in innovations and technologies, enhancing operational performance and stakeholder trust.



Financial Capital

36.24%

of revenue growth in FY2019-20 over FY2018-19

A+

Financial Rating

Climate change impacts assessed

and mitigated, to climate proof revenue

Top destination for overseas fund with

USD 2,294 million

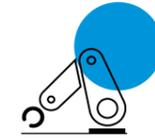
investment flows

USD 1,035 million

of Corporate Green Bond offering

Organic and inorganic growth

for transition to firm and flexible RE



Operational Capital

1.4 GW

capacity addition

2460 MW

Pumped Storage ready for development

Self Operation and Maintenance of wind turbines (WINSOM) of

178.5 MW

9969 MU

of Renewable Energy Generation

10%

of electricity sold directly to B2B segment

Healthy PLF maintained

at 24.4% (S), 46.2% (H), 27.2% (W)

Greenko has won

900 MW

SECI peak power tariff bid

Circular design and equipment choices

to enhance asset lifecycle



Intellectual Capital

100%

real-time monitoring of assets

40

personnel trained on GIMS internal auditing

130

success stories presented in IR conclave

85%

of sites covered under SCADA

98%

of in-house forecasting accuracy achieved

Partnered

with ONYX InSight to improve wind turbine reliability through predictive analytics

74%

sites covered under SAP

240

innovative ideas generated through knowledge sharing Innovation Hub

Performance Highlights



Human Capital

27.9%

increase in training hours/employee

93%

staff Retention

17.08%

increase in women workforce

252

multiskilled employees

Zero

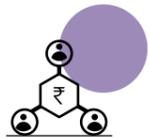
fatalities

5.98

per capita safety training hours

29%

new hires via campus interviews as GETs



Social and Relationship Capital

75%

of critical contractors workers received EHS trainings

80%

contractors/suppliers retained beyond 3 years

100%

customer satisfaction index for utility customers

600+ hours

spent for public policy advocacy

486

community development programs

14,065 hours

volunteered by employees for CSR

51

Co-Creation projects for communities under operation

935,048

beneficiaries from the community projects

85%

of critical suppliers are ISO 14001 certified



Natural Capital

8.2 MtCO₂

avoided through RE generation

92,380

saplings planted

Climate risk assessment

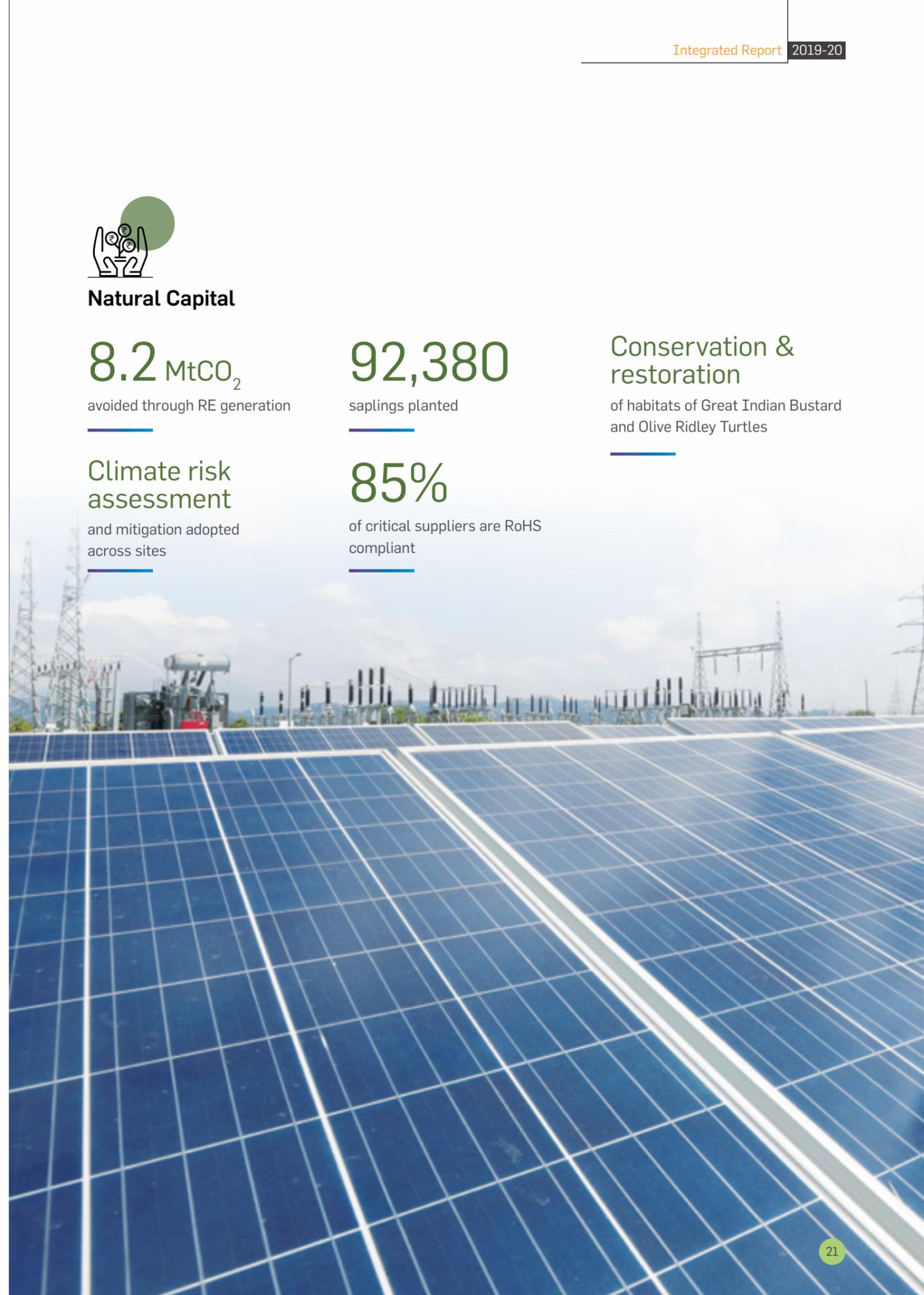
and mitigation adopted across sites

85%

of critical suppliers are RoHS compliant

Conservation & restoration

of habitats of Great Indian Bustard and Olive Ridley Turtles



Contribution to UNSDGs

The value generated and distributed by Greenko's business activity significantly contributes, both directly and indirectly, to the United Nations Sustainable Development Goals. In the current reporting period, Greenko has contributed positively to 11 goals of the UNSDGs, which has been reflected in different sections of this report.

Direct Contribution to UNSDG

As Greenko's focuses on delivering clean, reliable and affordable energy with increased focus on circularity and regenerative thinking, its core business activities have a direct impact on and contribute positively to SDG 7, SDG 12 and SDG 13.



Ensure access to affordable, reliable, sustainable, and modern energy for all

6.2 GW

of installed renewable energy capacity



Ensure sustainable consumption and production patterns

Publishing

integrated report annually

Reduced

material consumption

45.1%

proportion of spending on local suppliers/contractors



Take urgent action to combat climate change and its impacts

8.2 MtCO₂

GHG emissions

Established

an integrated climate risk assessment and management framework.

Established

Disaster preparedness Management Plan.

Established

Climate risk mitigation strategy based on the Early Warning System.

Indirect Contribution to UNSDGs

In addition to direct contribution, Greenko's value generated and distributed has an indirect impact on and positive contribution towards the following 8 UNSDGs.



End poverty in all its forms everywhere

Community engagement

to address climate change-related effects on society.



Ensure healthy lives and promote well-being for all at all ages.

Interventions to promote access to quality healthcare for the local communities by conducting regular health camps that benefitted

26,671 people

Medical insurance coverage to the employees' families. A total of

168 medical claims

were processed

Contribution to UNSDGs



Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

321

School and college tuition fee reimbursements for employees' children.

Greenko has established a **computer training centre** for skill development of local youth.

Providing Vidya Volunteers as **additional skilled teachers** to government schools through our interventions to improve the quality of education.

31,141 students

benefitted from Classroom Infrastructure (Benches, Chairs, Uniforms, Play Equipment, Smart Class Systems LED TV & Sound Systems, etc.) in Government Schools

329 youth

received practical training in the solar domain, out of which 133 have been successfully employed

12 Vocational

and Professional higher education fee reimbursements for employees



Achieve gender equality and empower all women and girls

12.5%

of the new hires amongst women are in Mid-Level Management roles

16.9%

have been hired for the First Level Management position

Strict adherence

to Prevention of Sexual Harassment (POSH)



Ensure availability and sustainable management of water and sanitation for all

34,000 people

Benefited from 5,097 KLs of filtered water through RO Plants

Construction of community toilet facilities benefitted

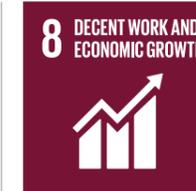
6,800 people

33,266 KLs

of wastewater treated and reused for gardening, plantation, etc

46 rainwater

harvesting systems were constructed. 80,453 KLs of rainwater collected and consumed / recharged.



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

329

youth received practical training in the solar domain, out of which 133 have been successfully employed

242

new talents hired

Zero

fatal incidents



Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

13

ICT projects planned and implemented



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

92,380

Saplings planted and also transplantation initiatives were taken up at sites.

82

Biodiversity enhancement programs conducted

Awards and Recognition



Heartfelt congratulations & a huge recognition to all frontline employees for their tireless efforts in bringing home awards & accolades. The Awards obtained cover the domains of Safety, Environment, Maintenance & Reliability, Operational Excellence and Project management are critical to Greenko's success.

Mr. Srinivasa Rao Ch
Deputy COO

Greenko is constantly innovating and improving the way the world works and lives. Its seamless efforts in transforming the energy landscape of India, being a great employer, and a respected corporate citizen has been significantly appreciated through numerous awards and accolades. Some of the significant awards received in the reporting period are presented below:

Asian Power Award Winner for India in Corporate Social Responsibility.



Corporate Social Responsibility Initiative of the Year - India

Conservation of Critically Endangered Species - Great Indian Bustard by Kurnool Ultra Mega Solar Park of Greenko Group

Golden Peacock Eco-Innovation Award



Divyesh Power Private Limited of Ghani Solar Park, Kurnool has been awarded the Winner of 'Golden Peacock Eco-Innovation Award' by IOD (Institute of Directors) for MOCE-Module Cleaning Efficiency- a method to optimize water usage by identifying the right time to clean the modules & ensure cleaning effectiveness, for the year 2019. The award was presented to Greenko at IOD, India's 21st World Congress on ENVIRONMENT MANAGEMENT and CLIMATE CHANGE.

Golden Peacock Award for CSR-2019



Greenko Solar Energy Private Limited has been awarded "The Golden Peacock Excellence for CSR Award" for the year 2019 by IOD (Institute of Directors) for the outstanding CSR works taken up by Greenko group. The award was presented to Greenko at a specially organized presentation ceremony during "The Institute of Director's 14th International Conference on CSR" held at Mumbai.

CII-Godrej Green Business-Green Company Silver Rating Award



AMR Power Private Limited, Mangalore has been awarded Green Company Silver Rating Certificate for implementing CII - Green Company Rating System from CII-Godrej GBC at GreenCo Summit-2019, Delhi. The award signifies the efforts made by an organization towards resource efficiency, circular economy, green supply chain, product stewardship, LCA, and water efficiency as core performance areas.

With this award, AMR has now become the first Hydro Power plant to receive a Green Company Silver rating for implementation of Green practices and initiatives.

Best Practices in CSR award 2020 from the Institute of Public Enterprise



At the 6th International Conference on CSR organized by the Institute of Public Enterprise (IPE) Greenko received the Best Practices in CSR Award 2020, for preventive healthcare efforts made for organizing diagnostic screening and treatment eye camps at sites around Hydel Plants in Chamba, Palampur, Shimla Districts of Himachal Pradesh.

Awards and Recognition

Asian Power Award at the International Forum



At "The Asian Power Awards 2019, also known as the Oscars of the Power Industry", Greenko received three awards for its exceptional performance in the RE domain, at the Shangri La hotel in Kuala Lumpur, Malaysia.

Greenko received Solar-Power Project of the Year-India for its 816 MWp Kurnool Ultra Mega Solar Park for building the single largest solar park in a record time of 168 days.

Greenko Rayala Wind Power Private Limited has been awarded 1. Wind Power Project of the Year - India and 2. Environmental Upgrade of the year India for its consistency in Operational Performance and for maintaining environmental management systems that helped to keep the biodiversity of the area intact.

Award of excellence in RE Spectrum at National Power Summit



Greenko has received an award of excellence for good performance in the RE spectrum at the National Power Summit, held in Hyderabad. Over 25 State Governments, Union Territories, Govt of India - Power and Renewable Energy Secretaries, CMDs of PSUs – DISCOMs - Distribution Companies, GENCOs - Generation Companies, TRANSCOs - Transmission Companies, Renewable Energy Corporations, Foreign Embassies and other key stakeholders from the energy ecosystem participated in the event.

Safety Award (National Level) in the Global Safety Summit 2020 from Renewable Energy Sector



Greenko received the prestigious national level 'Safety Award' at global Safety Summit 2020, which was Organized by Fire and Safety Forum in association with United Nations Global Compact Network India.



Deals of the Year 2019
"Honourable Mention"
by Asian-Mena Counsel
2019.



Making Green Bonds
Work: by Oxfam
mentions that Greenko
has been very effective
and diligent in delivering
environmental and
social benefits

CII Performance Excellence Awards 2019 for Solar & Wind



Greenko was the winner of the CII Performance Excellence Awards 2019 for Solar & Wind Plants, organized by the Green Power 2019 Conference & Exposition held at Chennai. These awards increased the company's standing, propelling it to the forefront of clean and green energy.

Best Utility-Scale Developer of the Year Award



Greenko has been felicitated with the "Best Utility-Scale Developer of the Year" Award in the Solar category by EQ International Magazine. The Award was presented to Greenko at EQ's Telangana State Annual Solar Awards 2019 Ceremony at the Suryacon Hyderabad Conference, Hyderabad.



IPPAI POWER
Awards-2019

Greenko Group has received the following three awards from the Independent Power Producers Association of India (IPPAI) for the year 2019, in recognition of its efforts in the fields of Hydro, Wind, and Solar power.

- Outstanding Performance award for Best Solar PV Developer
- Winner of Best Hydro Power Plant (< 25 MW)
- Winner of Best Wind Generator

Greenko Today

In line with Greenko's Belief of "It's Possible", a proud moment came in December 2019, when PV Sindhu shared her journey in the last decade to become the "World Badminton Champion" in an interactive session with Chairman OP Bhatt as part of "It's Possible" talk series held for Greenko employees on 4th Dec at Hyderabad.



Interactive Session between Chairman OP Bhatt and PV Sindhu



Message from CFO



Dear Stakeholders,

I am happy to reach out to you with our third Integrated Report, informing our financial and non-financial performance and outlook. We found the intertwining of performance across capitals very enlightening, and am sure you too will. I will mainly take you through our performance on financial capital.

Greenko has set out on the ambitious mission of 'Decarbonization, Digitalization and Decentralization of energy' in India. Achieving this mission and the journey towards it will not only deliver sustainable returns on invested capital but positively contribute to the achievement of UN Sustainable Development Goals 7, 12 and 13. Most of our investors are excited about the social and environmental outcomes that our business delivers besides sustainable financial returns.

Financial Instruments issued by Greenko continued to be rated A+ and Greenko continued to be the top destination for overseas funds in the sector with USD 2,294 million investment flows, more than double of its closest competitor in India. Further, Greenko accesses diverse sources of capital to meet its growth targets.

Most of these investments are deployed for the execution of reliable, schedulable, and flexible renewable energy projects to harness multiple value pools in the electricity system of India. Of course, we are sensitive to the need for change in the regulatory environment to harness some additional value pools. Our colleagues are continuously making much effort to contribute to public policy and align it in the interests of an effective electricity system, which in turn will deliver additional returns on our investments

To augment our strategic initiative of being a generator of firm renewable power across India, Greenko has acquired, during the reporting period, a stake in Teesta Urja Limited, which has an underlying asset of 1,200 MW of Hydropower project in North Sikkim. The inorganic growth in hydropower continued with the acquisition of assets of 100 MW in Himachal Pradesh.

Further, Greenko has secured a total equity commitment of USD 824 million from its existing shareholders. The new capital will be used to fund its business plan, which includes the CAPEX of IRESP projects and also other opportunistic and valuable acquisitions.

We fund our operations and capital requirements primarily through cash flows from operations and borrowings under credit facilities from banks and other financial institutions as well as from equity. We evaluate our funding requirements periodically in light of our net cash flow from operating activities, the progress of our various under-construction and under-active development projects, acquisition opportunities, and market conditions. We expect to incur significant capital expenditures for the year 20-21 as we develop and construct new projects and expand our operations. In alignment with regenerative thinking, we ensure money, men, machine, information, and the material do not stagnate. Accordingly, we ensure that the money flows for its

assigned purposes and this is a salient part of our financial prudence.

During the reporting period, Greenko has performed well to reach 6.2 GWdc installed capacity and is getting closer to the ambitious goal of 10GW of installed generation capacity. Accordingly, our revenue increased by 36.2%, to USD 660.9 million in FY 2020 from USD 485.1 million in FY 2019. Greenko has a well-diversified source of revenue from the sale of power through different structures of power purchase agreements and green/efficiency incentives. Our revenues against a generated unit have slightly decreased. Our revenues against RECs and other such incentives have increased over the previous year. Generation units located across India under the jurisdiction of different states and diversified PPA structures mitigate cash-flow risk and ensure balanced cash flow.

During this financial year, there have been challenges of curtailment, non and late payments, withholding of GBI, etc with regard to renewable assets in the state of Andhra Pradesh. However, the same is being resolved and the Ministry of New and Renewable Energy (MNRE) has issued directives to all State DISCOMs to adhere to the terms and conditions of PPAs and also to ensure the status of 'must run' with respect to renewable energy generating companies.

We have succeeded in reducing our costs by better asset management practices across the business. Some value maximization interventions have reduced downtime, some other losses, and some affected operational improvements. We have also improved revenues by harnessing electricity market/open access opportunities. Keeping with the circular economic principles, we have undertaken a modernization and up-gradation program of 500 wind turbines. This is also aimed at improving our revenue. Similarly, our WINSOM program where we have undertaken

O&M by ourselves, has also reduced costs and has a significant future cost-saving potential. In addition, it also mitigates operational risk. Further, the procurement of equipment and services for new and challenging Integrated Renewable Energy Projects has followed International Competitive Bidding procedures and the Project Management has included numerous built-in checks and balances. The risks in these complex projects are diligently identified and mitigated to a large extent and provisions are made for residual issues.

Thus, we earned profit before tax of USD 64.8 million in FY 2020 compared to a profit of USD 85.4 million in FY 2019.

The business environment after the COVID-19 outbreak globally and in India has not negatively impacted the generation and sale of energy. We find reinforcing evidence from IEA reports that suggest renewable generation has increased during the pandemic and it is also creating additional jobs. Global markets are accelerating the spread of new technologies, with a self-reinforcing cycle of falling costs through further deployment. Digital technology is an enabler of key elements of the energy transition: decarbonization and decentralization. At Greenko we are very much focused and invested in advanced analytics and real-time monitoring systems. We believe the combination of our existing hydro, solar, and wind projects along with our 24/7 Renewable Power Strategy to strengthen the electricity system in India is the right step in our growth trajectory.

With our steadfast approach, we will continue to pursue our transformational journey to effect decarbonization, digitalization, and decentralization. We will be keen to listen to you and engage with you throughout this journey.

Mr. Vasudeva Rao Kaipa
Chief Financial Officer



At Greenko we are very much focused and invested in advanced analytics and real-time monitoring systems. We believe the combination of our existing hydro, solar, and wind projects along with our 24/7 Renewable Power Strategy to strengthen the electricity system in India is the right step in our growth trajectory.

Message from COO



We started the implementation of WINSOM in July 2019 and focused on 178 MW of wind assets. At the four sites that we have undertaken this initiative, we have achieved improvement in energy-based availability by 1-3 %. ↵

Dear Stakeholders,

Our Integrated Thinking journey has been deepening through business-wise IR conclaves, innovation labs and PPS. The last two years are marked by our initiatives to effect significant improvement in asset performance including the asset life. Accordingly, this activity has become an integral part of our design & engineering, this endeavour also affirms to the circular economy approach of extending the life/ improving performance via asset reengineering and modernization. As we progress, on this endeavour, we are also very keen to understand how we can adapt to the changing climate and make our assets climate resilient.



We are sensitive to the fact that our assets depend on nature and draw their source from nature. Due to global warming, the impacts on climate are already discernible. ↵

Our portfolio of assets is diversified by asset type, geography, off-takers, and technology. Our assets are strategically located across geographies with a favourable history of hydrology, wind, and solar conditions. Our hydropower projects in the Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh Northern and North-Eastern Clusters are driven by hydrology based on snowmelt, glacier melt, and rainfall, while our hydropower projects in the Karnataka southern cluster are situated on rivers that are primarily monsoon dependent. Our wind energy projects are or will be located in the states of Maharashtra, Madhya Pradesh, Gujarat, Tamil Nadu, Karnataka, Rajasthan, Andhra Pradesh, and Telangana which have a favourable history of wind conditions. Our solar energy projects are, located in the states of Karnataka, Andhra Pradesh, Telangana, Tamil Nadu, Uttar Pradesh, Gujarat, and Maharashtra and in the city of Delhi, which are regions of strong irradiation. Geographical diversification allows for a generation that is more spread out throughout the year. Further, our hydropower, wind, and solar energy projects are located in geographical clusters, to share transmission and other common infrastructure which lowers our costs and helps to build on our local knowledge and goodwill. With the beginning of WINSOM, our plan

for asset performance improvement program, we have embarked on the implementation since July 2019 and focused on 178 MW of wind assets of Regent and Gamesa. At the four sites that we have undertaken this initiative, we have achieved improvement in energy-based availability by 1-3 %, thereby reducing the O&M costs reduced by 0.17 to 0.25 INR/KWh

Diverse technologies and geographies result in our ability to generate power that is more evenly spread out through the year. Also, our equipment is sourced from reputed and experienced OEM suppliers such as Alstom and BFL for the supply of hydro turbines, Gamesa and Suzlon for the supply of wind turbines generators, and Trina Solar, Risen, and Rene solar for the supply of key equipment such as solar panels, inverters, and trackers. The application of digitalization and data analytics has also helped us to improve the agility and reliability of assets being harnessed across our social assets.

We have improved Plant Load Factor, Plant Availability, and Grid Availability across the businesses. Mean Time Between Failures and Number of equipment failures have also been reduced. This demonstrates that as we expand and grow, our diligence in every activity continues. We also have initiated circular thinking which

involves planning for second life and end of life of assets. We have been deploying advanced analytics across our operations to predict the possible failures and initiate preventive actions.

The success stories presented in this report portray the team efforts in balancing long term and short-term performance of the assets, as also positive contribution of our teams to all the capitals and stakeholders. The ownership spirit of Greenko employees emanates from the realization that they are contributing to making #It'sPossible-clean, affordable, and reliable energy and at the same time deliver sustainable growth of India. Our people see their bright future in the a) potential for growth of the firm and flexible renewables b) the agility of Greenko to grow and offer solutions to meet the energy challenge and c) Greenko's continued commitment to its employees. The enthusiastic deliberations in these conclaves to align their role and activities to the company's strategic objectives have been very encouraging. Our suppliers and communities are also witnessing our evolution, as our peers find in us a reliable and agile partner to engage and commit for a long-term growth. Readiness to take ownership of outcomes by each employee; share gain and pain by suppliers and vendors and the trust that the company enjoys



The ownership spirit of Greenko employees emanates from the realization that they are contributing to making #It'sPossible-clean, affordable, and reliable energy and at the same time deliver sustainable growth of India. 

in the community has been a critical reasons for the company's success across technologies, geographies and markets, even in the face of disruptions and challenges.

We are sensitive and witness multiple operational disruptions due to weather. Our team's resilience in the face of adversity ensured that the disruptions due to extreme weather conditions are addressed immediately when the electrical infrastructure is disrupted. Going further, we have understood and are taking mitigative actions to address the changing pattern of extreme weather events due to global warming-induced climate change.

In service and supply contracts, OEMs provide warranties, power curve guarantees, and minimum availability guarantees for turbines and solar panels. It protects us against non-performance, subject to caps and may be limited by the ability of the vendor to satisfy the warranty or guarantee conditions. In addition, the warranties have time limits. We have already taken steps to mitigate such risks by increasing control over O&M and aligning contractual conditions. Further, we have teamed up with ONYX Insight, a leading global predictive analytics and engineering firm, to modernize

500 wind turbines and adopt the latest predictive analytics. ONYX Insight will be installing sensing equipment across the 500 direct-drive and geared turbines to monitor its condition. The data generated will be used to identify machinery failures and provide longer lead times of 6 – 12 months to plan for repairs. This improvement in turbine reliability through digitization is critical, as in the Indian market, renewable generators face significant competition from traditional power sources. At this scale and size and considering our ambitions to improve our scale and flexibility further, it is necessary to move towards self-sufficient operations and maintenance strategies. This will maximize efficiency, reduce costs, and retain investor confidence over the lifespan of the project. Digitalization and predictive maintenance will be the lynchpin to streamline asset operations and maximize production.

Greenko's agility has been demonstrated during the COVID pandemic. We have handled 353 Containers during COVID-19 (Lockdown), within 18 Days and ensured the safe delivery of containers & material to the site with zero mishandling. Also, we have contributed to health authorities and to communities across India, in and around our locations, during this health

emergency. Our employees weathered the COVID risk to maintain operations and generated uninterrupted power through the pandemic.

Greenko would continue to adhere to its values and be agile to respond to challenges in the environment. As they say, when going gets tough, tough get going'- Greenko is turning each challenge into an opportunity and marching ahead. In this journey, we are together with all our stakeholders.

We aim to maintain co-creative engagement with all our key stakeholders, and this is critical in the journey towards transformation of Greenko to 3.0 & 4.0. We are keen to listen to your feedback and engage with you to take this journey forward.

Mr. Venugopala Rao Naredla
Chief Operating Officer-Greenko Asset Management



Foundation and Motivation

Greenko Group is committed to transform renewable energy from real-time energy to a dispatchable and controlled medium, through digitalization and storage solutions that support the economy-wide drive for deeper decarbonization across sectors in the country.

From its inception, the group is committed to generating clean, reliable, and affordable energy and create #MoreSmilesPerWatt. The scale of this pursuit is calibrated as per available resources and opportunities. Greenko's values continue to be the bedrock of its foundation and its vision and mission have been a motivating factor driving every pursuit of Greenko.



VISION
To lead Decarbonization, Digitalization and Decentralization of India's Energy Sector

- Build and Operate flexible utility scale energy assets to deliver demand driven solutions
- Continuously innovate to deliver best-in-class solutions with life-cycle focus
- Manage all assets sustainably, leveraging leading-edge technologies
- Build public-private people alliances for sustainable development

MISSION

VALUES

- Stakeholder Inclusiveness
- Excellence
- Ethical
- Discipline
- Innovate
- Teamwork



STAKEHOLDER INCLUSIVENESS

Engage with all the Greenko stakeholders in an inclusive manner for sustainable development of the organization.



EXCELLENCE

Strive for excellence to deliver roles and responsibilities to achieve measurable results in developing, owning and operating world class assets.



ETHICAL

Conduct actions with fairness, integrity and honesty with all Greenko stakeholders.



DISCIPLINE

Adherence to company policies and GIMS with a sense of ownership.



INNOVATE

Adopt and encourage use of technology and innovative approaches to deliver breakthrough business results.



TEAMWORK

Achieve organizational objectives with respect and dignity towards all participants of Greenko in a positive and collaborative work environment.



Greenko communication strategy is built on Four Pillars: Honesty, Transparency, Accountability and Consistency. During this current COVID-19 crisis we have adopted an approach to communicate clearly, simply, frequently using digital and analytics tools, connecting employees to a deeper sense of purpose.

Mrs. Swathi Reddy
VP - Corporate Communications

Purpose-Driven Business

Greenko is one of the leading renewable energy companies in India, with assets across the solar, wind, hydro, biomass, and gas-based power generation. It presently has a net installed capacity of 6.2 GW across 15 States in India. With the capacity addition of 1.4 GW in the current reporting period, the group has nearly 8GW of assets in the pipeline, to achieve its goal of generating 30 BU of electricity by the financial year 2023.

Greenko strongly believes in business with long-term stability, guided by strong corporate values, high ethical standards, agile and motivated workforce, and an able shareholder base including sovereign wealth funds GIC and ADIA. Greenko's ultimate holding company is 'Greenko Energy Holdings', which is incorporated in Mauritius.

Presently, Greenko's business is directed towards decarbonization of the Indian energy sector through digitalization and decentralization. This is achieved through the implementation of projects at utility-scale to deliver clean, affordable, and schedulable energy to meet the country's current as well as future energy security and economic stability needs. The group is committed to transforming renewable energy from real-time to a dispatchable and controlled medium through digitalization, to build Intelligent Energy Platforms (IEP) as storage solutions to support the economy-wide shift towards a carbon-neutral electricity mix in the country, supporting deeper decarbonization. Greenko always takes a long-term view of its business, guided by strong corporate values, high ethical standards, and an able shareholder base including sovereign wealth funds, GIC and ADIA.



Decarbonization

- GW scale projects & deeper renewables penetration (5-15%)
- Achieving competitive cost of generation through RE
- Mainstreaming RE generation with scale
- Connecting renewables through HV to national grid without any regulatory support



Digitalization

- Converting renewable energy to reliable, schedulable, and flexible energy.
- Building Intelligent Energy Utility Platform
- Digital Integration of diverse Renewable Energy sources to solve market needs
- Energy Management SPOD Projects
- RTC renewables replacing fossil fuels
- Grid Storage Projects



Decentralization

- Energy value chain moving closer to customers and serving their core needs
- Energy platform as "Portable" and "Interoperable" for enhancing user experience
- Participating in Energy Distribution
- Socio-Economic upliftment contributing to overall national development



Outcome

- Ensure access to affordable, reliable and modern energy
- Deliver energy security and Economic stability
- Develop climate responsible business models for low-carbon future economy
- Contribute to circularity by developing Intelligent Energy Storage Sharing platforms
- Sustainable, non-consumptive utilization of natural resources
- Improve quality of life by contributing to common good
- Be a collaborative, open and responsible company



<IR> Conclave

Greenko has been taking up initiatives on the Economic, Environmental, and Social fronts. A renewed focus on sustainability has gained momentum in the last few years and has taken a significant turn because of the integrated reporting activity taken up by the group. This has started a new conversation within the organization to think about sustainability, integrated thinking to set KPIs and goals aligned with organizational strategies.

Ratnagiri, Maharashtra

<IR> Conclave

To become a champion in the RE space, Greenko is diving deep into sustainability initiatives, enabling stakeholders to understand true value; tangible and intangible. Greenko is ensuring that the key focus is not only on the financial capital but also on the material issues of non-financial capitals.

Greenko is continuously defining, implementing, measuring, and communicating its value creation and business strategy throughout the organization, year on year. To communicate further down and deploy the business strategy and value creation model, Greenko has launched <IR> Conclave as the annual platform to engage its internal stakeholders at the sites and across functions. These conclaves have become one of Greenko's flagship events attracting cross-functional teams from the group's Wind, Solar & Hydro businesses to develop, deliberate, and discuss Integrated Thinking, business strategy, and value creation stories.

The major focus areas of the conclaves included:

- Integrated Reporting Framework & Integrated thinking
- Embedding integrated thinking in decision making
- Aligning to Greenko's strategic goals and KPIs across six capitals i.e. Financial, Operational, Human, Intellectual, Natural and Social & Relationship

In the current reporting period, the <IR> Conclaves were conducted on the theme "It's Possible" in which the IR champions of Greenko shared success stories as to how the teams are contributing to the strategic goals of the company through the six capitals of Integrated Reporting.

The Objectives of the Conclaves:

These Conclaves have endeavoured to highlight the direction that Greenko has taken to reach its goals. The Major objectives of <IR> Conclaves included:



Highlights of <IR> Conclaves

200
<IR> Champions

30
Award-Winning Stories

130
Success Stories

3500
Training Man-Hours



For more information on Greenko's <IR> Conclave please refer to <IR> Conclave Report

Diverse Portfolio

Greenko has extensive experience in the design, construction, and operation of renewable energy plants, and has the advantage of owning one of India's largest portfolios of renewable energy assets. The group's diverse portfolio of Wind, Solar, and Hydro technologies are strategically located, have good growth potential, and have a high level of efficiency that is constantly being improved.

Assets at a Glance

6.2 GW
Installed Capacity

5.9 Mn
Solar Modules

112
Sites (Projects)

660.9
Revenue (Million USD)

1931 (Solar)
Inverters

15
States in India

2600+
Employees

2300+
Length of the transmission line (km)

62 (hydro)

1184 (wind)
Turbines



Our SBU leaders in Leadership summit

Business in Solar power

Greenko has developed, engineered, constructed, and currently operating many of India's grid parity, utility-scale solar assets, strategically situated across the country's landscape. As a result of strong execution and partnerships with tier 1 technology suppliers, Greenko is able to expedite implementation efficiently in a short span of time. Using the best of cutting-edge technologies and benchmark systems, the solar assets established by Greenko yield high energy in real-world conditions with stable grid integration. The group generated 2175 MW solar power from 47 sites.

Solar Portfolio

2175 MW
Operating Capacity

47
Number of Solar sites

5.9 Mn
Solar Modules

1,931
Inverters

305
Transmission line (km)

212.3
Revenue (USD in million)



Arushi, Andhra Pradesh

Diverse Portfolio



We have made significant progress in the management of solar assets. We are aware that managing solar assets as they age and at the end of life is a big challenge and has been a concern. While we would incorporate these factors into new procurement, we have begun thinking about addressing this for the existing assets. Accordingly, we will reinforce and strengthen our testing, repairing, and reengineering capacities. Further, climate change would have different impacts across our locations. We have taken and will take the necessary engineering measures to address operational disruption. Further, to address changes in solar radiation availability and impacts on power generation, we would like to understand and assess it better.

Mr. Ramprasad N
AVP, GAM-Solar



We have introduced many innovative programs in managing solar assets. The assets deployed in different topographies and environments require customization and we have been able to do it effectively. We are determined to build capacities within and at the sites to manage the full-life, second-life, and end-of-life of the assets.

Mr. Srinivas Naidu A
Sr GM, GAM-Solar



Business in Hydro Power

Greenko is leading the Indian hydro power sector in the small and medium hydrospace. The company primarily concentrates on run-of-river hydroelectric projects, building a portfolio that is diversified by hydrology and clusters across North and South of India.

In the current reporting period, Greenko has strategically improved its access to hydropower by actively pursuing inorganic growth through acquisition of equity stake in Teesta Urja Limited, which has an underlying asset of 1,200 MW of hydropower project in North Sikkim and a hydropower project of Everest Power Private Limited, with a total capacity of 100MW in Himachal Pradesh. With these capacity additions, Greenko's hydro portfolio' operating capacity stands at 1689 MW from 24 hydro projects and over 600 MW in pipeline.

Hydro Portfolio

1689 MW

Operating Capacity

233

Transmission Line (km)

67.5

Revenue (USD in million)

24

Number of Hydro sites

62

Turbines



Hemavathy, Karnataka

Diverse Portfolio



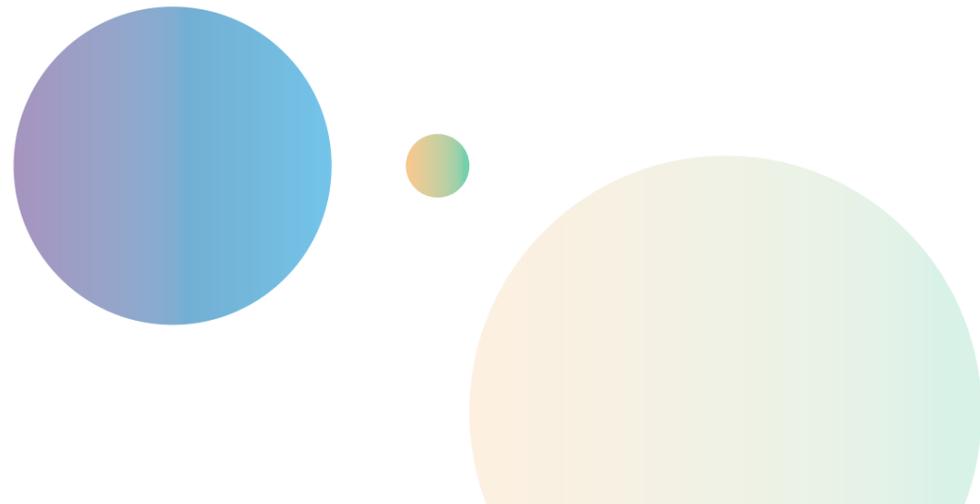
Our assets are located strategically in diverse and challenging geographies. The growth in the size and scale of this business has been phenomenal and we look forward to accelerated growth in the coming times. At each location, we are aware, that we are part of the riverine ecosystem that supports lives and livelihoods. We have been agile to seasonal and annual changes in hydrological flows as also to ecosystems due to other unanticipated post-project developments. Also, we have begun assessing the likely impacts of changing climate due to global warming and how it can impact our operations.

● **Mr. Prasada Raju J.V.S.D**
SVP, GAM-Hydro



Our operation and maintenance practices have been able to withstand the variability in weather conditions and even the extreme flooding events. We are aware that the severity and frequency of such events may increase in the medium term due to climate change induced global warming. We are revising the threshold of our designs and are assessing whether these are adequate or require any resetting.

● **Mr. Suresh Chand Kalsi**
GM, GAM-Hydro



Business in Wind Power

Greenko specializes in the full spectrum of wind power solutions with an extensive portfolio of reliable and technologically advanced projects. With operational wind farms strategically located in places with the highest wind potential, Greenko's turbines and modules are precisely engineered to yield maximum energy and optimized wind farm performance adapted to diverse operating conditions. With Wind energy being the fastest-growing power source in India, the group is actively contributing to the country's transition from fossil fuel dependency to clean energy generation by contributing 2358 MW power from 35 wind farms.

Wind Portfolio

2,358 MW

Installed Capacity

1184

Turbines

379.4

Revenue (USD in million)

35

Number of Wind Farms

1823

Transmission Line (km)



Saipuram, Andhra Pradesh

Diverse Portfolio



The WINSOM project, though it was initiated to address the challenges of O&M service providers, became the fountainhead of cost reduction, revenue enhancement, and circularity. We propose to expand it to cover all our assets and also extend it to have capacities for repair and refurbish to herald circular economic thinking. We have been and continue to be aware of the importance of guarding the asset through its life and if possible, take steps to extend its life.

We have been witnessing changing wind patterns and some researchers attribute this to changing climate. We have conducted a detailed study to understand such climate changes and made provisions for mitigation and management.

Mr. Bharath Kumar N
VP, GAM-Wind



This year it was full of challenges and new initiatives for making Greenko stand out as a unique IPP. Challenges & Initiatives like Urvakonda evacuation, WINSOM initiative and Borampalli 220 KV line made us think about out of the box solutions that came out with flying colours. We had been thorough and received valuable training, which in turn made us run operations smoothly & effectively.

Mr. Srinivasa Rao
GM GAM WIND



Future Projects

Greenko continuously seeks and harnesses opportunities to expand its generation portfolio, through both organic and inorganic growth, to achieve its target of generating 30 BU by 2023. Accordingly, a total of six projects are under construction with a licensed capacity of 254.5 MW, comprising one wind project with a licensed capacity of 20 MW, five hydropower projects with a licensed capacity of 234.5 MW. The Sorang Hydroelectric Project with installed capacity of 100 MW is near completion stage and is a run of the river scheme on Sorang Khad, a tributary of Sutlej river in Kinnaur district of Himachal Pradesh, India. There are also 6 hydropower projects under active development with a total licensed capacity of 369.0 MW.

Further, there are Three integrated renewable energy storage projects (IRESP) under pre-construction phase, the Pinnapuram IRESP, Saundatti IRESP and MP 30 Gandhi Sagar Standalone Pumped Storage Project (SPSP) with a total generation capacity of 8.7 GW with national grid connectivity. The IRESPs are expected to harness the power of solar and wind resources with digitally connected storage infrastructure to provide scheduled and flexible power to the grid. Greenko has license to build and operate multiple IRESPs across five states with a daily storage capacity of 40GWh.



Future Projects

IRESP Pinnapuram

The proposed Pinnapuram Integrated Renewable Energy Storage Project (IRESP) has been conceived as the world's first and largest Gigawatt-Scale Integrated Project with solar, wind, and pumped storage components. All three components of Pinnapuram IRESP are in close vicinity of each other and therefore, power from all three components will be commonly pooled.

The IRESP consists of four key components which are as follows,

Key components	Details
Standalone Pumped Storage Project (SPSP)	Generation of 1200 MW with 9-hour storage resulting in a daily storage capacity of 10.8 GWh, through the creation of two off-stream standalone reservoirs on natural depressions.
Solar Park	Generation Capacity of 3.0 GW
Wind Park	Generation Capacity 0.5 GW
Central Pooling Sub Station (CPSS)	Connected to evacuate energy nationally to multiple inter-state consumers. Greenko Renewable Energy Management Centre housing the "Intelligent Energy Platform" (to forecast, monitor, balance, and deliver the required energy and storage services) will be an integral part of CPSS.



IRESP Saundatti

Saundatti Integrated Renewable Energy Storage Project (IRESP) has been envisaged to be a 2660 MW project comprising of 1260 MW of Standalone Pumped Storage Project (PSP), 1000 MW Solar and 400 MW Wind energy project. Thereby, Greenko is planning to harness PSP, solar and wind potential in the state of Karnataka to supply dispatchable and schedulable renewable energy to the national grid.

Location

located in Belagavi district of Karnataka state

Standalone Pumped Storage Project (SPSP)

1260 MW

Solar Park

1000 MW

Wind Park

400 MW

Central Pooling Sub Station (CPSS)

PGCIL/CTU sub-station at Dharwad for further supply into the National Grid.



Pan India Presence

Greenko's operational assets are strategically located pan India to harness the best available renewable energy resources and infrastructure for evacuation. The locational advantage positions Greenko for further growth in the clusters. The strategic positioning details are presented below:

Andhra Pradesh

1. Pinnapuram*	IRESP	4860 MW
2. Ghani Solar Park	Solar	816 MWp
3. Amidyala	Wind	227 MW
4. Rayala Wind Farm	Wind	179 MW
5. MPR Darn	Wind	104 MW
6. Saipuram wind energy	Wind	105 MW
7. Belguppa	Wind	101 MW
8. Nimbagallu	Wind	100 MW
9. Animala	Wind	84 MW
10. Guttaseema	Wind	80 MW
11. Sandla	Wind	50 MW
12.Greenflash	Solar	41 MWp
13.Arushi	Solar	39 MWp
14.Rain Coke	Solar	33 MWp
15.PoIy	Wind	24 MW
16.Jed	Wind	24 MW
17.Sriram - Andhra Pradesh	Solar	23 MWp
18.Vayuputra	Wind	20 MW
19.Rayachoti	Solar	11 MWp
20.Makkuva*	Solar - Battery	5 MW
21.Kasumuru*	Solar-Battery	5 MW

Arunachal Pradesh

1. Rego*	Hydro	97 MW
2. Rapum.	Hydro	81MW
3. Pernashelpu.	Hydro	81MW
4. Kangtangshin*	Hydro	75 MW

Delhi

1. DMRC	Solar	4 MWP
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Gujarat

1. Charanka	Solar	53 MWp
2. Maliya	Wind	40 MW

Himachal Pradesh

1. Malana	Hydro	100 MW
2. Sorang*	Hydro	100 MW

3. Harsar*	Hydro	70 MW
4. Budhil Hydro	Hydro	70 MW
5. Bharmour*	Hydro	45 MW
6. Ravi River Basin Cluster	Hydro	32 MW
7. Sutlej River Basin	Hydro	44 MW
8. Beas River Basin Cluster	Hydro	25 MW
9. Lassa*	Hydro	24 MW
10. Jeori	Hydro	10 MW

Karnataka

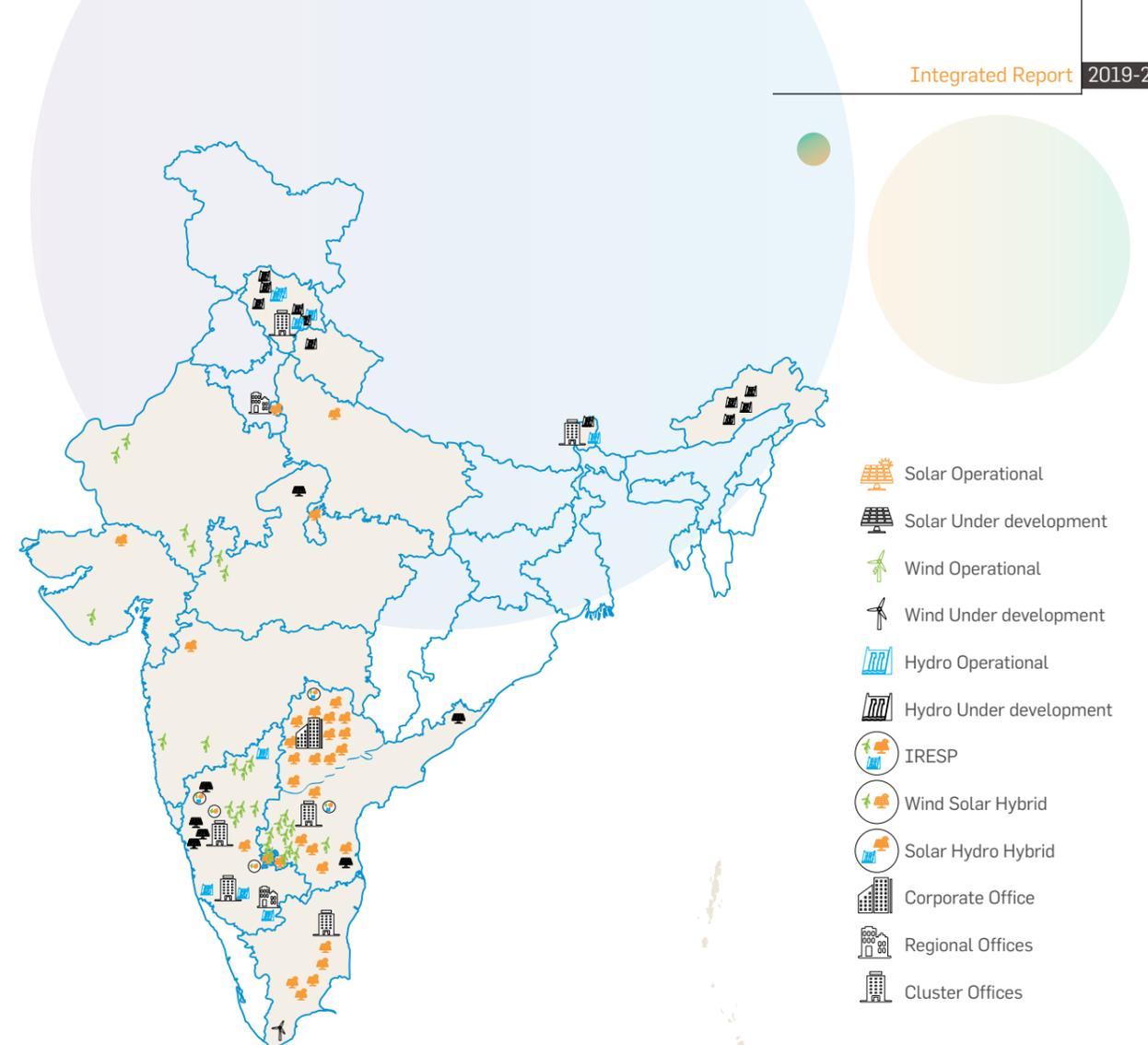
1. Saundatti*	IRESP	4860 MW
2. Rona & Gadag*	Wind Solar - Hybrid	1500 MW
3. Pavgada.	Wind Solar - Hybrid	1500 MW
4. Fortune Five Wind Farm	Wind	165 MW
5. Vyshali Wind Farm	Wind	100 MW
6. Devrahiparigi Wind Farm	Wind	100 MW
7. Pavgada Solar Farm	Solar	90 MWp
8. Chitradurga Solar Farm	Solar	66 MWp
9. Gurmitkal	Wind	60 MW
10.Netravathi River Basin Cluster	Hydro	60 MW
11.Kustagi	Wind	50 MW
12.Soraja	Wind	36 MW
13.Hemavathy MHS	Hydro	24 MW
14.Shanay	Wind	21 MW
15.Ramanakoppa*	Solar	20 MW
16.Chandragutti*	Solar	20 MW
17.Jasper MHS	Hydro	11 MW
18.Sai Spurthi MHS	Hydro	10 MW
19.Hipparigi*	Solar	5 MW

Madhya Pradesh

1. Shivapuri	Solar	180 MW
2. Mamathkheda	Wind	101 MW
3. Bercha	Wind	50 MW

Maharashtra

1. Suvaan	Solar	138 MWp
2. Ratnagiri Wind	Wind	102 MW
3. Khanapur	Wind	34 MW



Rajasthan

1. Tanot Wind Farm	Wind	120 MW
2. Bhesda	Wind	40 MW
3. Dalot & Devgarh	Wind	23 MW
4. Dalot	Wind	20 MW

Sikkim

1. Teesta Urja Limited	Hydro	1200 MW
2. Dikchu HEP	Hydro	96 MW
3. Rahikyoung*	Hydro	25MW

Tamil Nadu

1. Poovani	Wind	200 MW
2. Adhavan	Solar	60 MWp
3. Kathiravan	Solar	60 MWp
4. Phoebus	Solar	60 MWp
5. RT Renewable	Solar	18 MWp
6. Adityashakti	Solar	13 MWp

Telangana

1. Adilabad*	IRESP	2000 MW
2. NTPC - Karvy	Solar	77 MWp
3. Zuka	Solar	74 MWp
4. Jilesh	Solar	70 MWp
5. Sunbrone	Solar	45 MWp
6. Karvy	Solar	22 MWp
7. Sriram - Telengana	Solar	22 MWp
8. Ellanthakunta	Solar	12 MWp
9. Talmadla	Solar	12 MWp
10.Chennur	Solar	12 MWp
11.Kowdipalli	Solar	10 MWp
12.Digwal	Solar	9 MWp
13.Shankapur	Solar	9 MWp
14.Manakondur	Solar	6 MWp

Uttarakhand

1. Swasti HEP	Hydro	23 MW
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Uttar Pradesh

1. Dhruv Milkose	Solar	1 MWp
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* Projects under development

Journey so far

Greenko's journey so far has been unique, since it aims to generate 100% RE to support the country's energy needs, with a long term and steady business focus # Harit Urjaa Sada Ke Liye.

During the journey, Greenko rightly secured technology partnerships to achieve scale, adopted self EPC and O&M model, and improved access to the grid. Not only on the technology front, but Greenko has been actively participating in policy advocacy as well. The organization is also accessing institutional consumers directly and is poised to enter the next phase of access for customers with a provision of electricity plus services. Further, the business will also extend to tap electrification of energy, beginning with transportation.

The journey that began with about 100 MW in hydro and biomass has grown to deliver 9.97 BU with assets of 6.2 GW across solar, wind and hydro. Going forward by 2023, Greenko has set a target to generate 30 BU of electricity and own 8.7 GW of IRESP. The capacity will further expand to generation of 40 GWh by 2030. This roadmap (as presented below) is transformative and will herald firm and flexible RE in India, delivering energy security and economic stability.



2007

First plants acquired (operating & under construction)

Biomass: **40.5MW**
Hydro: **65 MW**

Total 5 biomass plants registered for CDM with UNFCCC

2008

Turnover increased by **270%**

2010

Human Capital increased by **750**

Group assets: **587 MW** including 430 MW assets under development

2011

Greenko and GE teamed up to develop wind energy projects

2013

GIC as a new investor in a subsidiary company

2014

Assets >2 GW

659.75 + 1793 MW under development

2015

Greenko taken private, sealing the partnership between GIC and founders

2016

Assets >3 GW

2.65 GW + 800 MW under development

2018

1.5 GW RE assets acquired

- Assets >**4.8 GW**
- Units generated **7.2 BU**
- **2,000+** Employee base
- Shift in strategy from plain vanilla RE to intelligent energy platform (IRESP)

2019

- Assets > **6.2 GW**
- Units generated **9.97 BU**
- Top destination for overseas fund with USD 2,294 million investment flows
- Embracing Circular Economic and Regenerative Thinking
- Owned O&M infrastructure
- Climate Risk Assessment of 6 critical operating sites

2023

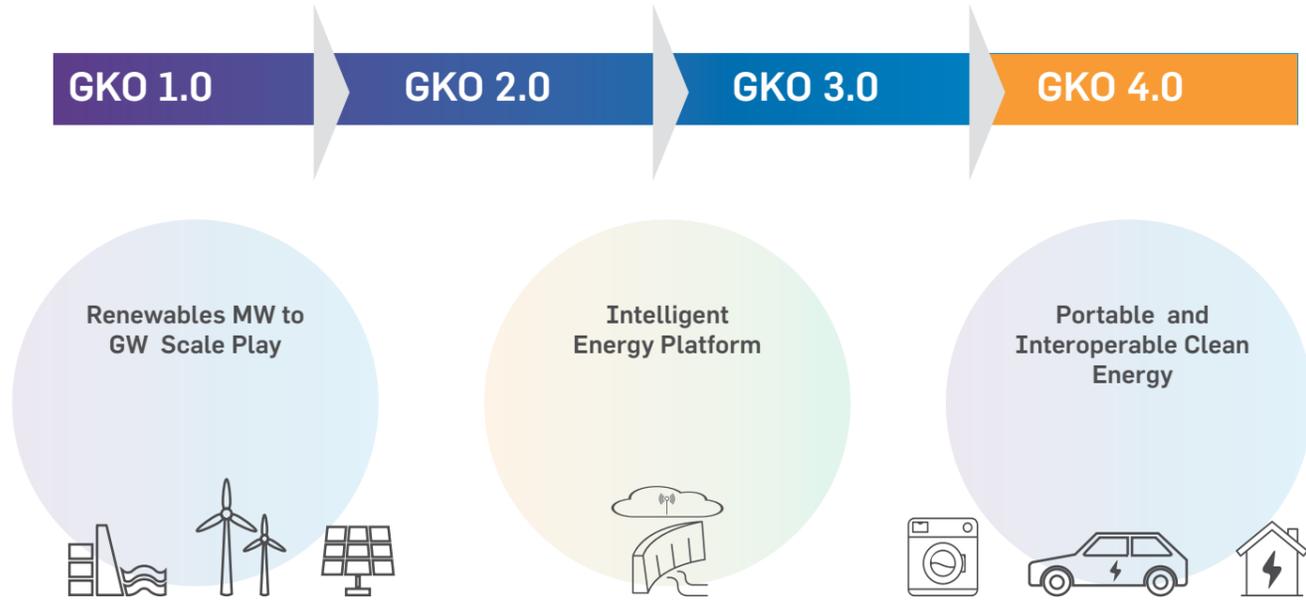
Target to manage

- **30 BU** of electricity generation
- **8.7 GW** of IRESP completion

2030

On target to build and operate multiple IRESPs with storage capacity of **40GWh.**

Journey so far



- Resource forecasting
- Advanced weather prediction algorithms
- High accuracy field devices / sensors
- Automated analytics and modelling techniques
- Fiber optic technology for real-time data feeds
- Overall voltage regulation and power flow optimization
- Localizing and islanding faults

- Scalable and powerful SCADA solutions
- Advanced image processing and recognition technology
- Unmanned drone technologies
- Energy market management software integration layer
 - IEX and other regional trading markets

- AI and ML based energy scheduling and dispatch algorithms
- Battery Management Systems (BMS)
 - Advanced self-optimization battery models
 - Active cell balancing techniques
- Energy Management Systems / Energy Communications Unit (ECU)
- Localized control centers based on network optimization
- Real-time customer interaction

- Open IoT cloud architecture
 - Localized interfaces based on individual customer energy optimization algorithms
 - Integration of decentralized energy pools, microgrids, storage, generation and demand layers
 - Smart energy control and monitoring devices
- R&D:**
- Li-ion battery technology research on energy density, safety and volumetric efficiency
 - Hydrogen fuel cells and electrolyzers



Malana, Himachal Pradesh

05

Balancing
Value –
Governance
Framework

Arushi, Andhra Pradesh



Strategic Orientation and Supervision

Greenko Energy Holdings together with its subsidiaries ("Greenko Group") is in the business of owning and operating clean energy facilities in India. Greenko Energy Holdings Board is constituted by representatives from GIC, ADIA, the founders and independent directors.



In GIC, we believe that companies with good sustainability practices will generate better risk-adjusted investment returns over the long term, and that this relationship will strengthen over time. With the general direction of economies towards net zero carbon emission, the Greenko leadership team has done well in positioning the company sustainably. By focusing on key ESG issues, and staying ahead through continuous innovation as demonstrated by Greenko's journey to date, we are confident in the company's ability to grow and sustain its performance.

● **Mr. Boon Chin Hau**
(Board Director)



The corporate governance framework at Greenko is a set of practices and structures through which the company manages business affairs and works to meet its financial, operational, and strategic objectives to achieve long-term sustainability. Through adherence to best practices and principles of corporate governance, Greenko will continue to enjoy stakeholder trust and be a strong, viable competitive corporation accountable

to stakeholders. The governance framework is crafted considering

- The nature of the business
- The company's size and stage of development
- Availability of resources
- Shareholder expectations and
- Legal and regulatory requirements.

The Governance Framework at Greenko is structured based on the following principles:

- 1 Ethical approach** – culture, society; organizational paradigm
- 2 Balanced objectives** – congruence of goals of all interested parties
- 3 Each party plays its part** – roles of key players: shareholders/directors/ staff

- 4 Decision-making process in place** – reflecting the first three principles and giving due weight to all stakeholders
- 5 Equal concern for all stakeholders** – albeit some have greater weight than others
- 6 Accountability and transparency** – for all stakeholders

The Greenko governance framework has the following salient elements'

Steering for the Long-Term

The vision and mission of the company are long-term, and the shareholder interests too are aligned for the long-term. To continue a focus on decarbonization, digitalization, and decentralization of the Energy System in India and harness all value pools, Greenko cannot afford to be immobilized by the demands of quarterly results. Thus, the group's focus of deliberations and communication is about long-term goals, such as market share targets, percent of revenue from new markets, besides quarterly earnings guidance. Greenko follows a staggered representation of the board and this promotes continuity and stability in the boardroom.

Best in the Board

Greenko's Board ensures that its membership has the proper mix of skills and perspectives. To ensure this, the Board not only follows age limits and term limits but also gender and other diversity requirements. The Board takes a hard look at their composition and whether the skill set is appropriate for the company and its ambitions for growth. The Board presently has internal evaluations conducted by the chairman or lead director and process design for reviews involving grading directors on various company-specific attributes.

Orderly Voice to Shareholders

Greenko's executive directors would campaign hard for their point of view but leave the decision to the shareholders and guarantee a reasonable process whereby shareholders get to decide.

Further at Greenko, we follow the best corporate governance practices, as below:

- Greenko Board comprises of knowledgeable directors, have expertise relevant to the business and are qualified & competent, have strong ethics and integrity, diverse backgrounds and skillsets, and sufficient time to commit to their duties.
- Regularly, the Board identifies gaps in the list of directors, complement the ideal qualities, characteristics and keep an "evergreen" list of suitable candidates to fill Board vacancies.
- Most of the directors are non-executive and some including the chairman are independent
- An engaged Board where directors question and challenge management
- Conducting familiarization programs covering the business, their duties, and the Board's expectations; reserve time in Board meetings for ongoing education about the business and governance matters.
- Reviews Board mandates and undertakes evaluation of performance.

Define roles and responsibilities

Further the following good governance practices are adhered to at Greenko:

- Written mandates for the Board and each committee setting out their duties and accountabilities.
- Delegation of certain responsibilities to committees such as audit, nomination, and remuneration & "special committees" formed to evaluate proposed transactions or opportunities.
- Written position descriptions for the Board Chair, Board committees, the CEO, and executive officers.
- Separation of the roles of the Board Chair and the CEO: The Chair leads the Board and ensures its acting in the company's long-term interests; the CEO leads management,

develops and implements business strategy, and reports to the Board.

Emphasize integrity and ethical dealing

- Adopted a conflict of interest policy and a code of business conduct setting out the company's requirements and process to report and deal with non-compliance & formulated a Whistleblower policy.
 - Made a director responsible for oversight and management of these policies & procedures.
- Evaluate performance and make principled compensation decisions
- Directors' fees structure does not conflict with the director's independence or discharge of his/her duties.
 - Measurable performance targets for executive officers (including the CEO) to regularly assess and evaluate their performance against set standards, and align compensation to performance.
 - Establish a Compensation Committee comprising of independent directors to develop and oversee executive compensation plans.

Effective Risk Management

- The Board is responsible for strategically establishing the company's risk tolerance and developing a framework and clear accountabilities for managing risk. It reviews, by itself or by anointing external independent parties, the adequacy of the systems and controls in place to identify, assess, mitigate, and monitor risk and the sufficiency of its reporting.
- Directors are responsible for understanding the current and emerging short and long-term risks the company faces and its performance implications. Management's assumptions are often challenged, and the adequacy of the company's risk management processes and procedures are assessed.

Committees of the Board

The Board has constituted the following committees:

Audit and Risk Committee

The terms of reference of the Audit and Risk Committee include the following:

- Overseeing and planning all audit activities and the definition of the scope of those activities
- Monitoring the integrity of the financial statements and any announcement or communications relating to financial performance
- Reviewing internal financial controls, reviewing the Company's internal control and risk management systems
- Reviewing internal risk assessment reports and the evaluation of actions intended to mitigate the identified risks
- Monitoring and reviewing the effectiveness of the internal audit function
- Making recommendations to the Company's Board of Directors concerning the appointment, reappointment, and removal of the external auditor and approving the remuneration and terms of engagement of the auditor; and
- Reviewing the auditor's independence and objectivity.

The Audit and Risk Committee is required to meet at least three times in a year, including once before the finalization of annual accounts and once every six months.

Remuneration and Nomination Committee

The Remuneration and Nomination Committee determine Greenko's remuneration policy, regarding performance standards and existing industry practice. Under the

existing policies of the Company, the Remuneration and Nomination Committee determines, inter alia, the remuneration, and benefits package payable to the Directors.

Apart from discharging the above-mentioned functions, the Remuneration and Nomination Committee also discharges the following functions:

- Setting up the remuneration policy for all executive directors and the Company's chairman, including pension rights and any compensation payments
- Recommending the level and structure of remuneration for senior management
- Recommending appointments to the Board of Directors of the Company's subsidiaries
- Within the terms of the remuneration policy and in consultation with the directors, determining the total individual remuneration package of each designate, including bonuses, incentive payments, and share options or other awards
- Reviewing and designing incentive plans for approval by the Board of Directors and shareholders
- Assessing and approving the performance or non-performance of targets set for awarding incentive exercises
- Determining the policy for, and scope of, pension arrangements for each executive director and other designated senior executives
- Overseeing the hiring of key executives and members of the Board of Directors
- Ensuring that contractual terms of termination, and any payments made, are fair to the individual and the Company

- Planning and preparing for Board succession and development; and
- Considering any other matter that may be referred by the Board of Directors for consideration by the Committee from time to time in respect of employment and remuneration

Capital Delivery Committee

The objectives of the Capital Delivery Committee (the "committee") of the board of directors are to assist the Board with oversight of:

- the development and adoption of appropriate governance, monitoring and reporting frameworks for Board approved Integrated Renewable Energy Projects ("IREP"),
- the review and assessment of project plans and delivery processes to identify key risks, interdependencies and milestones,
- ongoing project progress and status of IREPs and against pre-determined plans and milestones as set out in Schedule 7 of the Rights Issue Deed dated 23rd May 2019 (the "RA"), and
- consider, review and recommend for approval any and all capital expenditure for any IREP and to make recommendations to the Board in relation to the release of funds associated with project delivery after satisfaction of project status, including the achievement milestones as listed in Schedule 7 of the RA.

The role, responsibilities and powers of this committee includes matters set out above as amended from time to time as per approval process set out in the RA.

Management Team

Greenko's senior management team comprises of professionals with extensive experience in the industry and relevant expertise to execute the business plans of the company. They lead the day-to-day management of the business and provide significant inputs for setting strategic direction and assessing the risk to the Board. Under the supervision of the Board of Directors, they ensure that the business is conducted in accordance with the policies and procedures established by the governing bodies. They report regularly to the Board of Directors about the attainment of the established objectives.

Leadership Team



Mr. Anil Kumar Chalamalasetty (Chief Executive and Managing Director) had an extended entrepreneurial career during which he was involved in evolving start-up businesses in Information Technology, Infrastructure and Environmental sectors in the United Kingdom and India. Mr. Chalamalasetty is experienced in mergers and acquisitions, transition and project management with a successful track record of managing operations involving large remote teams. He co-founded and developed the Company with Mr Mahesh Kolli in 2004 and incorporated it in early-2006 to raise funds for financing early operations. He is responsible for effectively implementing the strategic business road map of the Company. Mr. Chalamalasetty is a graduate in Computer Science and holds a Master's from North West University.



Mr. Mahesh Kolli (President and Joint Managing Director) started his career in the energy sector and went on to build his entrepreneurial interests in Information Technology and Environmental space. His entrepreneurial journey started with an environmental solutions company focused on technology transfer from developed markets to India. He co-founded Greenko Group along with Mr Anil Chalamalasetty in 2004. Within Greenko, he is responsible for driving the vision, business development and new project initiatives of the Group. Mahesh is a regular speaker at Carbon Market & Clean Energy conferences around the world and is a graduate in Mechanical Engineering from Karnataka, India.



Mr. Vasudeva Rao Kaipa (Chief Financial Officer). He joined the Board in Feb 2012. Prior to Greenko, he was an Executive Director for XL Energy Ltd (from 2005) which has diversified interests including significant solar power operations and organized its IPO to the Indian Stock Exchange in 2006. He also served on the Board of Directors of GSS America Infotech Ltd, a Software Services Company which he advised and helped organize its IPO and NEST Ltd. Vasu also served as an Executive Director at Goldstone Technologies Ltd and also worked for Kirloskar Electric, in a number of key finance roles.

Management Team



Mr. Vinay Bhatia (General Counsel) is a 2001 alumnus of one of India's premier law schools, NLSIU Bangalore. He has a diverse blend of experience across organizations such as ICICI Bank, AMSS, Franklin Templeton, SunEdison and IFIN. As India General Counsel of SunEdison, Vinay played an instrumental role in the rapid expansion of its business in India and emerging markets, while also serving as its regional compliance officer. At Greenko, Vinay manages commercial litigation and provides legal counsel for all project financing, project contracting and M&A activities.



Mr. Naredla Venugopala Rao (Chief Operating Officer-Greenko Asset Management), former CEO of Reliance Power, is a power-sector professional. He has more than 36 years of experience in senior positions like CEO, CFO with Reliance Power, Lanco Group and NTPC. At Greenko he heads project management and asset management.



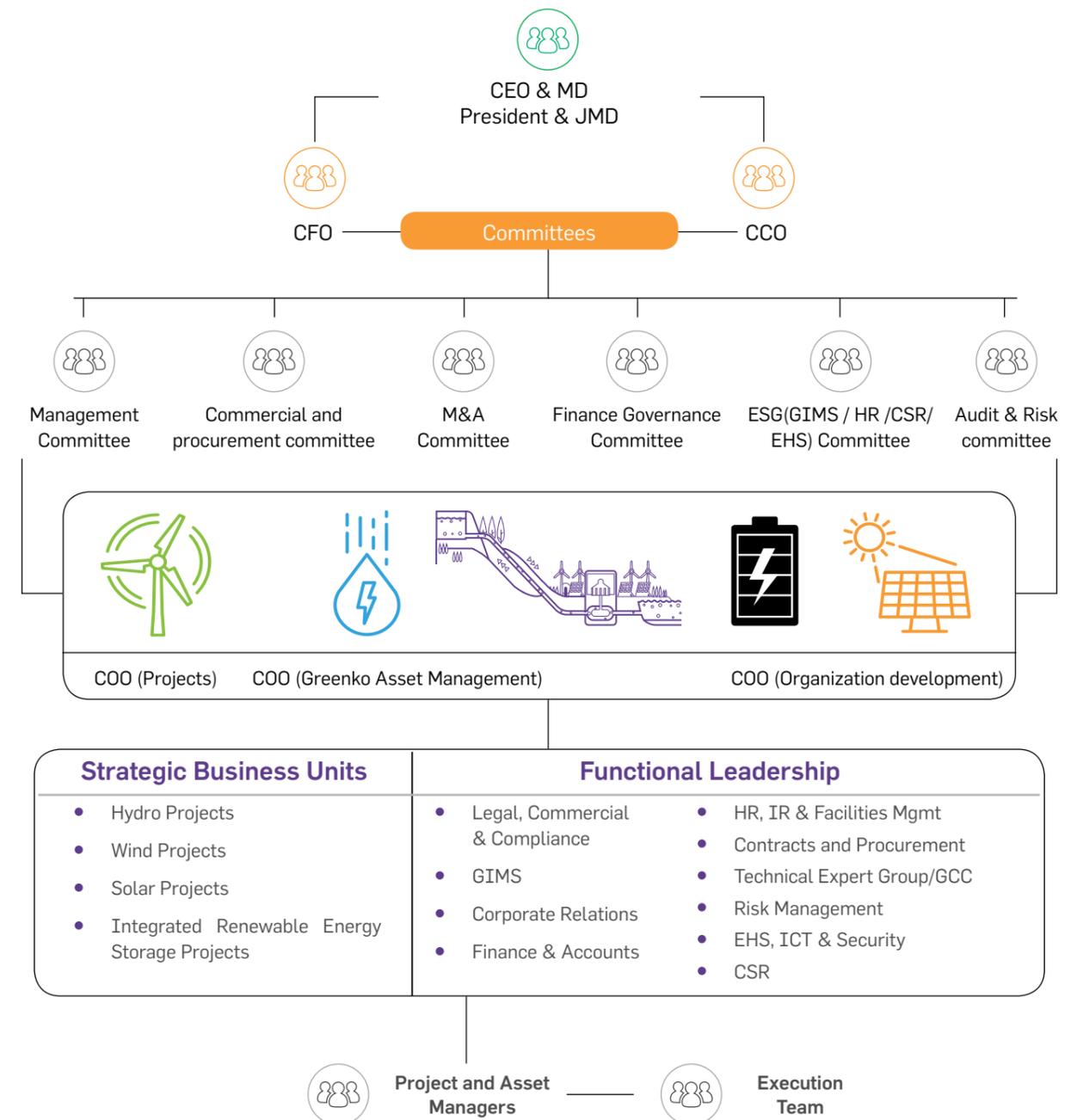
Mr. G. Adishesulu (Chief Operating Officer-Projects), An energy industry veteran with over 45 years of varied experience in the design, development and operations of Hydro, Pumped storage, Lift irrigation projects and solar parks in India. He retired as Chief Engineer and Director (Hydro) of Andhra Pradesh Power Generation Corporation (APGENCO) and also served as CEO of APSPCL. At Greenko he heads the Integrated Renewable Energy Storage Projects.



Mr. Nagendra Dandamudi (Chief Operating Officer - Organization Development) has over 25 years of experience in leadership positions at various organizations including AT&T, Cable & Wireless, and Motorola. At Greenko he leads Greenko's transformation initiatives, Innovation, Strategic Planning, ESG, Sustainability, Integrated Reporting System, Greenko Integrated Management Systems, Organization Development, and Technology Roadmap.

Organizational Structure

In Greenko's organizational structure, accountability and responsibilities rest with multiple stakeholders, functions, and departments. The responsibility for review and direction is spread across committees.



Compliance and Ethics

The group has articulated Greenko's values and insists on adherence, in every sphere of activity. Besides, all employees are signatories to the code of conduct and Greenko organizes awareness sessions and training programs to deliberate and demonstrate the ways and means to adhere to its value system and code of conduct.

The company prides itself on the high standards of excellence embodied by its operating principles. Greenko expects its employees to personify these principles in their dealing with people within and outside the organization. The employee code of conduct at Greenko is intended to provide guidelines for professional, ethical, legal, and socially responsible behaviour. As it is impossible for this code and the associated guidance to cover every situation that may arise, the employees are given an option of online and offline training. The employees are also encouraged to consult and enquire when faced with any situation. In circumstances where the employee is unable to query or consult, he/she is encouraged to use his/her best judgment.

The Board and its Audit Committee, have ultimate responsibility for stewarding the organisation's ethical climate and compliance, as well as the policies, processes and controls that support it. HR officers at site function as ethics counsellor. Ethics training and counselling is part of the induction process itself.

The code of conduct covers:

- Professional Integrity Relationships and Customers Relationships with Suppliers
- Relationships with Competitors Accurate and Complete Accounting Bribes and Kickbacks
- Gifts and Entertainment Conflict of Interest Confidentiality

- Workplace Communication Safety
- Political and Charitable Contributions

All employees who witness or doubt/suspect violation of this code in letter and spirit, have an obligation to report to the management or any member of the board of directors. All allegations of improper or illegal behaviour are investigated promptly and thoroughly. The investigation remains confidential as practicable and those conducting the investigation respect the anonymity of the complainant and privacy of all persons involved. No adverse action is taken or permitted against anyone for communicating observed violations in the code of conduct.



Training on values, ethics and compliance

Risk Management

Greenko manages all the risks affecting an organization's ability to meet its goals, regardless of the types of risks being considered. The Risk Management Framework is designed to identify potential threats that may affect the entity and manage risk to provide reasonable assurance regarding the achievement of objectives.

Greenko Risk Management Framework (GRMF) is developed based on the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and some elements of Operationally Critical Threat, Asset, and Vulnerability Evaluation (OCTAVE) are also adapted. The Board and the Audit Committee approve the company's risk control and management. They review internal control systems regularly to ensure that the main risks are properly identified, managed, and disclosed.

Under GRMF, the Board and management assesses and monitors risk from a high-level, or portfolio view. This allows management to first identify risks and then analyze the enterprise-wide effects of these risks.

The GRMF is geared to achieve the following objectives.

- **Strategic-** Aligned with VMV and Strategic Objectives
- **Operations-** Effective and efficient use of resources.
- **Reporting-** Credible and reliable disclosures.
- **Compliance-** Comply with applicable laws, regulations, codes, and voluntary commitments.

Managing risks in these four categories within an entity's risk appetite will aid in the creation of stakeholder value.

Members of top management play a critical role in GRMF. Currently, the GRMF is jointly handled by Risk, Legal and Compliance functions. When management considers alternate ways to achieve its strategic objectives

through different strategic choices, it uses GRMF to evaluate risks associated with each alternative. In the instance of IRESP, prior to finalizing the size, scale, location, and timing, the management has determined that their strategy is within their overall risk appetite. Focusing on strategic objectives and strategy allows Greenko to develop related objectives at the business level. Business-level objectives are linked to and integrated with more specific objectives (i.e. operations, reporting, and compliance). These specific objectives are broken down further into sub-objectives established for various activities, such as GAM, Commercial, Projects, Procurement, and other functions.



Risk Management

The Greenko Risk Management Framework consists of eight components:

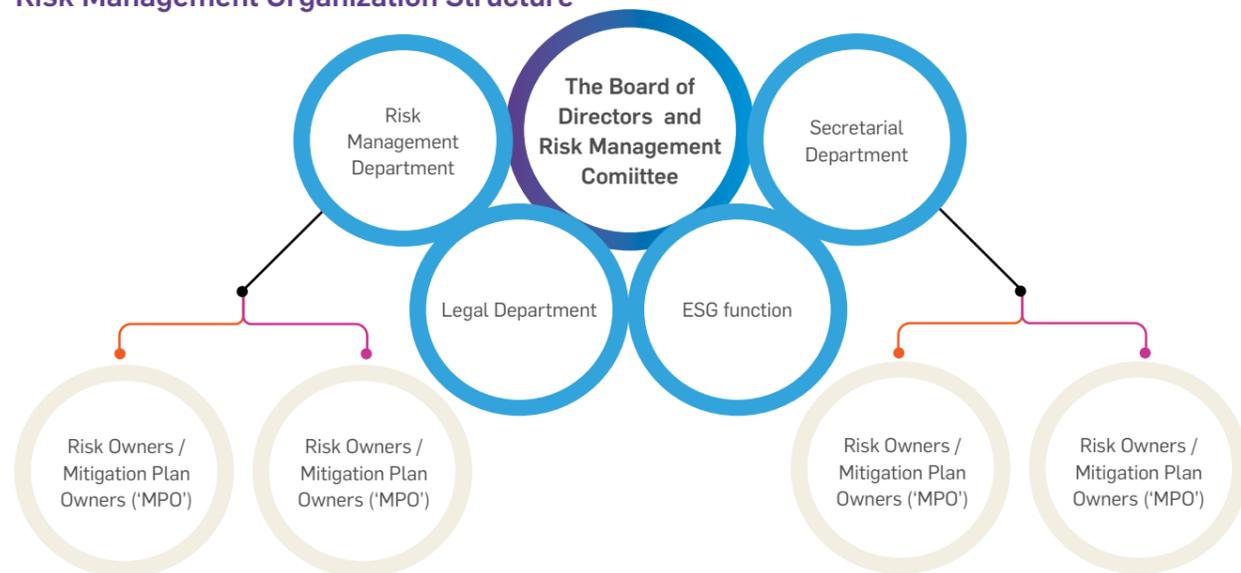
- 1. Internal and External Environment** - The Board sets a philosophy regarding risk and establishes a risk appetite. Further, it sets the basis for how risk and control are viewed and addressed
- 2. Objective Setting**- Objectives are aligned to support the entity's mission and are consistent with its risk appetite.
- 3. Event Identification**- Identifying potential events from internal or external environment affecting,

both positively and negatively, the achievement of objectives

- 4. Risk Assessment**- Identified risks, associated with hindrance or enhancer of objectives, are assessed on both an inherent and residual basis, with the assessment considering both risk likelihood and impact.
- 5. Risk Response**- Possible responses to risks, which include avoiding, accepting, reducing, and sharing risks. Management selects a set of actions to align risks with the entity's risk tolerances and risk appetite.

- 6. Control Activities**- Policies and procedures are established and executed to help ensure the risk responses
- 7. Information and Communication**- Relevant information is identified, captured, and communicated in a form and timeframe that enable people to carry out their responsibilities.
- 8. Monitoring**- Then the entirety of ERM is monitored, and modifications made, as necessary.

Risk Management Organization Structure



As we continue to strengthen our core team and initiate value addition to various business functions, we acknowledge that our corporate -legal function does not merely comprise of litigation remediation but spreading awareness across the organization by being proactive to identify and set a roadmap.

Mr. Vinay Bhatia
General Counsel

Climate Risk Assessment and Management

Greenko is committed to 'Climate Risk Assessment and Management' as part of its Risk Management System, with the aim of making informed choices, building capacity, planning, and prioritizing, mitigation and adaptation measures to reduce its vulnerability to climate change.

This entails proactive and systematic identification and analysis of potential climate-related hazards to Greenko's operations based on projections of climate change models.

The integration of climate risk assessment in the existing framework was carried out by identifying the physical and transition risks of climate change that have the potential to profoundly impact Greenko's business. Presently the climate risk assessment is conducted for six of its critical operating sites.

Greenko's Climate Risk Management Strategy

The Board desired for the management to consider assessing the climate risk and if found significant and appropriate include the same in the GRMF. Further, the Board reinforced Greenko's commitment to UNSDG's, especially SDG-7 (affordable and clean energy) and SDG-13 (climate action). The management undertook the climate risk assessment accordingly during 2020.

In 2020, Greenko analysed the impacts of different climate scenarios for transition and physical risks which included the scenario in which the Government of India will enact to accelerate the renewable energy adoption as also physical changes occur as per Global Climate Change scenario RC 4.5. This analysis confirmed that the group's business model is adequate to face the challenges arising from climate change. However, the analyses also

have resulted in additional operational steps at each site as also additional criteria while evaluating new assets and technology choices.

In the case of physical impacts derived from the main climatic threats and the increase in the frequency and severity of extreme weather events —, Greenko has plans and systems to improve the resilience of all assets and components. Also, we have begun discussions with the insurance institutions to cover climate risk resulting in extreme weather events.

The GRMF considers and monitors the risks derived from climate change:

- Physical:** possible material impacts on installations including the uncertainties in the resource availability for generation
- Transitional:** associated with the process of global decarbonization and its reflection in India (regulatory changes, market prices, technological, reputational, etc.).
- Others:** such as risks to the supply chain and social phenomena

Greenko does not foresee that these risks will have a catastrophic or permanent impact on the assets and revenues. This is also because of the portfolio of assets and their spread across the geography. However, the group anticipates a marginal increase in operational expenses. In addition, the opportunities that the company derives from the decarbonization of the energy system in India.

Climate Risk Mitigation

Mitigating climate risk is a continuous process and Greenko's Risk Assessment and Management Framework enables to build resilience against variations in climate by taking account of all the potential climate risks in its operations and planning appropriate mitigation strategies.

As part of its climate risk management strategy, Greenko has adopted an effective climate risk mitigation strategy, one element of which includes upgradation of existing Early Warning System (EWS). The existing Early Warning System of Greenko, has now incorporated the monitoring and warning of global warming induced extreme events (acute risks), whose frequency and severity are projected to increase as a result of climate change, to proactively protect and minimize the impacts of climate change on its assets and the community it operates in. The purpose of the EWS strategy is not just limited to planning and executing risk-mitigating measures but to build resilience. The EWS mainly functions based on the synergy between visual observations, past experiences, and co-operation to mitigate losses from upcoming hazards.

Risk Management

Business Continuity Plan (BCP)

Business Continuity Plan (BCP) plays an important role in all businesses. A business is always susceptible to threats and disruptions not only from external environment changes but also due to certain non-conductive internal environment conditions.

This can lead to a significant loss of revenue and higher costs, ultimately resulting in decrease of overall profitability. Businesses like Greenko, is dependent on nature and various factors such as people, infrastructure, location, technology etc. for a major part of their activity and are more prone to threats & disruptions due to external environment. Greenko understands that the business is prone to numerous disasters varying in their degree, from minor to catastrophic and including those occurring because of climate change. BCP is a process that an organization undergoes to create a prevention and recovery system from potential threats, such as natural disasters or cyber-attacks. Greenko's BCP is designed to protect personnel and assets, and make sure they can recover and function quickly when any such disaster strikes.

The business impact analysis at Greenko, is a critical function. This function is guided by the Business Continuity Steering Committee (BCSC), which comprises of senior management and key stakeholders to ensure visibility. Business Impact Analysis (BIA) is conducted for each department/function at Greenko. Any department, which if non-functional for few days leads to hampering of the business, is termed 'critical'. These departments/functions are considered first in-line for the implementation of a Business Continuity Plan. These departments/functions can either be from the corporate side or site specific. All departments and branches at Greenko are BCP compliant. Internal

and external audits are being conducted on a regular basis to verify the effectiveness of implementation of BCP. BCP testing of the sites is done twice a year, For Information Technology (IT), testing is also conducted twice a year. For critical functions testing is conducted every six months. Greenko is committed to provide a safe and healthy work environment. This is achieved by preventing accidents and occupation related ill-health and assessing risks related to sites and overall work culture safety preparedness. Employees are communicated, instructed, and

trained on emergency preparedness and Business Continuity. Greenko has a comprehensive Disaster Recovery Plan which comprises of a Locational recovery plan, Data centre recovery plan, DR site and technology related challenges. BCP mock drills are an important function ensure preparedness in case of emergencies / exigencies and are an important part of the larger Business Continuity Management Plan.

The group also has a Crisis Management Plan to address large natural disasters, cyber-security threats etc.



COVID-19_Telangana CM Relief Fund



COVID-19_AP CM Relief Fund



COVID-19_Rajasthan CM Relief Fund

Business Continuity during COVID Times

During this unprecedented situation of COVID - 19 Pandemic, Greenko has given top priority to its Employees' Health & Safety. They have initiated special risk mitigation measures for prevention & spread of contagious disease, this is being practiced by educating employees over New norms of Social distancing, Hygiene practices, Screening of employees & stakeholders and focus on disinfection and online health monitoring of employees, carried out from time to time.

Greenko has also imparted training over work resumption post lockdown to all employees in its business, Viz. 5260 Employees in a span of a week to cope with new requirements.

During the initial period of COVID - 19 spread in other countries and declaration of global emergency by WHO, the group had anticipated a huge crisis with respect to employee engagement, plant & office operations. The senior management quickly planned and implemented decisions to manage operations by keeping 50% employee strength at work and enabling the rest to work from home. They could login, on need basis for necessary support,

to ensure uninterrupted power supply to the stakeholders. Since the initial phase, this global crisis was addressed and various operational, health & safety challenges were readily handled. The timely action proved to be a blessing in disguise to keep the employees safe and run the business operations smoothly with minimum manpower & resources.

Greenko has devised a work resumption after lockdown procedure, which contains

- Thermal Screening of employees
- Self-Monitoring of Health
- Travel protocol
- COVID - 19 Protocol for persons infected or having symptoms
- PPE Usage etc

As COVID-19 is rapidly spreading in the country & cases are sporadically popping up in the entire country and some cases were also noted in Greenko's office campus, they have devised a COVID - 19 task force with the involvement of top management to ensure quick response over medical needs and concerns.

The Main tasks of COVID-19 taskforce include:

- A dedicated COVID -19 help line number - any employee from any part of India, can call on this number 24*7 for real time monitoring and support
- COVID - 19 Help line number to address and resolve employee query in real time
- Extending all possible Support & Help to employees for their medical and emergency needs
- Quarantined suspected employees to be tested as per medical advice, according to approved testing protocols
- Track contacts of suspected/infected employees and follow quarantine regulations etc. to avoid further spread.

The fight against COVID-19 continues to progress in the right spirit and direction.

Greenko Integrated Management System

The Greenko Integrated Management System is an instrument established to drive standardization of processes across the operations of the group, in line with Greenko's values of compliance and ethics and in conformance with global standards.

The Group has established the Greenko Integrated Management System (GIMS) that operates in accordance with global best practices. GIMS integrates Quality, Environment, Health & Safety, Information Security, Energy, and Social Accountability Management Systems (QEHS-IS-En-SA) as per the requirements of ISO standards, the ESMS (Environmental and Social Management Systems) as per the

requirements of IFC performance standards, Sustainability reporting as per the requirements of GRI Standards, and Integrated reporting as per the requirements of IIRC are also integrated into GIMS. Various sites of Greenko are certified by DNV-GL for implementing ISO 9001:2015, ISO 14001:2015, ISO 45001:2018 & ISO 27001:2013.

At Greenko GIMS standardizes all its business processes to ensure uniformity of all processes across sites. GIMS ensures implementation of strategies formulated by the top management. GIMS has introduced an Excellence Model which is called GIMS Rating System to drive a culture of excellence throughout the organization.



Innovation Hub: Ideas to develop and deliver disruptive innovations

GIMS framework



Further, in 2020, GIMS conducted three IR Conclaves to inculcate integrated thinking throughout the organization. GIMS has also undertaken Climate Risk Assessment of critical assets. The company's strategy is aligned to harness significant shifts in regulations, markets, and behaviours in the transition to Decarbonization. However,

the physical risks of climate change to its assets and uncertainty in generating revenues due to shifts in wind pattern, sunshine, and hydrological flows is a challenge. In some assets and some periods, it may be advantageous, and, in some others, it could result in lesser power generation. The initial analysis reveals that such things may balance

out due to geographical spread and technological variety of the portfolio. However, accelerating digitalization is necessary across all assets to improve adaptive and predictive systems that are essential for fulfilling strategic objectives.



Greenko Integrated Management System is vital for meeting the needs and expectations of all stakeholders and for addressing and managing risks. GIMS integrates all the systems and processes into one complete framework, enabling standardization to achieve our unified objectives and thereby, helping us to continually improve

Mr. Syed Saleem Basha
AVP, GIMS

06



Framework for
Sustainable
value



Value Generation and Distribution

The scale, size, and spread of Greenko's operations position its asset base to harness the natural sources of wind patterns, solar radiation and hydrological flows, and grid resources and its value pools in the most effective way. The organization's commitment, its agile workforce, the systems and processes that are now focused on being circular and adaptive further reinforce its strengths to harness the opportunities presented by disrupting the energy trilogy.

Greenko is becoming truly decentralized with respect to offering its product as a service to its customers by developing storage assets, complementing it with Intelligent Energy Platforms, and managing existing assets. The public-private-people approach offers a means to effectively harness social capital and reinforce stakeholder relationships. While much of the energy sector is disrupted by increasing electrification, decarbonization, digitalization, and decentralization, for Greenko it offers new value pools to harness in the short term and a possibility of providing clean, reliable, 24x7 affordable energy to India in the long term via its Intelligent Energy Platform (IEP).

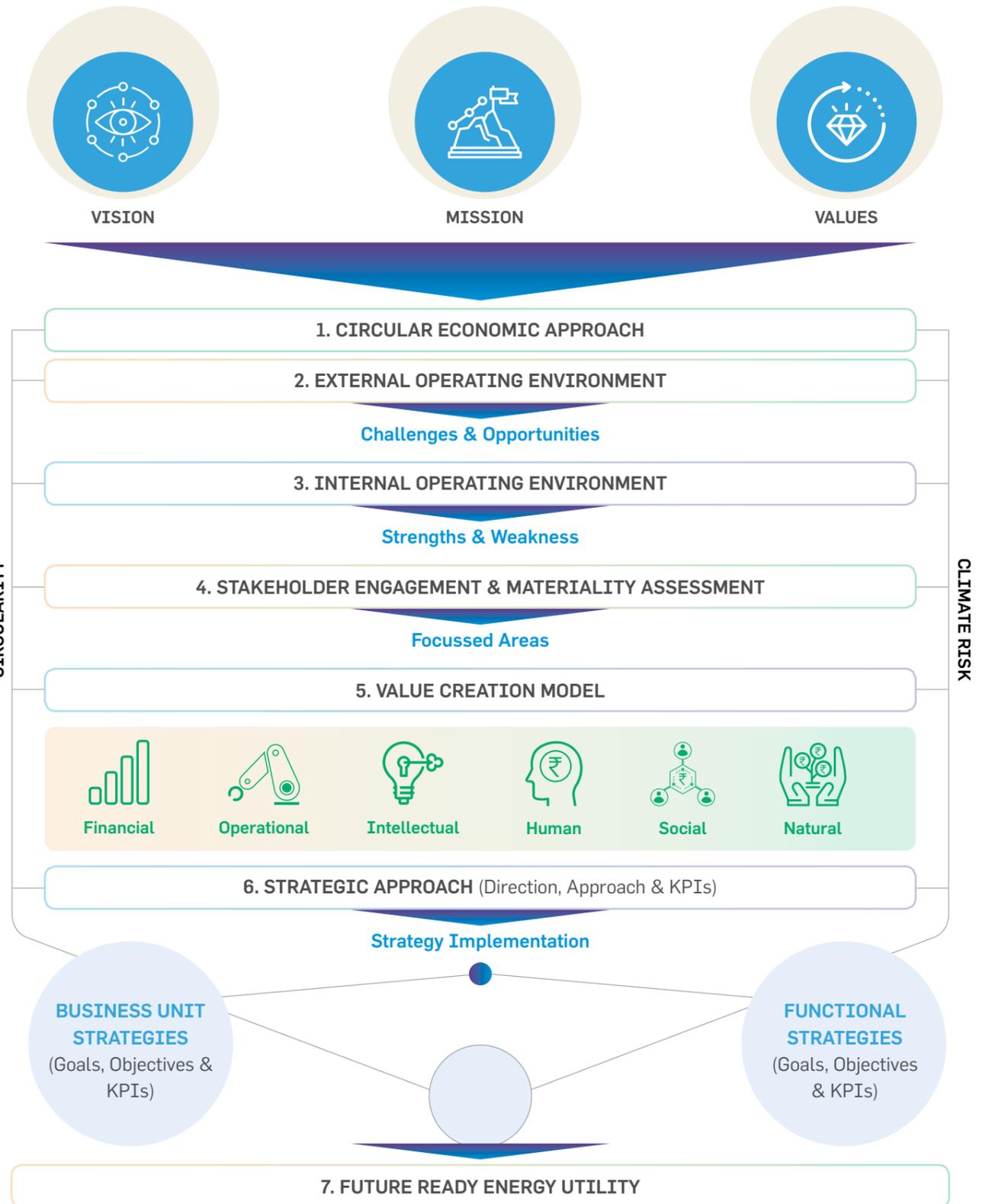
The internal operating environment at Greenko has specific strengths and a few challenges in view of its transformative journey. To seize the moment and harness the historical opportunity to provide clean, reliable, and affordable power in India, Greenko has come a long way, from being a clean electricity generator to being a champion, participating in India's policy ecosystem to shape the evolution of RE hybrid energy projects, tariff determination for RE plus storage projects, aiding in the inclusion of the definition of 'storage' for pumped storage project to integrate with RE generation.

Integrated Value Creation Framework

Greenko's integrated framework is designed to steer action in pursuit of its Vision and Mission, in the face of a changing external and internal operating environment. At this stage, the transformation of Greenko from GKO 3.0 to GKO 4.0 is being pursued in response to continuing economic growth in India combined with increasing decarbonization efforts, speedier diffusion of digitalization and widening decentralization. This integrated framework is designed to guide action by each function and business to contribute to Greenko's transformation and value creation.

Greenko's Strategic Framework is established through the execution of the following tasks,

- 1 We have integrated the circularity approach into our strategy to create a long term sustainable value.
- 2 We study the External Operating Environment and identify the Challenges and Opportunities.
- 3 We scrutinize our Internal Operating Environment and identify our Strengths and Weakness.
- 4 We conduct Stakeholder engagement and materiality assessment to identify our focused areas.
- 5 We create our Value Creation Model and derive our strategic directions, approaches and KPIs.



Circular Economic Approach



At Greenko, we create long-term value by providing secure and sustainable management of resources. While understanding the concept of the circular economy is not a challenge, the drive to make it the standard business model is.

Mr. Shatanshu Agarwal
AVP-Commercial



Dikchu, Sikkim

Greenko recognizes the limitation of 'All Renewables' to address 'Net-Zero Emissions' by 2050 which is essential for 2 degrees pathway of the Paris Climate accord. Renewable Energy can decarbonize up to 55% and for the remaining 45%, adopting circular economic approaches is imperative. In addition, Greenko is aware of the concerns of the patient capital vis-a-vis the long-term effectiveness of its assets. Accordingly, circular economic approaches that extend the life and also have effective plans for 'second life' or manage 'end of life' of assets are being pursued.

The leadership at Greenko envisions that the energy assets that it creates follow principles of and be a part of nature. These energy assets are efficient, effective, and balancing. In the design, execution, and operation, such assets are regenerative, sustaining for generations, and are circular. Greenko believes that while delivering multiple values to the economy, society, and environment the regenerative and circular model will deliver sustained returns to its financial stakeholders. Greenko, during this reporting period, has reviewed its Value Creation Model, Strategic Approaches and KPIs for addressing aspects of regenerative and circular economic principles and approaches

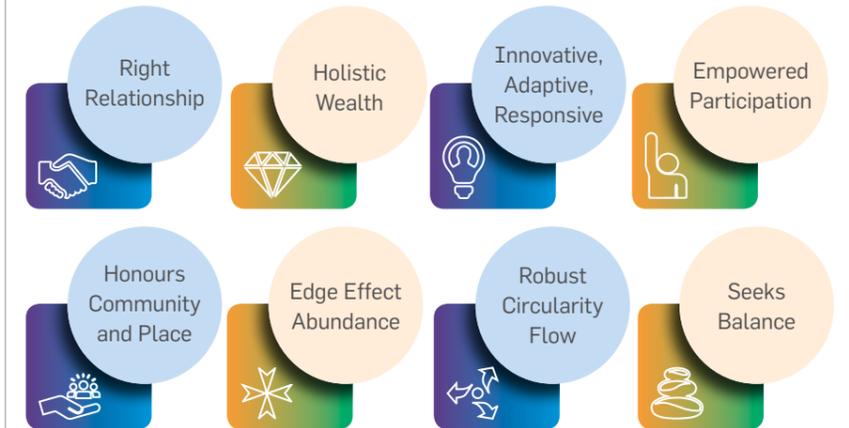
While Greenko continues to contribute to the sustained growth of the national economy, it also desires to pursue a fundamentally different path to prosperity, that is, support the development of healthy human networks. It believes that prosperity arises out of the relationships and patterns of healthy human networks, within the biophysical constraints of the planet and under its physical laws.

Regenerative economic systems build lasting human, societal, and economic vitality by developing richness, variety, responsiveness, and integrity of inclusive human networks at every level of global civilization. The task at hand for business, finance, and policymakers

is to shift into alignment with the regenerative principles described below to give rise to healthy human networks. Accordingly, Greenko desires to develop energy systems that are circular and support regenerative economic systems.

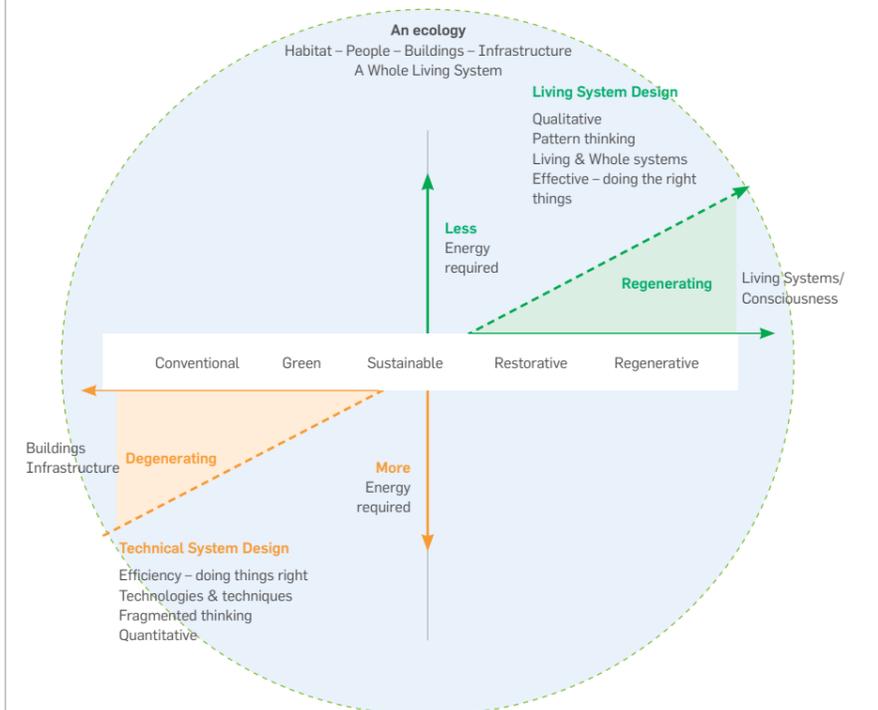
The Energy Systems at Greenko, thus are adhering to the principles of regenerative economic systems:

Principles of Regenerative Economic Systems



Further, it is important to specifically recognize the transition journey from degenerative to sustainable to regenerative systems, as depicted below.

Transition Journey from degenerative to sustainable to regenerative systems



Circular Economic Approach

Regenerative systems are designed using the principles of living systems, unlike the present systems that are designed on the basis of technical systems.

Accordingly, additional strategic approaches considered by Greenko to address regenerative thinking are:

- 1 Pursue Eco Design principles in Project Design, Execution, and Operation

- 2 Increase Share of “Invest-Generate and Consume” models at a decentralized level
- 3 Deliver power to maximize improvement in holistic wealth (Human Development Index)
- 4 Deploy business models to harness increasing electrification

- 5 Improve co-creation with suppliers, customers, regulators, and communities
- 6 Continuous Improvement in the Life Time of all assets
- 7 Minimal waste or stagnation of money, men, material, and information
- 8 Improve the effectiveness of service offerings

Further, Greenko has identified the following additional circular approaches and performance indicators to be included appropriately in its value creation framework.

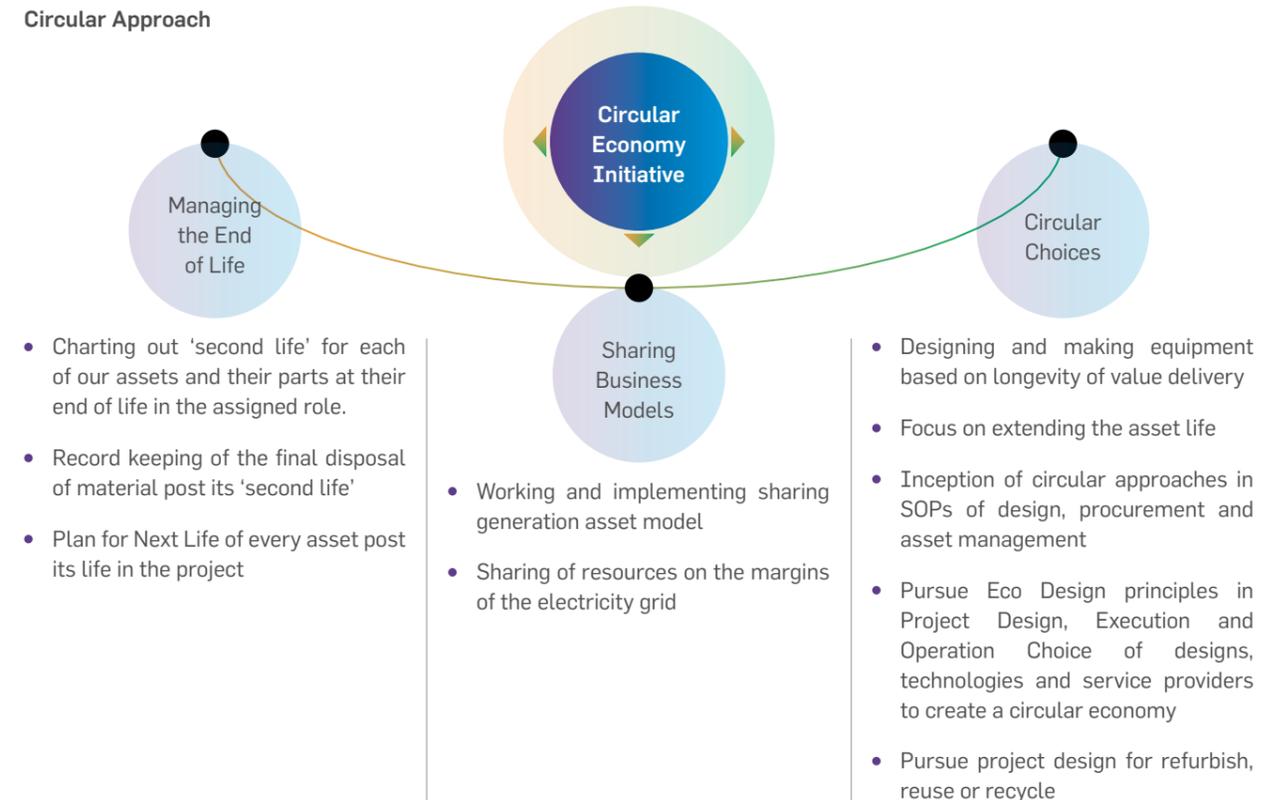
Circular Approach and Indicators

Circularity Approach	Circular Value Drivers	Strategic Approach	Suggestions for inclusion
Circular Design Product and process design Circular supplies	REGENERATE LOOP OPTIMISE	Identify and manage the life cycle impacts of projects Harnessing digitalization to improve efficiencies and deliver 24x7 renewable power	Design, Execute and Operate projects to maximize value delivery across the life cycle Choice of designs, technologies, and service providers be guided by the circular value generated
Circular Use Sharing platforms Product as a service Lifetime extension Sell and buy back Tracking facility	SHARE LOOP VIRTUALISE	Harnessing digitalization to improve efficiencies and deliver 24x7 renewable power Pilot models of “generate-and- Consume” at a decentralized level	Intelligent Energy Platform to share/sell-buyback generation, transmission, distribution, and storage assets Asset Management to extend the Life of Assets
Circular Recovery Support lifecycle Recovery provider Refurbish and maintain Recycling facility Recapture material suppliers	REGENERATE LOOP OPTIMISE	Identify and manage the life cycle impacts of projects	Pursue project design for refurbishing, reuse or recycle Plan for Next Life of every asset post its life in the project Asset Management to extend the Life of Assets

Circular Economy Initiative

Greenko is now very diligently and conscientiously adhering to circular economics principles in managing its assets.

Circular Approach

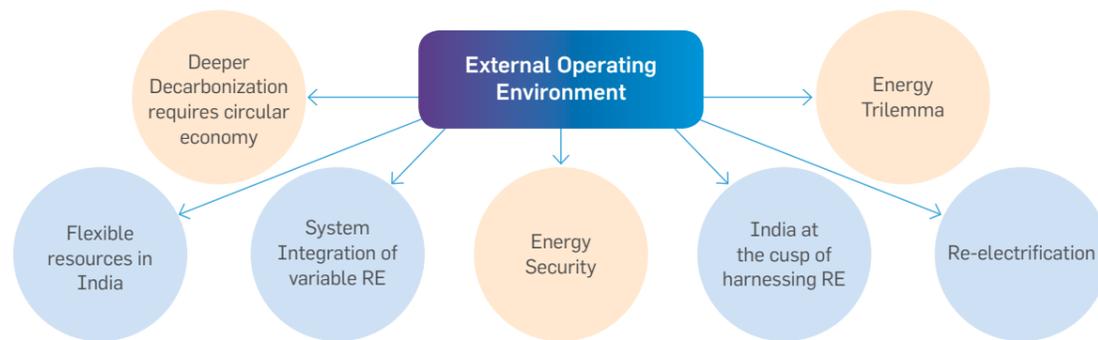


Ratnagiri, Maharashtra

External Operating Environment

The ever-changing and dynamic external operating environment of Greenko's business, poses both risks and opportunities, which have the potential to profoundly influence its operations, decision-making, and future development. Greenko is highly vigilant to such challenges of the changing business environment. Examining the factors of the external operating environment is a crucial task that Greenko executes, which aids in developing appropriate strategic focus areas that are capable of harnessing opportunities and mitigating risks that emerge. In this context, Greenko has examined the external operating environment extensively and identified the factors that can impact its business.

Elements of External Operating Environment



Driven by an expanding population and increasing prosperity, global energy consumption has significantly increased over the last decades. Demand has risen for virtually all sources—coal, oil, natural gas, nuclear energy, and renewables. At the same time, rising fossil fuel consumption is the leading cause of global climate change and creates other major environmental challenges. To address these challenges, the global energy system will need to undergo a clean energy transition, whereby sources of energy that emit greenhouse gases are replaced by increasingly cleaner sources. The decarbonization drive initially spurred by UNFCCC and Kyoto protocol, now has gained momentum of its own. While the Paris Climate Goals continue to be the pivot, the technological developments (digitalization) and other social trends

(decentralization) have reinforced decarbonization.

Further, in a global economy shaken deeply by COVID-19, short-term demand declined for fossil fuels, while renewables have grown slightly across all geographies. The International Energy Agency (IEA) estimates that primary energy demand in 2020 could decline for oil (-9%), coal (-8%), natural gas (-5%), and nuclear (-2%), while renewables would grow by 1%. However, the uncertainty of future GDP across nations and energy trends are immense and worrying.

The IEA estimates that emissions could fall by roughly 8% this year, returning to their 2010 levels. However, in the absence of climate policies during the pandemic and aggressive return

to economic growth could render the achievement of the Paris Agreement targets difficult. This calls for post COVID agenda with substantial new policies and widespread deployment of low-, zero-, and potentially negative-emissions technologies.

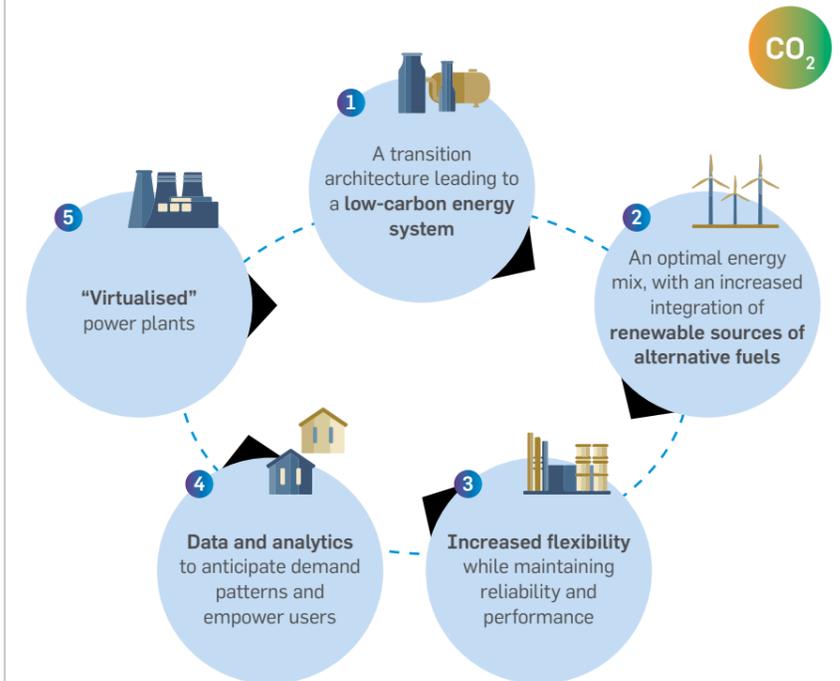
Since 2009, the levelized cost of solar photovoltaic (PV) power has declined by nearly 90%. Over that time, global solar electricity production has grown more than tenfold. But this may be just the beginning. By 2040, multiple scenarios project that solar will provide over 20% of the world's electricity. Though it is very encouraging, this share of solar photovoltaic and similar share of wind and hydro by 2040 would be barely adequate to limit the global temperature rise to 2 degrees.

The Energy Trilemma

To address the challenging climate goals set in the Paris Climate Agreement, the global energy system has to continue with the ongoing pursuit of increasing the share of renewables. Two additional factors that are added to the current energy scenario, to make it a trilemma are: digitalization and decentralization. These trends, if crafted and curated in the right fashion, can be effective tools in deeper decarbonization and at the same time deliver affordable and reliable energy. It is obvious that digital technologies are transforming business at an unprecedented pace and heralding Energy 4.0. Digitalization catalyzes the decentralization of energy i.e., both generation and use, possible and effective. This "3D" view, i.e., Decentralized, Decarbonized, and Digitalized, of energy is based on five pillars:

- I. The development of a transition architecture i.e. the move from our current system to a low carbon one (EU objectives for 2030 foresee a CO2 emissions reduction by 40% compared with 1990 levels and in India's INDC builds on its goal of installing 175 gigawatts (GW) of renewable power capacity by 2022) must be carried out as smoothly as possible.
- II. Increasing the integration of renewable sources in the grid as well as the use of different alternative fuels.
- III. Providing flexibility to the system while maintaining its reliability and performance (e.g., by the use of energy storage).
- IV. The extensive use of data and analytics to anticipate demand patterns and empower users.
- V. Aggregation of home and corporate distributed generation resources into "virtualized" power plants.

Five Pillars of Energy System Transformation



Each of these pillars have many challenges but, it is being addressed by businesses and governments. The transition architecture is in place in many countries and most INDCs have defined their optimal mix and the share of renewable energy to be targeted. However, the required flexibility in the grid and the generation systems is not yet developed. The energy storage systems to support flexibility is being put in place in some countries. Exploration of the digital world for a better understanding of the uses and effective deployment of virtualized power plants is on.

The future of the energy system is irreversibly heading to a low-carbon economy. The increased decentralized and digitalized scenario is a good opportunity to define the required transition architecture for the energy system.

Re-Electrification: A Vital Pathway

Re-electrification is reinforcing electrification with renewables. Over the course of human history, the transition from one major form of energy to another happened several times – from animal power and biomass to burning coal, and then to the increasing use of oil and gas. The world is already in the midst of another historic shift away from these fuels. But to meet sustainability and climate goals, the pace of change must accelerate. We need to expand renewable capacity and create a smarter and much more flexible electricity grid, increase the number of vehicles and other products and processes that run on electricity.

The energy trilemma – decarbonization, digitalization, and decentralization, is to be reinforced by increasing

External Operating Environment



electrification. In a low-carbon power system, electrification can have a significant impact on carbon emissions by 2040, reducing emissions by 10-20%, compared to a baseline. In a world where power generation is decarbonized, RE is the main form of energy that can help reduce CO2 emissions significantly by accelerating the decarbonization of energy supply and by improving energy productivity.

Electricity today accounts for 19% of total final consumption of energy and the share is expected to reach in the business-as-usual scenario to 24% in 2040, very much behind full electrification. Also, not all end uses can be readily electrified, such as high-temperature heat demand in industry, long-haul aviation, and shipping, where electrification is harder to achieve due to either economic or technical barriers.

Technological innovations and policy Interventions around sustainable development and climate change are driving an urgent energy transition in this century. This transition towards clean electricity is combined with 'smart' digital technologies that make

it possible to take full advantage of the growing amounts of cheap renewable power. This vision, which IRENA coined as RE-electrification, unlocks the potential synergies between major increases in the use of electricity and renewable power generation by coordinating their deployment and use across demand sectors – power, transport, industry, and buildings. As the digitalization and strong global climate policies become pervasive in the future, the electrification of energy services will be catalyzed. Electric or fuel cell vehicles would largely replace fossil-fuelled cars and trucks, and heat pumps and electric boilers would substitute for oil and gas furnaces in buildings and industry. Electricity from renewables could also be used to make hydrogen or synthetic gas for applications where direct electrification is difficult.

Widespread electrification together with digital technologies and renewable power can become a central pillar of energy and climate policy, given their numerous benefits. RE-electrification can make power systems more flexible, resilient, secure, and less reliant on

fossil fuels. Over and above, it offers significant efficiency gains in primary energy use. It reduces pollution, leading to improved health. The modern automation and control systems that are an integral part of RE-electrification can also boost economic productivity and improve the quality of living conditions.

RE-electrification strategies have to look beyond the generation side of the power system and tap all available sources of flexibility including demand over a wide range of time scales. The charging of electric vehicles (EVs) can be ramped up or down within milliseconds or shifted by several hours. RE-electrification requires smart devices and other information technologies that offer much more flexibility and control over demand and the delivery and use of renewable electricity. Smart approaches in combination with digitalization are key to reducing risks of rising peak loads, to expand opportunities for renewable power utilization, and to avoid massive investment in building new grid infrastructure. This virtuous cycle, where electrification drives new

uses and markets for renewables, then accelerates the switch to electricity for end uses, creating more flexibility and thus, driving further growth of renewables and technological innovation.

This major transformation will encounter many challenges. Energy systems are both complex and highly integrated, making them difficult to change. On the policy side, they are highly dependent on entrenched regulations, taxes, and subsidies, which require considerable political will to adjust. Further, transforming markets and supply chains – e.g. the automobiles shifting to EVs, or home heating to heat pumps – may still take many years. Any transition also creates winners and losers, and the distribution of cost and benefits needs to be fair in order to achieve broad acceptance. On the technical side, a transition to the widespread use of renewable electricity also has considerable challenges. It requires integrating large amounts of variables into the grid, which involves matching supply and demand in the face of varying generation that may not match peak demand. It requires improved coordination between sectors of the economy, both in planning and operation and building of new infrastructure.

The basic technologies needed for the transition already exist. Still, innovation remains critical.

Innovation in technologies needs to go hand-in-hand with improvements in new hardware, software, and services. Together, all these innovations can accelerate the energy transition.

India is at the cusp

India has made huge strides to ensure full access to electricity, bringing power to more than 700 million people since 2000. The pursuit of ambitious deployment of renewable energy,

notably solar, and energy efficiency in lighting through Ujala and providing 80 million households with liquefied petroleum gas connection (under the Pradhan Mantri Ujjwala Yojana scheme) are some noteworthy ones amongst many initiatives.

India is also introducing important energy pricing reforms in the coal, oil, gas, and electricity sectors to improve the financial health of multiple institutions and the whole ecosystem. It is taking significant steps to enhance energy security by fostering domestic production through the most significant upstream reform of India's Hydrocarbon Exploration and Licensing Policy (HELP) and building dedicated oil emergency stocks in the form of a strategic petroleum reserve.

Reform of India's electricity sector will need to be comprehensive to achieve energy security and will require affordable and reliable power for driving economic growth. The Central Energy Regulatory Commission (CERC) has made progress and working towards a country-wide wholesale market is a backbone for the national grid. The key to this success will be building a joint vision and a common reform roadmap among a broad range of central government agencies, state authorities, system operators, and utilities.

India also faces the challenge of ensuring the financial health of its power sector challenged by surplus capacity, lower utilization of coal and natural gas plants and increasing shares of variable renewable energy. The government is working to improve the financial viability of the power sector. The "stressed assets" in coal and gas-fired generation are being offered measures to enhance the economic efficiency of coal and gas supply for power generation and the availability of finance. The creation of a competitive wholesale power market will be vital for improving the utilization of India's generation capacity.

Energy security

India's electricity security has improved markedly through the creation of a single national power system and major investments in thermal and renewable generation. India's power system is shifting to higher shares of variable renewable energy, which is making system integration and flexibility a priority. The Government of India has supported greater interconnections across the country and now requires the existing coal fleet to operate more flexibly. It is also promoting affordable storage. It is now exploring a diverse mix of flexibility investments for the successful system integration of wind and solar PV viz., flexibility from the coal and natural gas capacity, variable renewables themselves, energy storage, demand-side response, and smart grids. To fully activate a diverse set of flexibility options, the government will put in place electricity market reforms that enable the appropriate price signals for various value pools and create a robust regulatory framework

Based on current policies, India's energy demand could double by 2040, with electricity demand tripling because of increased appliance ownership and cooling needs. If other sectors also electrify at a good pace, the electricity demand by 2040 may increase by five times. India had deployed a total of 84 GW of grid-connected renewable electricity capacity by 2019 against the target of 175 GW of renewables by 2022. In September 2019, the prime minister of India, Shri Narendra Modi, announced that India's electricity mix would eventually include 450 GW of renewable energy capacity.

Progress towards these targets will require a focus on unlocking the flexibility needed for effective system integration. This can potentially be achieved by improving the design of renewable auctions (e.g., SECI auctions), with clear trajectories and

External Operating Environment

criteria to reflect quality, location, and system value, along with measures to foster grid expansion and demand-side response across India.

The Energy Roadmap may contribute to broaden national priorities such as the "Make in India" manufacturing initiative to produce solar PV, lithium batteries, solar charging infrastructure, and other advanced technologies in India. The innovation efforts in a broad range of energy technology areas, including cooling, electric mobility, smart grids, and advanced biofuels are actively being promoted.

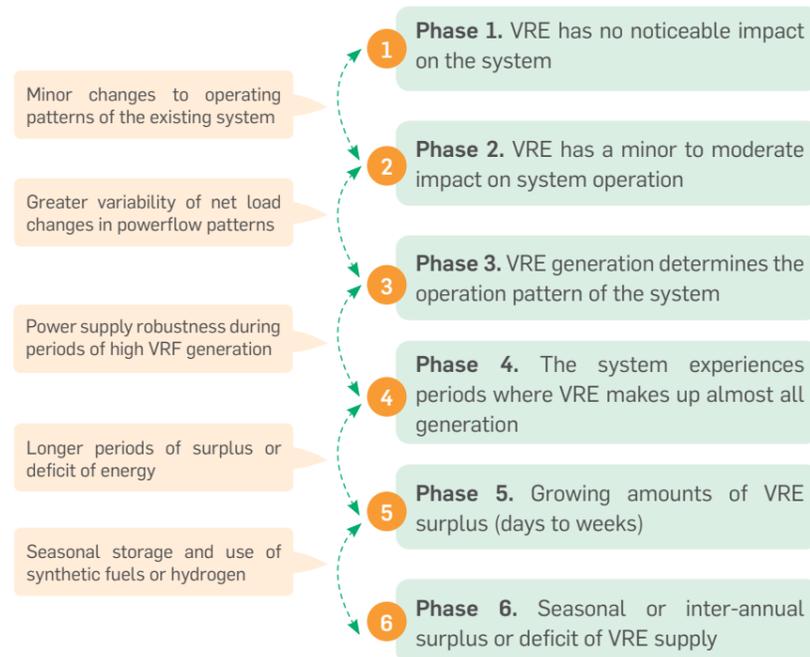
System integration of variable renewable Energy

The five states (Karnataka, Tamil Nadu, Rajasthan, Andhra Pradesh, and Gujarat) are already facing significant system integration challenges, with solar and wind shares above 15%. In the future, more Indian states will experience even higher shares of variable renewables. As India decarbonizes and moves towards its 175 GW goal, this may create new challenges and those states will be required to make significant changes to how they operate their power systems.

The need for flexibility is increasing and can create the opportunity for growth and innovation at the national and state levels in India. Increasingly, India will need to broaden the focus from power system flexibility coming from thermal plants (coal) to use all sources of flexibility (renewable power generators, grids, storage, and the demand side), based on a thorough analysis of power system transformation and flexibility needs. This will create new value pools for businesses to harness decarbonization, digitalization, and decentralization of energy in India.

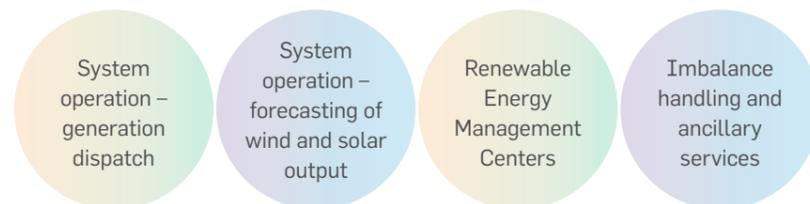


Key characteristics and challenges in the different phases of system integration of VRE



Source: IEA (2018a), World Energy Outlook 2018.

To improve the system flexibility, India has taken several steps and notable amongst these are;



Flexibility resources in India

Four categories of electricity infrastructure assets are critical for system flexibility: a) conventional and variable renewable resources; b) electricity networks; c) distributed energy resources; and d) energy storage. Conventional power plants, electricity networks, and pumped storage hydropower have historically been the primary sources of flexibility. However, as operational protocols modernized, improvements in VRE power plants, smarter electricity networks, and more affordable distributed energy resources and battery electricity storage, a wider set of flexibility options are now available. As power systems transition towards higher phases of system integration, these flexible resources can be adapted to work in a cost-effective, reliable, and sustainable manner. India is considering these changes to the policy, market, and regulatory frameworks to achieve effective system integration.

In India, Pumped Storage remains the most widely deployed utility-scale storage option. By absorbing off-peak energy and providing peak power, PSH also improves the overall economy of power system operation and increases the capacity utilization of thermal stations. To support system flexibility, India has significant hydro reservoir capacity and a large PSH potential, which, however, remains untapped. Out of more than 90 GW of PSH potential in the country, only 4.8 GW is designed and is capable of operating as pumped storage units. The 4.8 GW of capacity is provided by nine PSH plants. Only 6 power plants (24 units) with a capacity of 3.3 GW are operational today.

Energy storage systems could have a wide range of owners: generating companies, distribution licensees, transmission utilities, merchant power plants, bulk power consumers, or unrelated third parties. The

dependence of regulatory treatment on the ownership of energy storage assets which include market entry fee, cost recovery structures/mechanisms (pricing), grid integration, use of licensee's assets, and revenue sharing, etc., is a challenge. For instance, storage facilities owned by the transmission or distribution licensee may be used to maintain grid stability, to relieve congestion in the grid, and to shift conventional generation to meet peak demand.

The storage assets can be used by generating companies to reduce bulk/ industrial consumers' reliance on Distribution Companies as a back-up. The cost recovery mechanisms vary, depending on the dedicated use of the energy storage systems by the generating company or the transmission licensee, the cost of such storage system and that of service of energy storage can be considered in the tariff determination of the generating company or the transmission licensee. Recently, such a structure has been considered by Solar Energy Corporation of India (SECI) which has invited bids for setting up renewable energy projects with energy storage units. As opposed to the aforesaid, energy storage systems can be for shared purposes,

the developer of such facilities could enter into multiple contracts with the proposed users for recovery of cost.

Another area of concern with respect to energy storage systems is the determination of the jurisdiction. For example, if a storage facility is an inter-state transmission asset, it could be CERC, if they are for a specific generating company, then the State Commission.

The India Energy Storage Alliance (IESA) has estimated over 70 GW and 200 GWh of energy storage capacity in India by 2022, which is among the highest in the world. However, a comprehensive policy and regulatory framework for energy storage, similar to India's policy on renewable energy is essential.

Recently 'hybrid wind-solar with storage' policy is amended to clarify that any form of storage – not just batteries – could be used in hybrid projects, including PHS, compressed air, and flywheels. Then, in March 2019 India's Ministry of Power proposed electricity rule changes to incentivize electricity supply at times of peak demand, a key pricing signal needed to underpin the financial bankability of storage projects.

Characteristics of RE storage technologies

Discharge time at rated power	UPS Power quality		T&D grid support Load shifting		Bulk power management	
	Hours	Minutes	Hours	Minutes	Hours	Minutes
Hours	High-energy supercapacitors	Li-ion battery	Flow batteries: Zn-CI, Zn-Br Vanadium redox New Chemistries	NaS battery	Pumped hydro	Compressed air Energy storage
Minutes	Lead-acid battery	NiCd	Advanced lead-acid battery	NaNiCl ₂ battery		
Seconds	NiMH	High-power flywheels				
	1 kW	10 kW	100 kW	1 MW	100 MW	1 GW

System power ratings, module size

External Operating Environment

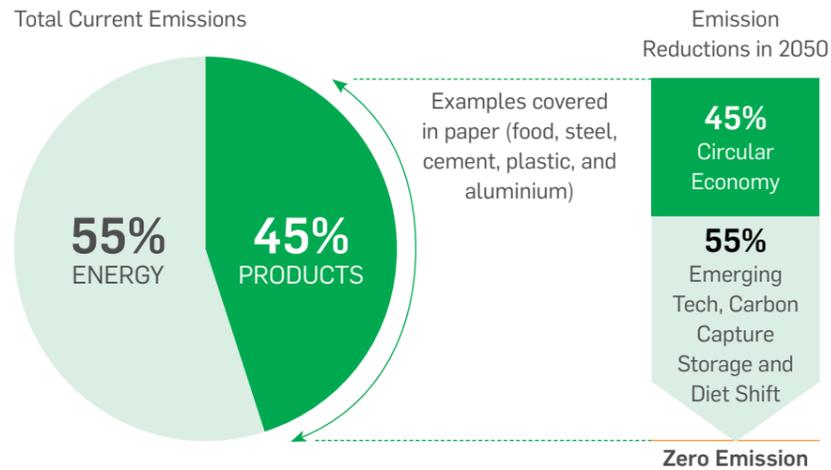
Contrary to the dominant perception that batteries will gobble up the new storage opportunities (like the US, EU, and Korea), a recent SECI tender, which floated the world's largest renewables-cum-storage tender, provided an interesting twist. The tender required assured peak power and Greenko won 75% of the tendered capacity at a peak+off-peak tariff of Rs. 4.07.

This is the cheapest renewables-cum-storage tariff in history, anywhere in the world. The technology chosen is pumped hydro storage. The remaining part of the tender was won by RenNew Power with batteries, which is the world's second cheapest tariff.

Deeper Decarbonization requires Circular Economy

Presently, mitigation of climate change has focused mainly on the critical role of renewable energy and energy-efficiency measures besides land use and land-use change strategies. The renewable energy, in a scenario where a significant component of energy is electrified, would only address 55% of required emission reductions to reach Net-Zero by 2050. Hence, meeting climate targets will also require tackling the remaining 45% of emissions associated with making products. A circular economy offers a systemic and cost-effective approach to tackling this challenge.

Estimated advantages of emission reduction in 2050



Our 'Take-Make-Waste' linear economy relies primarily on extraction, is resource-intensive, and produces significant greenhouse gases (GHGs) that are causing the climate crisis. Companies extract materials from the earth, apply energy and labour to manufacture a product, and sell it to an end-user, who then discards it at the end of its life. Circular economic approaches would extend the life of assets and enable recycling and reusing of the assets, thus reducing the need for extraction, refining and processing of virgin materials.

Systemic transformation of energy and industrial systems, land management, buildings, and infrastructure will have to be achieved to reach net-zero emissions by 2050 and therefore, limit global warming to 1.5°C. NDCs are currently estimated to reduce global emissions in 2030 by 3-6 billion tons CO2. Nations will therefore have to increase their ambitions fivefold to meet the emission targets, consistent with the 1.5°C scenario.

With renewable sources projected to supply more than 60% of global electricity in 2050, the Net Zero by 2050 cannot be achieved. This would require six times faster renewable energy generation growth, significant

storage infrastructure, and doubling the share of electricity in energy. The adoption of the circular economy in the industrial and food ecosystem can address another significant part of the decarbonization target.

Emission Reduction Pathways

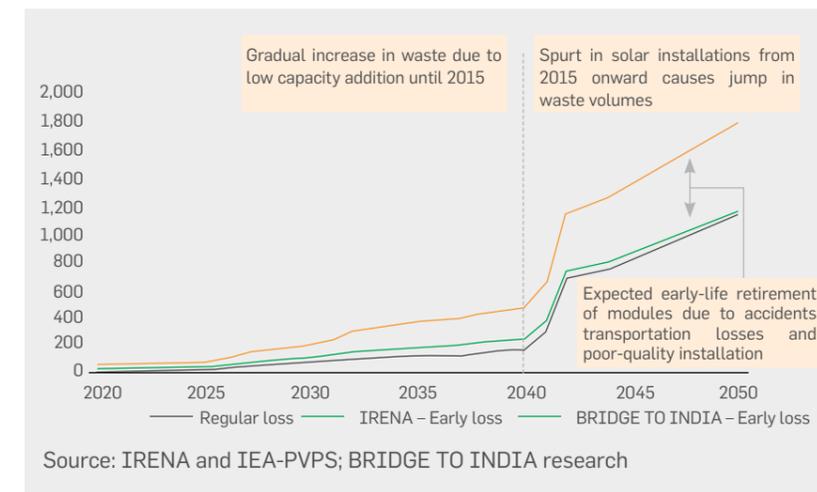
- Design out waste and pollution to reduce GHG emissions across the value chain
- Keep products and materials in use to retain the embodied energy in products and materials
- Regenerate natural systems to sequester carbon in soil and products

Circular Value Pools in Solar PV

It is estimated that the PV waste is 250,000 metric tons in 2016 and this will increase further and will contribute 4% of the installed PV capacity by 2030s. However, there are unique opportunities for creating economic value from the PV waste (e.g. recovery of raw material, the market for new PV recycle industries, etc.). The EU member states have taken initiatives for establishing the regime for PV module collection and handling in accordance with Waste Electrical and Electronic Equipment Directive (WEEE Directive). Further, PV manufacturers have also developed voluntarily a few

models for PV recycling: First Solar, Solar World Global, and PV Cycle. First Solar's industry-leading recycling services enable PV power plant and module owners to meet their module end-of-life (EOL) obligation simply, cost-effectively, and responsibly. Solar World program is offering to recycle of PV modules that have undergone any type of damage (e.g. glass breakage, defective laminate, or electrical faults). PV systems are increasing exponentially in India and end-of-life management policies regulations are being considered to support the transition to a sustainable PV life cycle program.

Estimated annual PV module waste generation in India



Embracing a circular approach to PV waste and material recovery will be necessary and an opportunity to harness value at the end of life. Further, extending the life of assets and having a modular approach at the design stage for second life are becoming the new normal in the RE sector. It not only helps to close the gap of the net-zero target but also offers new value opportunities to the business.



Internal Operating Environment

Greenko endeavours to establish, boost and nurture the elements of its internal operating environment, in such a manner that it adapts the organisation to harness opportunities presented by the external environment. In this context, Greenko is adapting and transforming its businesses through internal operating elements such as resilience and agility of its human asset, circularity, regenerative approach towards its asset management, ownership mindset of its People, Processes, and Systems for business excellence.

Elements of Internal Operating Environment

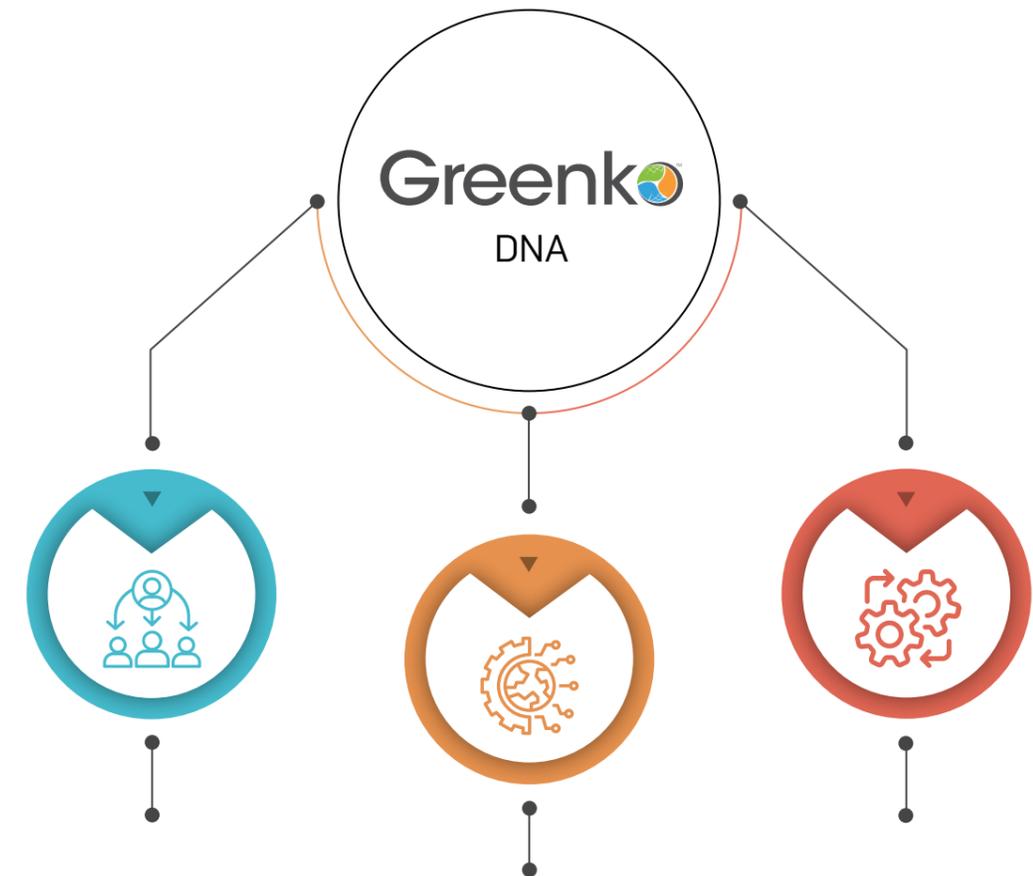


Value-based Business Principles

Greenko is high on its SEEDIT values and in this context, stakeholder inclusiveness stands tall, apart from excellence, agility, ethics, discipline,

innovation, teamwork & circularity. Greenko's values are explained to every employee and partner. The organization ensures that new entrants are made aware of values in the Induction stage itself and the organization not just inculcates values but believes in living by them. The appraisal system at

Greenko is completely merit-based and gives equal weightage to performance and adherence to company values. The succession planning is also looked upon right from the beginning and future leaders are groomed in a way that enables them to take up future challenges.



LEADERSHIP

- Empowered leadership teams
- Agility in culture for value creation
- Managing talent for growth
- Ownership with accountability
- Inculcated mindset for risk mitigation

TECHNOLOGY

- Technology for decisions
- Realtime monitoring
- Generating big data & analytics
- Drones –Survey, predictive maintenance, project progress

PROCESS

- Built project & operating excellence
- Robust Integrated Management System (GIMS)
- Accredited SOPs for business
- Automation of processes

Internal Operating Environment

Changing Internal Model- Ownership Model

The Human asset at Greenko is agile, resilient & committed to sailing through any unforeseen & challenging business situation(s). At Greenko, augmentation of Human Capital through inorganic growth is more incidental to business acquisitions spanning across its businesses viz. Hydro, Wind, and Solar. The diverse skill sets of human assets have aided in managing multiple business scenarios synergistically, across multiple Projects and Plants, indicating a circular approach in grooming manpower which does not allow the stagnation of men, machines, material & information. The Leadership at Greenko has always committed itself to human development by harnessing newer growth opportunities in the renewable space through Integrated Renewable Energy Storage Projects (IRESP).

The Group believes in the ownership model of an empowered team, entrusted with accountability, authority, and autonomy to achieve business goals in line with organizational values. The unique ownership mindset aids in an innovative and motivational work culture across the organization and allows teams to make the right decisions at the right time, abiding by Greenko values and ethics.

At Greenko, individuals and teams have the authority, autonomy, and accountability to shoulder responsibility for an outcome. The Organization and leaders are transparent about the strategic decisions that are being made. This mindset allows employees and teams to be accountable for the decisions executed, as they have the appropriate information base & experience to take the most appropriate decisions in a situation/scenario.

The business transformation initiatives at Greenko are based on the principles of Authorize, Align & Autonomy.

Authorize

The ownership model at Greenko accords authority to its employees in decision making. The teams are clear in their focus and outlook from the beginning and hence can make the right decisions even in the most critical scenarios. They are also well informed about several "not-the-way" illustrations in advance, to avoid instances of wrong decision making. Since most of the relevant information is available in an unambiguous way, it prevents wrong decision making in most scenarios. The team members are encouraged to view things differently and make decisions commensurate with a given situation/scenario. Also, the managers respect and support the team's decision.

Align

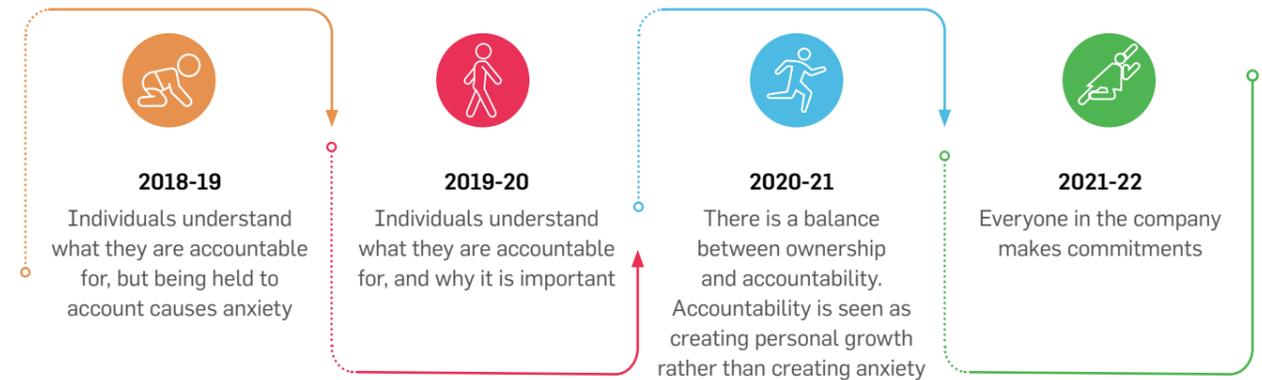
The key to aligning the human asset to match the organizational values for business transformation not only warrants the team to be congruent with the expected outcomes of any and all business decisions, it also delivers the task at hand on time. The success of any project generally means timely delivery of objectives within a stipulated time and budget. But, for Greenko it means much more and it means addressing the concerns of relevant stakeholders to meet their expectations throughout their journey with the company. The stakeholders are not only eligible for sharing the success of projects but are also equally responsible for its outcomes. The Organizational journey at Greenko, from GKO 3.0 to 4.0, requires the transition from output-based objectives to outcomes and this system will aid in owning the task and

its outcomes right from the beginning. The organization has therefore, aligned the KPIs to goals that are beyond outputs and include outcomes which enable ownership and innovation.

Autonomy

At Greenko, although the employees and teams can work independently in an autonomous way, the steering committee is responsible for keeping the whole process clear and organized. An autonomous team has the guiding vision and support from its leaders, as and when required. Each team member is therefore, sure about the task in hand and can align and coordinate with everyone else. There is a lot of clarity about seeking help at Greenko, the alignment to outcomes enables teams to autonomously decide "What", instead of restricting themselves to "How".

Greenko Ownership Maturity Model



The People Process System

Greenko balances its 'ownership model' with People, Process and Systems approach. The PPS model was implemented at Greenko to achieve the following:

- To build & recalibrate competencies of human asset
- To internalize in GAM for enhanced process efficiency
- To connect people to motivate overall PPS implementation
- To share best practices across businesses
- To achieve set business targets to aid transformation
- To aid Greenko towards the smooth transitioning from GKO 2.0 to 3.0 and reach GKO 4.0

The People – Expectations & Competencies

The impact of the PPS Model in two years (2018-20) at Greenko has shown:

- improved sustainable operational efficiency and growth with the measurable performance of the 'People' and the 'Assets' - **Focus**
- contributing to the regeneration of efficiency in people and operational assets for value creation, through Energy Systems for Greenko - **Regenerative Thinking**
- The group has mapped Key Performance Indicators (KPIs) of the Businesses for each of the employee roles and measured it against predetermined metrics and weightages assigned to employee role deliverables - **Talent Management**
- The Performance Management System (PMS) was implemented with measurable weightages of 50% for Business KPIs and 50% to measure Business deliverables in alignment to Greenko Values- **Strategic Thinking**
- Multi domain-multi skilled employees who can role play in uncertain times- a transition towards GKO 4.0 made it imperative for Greenko to multi-skill its human

assets to get a circular orientation, not allowing any stagnation in the same role year on year - **Circular**

The Process

As a framework, GAM was divided into seven key areas for which detailed processes were delineated, discussed, and adopted in these key areas. The features of the process flow include:

- Cross-functional activities
- The mandated flow of day to day, week over week, month on month activities
- Communication with centralized teams like Tech services
- Checks & balances and the way forward, when falling short of targets

The GAM and HR Leadership Team have convened a 'Leadership Conference' to calibrate on the Group's vision, values, and the PPS Model. All the GAM employees have been trained and the HR Team and GAM Leaders have put the PPS Model to work and the outcomes are 'propounding and profoundly positive' for the business.

Internal Operating Environment

Also, the KPIs, identified for each of the GAM assets (Hydro, Wind & Solar) and the performance outcomes were measurable indicators for Hydro, Wind & Solar Operational Assets. In the Greenko Asset Management (GAM) vertical, out of the total employees multiskilled for various domains (Hydro, Wind & Solar), 82% were found eligible to work in multiple functions in addition to their multi-disciplinary domain knowledge, thus reaffirming the circular approach in business management.

The System

The analytical management systems deployed for tracking project and asset management include analytical measures such as:

Celeste Solar - Analyse the trends and identify any deviation from the expected results

GOMs - Tracking of Maintenance activities and alerts to check any form of deviation from schedule or quality

GMAT Tracker - Tracking of minutes of meeting and closing the action items

GATS - Tracking of assets (e.g. Modules)

GEPS - Tracking of project activities

Forecast & Scheduling - Deploying statistical forecasting models and real-time weather forecasts to predict day-ahead energy Activity Tracker

The systems also consist of predictive measures such as:

Aerial drones - for digital plant inspection which is an advanced technique for reliability and performance improvement

Thermal Imaging - Thermal Imaging camera to observe the health of modules.

Predict Downtimes - Development of custom notifications based on queries and machine learning models to identify

anomalies and predict impending failures

Greenko has showcased exemplary strengths through its ownership model and PPS framework implementation. Greenko's renewed strengths with a new dimension of circular and regenerative thinking would aid its smooth transformation from GKO 3.0 to 4.0.

Reinforcing Stakeholder trust

Growth has been synonymous with the inherent nature of Greenko Group. The ownership culture and the institutionalization of SEED IT (Stakeholder Inclusiveness, Excellence, Ethical, Discipline, Innovate, Teamwork) Value System has built a strong foundation. The above 'Value Drivers' are seamlessly integrated with the 'Enablers' to strategically create a Value Proposition with definite 'Outcome'. The HR strategy has evolved critically to support the Value Drivers with desired HR Policies, Processes, and Systems. In this context, the inclusion of stakeholder trust in all the stages and all levels of decision making signifies public-private-people partnership and remains the main pillar of project execution and operations at Greenko. Greenko believes in having a long-lasting relationship with its relevant & critical stakeholders. The Trust of stakeholders is the foundation of business policy at Greenko and timely reinforcement of this faith will smoothen Greenko's journey from GKO 3.0 to 4.0. The same principle applies to the ownership model and PPS implementation in the business. (GRI 102-21, 43).

Agility to Adapt

Greenko's easy transition from GKO 1.0 to GKO 2.0 and further to GKO 3.0 has been possible due to the agility

of the organization. Ownership and empowerment make the organization more agile by incorporating the vital characteristics of self-belief.

The Leadership Pipeline is developed to meet the Business expansion plans of the Group and thus opportunities are provided to the young who have the competence and potential to take appropriate leadership roles. Talent scalability is a critical and on-going agenda for HR to provide the required number of talented resources for new projects and acquisitions. Since its inception, Greenko has always grown with a mechanism of built-in talent scalability.

Individual Stewardship

The ownership culture at Greenko has made the group the most sought-after employer in the RE domain. Employee welfare programs, merit-based annual performance reviews, and rewarding of talent has built and sustained a favourable brand image amongst employees. The group retained 93% of its workforce during the reporting period and achieved a cost reduction of 10% per hire, for the FY2019-20.

Unambiguous Information for Critical Decision Making

Greenko deploys advanced information technology to monitor the progress of project execution and asset management and makes such information available to all, on need-to-know basis, in real-time. The leadership at Greenko has a clear focus and vision, thus leading to clear and unambiguous communication minus any gaps. This avoids delays, conflicts, and friction in decision making and aids teams to take ownership. It enables the leaders at all levels to focus on material issues for growth and transformation.

Technologically superior Intelligent Energy Platform

Greenko has a strategically diversified portfolio of assets by type, geography, offtakes, and technology employed. This diversification allows them to build expertise by dealing with multiple stakeholders. Greenko manages its diverse operating assets in accordance with the highest standards of performance, availability, and efficiency. The continuing excellence of operations provides a strong foundation for the ongoing transition of Greenko's business towards a decentralized and digitalised future.

This asset base is being significantly augmented to create an Intelligent Energy Platform. While Greenko's success in deploying different technologies renews its confidence, the organization realizes the challenge of technology adoption and up-gradation in the transformation of Greenko's business models from GKO 3.0 to GKO 4.0.

Disciplined & Methodical Project Development Mechanism

In project execution, Greenko follows a very meticulous process with self-discipline and agility. Discipline is one of the values which is at the core of Greenko's business model. GEPS is one such in-house state-of-the-art project monitoring system tailored for robust and real-time project management, QA/QC, engineering, logistics, material management, and stores.

Greenko through its disciplined approach sets an example to its suppliers and contractors to execute projects on time with minimal cost in operating projects. Greenko understands that the journey from Greenko 3.0 towards 4.0, would be complex, demanding innovation and agility, and synergies of different natures, and hence it has promoted the ownership approach, across the organization, during this reporting period.

Leading Experts in Renewable Energy Space

Greenko team has significant experience in renewable energy project execution and asset management; arriving at and managing different kinds of commercial arrangements with public and private entities; managing revenues and engaging with relevant stakeholders. The organization actively contributes to public policy advocacy regarding firm and schedulable power.

This experience with technologies and relevant & critical stakeholders viz., regulators, distribution utilities, and government bodies, will be extremely critical in business growth as well as the transformation from GKO 3.0 to 4.0. Technological and regulatory challenges will be posing significantly difficult scenarios, and the electricity markets will pose newer challenges each day. However, the valuable experience and competencies achieved in managing the transformation in the past will be useful in addressing the challenges and to forge ahead towards deep decarbonization.



Materiality

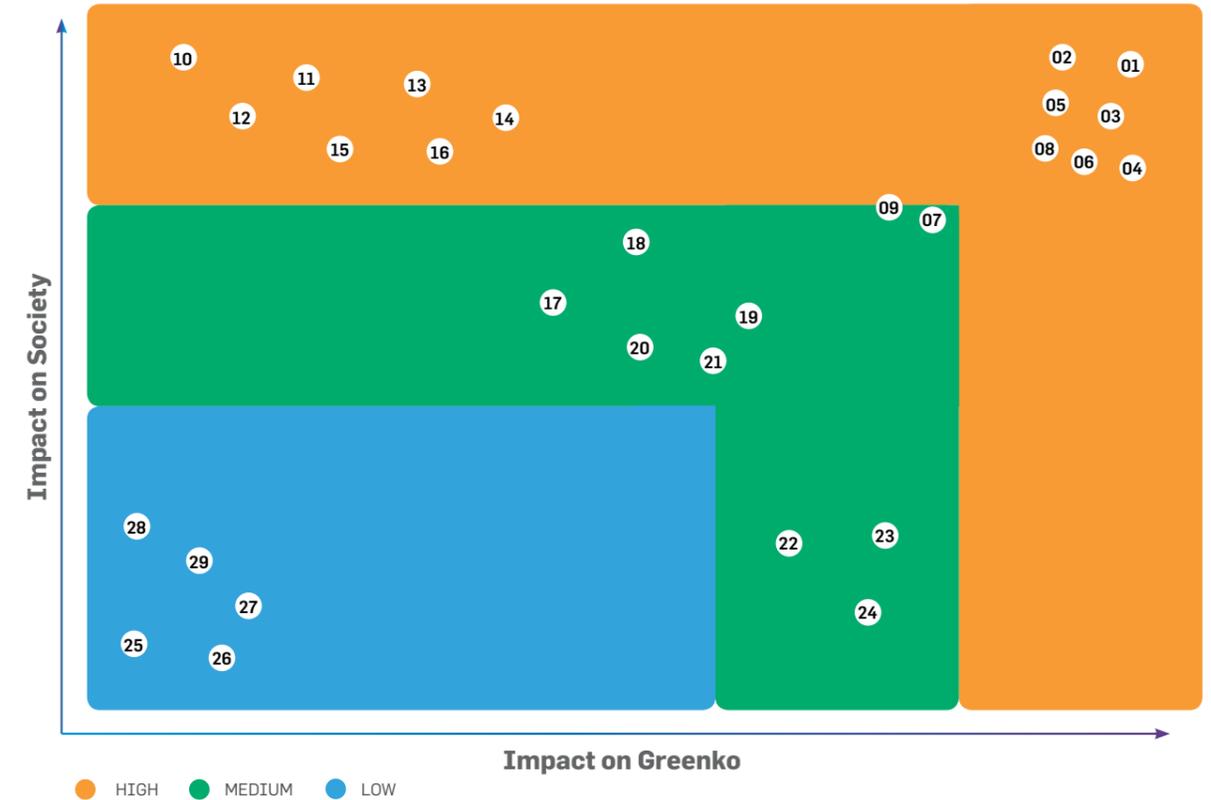
Stakeholders are critical for organizations as they are impacted and have the power to influence business. Greenko is committed to reporting the progress it made in drawing and delivering financial and non-financial values to all stakeholders.

It intends to address the key impacts (positive and negative) across its value chain and the same are reported. Stakeholder engagement provides Greenko an opportunity to obtain an insight into the stakeholder perspective and share Company's sustainability strategies with them. This exercise not only helps the Company to establish a transparent and positive relationship with the stakeholders

but also understand and assess their concerns and approaches. This enables the identification of the key material topics that Greenko needs to address to sustain value creation.

Greenko considers an issue to be material if it influences or likely to influence its ability to create value in the short, medium, and long term. Greenko conducted materiality

assessment through extensive internal and external stakeholder engagement and identified issues and aspects of significance. Such material issues have been identified, segregated, and ranked as High, Medium, and Low by considering the kind of impact it has on the organization and its stakeholders. Greenko's position, approach and performance on these material issues are detailed in this report.



HIGH

1. Economic Performance
2. Energy storage value pools
3. Excellence, Adoption and Management of Assets and Projects
4. Health & Safety
5. Community Development Initiatives
6. Innovation and Technology adoption
7. Public Policy Advocacy
8. Climate Proofing
9. Regenerative and Circular Value Pursuit

MEDIUM

10. Stakeholder Engagement
11. Regulatory Compliances
12. Risk Management
13. Diversity
14. Waste Management
15. Talent Acquisition and retention
16. Skill Enhancement
17. Employee welfare
18. Employee Engagement
19. Transparency
20. Anti-corruption

21. Sustainable Supply Chain Management
22. Human rights
23. Life Cycle Management
24. Biodiversity

LOW

25. Energy Management
26. Succession Planning
27. Grievance Mechanism
28. Land management
29. Sustainable partnerships

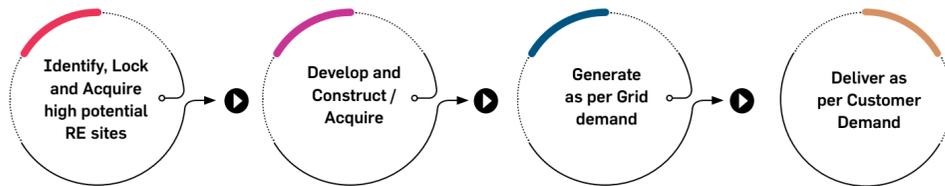
Generating and Sustaining Value - The Greenko Way

INPUTS

<p>Financial Capital</p> <p>Gross debt</p> <ul style="list-style-type: none"> Issued Green bonds and Bond offering to raise USD 1,470 Million. <p>Equity</p> <ul style="list-style-type: none"> Infused US\$824 million in equity <p>Diverse sources of funds</p> <p>Diverse power sale contracts</p>	<p>Cost reduction initiatives</p> <ul style="list-style-type: none"> 8% cost savings achieved by developing new-vendors, negotiations Cost savings by self O&M <p>The pursuit of organic and inorganic growth opportunities</p> <ul style="list-style-type: none"> 1.4 GW capacity addition 	<p>Operational Capital</p> <p>Diversified Asset portfolio</p> <ul style="list-style-type: none"> Solar Wind Hydro Pumped Storage <p>Diversified across geography</p> <p>Self O&M Infrastructure</p>	<p>Intellectual Capital</p> <p>Life Cycle Cost-Effective RE options</p> <ul style="list-style-type: none"> Implementation of GOMS, SCADA & SAP Introduction of BoT (robotic process automation) <p>Digitalization</p> <ul style="list-style-type: none"> Use of predictive maintenance, scheduling, and forecasting, improving generation agility <p>Innovation hub</p> <ul style="list-style-type: none"> 240 ideas generated 	<p>Human Capital</p> <p>35.3 Average Training Hours / Employee</p> <p>Health & safety training</p> <p>Specialized Domain training for wind/hydro/solar segment</p> <p>Cross-functional and business roles</p> <p>Ownership culture in the workplace</p> <p>Digitalization of the overall hiring process</p>	<p>Social & Relationship Capital</p> <p>Public policy advocacy</p> <ul style="list-style-type: none"> 600+ professional hours spent by senior management <p>Engaging with customers</p> <p>Co-creation projects with local community and suppliers</p> <ul style="list-style-type: none"> 15.57 crore invested in CSR 14,065 hours volunteered by employees for CSR activities 	<p>Natural Capital</p> <p>Responsible suppliers</p> <ul style="list-style-type: none"> Encouraging suppliers to become ISO certified & RoHS compliant <p>Environmental stewardship</p> <p>Circular Economic approach</p> <ul style="list-style-type: none"> Self O&M Repair and refurbish infrastructure Asset sharing Climate Adaptation
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ACTIVITIES

Greenko's Value Chain



OUTPUTS

<ul style="list-style-type: none"> USD 660.9 million revenue generated \$5.1 Million revenue from the sale of REC certificates INR 162.32 Cr revenue from GBI 	<ul style="list-style-type: none"> INR 15,46 Cr Revenue from the sale of Carbon Credits 36.24% increase in revenue A+ Credit rating 	<ul style="list-style-type: none"> 9969 MU generated Healthy PLF maintained at 24.4% (S), 46.2% (H), 27.2% (W) Improvement in productivity 	<ul style="list-style-type: none"> 99.46% (S), 98.37% (H), 99.26% (W) grid availability 	<ul style="list-style-type: none"> 13 ICT projects planned and implemented 85% of sites covered under SCADA 74% of sites covered under SAP Process standardization at all operations 	<ul style="list-style-type: none"> 81 continual improvement programs 240 innovative ideas generated 	<ul style="list-style-type: none"> 27.9% increase in training hours/employee 93% of staff Retention 17.08% increase in women workforce 71 Training on equality, diversity & inclusion Reduction in average age of employees from 39 to 36.65 years 	<ul style="list-style-type: none"> 252 employees multi skilled 7 & 11% attrition amongst male & female employees 29% new hires via campus interviews as GETs 	<ul style="list-style-type: none"> Decarbonization 8.2 MtCO₂ avoided Environment improvement 9769.62 tPM10 avoided Supply Chain 85% of critical suppliers are ISO 14001 certified & RoHS compliant Restoration of Nature Habitat conservation & species recovery of Great Indian Bustard and Olive Ridley Turtles 	<ul style="list-style-type: none"> Habitats for birds, fox, and fish restored 92,380 saplings planted Circular Economy Electronic waste avoided due to reuse after repair/refurbish Climate Adaptation adapting operations to changes in resource pattern adapting to extreme weather events 	<ul style="list-style-type: none"> Changes in the policies related to RTC RE and pumped storage 100% customer satisfaction index for utility customers 80% of contractors/suppliers retained beyond 3 years 	<ul style="list-style-type: none"> 935,048 total number of beneficiaries from the community projects
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OUTCOME

<p>VALUE RETAINED</p> <ul style="list-style-type: none"> Organic and inorganic growth of assets Infrastructure for sustainable management of assets Infrastructure for agility and adaption in the face of changing climate Human capital development 	<ul style="list-style-type: none"> Asset Health Asset Life Improved Asset Performance Solid digital infrastructure for effective performance management 	<ul style="list-style-type: none"> Protocols and Standards Improved operational performance Seamless information flow and decision making A highly skilled and motivated workforce Agile and autonomous networks 	<ul style="list-style-type: none"> Fair, safe and healthy workspace Attainment of long term stable and effective relationship with contractors & suppliers Increased stakeholder trust Policy environment for firm RE 	<ul style="list-style-type: none"> Attainment of knowledge on evolving technologies Diversified customers and customer-centric business approach Uninterrupted and stable supply chain Predictable and stable wind, solar and hydro resources 	<ul style="list-style-type: none"> Compliance with regulations Community trust Uninterrupted operations Improved O&M
<p>VALUE DELIVERED</p> <ul style="list-style-type: none"> Interest and bond proceeds Dividends Remuneration to employees 	<ul style="list-style-type: none"> Local area infrastructure Taxes to the Government Contribution to Community through CSR 	<ul style="list-style-type: none"> Industrial infrastructure in the region Grid performance Clean and reliable energy Technology transfer 	<ul style="list-style-type: none"> Improved quality and quantum of employment Up-gradation of skills Inclusive development in regions of operations Improved policy environment for decarbonization 	<ul style="list-style-type: none"> Improved business opportunity and wealth for suppliers Decarbonization Improved air environment 	<ul style="list-style-type: none"> Reduced electronic waste and Conservation of virgin materials Restoration of nature Community adaptation to climate change

EXTERNAL ENVIRONMENT

- Responsible and patient capital
- Transparency and good governance practices
- Clean, affordable, and reliable energy in India
- Climate change
- Decarbonization, Digitalization, Decentralization
- Need for flexible and firm RE
- Energy Security
- Circular Economy
- End of Life of Assets
- Aspirational and Entrepreneurial Millennial
- Inadequate skills for emerging job roles
- Fair, safe and healthy workspace
- Changing policy environment
- The financial health of DISCOMs
- Increased stress on water, land, and ecosystems
- Investor Watch on environmental and social risk management
- Increased public concern and regulatory watch
- Sustainability and climate change goals

CONTRIBUTION TO UNSDGs

INTERNAL OPERATING ENVIRONMENT

- Innovation
- Values (SEEDIT)
- Public Private People partnership
- Real-time monitoring of assets
- Robust Integrated Management Systems
- Intelligent Energy Platform
- Empowered teams
- Diversified source of revenue
- Diversified Renewable Technologies
- Matured PPS
- Predictive and self Operations and Maintenance
- Quality Assurance and Control
- Integrated Renewable Energy Storage Projects
- Responsible contracts and Procurement
- Public Policy Advocacy
- Value creation for community
- Climate proofing of business
- Preservation of biodiversity
- Life cycle management of assets



Malana, Himachal Pradesh

Greenko's Strategic Approach



Our new-age products offer flexible energy solutions serving bespoke client needs. Key is to keep the customer experience at the core and structure a viable solution around the need. We continue to be sensitive to the customer's voice and calibrate our offerings, thereby integrating it into a culture of continuous feedback and continue to develop new products.

Mr. Seshanka Palukuri
AVP, Strategic Planning Group

The external operating environment, as it is today and how it is expected to evolve, presents opportunities and threats to the business. The increasing share of renewables, a consequence of Greenko's business progress and that of the peers', and the expected bootstrapping of RE share in the coming years compound the challenges to the grid and the state distribution utilities. Present and expected futures, thus offer numerous opportunities and risks to the value creation ability of Greenko. Thus, the group's internal operating strengths have to be marshalled and bridged to address the risks and harness opportunities. This constitutes the revisiting of the strategic approaches and KPIs.

Greenko's Strategic Approach

Financial Capital

In the pursuit of its vision and mission, Greenko will have to tap diverse sources of capital, including green/climate/social bonds, and pursue both organic and inorganic growth to continue to be amongst the top 3 power utilities in India. The structure of Greenko is such that funds flow seamlessly to a designated objective. Further, the risk management framework of Greenko addresses long term strategic risks including those that arise at the end of life of the assets or the impending climate change due to global warming. Thus, the trust of shareholders and investors is reinforced and Greenko attracts diverse sources of capital, especially the impact and patient capital.

Strategic Direction: Preserve and Enhance value for shareholders

<p>STRATEGIC FOCUS AREA</p>	<ul style="list-style-type: none"> ● Debt Capacity ● Access to capital ● Organic and inorganic growth ● Revenue Growth (to be amongst top 3 power utilities in India) ● Seamless fund flow to the targeted objective ● Climate Change Risk Assessment and Impact mitigation
<p>APPROACH</p>	<ul style="list-style-type: none"> ● Improve credit rating ● Harness diverse avenues of funds ● Pursue appropriate M&A opportunity ● Pursue high growth through healthy capex deployment in new projects delivering flexible and firm power ● Maintain CAGR above 40% till 2023 ● Diversify across Decarbonization, Digitalization and Decentralization technologies to generate firm, RTC electricity ● Improve quantum and stability of revenues by providing superior quality, reliable and firm power
<p>KEY PERFORMANCE INDICATORS</p>	<ul style="list-style-type: none"> ● Credit Rating ● Leverage or Diversity of fund sources ● Share of funds deployed for organic to inorganic growth ● Capex to revenue ratios ● Ratio of firm power delivered CAGR ● Top-line ranking amongst power utilities in India ● Percentage of revenue earned from delivering power-as-demanded ● Monthly variance in revenue ● Fund flow statements

During the reporting period, significant financial capital was raised for both equity and debt. The green bonds raised the debt and the existing shareholders infused additional equity. The financial capital, as always, was seamlessly deployed for designated objectives and the achievement of these objectives will be monitored as the project progresses.

Operational Capital

The energy sector across the globe is experiencing disruptions due to the demands of decarbonization and decentralization and opportunities offered by digitalization. These developments are impacting the sector in India, which is already beset with institutional and financial challenges. Greenko is rightly placed to harness opportunities presented by these developments and by the increasing need for flexible and firm RE. For harnessing some opportunities marginal improvements may be required and for other improvements, large and complex projects and ecosystem interventions may be necessary. Thus, Greenko has to be sensitive to the risks and has to put in place systems and processes to tread cautiously on paths that are new and are being taken for the first time in India. The agile workforce and ownership mindset would facilitate the adoption of technology as per the demands of the business. This has implications for ICT, HR and GAM functions.

Strategic Direction: Ensure Sustainable Operations

<p>STRATEGIC FOCUS AREA</p>	<ul style="list-style-type: none"> ● Excellence, Adoption and Management of Assets and Projects ● Quality and Efficiency ● Contracts and Procurement Management ● Energy Storage value pools ● Harness Regenerative and Circular Value Pools
<p>APPROACH</p>	<ul style="list-style-type: none"> ● Deploy Digitalization for real-time information and predictive/adaptive O&M ● In house capability and infrastructure for O&M ● Execute projects with best technology enabled systems ● Design and deploy utility scale round-the-clock RE generation with flexibility to harness all value pools in electricity system ● Sharing models of storage and Intelligent Energy Platforms ● Re-engineering and refurbishing of assets
<p>KEY PERFORMANCE INDICATORS</p>	<ul style="list-style-type: none"> ● MTBF or downtime per GWH generation ● O&M Cost per GWH ● Percentage of Power delivered as per schedule ● PAF & PLF ● On time completion of projects ● Time and Cost overrun (%) in projects Capital invested in Generate-consume pilots ● % of assets (operation & construction) with RTC capability ● % assets covered under self O&M ● % of assets that malfunctioned, re-engineered and refurbished

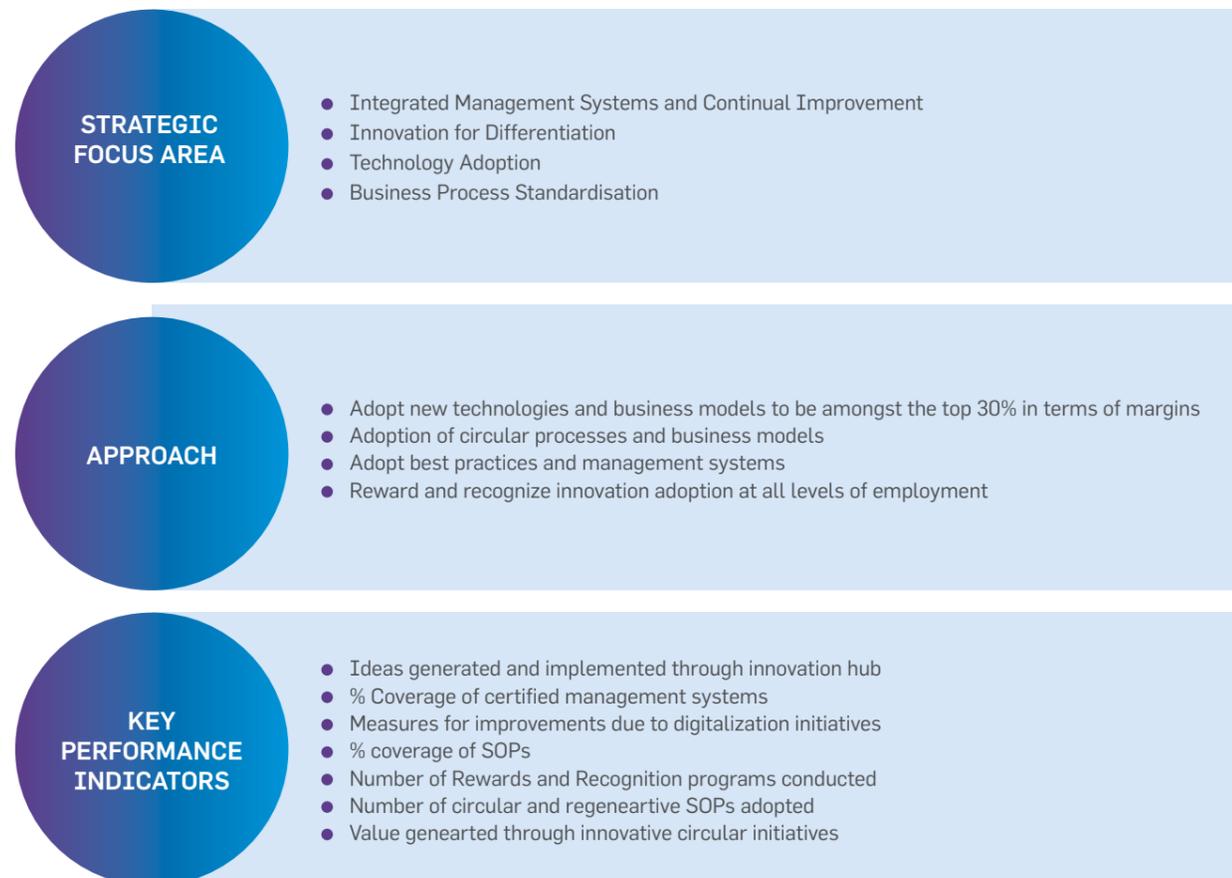
The asset management practices have drawn significantly from circular economic approaches and also climate proofing. Digitalization in asset management and self O&M at Greenko is strategically aimed at gradually developing the capability for predictive and adaptive O&M and application of circular economic practices and climate proofing. The infrastructure developed for self O&M is already used for repair, refurbishment, and re-engineering of many assets or reuse of its components. The agility of assets achieved through predictive and adaptive capabilities gained through deployment of digitalization is aimed at addressing climate-proofing also.

Greenko's Strategic Approach

Intellectual Capital

Innovation is the focus of the transformational journey at Greenko. The innovation hub platform elicits participation of employees and partners across the value chain, identifies solution areas, and curates the solutions through a collaborative approach. Continuous and targeted innovation hub initiatives are critical to adopt and adapt to appropriate systems, technologies, and business models. It is also about system integration and geography-specific customization involving soft and hard approaches. Accordingly, intellectual capital at Greenko is cross-functional systems and processes, and standard operating practices. People, Process, and Systems significantly supplement Greenko's Intellectual Capital and becomes the critical instrument for driving transformation and adaptation at all levels.

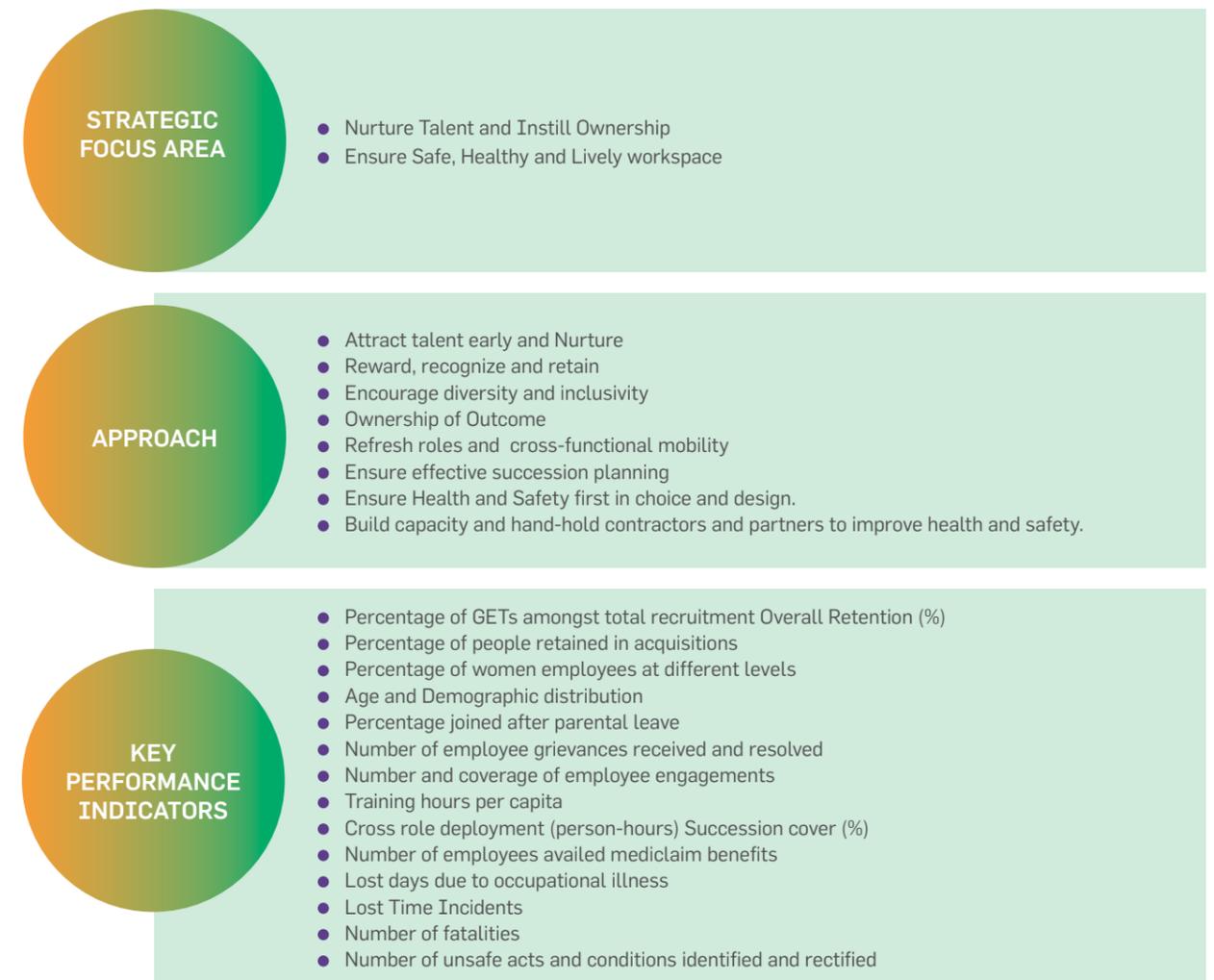
Strategic Direction: Preserve and Enhance Innovation and Systems



Human Capital

People are at the core of Greenko's success today and tomorrow. Nurturing talent and caring for people is a principled commitment. Greenko attracts, trains, rewards, recognizes and grows its people. Fair, Safe, Healthy, and Lively workspaces can be found at every site. People at Greenko are motivated by growth, committed to values, are agile, and innovative to harness opportunities and enable the company to navigate through turbulence. Our ownership models drive people to be responsible for outcomes of their work and "transform and be transformed".

Strategic Direction: Attract, Retain and Nurture the Best Talent



Greenko's Strategic Approach

Social and Relationship Capital

Greenko's operations use wind, solar, hydro, land, and ecological resources extensively and are situated amongst people and have intertwined with their livelihood. It touches the lives of many in and around sites. Greenko considers the nature of its operations an opportunity to touch many lives and contribute to human development. Greenko's partnership with communities enables us to deploy projects on time, manage assets efficiently and provides us a broader social license to operate. Greenko is sensitive to its role in achieving national climate, energy security, and financial stability goals and accordingly collaborates with the policy and stakeholder ecosystems to improve its contribution. Further, the journey to GKO 3.0 and 4.0 would necessitate partnerships and relationships of a new kind. The challenge in the new model will be "to be self-organizing in a multi-agent system"

Strategic Direction: Reinforce Stakeholder Trust and Develop Co-Creative Partnerships



Natural Capital

Greenko's business is designed to harness unaccounted nature's value. Accordingly, Greenko's business from inception and in the future would be addressing challenges and opportunities of "caring for, conserving and adapting to changes in nature". Greenko is committed not to harm nature in all its operations and value chain, to the extent practicable. In addition, Greenko is proactively contributing to the conservation of ecosystems and managing impact across the life cycle. It is sensitive to the fact that the climate is changing due to global warming despite global efforts to reduce the GHG emissions. The changes in climate has the potential to impact the wind, solar, and hydro resources and Greenko is developing adaptation plans to climate proof its business. Further, we are also addressing the long-term end of life impacts of our energy generation projects.

Strategic Direction: Preserve and Enhance Nature



Next Generation Energy Utility



Greenko transformation is based on a reliable set of measures that stabilize revenue, unlock growth, reduce costs, and become more agile. Our new business models on storage and intelligent energy have multiple streams of revenue from different sources. This reinforces agility, stabilizes revenue, and unlocks growth.

Ms. Divya Mathur
AVP, Corporate Planning



The electricity markets are changing, and the pace may be slower but Greenko is patient enough and is always ready to tap it. The businesses in India are readying for net-zero carbon by 2050 and our RTC renewables are a pathway for them. We look forward to having more direct industrial and institutional customers in the medium term, the share of it depends on how regulations evolve and how regulators encourage the movement.

Mr. Seshagiri Rao N
VP, Commercial

Harnessing new value pools

Greenko generates value by pursuing its mission "Leading decarbonization, digitalization, and decentralization of the energy sector in India". Greenko has launched new sharing business models of Pumped Storage and Intelligent Energy Platforms – transforming renewable energy into reliable, schedulable, and flexible energy and moving closer to customers.

The digital revolution as well as renewables, and smart grids are triggering new business models and regulatory frameworks. The energy markets and competition for customers are shifting to the online channel. Also, the Internet of Things (IoT) driving new product and management options, with digital companies and start-ups disrupting the landscape, while

governments and regulatory bodies seek to encourage smarter measuring systems and greener standards for energy generation and consumption. Besides, digitalization has offered an enormous opportunity to manage generation more efficiently and in the case of renewables, it offers options to generate reliable, schedulable, and flexible energy. To thrive amidst these challenges, the utility of the future – Greenko, will be a decarbonized and digitalized system. This transformative journey will affect enhancements in productivity, reliability, safety, customer experience, compliance, and revenue management, while significantly contributing to the mitigation of climate change and the catalyzation of socio-economic development. In India, Greenko's next-generation energy utility promotes energy security by avoiding imports of non-renewable resources and financial stability by offering no-escalation-of-electricity-prices. There is a growing preference amongst B2B

customers for renewable energy as these are committing to deeper cuts in GHGs to reach Net Zero Emissions by 2050. This is becoming possible with the price parity of renewables and flexibility achieved by next-generation electricity utilities

Increased share of RE is pushing greater intra-day variations for baseload coal, demanding more flexibility from RE generators. Also, it is a known fact that in India there is a limited flexible generation compared to other countries. In addition, 40 GW of generation capacity based on coal in India is generating power at a cost more than Rs.4.20/kWh and RE Storage hybrid can potentially compete with such capacity. Also, there are pools of value that Integrated Storage projects can tap into. In order to harness this opportunity in schedulable RE- value pools in the power sector in India, Greenko has planned for Integrated Renewable Energy Storage projects.

The electric grid of the future would be following the five principles:

- Empowering the consumer while maintaining universal access to safe, reliable electricity at a reasonable cost;
- Demarcating and protecting the commons;
- Aligning risks and rewards across the industry;
- Creating a transparent, level playing field; and
- Fostering open access to the grid.

These principles would help "future-proof the grid with the flexibility, resilience, and scalability to meet future needs. Further, the attributes for the "future" distribution edge platform will be:

- Network efficiency, resilience, and reliability;
- The level playing field for all resources;
- Innovation;
- Transparent incentives to promote technologies that result in social benefits;
- Minimize complexity;
- Support the harmonization of business models.

Value Creation Pools

In this new scenario, the new value pools in different segments of value chain will be;

Generation

- RE Smoothing
- RE Firming
- Curtailment
- Avoidance

- RET/RTC
- RE Arbitrage
- Energy Storage

Transmission and Distribution

- Frequency
- Regulation
- Voltage
- T&D Investment
- Deferral
- Wholesale
- Arbitrage
- Storage

End Consumer

- End-consumer Power Quality
- Reliability (e.g., Backup, UPS)
- Increase of Self consumption (e.g., Residential Solar + Storage)

It is clear that schedulable renewable is the pathway for deeper decarbonization and advances in digital technologies combined with storage technologies will make it possible in India. A similar aspiration is articulated by Global Solar Alliance led by India- "One Sun, One World, One Grid".

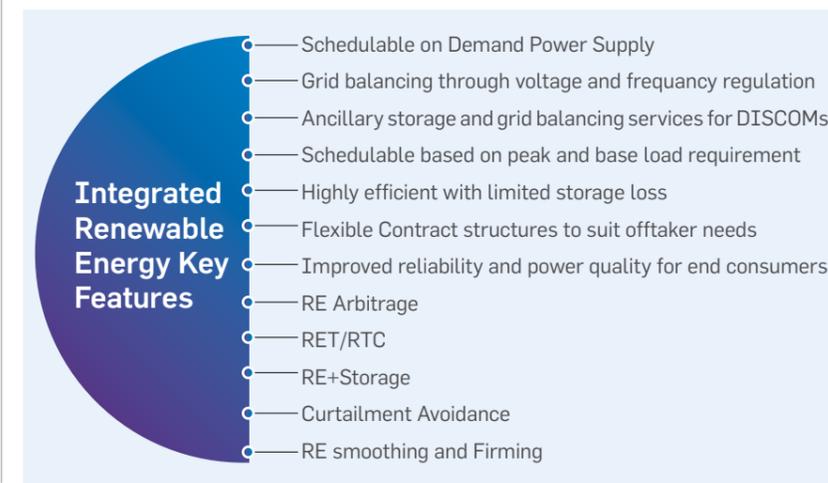
New Generation Energy Utility of Greenko

Greenko's new generation energy utility is designed to harness vital value pools proactively by developing state-of-the-art multi GW scale Integrated Renewable Energy Storage Projects "IRESP". The group has plans to develop Integrated Renewable Energy projects with a total capacity of 40 GWh across 5 states of India. Currently, the Pinnapuram IRESP, the Saundatti IRESP and 30 Gandhi Sagar Standalone Pumped Storage Project (SPSP) in the states of Andhra Pradesh, Karnataka and Madhya Pradesh

respectively, are in the pre-construction phase with a total capacity of 8.7 GW. The IRESPs are expected to harness the power of solar and wind resources with digitally connected storage infrastructure to provide scheduled and flexible power to the grid.

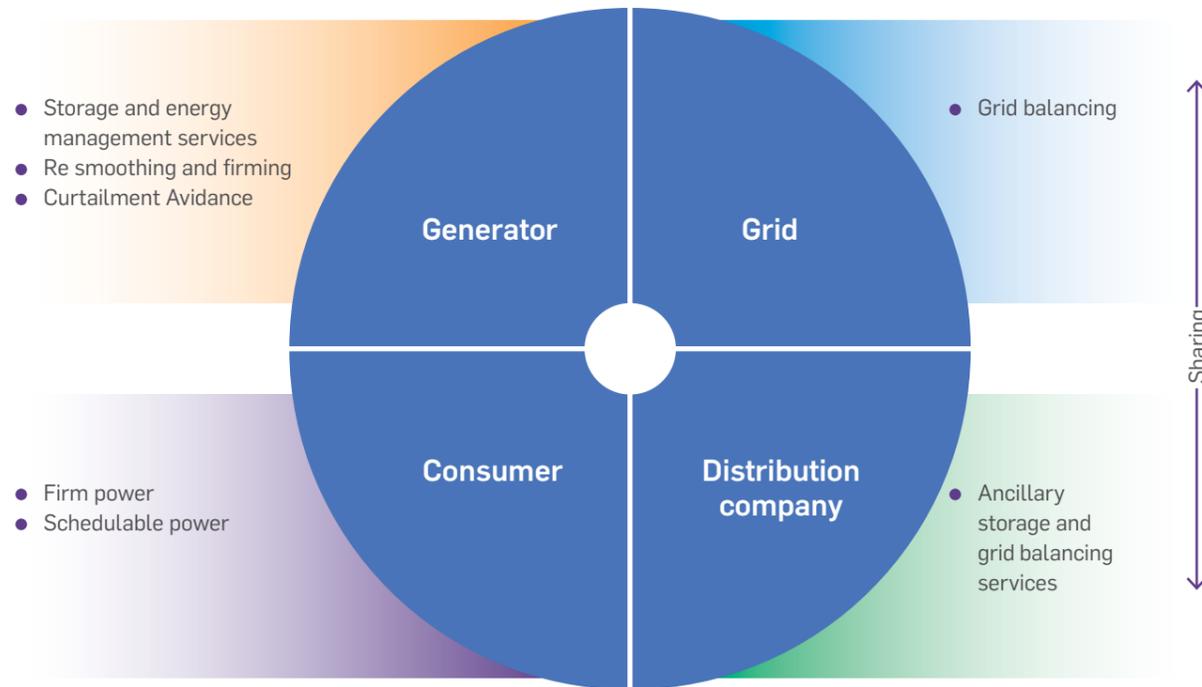
The IRESPs are combined with Intelligent Energy Platforms to offer flexible renewable energy that can harness many value pools in the electricity system. The business model is a 'sharing platform of energy storage and energy management' that offers multiple services to RE generators, grid, distribution company, and consumers.

Value Pools Harvested by Greenko's IRESP projects



Next Generation Energy Utility

Circular Economy- Driven Next-Generation Energy Utility of Greenko



Pinnapuram Integrated Renewable Energy Project Overview

The Pinnapuram IRESP consists of four key components which are as follows,

- The Standalone Pumped Storage Project (SPSP) is planned for a generation of 1200 MW with 9-hour storage resulting in a daily storage capacity of 10.8 GWh by creating two off-stream standalone new reservoirs on natural depressions.
- Solar Park development of 3.0 GW capacity
- Wind Park of 0.5 GW wind capacity
- Central Pooling Sub Station (CPSS) is connected to evacuate energy nationally to multiple inter-state consumers. Greenko Renewable Energy Management Centre, housing the "Intelligent Energy Platform" (to forecast, monitor,

balance, and deliver the required energy and storage services) will be an integral part of CPSS.

The Pinnapuram Integrated Renewable Energy Storage Project (IRESP) is conceived as the world's first and largest gigawatt-scale integrated project with solar, wind, and pumped storage components. All three components of Pinnapuram IRESP are in close vicinity of each other and therefore, power from all three components will be pooled commonly.

Saundatti Integrated Renewable Energy Project Overview

Greenko's second Integrated Renewable Energy Project is planned to be developed at Saundatti, Karnataka, which is currently in the design phase and is planned to have similar components and design features as that of the Pinnapuram IRESP. The four

key components of the projects are:

- The Standalone Pumped Storage Project (SPSP) is planned for a generation of 1260 MW with 9-hour storage resulting in a daily storage capacity of 11.3 GWh.
- Solar Park of 1.0 GW capacity
- Wind Park of 0.4 GW wind capacity

These IRESP Projects can meet the dynamic needs of DISCOMs/STUs, through:

- 24 Hours Round The Clock (RTC) Base Load Energy
- 18 Hours Base Load Energy as per Demand
- 12 Hour Peak Load Energy (6 hours + 6 hours)
- Energy Storage Service, Grid Management, Frequency Management & Ancillary Services



07



Performance
Based Value
Creation



Message from COO



Dear Stakeholders,

In this Integrated Report, you will discern that the major strategic step that Greenko has taken is to decarbonize the electricity system in India by making renewables firm and flexible. This strategic step is in keeping with India's climate ambition and aims to harness sharing platforms in the energy sector. An important component of this initiative is the pumped storage project and I will walk you through the project and explain how Greenko is planning and executing a first-of-its-kind project in India.



To execute IRESP, we are working with very experienced global companies of repute such as Andritz Hydro, AFRY, Tata consulting Engineers, and EDF. 



Further, our project management teams have designed the SOPs to address the challenges of balancing flexibility and robustness. Our partnerships with the vendors are executed in a twining mode, to learn from each other and to make the transfer smoother at the closure of the contract. 

Most pumped storage hydropower in the world was built in the last century, at a time prior to the inclusion of variable generation in the electric power grid. However, in recent years, the nature of the grid has changed and variable generation through renewable power has increased and will continue to contribute a dominant share. Wind & Solar, are the lowest-cost sources of new energy, however, their inherent infirm & non-schedulable nature presents a huge challenge for integrating large RE capacities, while maintaining grid stability. The Integrated Renewable Energy Storage Project is expected to harness the power of solar and wind resources with digitally connected storage infrastructure to provide scheduled and flexible power to the grid. These provide the necessary scale (large volume of energy storage) and have a long-life cycle resulting in the lowest cost of delivered SPOD (Schedulable Power On-Demand) energy over the life of the projects.

The proposed Pinnapuram Integrated Renewable Energy Storage Project (IRESP) has been conceived as the World's First & Largest Gigawatt Scale integrated project with solar, wind,

and pumped storage components. The IRESP Project can meet the dynamic needs of DISCOMs/STUs, through:

- 24 Hours Round The Clock (RTC) Base Load Energy
- 18 Hours Base Load Energy as per Demand
- 12 Hour Peak Load Energy (6 hours + 6 hours)
- Energy Storage Service, Grid Management, Frequency Management & Ancillary Services

The selection of machine i.e. variable speed or fixed speed can be done based on the requirement of the grid and the flexibility required for power generation or consumption. This flexibility positions us to harness some value pools in the electricity systems.

To execute this IRESP, we are working with very experienced global companies of repute such as Andritz Hydro, AFRY, Tata consulting Engineers, and EDF. To spot and partner with the best global resources and expertise, we have followed International Competitive Bidding and adhered to the guidelines of IFC. The systems and processes

developed during this procurement are now standardized for deployment in upcoming projects. Further, our project management teams have designed the SOPs to address the challenges of balancing flexibility and robustness. Our partnerships with the vendors are executed in a twining mode, to learn from each other and to make the transfer smoother at the closure of the contract.

While we are designing and executing the project to harness all the possible value pools in the electricity systems, my colleagues are engaging with the government and contributing to public policy so that our electricity plus services are incentivized and thus sustained.

This milestone in our transformational journey of Greenko 3.0 and 4.0, will be achieved only with the active cooperation of all stakeholders-employees, suppliers, regulators, public authorities, and communities. We call upon our stakeholders to actively engage with us for a successful joint endeavour to transform the electric system in India.

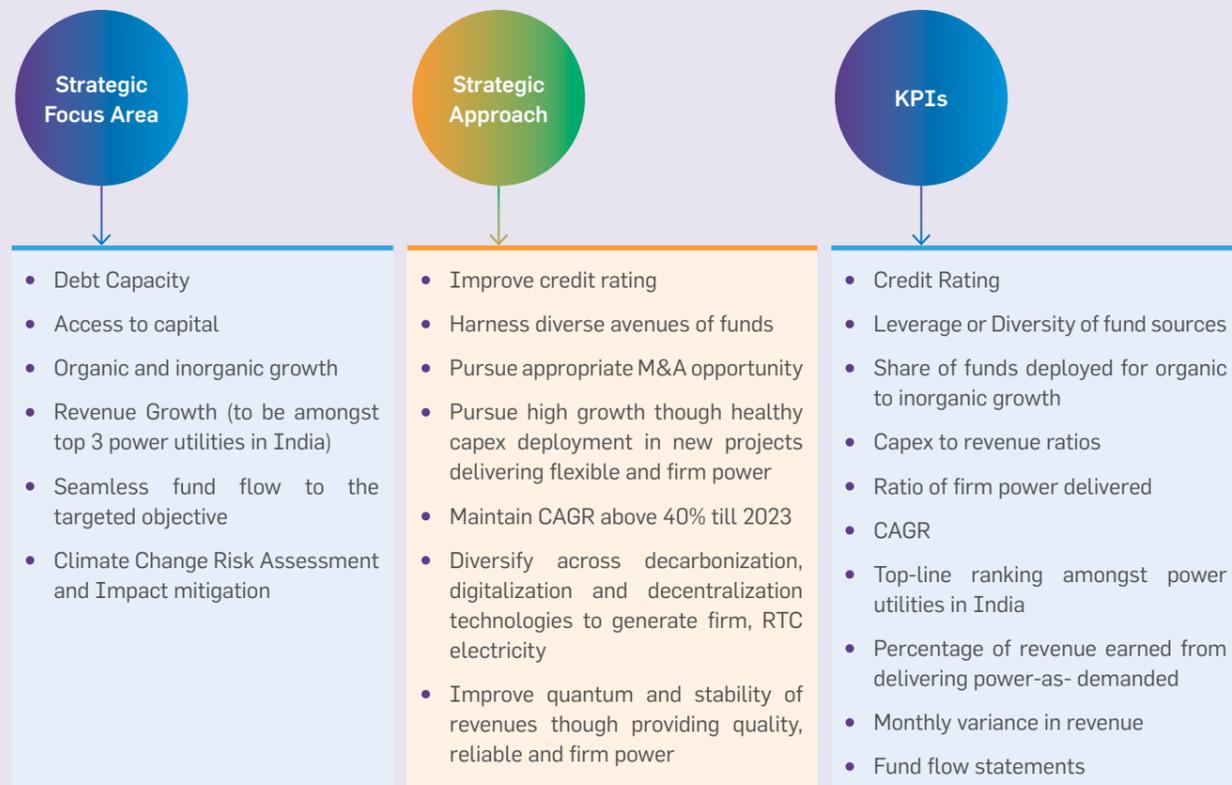
Mr. Adishesulu Gopalam
Chief Operating Officer-Projects

Financial Capital

Strategic Approach

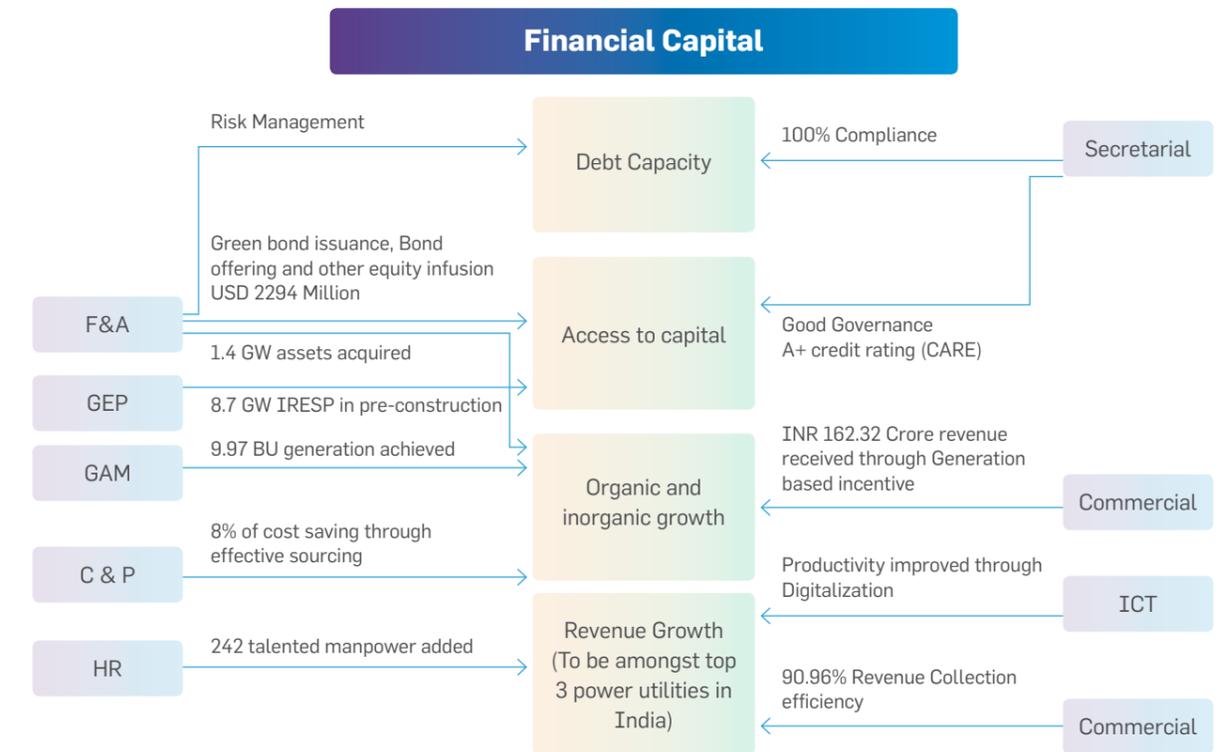
Greenko's strong commitment to the principles of transparency and integrity enables the group in delivering consistent economic value to all its stakeholders. In the pursuit of its vision and mission, Greenko endeavours to tap diverse capital sources and pursue both organic and inorganic growth, aimed to be amongst the top 3 power utilities in India. To pursue the diverse opportunities of the energy sector Greenko strives to preserve and enhance its stakeholder trust continuously.

Strategic Direction: Preserve and Enhance Value for Shareholders



The availability of financial capital at the right cost and time is critical in the pursuit of its vision and mission. Greenko's functions and businesses recognize and understand the concerns and expectations of capital providers, specifically regarding risk identification, control, and provisioning for residual risk in new projects, activities, partnerships and acquisitions. The group proactively addresses stakeholder expectations through strong governance and risk management practices.

Integrated Value Creation in Financial Capital



For more information on Greenko sustainable financing and impact reporting read : <http://www.greenkogroup.com/sustainablefinancing.php#sustainablefinancing>

Financial Capital

Journey so Far

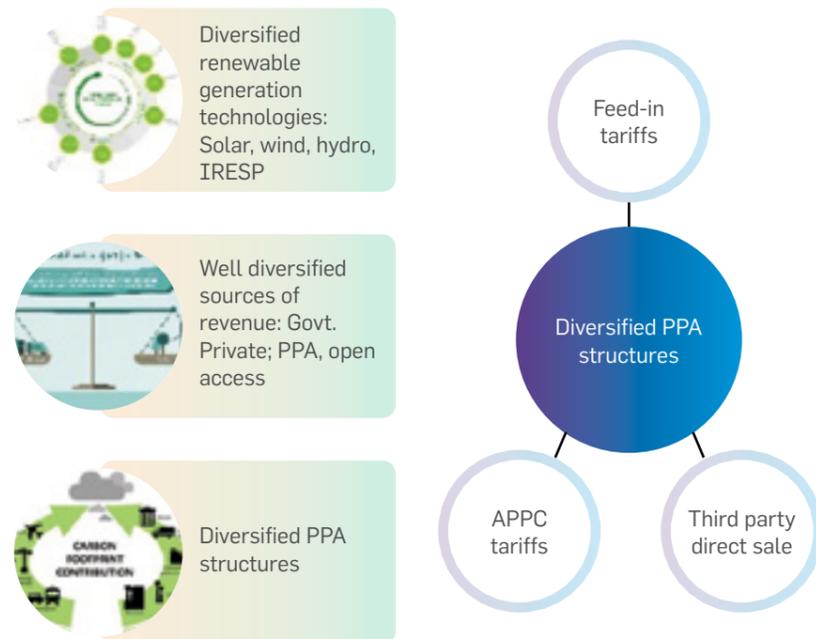
Greenko has performed well in the current reporting period, by consistently developing and reinforcing financial strength in line with its strategic approaches viz., pursuing revenue growth, organic and inorganic growth, enhancing debt capacity and access to capital. This is helping Greenko progress towards its ambitious goal of reaching 10GW of installed generation capacity, with the group having achieved more than half of its desired generation capacity already in the reporting period. This will not only enable Greenko to offer sustained and attractive returns to shareholders but also to other stakeholders, as would be evident from the performance reflected in the capital.

Greenko has achieved 6.2 GW installed capacity, in the current reporting period, to progress towards its goal of reaching 10GW of installed generation capacity. This scale of expansion was achieved by pursuing strategically both organic and inorganic growth. Accordingly, Greenko added nearly 1.4 GW of capacity in FY 2019-20 through acquisition of assets.

Further, in the current reporting period, Greenko remained the top destination for overseas funds in the sector with USD 2,294 million investment flows, more than double than its closest competitor in India. In line with good corporate governance, the group also raised USD 1,035 million through green bond issuance, thus continuing its journey of tapping sustainable finance.

Greenko has maintained a good credit rating and has thereby, remained highly attractive to potential investors. It has been able to tap diverse sources of funds and has positioned itself among the top three renewable energy generators in India. Greenko has a well-diversified source of revenue – diversified renewable generation technologies and diversified PPA structures, including (i) Feed-in tariffs, (ii) APPC Tariffs, and (iii) Third-party direct sales.

Diversified source and renewable technologies



Diverse PPA structures

KPI	FY 2019-20	FY 2018-19
Total saleable electricity (Excluding Import Energy and line losses)	9969 MU	7,379 MU
Sale of electricity to utilities (PPA / Feed-in tariff)	7879.18 MU	6,514 MU
Sale of electricity through Wheeling and banking (direct sale to consumers)	620.01 MU	509 MU
Sale of electricity through exchanges	403.54 MU	356 MU

The different generation technologies help to peak generation in different seasons of the year. The diversity of PPAs and the types of customers served due to reduction of regulatory and payment risks have ensured continuous cash flow for operational projects. Further, due to the different capital avenues that Greenko accesses, it can raise finance at competitive terms. In addition, the contribution of Greenko to public policy has improved its position in the sector.

Financial Performance

(all values in million USD)

KPI	FY 2019-20	FY 2018-19
Profit before tax	64.8	85.4
Profit for the year	21.5	38.8
Earnings before interest, depreciation, and amortization (EBITDA)	562.42	470.5
Revenue		
Total revenue	660.9	485.1
Revenue from wind energy projects	379.4	244.8
Revenue from solar projects	212.3	174.7
Revenue from hydro projects	67.5	63.3
Other operating income	1.6	0.6
GBI revenue	25.7	17.1
REC Certificates	5.1	2.2
Expense		
Employee benefits	28.6	14.9
Cost of material and power generation expenses	56.2	42.7
Other operating expenses	24.3	28.6

Credit rating upgrades

- Credit Analysis and Research Limited (CARE) for Indian debt instruments gave Greenko A+ rating as of July 4, 2019
- Moody's upgraded Greenko Dutch to Ba3 reflecting its standalone credit quality and a two-notch upgrade from Ba1 rating of last financial year
- Fitch upgraded Greenko Energy credit rating to 'BB with stable outlook' as of June 2020 from an earlier 'BB-' rating of last financial year
- CRISIL upgraded Greenko credit rating to 'BBB/Watch Developing' as of July 2019

Sustainable financing with green bonds

Greenko continues to harness the increasing commitment to responsible investment amongst global investors. The fixed-income instruments, Green Bonds, that are specifically earmarked to raise money for climate and environmental projects, are issued by Greenko, to finance development and acquisition of the wind and solar projects. The green bonds issued by Greenko Solar Mauritius Limited, during this financial year are asset-linked and backed by

the entity's balance sheet. Greenko has diligently deployed the funds as per the use of proceeds specified and followed the process for evaluation and selection. Greenko has been regularly and diligently fulfilling its impact assessment and allocation reporting obligations as required by the green bond framework.

Circular and Regenerative Approach

The organization aims to harness overall organic & inorganic growth by embracing circular and regenerative thinking as a

way of business. Accordingly, circularity and regenerative thinking are integrated across Greenko's value chain, right from the selection of designs, technologies, and service providers to assessing the possibility of extending the life cycle, second life, and managing the end-of-life of assets.

Circularity at Greenko is harnessed at three levels,

- Sharing Business Models
- Circular Choices
- Managing end of life

Greenko's Integrated Renewable Energy Project, which is designed to address inherent infirmity of wind and solar energy by employing the innovative solutions of Pumped Storage Plant (PSP), is an important component of our circular approach. These projects are designed as sharing platforms of storage and other electricity system services.

By virtue of the circularity and regenerative thinking approach, Greenko aspires to explore and employ innovative ideas and action plans, such as "invest-generate-and-Consume", "harness increasing electrification", "solutions to non-electric use sectors". In addition to addressing business performance enhancement, this approach also addresses human resource management through processes such as "Edge effect abundance", "Empowered participation" and "Honours community and place". The ideas conceptualized should necessarily address (i) meeting the community energy needs through crowdfunding; (ii) providing electrical solutions to non-electric uses and thereby accessing a new set of consumers.

The year 2019-20, was characterized by cost optimization, holistic wellbeing to achieve organic & inorganic growth in a circular and regenerative manner, wherein no men, machine, material, information, and money was allowed to stagnate. The money was continuously circulated back in the system to harness economic, social & environmental benefits.

Financial Capital



We have systems in place to address many operational risks. The weather risk is managed through appropriate insurance. We are exploring the possibility of including the likely risks of climate change due to global warming in the insurance policy. These will include both acute risks viz., increased severity and frequency of extreme weather events and chronic risks viz., increased uncertainty in availability of wind, solar radiation, and hydrological flows.

Mr. Rajendra Prasad L
AVP, Risk Management.

Managing Climate Change Impacts – Risks and Opportunities

Renewable energy has proven to be a key in the transition towards a low carbon future and to meet the 2°C climate goal, to minimize the catastrophic impacts of climate change and address the growing energy demand. However, like every other sector, renewables are also susceptible to the impacts of the changing climate. The entire supply chain of the renewable energy system is significantly vulnerable to climate variability. While physical impacts altering the availability of renewable resources affect the overall generation potential and supply, extreme weather events affect the generation assets, transmission infrastructure, and variation in seasonal energy demand. In addition to physical impacts,

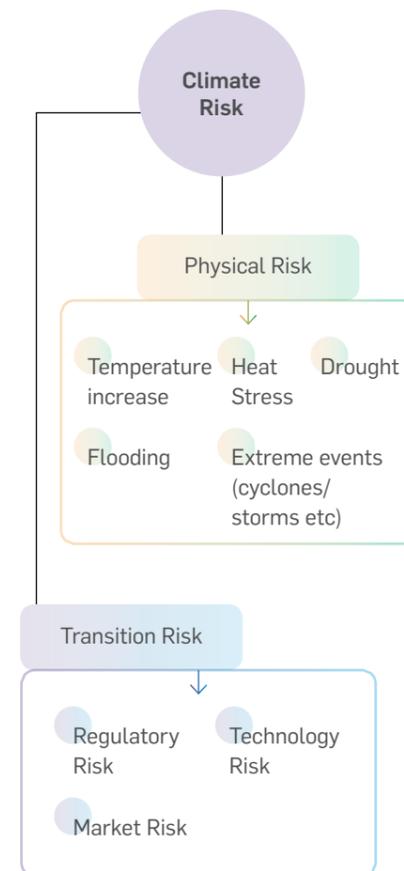
transitional impacts such as regulatory and market change also remarkably affect the renewables.

Therefore, it is critical to take into consideration emerging climate change conditions and their impact before deciding about specific geography, design, construction, operation and maintenance strategies for existing energy infrastructure, new infrastructure, and future planning. For this purpose, Greenko has established a Climate Risk Assessment and Management framework and has conducted a Climate Risk Assessment study in the current reporting period to proactively and systematically identify and analyse potential climate change-related hazards to its operations, based on historical events, trends, forecasts and projections from global warming models.

The two major categories of climate risks about which any organizations are focussed about are:

- 1 Physical climate risks
- 2 Transition Climate risks

Climate Risk and Impacts



Physical climate risks

Physical risks are what comes to mind when anybody think of climate risks. They can range from droughts to tropical storms. Physical risks can be separated into extreme events and incremental environmental changes.

The two main categories of impacts of Physical Risks at Greenko are 1. Physical risk Impact on Resource Potential and 2. Physical risk impact on Generating assets.

Physical Risk Impact on Resource Potential

The electricity production potential of renewable energy is critically impacted by the physical risks of climate change, due to its dependence on climate conditions. The climate change risk and its impact on Greenko's generation potential, due to the shift in renewable resource patterns is assessed through an extensive literature review of studies. The studies has quantitatively estimated climate change impacts on renewable energy in India based on historical data, trends, and projections using global warming models.

The findings of the risk assessment on resource potential are summarised as follows,

- A secular decrease in wind power potential, which is associated with a decline in wind speed due to warming in the Indian Ocean, particularly over western India. The greatest decline is projected for Rajasthan.
- Increase in productivity of hydropower as a result of the projected increase in precipitation and stream flow in the medium term.
- Solar irradiance is projected to decrease in the future, especially in the north.

From the above risk assessment findings, it is evident that Greenko's generating assets are strategically distributed across geographies and thus, capable of effectively addressing the projected changes in the renewable resource potential. The majority of Greenko's wind and solar portfolio are established in the southern regions of India, thus mitigating the negative impacts of climate change projected in western and northern India, for the respective portfolios. Moving forward, the future projects of Greenko will be strategically planned and designed in terms of geography, equipment specification, mitigation and adaption measures etc. in line with the climate risk impact projections on generation potential.

Physical Risk Impact on Generating Assets

A shift in climatic conditions resulting in temperature extremes, heat waves, extreme changes in precipitation leading to flooding and drought, sea-level rise, etc. have the potential to adversely affect generation and transmission infrastructure of Greenko as well as the asset's productivity. Accordingly, studies project that the severity and frequency of such extreme weather events are projected to increase with climate change.

In this context, Greenko has conducted a climate risk assessment for six of its critical operating sites to assess and manage climate risk vulnerability of assets and its productivity. The initial study included two power plants each from the wind, solar, and hydro business verticals. Greenko has studied projected climate change impacts on its operations using IPCC's RCP 4.5 scenario which is the low-medium emission pathway (equivalent to 1.7-3.2°C temperature increase). The climate change projections were studied for the period 2020-2039 (Short term) and 2040-2059 (Medium Term).

Climate change conditions for assessment

All projects

- Period 2020-2039 and 2040-2059
- IPCC Emission Scenario: RCP 4.5 (medium low emission, global average CO2 concentration about 600 ppm)
- Projected change in Monthly maximum temperature, Monthly Precipitation, Severe drought likelihood, Probability of heat wave, Mean drought index, and Land projected to be below annual flood level

Financial Capital

Physical Risk impacts on the operational sites of Greenko

Physical Risk		Temperature Increase		Water Availability		Flooding	Extreme events
Plant	Time Period	Average Temperature	Heat Wave	Drought	Severe Drought	Sea Level Rise/Annual flooding	Cyclones/storms/earthquake
Ghani Solar - Kurnool	Short term (2020-2039)	Low	Low	Low	Low	Low	Low
	Medium Term (2040-2059)	Medium	Low	Low	Low	Low	Low
SEI Adhavan - Tamil Nadu	Short term (2020-2039)	Low	Low	Low	Low	Low	Low
	Medium Term (2040-2059)	Low	Low	Low	Low	Low	Low
Sneha Kinetic (Hydro)- Sikkim	Short term (2020-2039)	Low	Low	Low	Low	Low	Low
	Medium Term (2040-2059)	Medium	Low	Low	Low	Low	Low
AMR Power - Karnataka	Short term (2020-2039)	Low	Low	Low	Low	Low	Low
	Medium Term (2040-2059)	Low	Low	Low	Low	Low	Low
Rayala Wind - Andhra Pradesh	Short term (2020-2039)	Low	Low	Low	Low	Low	Low
	Medium Term (2040-2059)	Low	Low	Low	Low	Low	Low
Tanot Wind - Rajasthan	Short term (2020-2039)	Low	Low	High	High	Low	Low
	Medium Term (2040-2059)	High	Low	High	High	Low	Low



The assessment of physical impacts on generation infrastructure does not show significant risk in the short term, except for the wind site in Rajasthan, which presents considerable risk of projected increase in drought probability and severity.

The projected drought risk of the wind site continues to increase in the medium term and in addition, the solar site in Kurnool, shows a risk of projected temperature increase of up to 2°C, in the medium term. For both these sites, the appropriate quantification of risk and mitigation measures are also being developed and projected.

Climate Risk and Mitigation Measures

Risk	Mitigation
Increase in water stress near few wind and solar farms.	The organization is carrying out specific plans to manage this situation. On one hand, it has started using automated machine / robotic cleaning of the solar panels, which reduces the water requirement. Also, a detailed dust collection study is being used to schedule the panel cleaning.
This projected water stress in summer may lead to an increased cost of water and under extreme scenarios, non-availability of water leading to operational disruption.	On the other hand, the company significantly invests in rainwater harvesting in the regions near to its operations and also as part of its community initiative, to increase the water table in the region.

Climate Opportunity and Plan to Harness

Opportunities	Plans to harness
Development and/or expansion of low emission goods and services	The government initiatives like REC have led so far, to the purchase of energy from renewable sources. There are a rising number of companies seeking to reduce their carbon footprint and procure 100% of their electricity from renewable sources (i.e. RE100 initiative). The 24x7 RE that Greenko would generate would be the solution for many businesses in India seeking to become RE 100 or meet Science Based Targets.

Transition climate risks

The Climate Transition risks are the risks that could arise from the process of adjusting to a low carbon economy such as changes in policy, technology and Market.

Regulatory Risk

Changes in public policy to address climate change is an opportunity for Greenko. In its drive for deep Decarbonization, India will have to reform the energy policy ecosystem. To be on the top of these evolving policies, Greenko continuously engages with regulatory processes through proactive participation in discussions and public policy advocacy with both National and Local regulatory bodies viz., MoP, MNRE, MOEFCC, and CERC providing constructive feedback regarding policies and regulations.

Technology Risk

Climate change will drive the demand for RE and storage systems. While R&D will advance the possibilities, increased application of innovative methods will bring down prices. The relative costs of alternatives with similar or overlapping functional capabilities is and will be evolving. In such a situation, technology

choices of RE and storage face the risk of technology change. Accordingly, Greenko chooses diverse portfolios of technology options after conducting rigorous technology forecasting and assessment.

Market Risk

The transition to a low carbon future presents several market opportunities for Greenko, including a projected increase in demand for renewable electricity, driven primarily by projected increase in temperature and increasing pressure on the energy-intensive sector to move towards a low emission future. Greenko addresses this transition risk by significantly improving its capacity and operation for its transition towards GKO 4.0 which enables delivering firm, reliable, on-demand power.



For more details on Greenko's Climate Risk Assessment and Management please refer **Greenko's Climate Change report**

Looking Ahead

Greenko would build upon stakeholder trust to pursue opportunities and make it possible to generate firm and flexible RE and reinforce energy security and economic stability in India. The group will boost its financial health continuously and strategically by enhancing its appeal to investors by means of its strong credit quality, accessing diverse avenues of funds in the market, continuing to seek sustainable and climate finance through green bond issuance and expanding through organic and inorganic growth.

Further, under the 'regenerative & circular thinking', Greenko will strive to achieve holistic wellbeing for overall economic, social, and environmental gain. Clean, and schedulable 24x7 electricity will be the new energy as the demand for oil and gas in India will flatten off much earlier to 2035. Greenko believes that investors across the globe would harness the opportunity to address deep decarbonization and digitalization of the energy sector in India. Greenko would continue to generate and harness ideas even in non-electric use sectors and deliver flexible and firm power while pursuing a healthy capex deployment. In the Climate Risk front, Greenko is in the process of preparing and publishing Taskforce on Climate-related Financial Disclosures (TCFD) in the next financial year.



Operational Capital

Strategic Approach

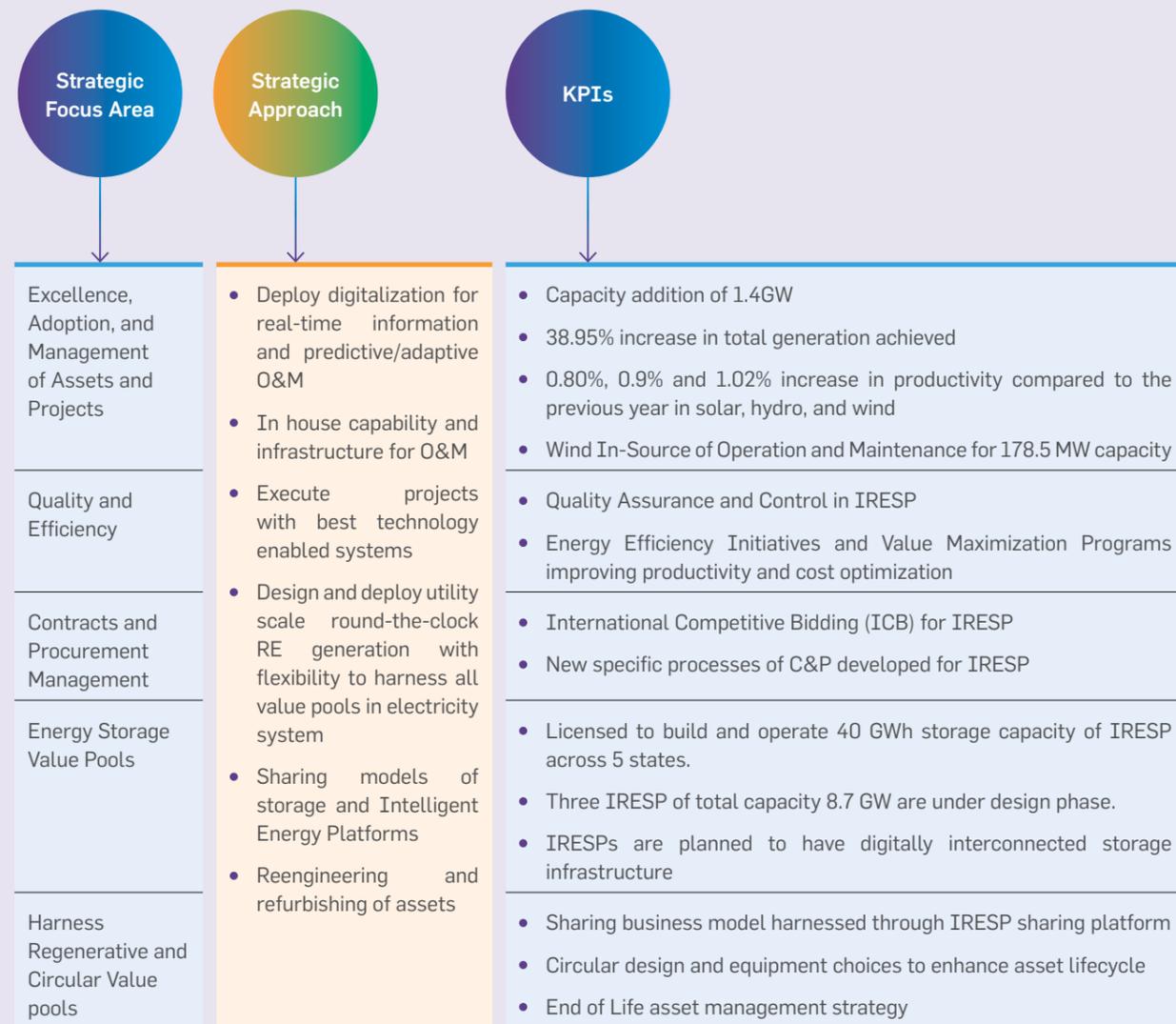
Addressing India's commitment to deep decarbonization of the energy sector, Greenko operates responsibly, guaranteeing reliability, and permanence to build a fully sustainable energy system based on renewables. Greenko is highly proactive in identifying and responding to the challenges and diverse value pools emerging as a result of the rapidly changing energy

landscape. To harness value pools and cope with challenges, Greenko is practicing an operating model that is characterized by excellence, agility, and resilience.

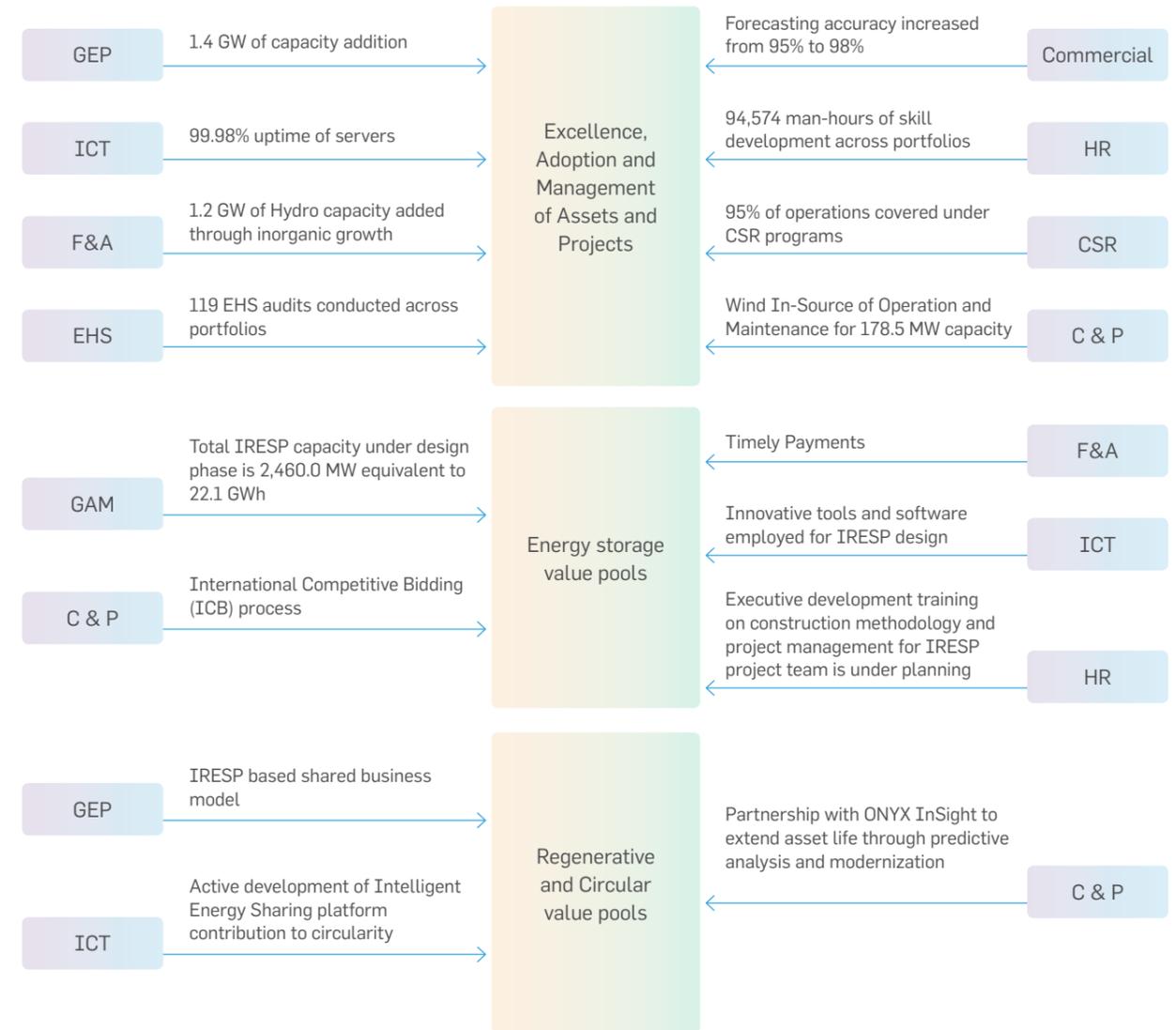
To preserve and enhance operational asset value and project management, Greenko has adopted the following effective strategic focus Areas viz., Excellence, Adoption and Management of Assets and Projects, Contract and Procurement Management, Quality and

Efficiency, Energy Storage Value Pools and Harness Regenerative and Circular Value Pools. The performance against each strategic focus area is monitored, measured, and boosted year-on-year, using established key performance indicators. The review of performance on operational capital demonstrates Greenko's preparedness for a smooth transition to GKO 4.0, to be able to generate 30 Billion Units of electricity by 2023.

Strategic Direction: Ensure Sustainable Operations



Operational Capital



Operational Capital

Journey so far

Greenko is in a unique position to address the country's ambitious renewable capacity expansion programs, being a 100% renewable energy generator with a long-term vocation, aiming to build a fully sustainable energy system. Greenko is working continuously on adopting digitalizing and decentralizing energy solutions to achieve its goal of accelerating Decarbonization and harnessing newly emerging value pools. The organization's extensive experience and expertise in renewable energy and digital technologies enable them to do so. In the current reporting period, Greenko continues to (i) improve its operating efficiency by intense deployment of digitalization (ii) renovation of the existing assets (iii) deploy people, process, and systems to standardize operational responses and (iv) developing new skills, systems, and partnerships for focus on Pumped Storage with Intelligent Energy Platform (v) investment in cutting edge technologies and processes, to power our transformational journey towards GKO 4.0.

Excellence, Adoption, and Managements of Assets and Projects

The transformational journey of Greenko, right from GKO 1.0 to GKO 4.0 is in synergy with the transitioning landscape of global energy systems, which is fuelled by the "3D" view i.e., Decarbonization, Digitalization, and Decentralization. This transition of energy system depends on increasing the integration of renewable energy in the grid and flexibility of the system while maintaining its reliability and performance. Greenko operates its business under this evolving context. Accordingly, Greenko has focused significant investment on the Integrated Renewable Energy Project as well as renovation and repowering of existing

assets through the deployment of digital technologies and value maximization programs. Operating efficiencies and effective management of generating assets are crucial to delivering flexible, schedulable, and reliable power to the stakeholders.

Greenko has a strategically diversified portfolio of assets by type, geography, offtakes, and technology employed. This diversification allows them for a yearlong generation as well as to build expertise by dealing with multiple stakeholders. To ensure the delivery of clean, reliable, and affordable energy, Greenko manages its diverse operating assets in accordance with the highest standards of performance, availability, and efficiency. The continuing excellence of operations provides a strong foundation for the ongoing transition of Greenko's business.

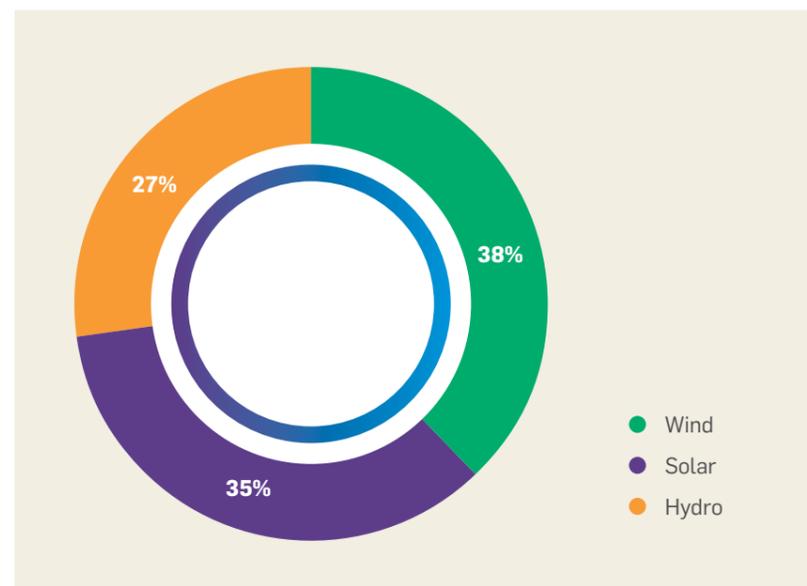
In the current reporting period, the group continued to provide climate responsible, highly reliable and affordable electricity supply, thus contributing significantly to the

transition towards a low-carbon economy. The energy generation infrastructure of Greenko has demonstrated considerable growth in scale with capacity addition of 1.4GW, taking the total installed capacity to 6.2 GW in FY 2019-20. The total capacity added includes inorganic growth through project acquisitions viz., a hydropower project of Everest Power Private Limited, with a total capacity of 100MW was added to Greenko's portfolio and a definitive power purchase agreement was entered with Teesta Urja Private Limited, which has the underlying asset of 1200 MW of hydropower project.

In addition, a total of six projects are under construction with a licensed capacity of 254.5 MW, comprising one wind project with a licensed capacity of 20 MW, five hydropower projects with a licensed capacity of 234.5 MW. There are also 6 hydropower projects under active development with a total licensed capacity of 369.0 MW.

GRI 203-1

Total Installed Capacity



In addition, three Integrated Renewable Energy Storage Projects ("IRESP"), the Pinnapuram IRESP, the Saundatti IRESP and MP 30 Gandhi Sagar Standalone Pumped Storage Project (SPSP), with a capacity of 8.7 GW with the national grid connectivity are in development.

In the current reporting period, the total generation achieved has increased by 38.95% over the previous financial year to a total of 9969 GWh. The productivity of the operation demonstrated excellence with an increase of 0.80%, 9%, and 1.02% in solar, Hydro, and Wind portfolio respectively. A healthy Plant Load Factor (PLF), machine availability,

grid availability was maintained in each of the renewable energy generation technologies viz. Wind, Hydro, and Solar, in complete sync with circularity aspects. In addition, the performance of the acquired assets has significantly improved in terms of efficiency and reliability in the reporting period.

Greenko Asset Performance

KPI	Solar	Hydro	Wind
Plant Load Factor (%)	24.4%	46.2%	27.2%
Machine availability (%)	99.25%	99.15%	98.1%
Grid availability (%)	99.46%	98.37%	99.26%
MTBF	NA	1860	1564
% reduction in equipment failures compared to last year	30%	36%	59.57%

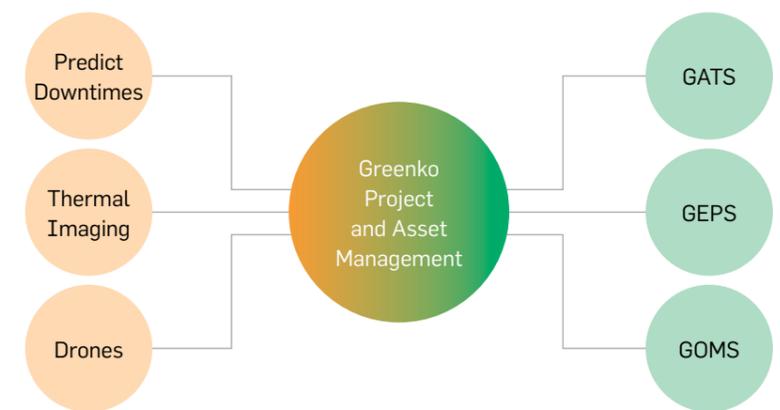
Generation Losses

Generation losses/downtime losses in MU	Solar	Hydro	Wind
Loss of generation due to equipment failure	14.38	70	34.93
Loss of generation due to external grid failure	9.74	30	6.20
Loss of generation due to internal grid failure	7.6	6.5	19.00

Project and Asset Management

Greenko's ability to deliver reliable and affordable electricity depends on the continued efficient operation of its assets. The variety of skills and expertise housed by Greenko is the backbone of asset management capabilities to achieve excellence in performance.

Components of Project and Asset Management



Operational Capital

Operational excellence cannot be achieved without reliable, efficient, and continuously improving business systems. In this context, Greenko has established strategic asset and project management systems and processes under PPS (People, Process, System) which enables the organization to identify and prioritize enhancement or remedial work on its diverse generating assets. The systems and processes established by Greenko enhance visibility, control, and management of assets and projects to drive greater operational efficiency and effectiveness.

The analytical management systems deployed for tracking project and asset management are GEPS (Greenko Energy Project System) and GATS (Greenko Asset Tracking System). In addition to analytical systems, Greenko has employed predictive measures including aerial drone-based digital plant inspection which is an advanced technique for reliability and performance improvement. The digital inspection of rotor blades increased performance of up to 5%. It also improved the aero efficiency of the turbine blades significantly. Greenko has embedded a robust asset health monitoring and improvement practice through constant audit mechanisms which have greatly avoided many major component outages. Optimal operational performance is also ensured by adhering to 100% periodical and regular audit inspections which have resulted in overall asset availability.

Greenko Energy Project Systems (GEPS)

GEPS is an in-house state-of-the-art project monitoring system tailored for real-time and agile project management, QA/QC, engineering, logistics, material management, and stores.

- GEPS provides information to the management to identify the criticalities of the project execution and its severity in the stipulated timeline with appropriate colour gradients.
- GEPS contains Business Intelligence System, facilitating tracking and monitoring to the micro-level with highlighted criticalities based on the project timeline.
- GEPS includes Document Management System (DMS) as well.

Value Creation Story

Skeiron sites Asset Reliability Improvement

Objective

To improve Skeiron assets WTG & Grid infrastructure and ensure Overall performance improvement.

Actions Taken

- Entire asset was audited by Greenko's in-house teams including a sample audit through third party to conclude all quality related, punch / pending and corrective works.
- The actions were executed in a time bound manner in regular coordination with Skeiron and Suzlon teams, in a lean wind period to minimize generation impact and ensure improvement in reliability of assets during the high wind season of FY19-20.

Major activities carried out

- Strengthening of 33KV poles by rebuilding pole foundation and providing stud pole support.
- Transmission line sag correction by re-laying conductors and replacement of towers.
- Relay coordination strengthened for proper trip sequence.
- Commissioning and checking of all protective systems for better performance.
- Re-torqueing of foundation hardware.
- Blade Repair & Replacement program initiated for the critical turbines identified in the drone inspection.

Key Benefits

- Estimated improvement in generation by 11.08 MU

Operation and maintenance (O&M) of Greenko's large-scale infrastructure are benchmarked to industry best practices. GOMS (Greenko Operations and Maintenance System) is employed for Tracking of Maintenance activities and alert any form of deviation from schedule or quality.

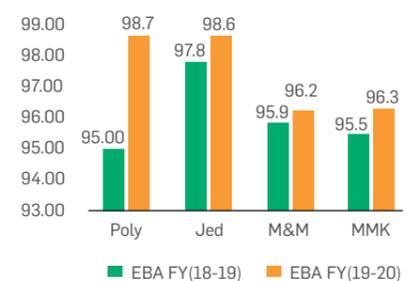
WINSOM – Wind In-Source of Operation and Maintenance

In the past, the operation and maintenance activities of Greenko's wind portfolio were solely handled by the Original Equipment Manufacturer (OEM). After a detailed analysis of risks and opportunities, Greenko had taken a decision to go for an in-source model for a limited identified wind asset, to maximize asset performance and quality by utilizing own resources in the current reporting period. This encouraged the participation of the group's multiskilled employees, avoiding any stagnation of manpower and bringing in more independent approach for O&M.

Presently, five of Greenko sites under the wind portfolio, with a total capacity of 178.5 MW are covered under the WINSOM program. All the WINSOM sites demonstrated considerable improvement in performance and in capturing the missed opportunities to harness energy.

WINSOM Induced Performance Improvement

FY(18-19) Vs FY(19-20) EBA Comparison



Value Creation Story

WINSOM

Objective

To improve asset performance and quality and reduce O&M cost.

Location

Poly, Jed, Matrix, Mangalore & Orange Mamatkhedha wind sites

Actions Taken

- Required spare parts were identified from previous years' operational trends.
- Critical issues/errors were identified and rectified.
- Preventive maintenance established by Greenko staff.
- Gear oil replacement done as part of schedule.
- Undertaken in-house repair of failed components.
- Active employee trainings were conducted for team development.

Outcome

The timely intervention on availability of spare parts and equipment maintenance as per the schedule, sometimes even before the schedule, avoided wear & tear of assets and improved its life and enhanced performance. The significant outcomes of the initiative are:

- Improvement in asset performance
- Decrease of OEM dependency
- Reduced the O&M cost by 50 %

GRI 203-1

Energy Value Pools

The rapid increase of RE in the grid and its associated challenges gives rise to multiple values to generated electricity, which are increasingly encouraged and rewarded by the regulators. Greenko is driven in tapping such opportunities year on year.

Energy Value Pools Harvested

KPI	FY 2019-20	FY 2018-19
Saleable electricity (Excluding Import Energy and line losses)	9969 MU	7,379 MU
Sale of electricity to utilities (PPA / Feed-in tariff)	7879.18 MU	6,514
Sale of electricity through Wheeling and banking (direct sale to consumers)	620.01 MU	509 MU
Sale of electricity through exchanges	403.54 MU	356 MU

Projects under Carbon Market Mechanisms

Greenko has been an active participant in numerous carbon market mechanisms and government schemes from the beginning of its journey. In the current reporting period, Greenko has registered 22 projects under Clean Development Mechanism (CDM) projects with UNFCCC and generated 24,26,000 Certified Emission Reduction (CER) credits and 23 projects are registered under Verified Carbon Standard (VCS)

A 180 MW solar project and 9.6 MW Hydro project is being registered under the Gold Standard (GS). In addition, participating in the Indian government scheme, one solar, and three non-solar plants are registered under the REC mechanism and further registration of four solar plants and two non-solar plants are also under progress.



Operational Capital

Quality and Efficiency



As we progress on implementing complex and novel technologies like Pumped Storage Projects and Intelligent Energy Platforms, quality becomes more critical and important than ever. Further, as these systems are for the long term, the quality parameters related to performance through out life cycle for repair/reengineer/remanufacture will become important. Quality assurance cannot be compromised for speed, cost, or innovation, and more so for projects that are executed to operate in an open environment and for a long time.”

Mr. Srinivas Popuri
VP, QA/QC

Greenko is expanding its asset portfolio significantly, year-on-year, to drive its transformation towards GKO 4.0 and this journey is possible only by maintaining high standards of quality and efficiency. In line with a commitment towards excellence, Greenko's Quality Management Department (QMD) has established and implemented a strategic management plan for Quality Assurance and Control of assets.

The Quality Management team of Greenko has a vision of "Maintaining uncompromised quality standards in building and operating energy assets". This vision enables the team to determine its focus areas, methodologies, and processes, integrate quality control elements into decisive phases of the project through strategic level policies and operations that are required to be implemented to address the complexities of a project. Strategic plans are developed to ease these complexities.

Strategic elements that are described in this plan consist of the team's interactions with aspects such as Policy & Objectives, Context Management, Project Organization, Communication Management, Design, and Engineering Management, Vendor Management, Quality Control and Assurance, Audit Management, Deviation Control, Document Management, Training, IT Management, and HSE Management.

Value Maximization Programs

To achieve the highest standards of operational performance, Greenko has identified and implemented several energy efficiency initiatives and Value Maximization Programs across its operating portfolio. The initiatives carried out in the current reporting has increased the generation significantly.

Value Maximisation Initiatives across Portfolio

Solar	Hydro	Wind
<ol style="list-style-type: none"> 1. Tracker - Indigenous controller development and POC 2. EIC Inverter Tripping Minimization 3. Mismatch loss reduced by replacing the modules 4. Tracker paralleling to reduce losses 5. Module Cleaning System Installation 6. Shadow effect minimization 	<ol style="list-style-type: none"> 1. Installation of Duplex Filter and enhancing TGB cooler capacity 2. TRCM Installation and commissioning 3. PSS fine-tuning 4. Extra Cooling water tank provision 5. Overhauling the Power Transformer 6. Replacement of Porcelain Insulator with Polymer 	<ol style="list-style-type: none"> 1. Third-party inspections 2. Frequency converter reliability improvement plan 3. BHEMM- Blade Health Engineering & Maintenance Module 4. Tanot tower 220 KV corrective Measurements & Maintenance 5. IGBT Repairs and Containment actions- 6. Forecasting & Scheduling and WTGs Stabilisation

Value Creation Story

Reducing Transmission line losses

Objective

Minimization of consumption from the grid to reduce transmission line losses and related expenses.

Location

Axis Wind Farms (MPRDAM) Pvt Ltd, Anantapur, AP

Description

In calendar year 2018, grid import of the site was 0.443 MU and its expenditure was Rs. 5.504 Million. The site, through root cause analysis and other problem-solving methods, identified solutions to minimize the grid consumption. By tuning power factor setting of wind turbine generator at low wind to 0.985 and at high wind to unity, import grid electricity and line losses were controlled during low wind period.

Reduction of transmission losses was achieved by maintaining higher voltages on 33 kV Side i.e. greater than 33.5 kV. By maintaining higher voltage on the power transformer's low voltage side at PSS during high wind, Greenko was able to reduce I2R losses of the transformer. Further, the power transformer's full load losses were reduced by 3% due to the decrease in current.

Actions Taken

- Daily Monitoring of the line losses in DGR.
- Changing the power factor setting of WTGs through software interface in the turbine during high/low wind seasons.

Key Benefits

- Yearly energy saving of up to 50,400 units and increase in revenue of Rs: 24,20,000 /-

Outcome

- Energy losses and inefficiencies reduced in the electricity system
- In calendar year 2019, grid Import was 0.392 MU and its associated expenditure amounted to 4.638 Million Rupees.

Value Creation Story

Tracking Health of Wind Assets

Objective

To avoid major breakdown of wind assets by tracking the health of the main bearing and avoiding failures during high wind Season.

Location

FFHPPL, wind site, Vijayapura

Description

Root cause analysis was conducted to identify the issues in the main bearing. CBM (Condition based monitoring) method, which is identified as the best tool to track such problems, was employed to detect the anomaly in the main bearing. By addressing the detected anomaly, major breakdowns in the high wind season is avoided, thereby ensuring improved generation and health of the wind turbine generator. A dedicated WTG main bearing repair and replacement centre was also temporarily constructed at site level for quick restoration.

Actions Taken

WTG Main bearing repair and replacement centre temporarily constructed at site level for quick restoration.

Key Benefits

1. Avoided major breakdowns in high wind season.
2. Avoided generation loss by predictive main bearing replacement in low wind season.
3. Enhanced asset life.
4. Avoided major repairs by detecting the anomaly at an earlier stage.

Outcome

Harnessed full potential of wind resource

Operational Capital

Value Creation Story

Innovative Tracker Drives System for Solar PV

Objective

To avoid generation losses and system failure by adopting an innovative idea of tracker drives system protection

Location

Pavagada Solar Power Plant, Karnataka

Description

The emergency push button is placed beneath the PV Modules and the regular tilt setting is kept up to 45° for both the directions viz., East & West Side (- 45° & 45°). If the limit switch or PLC programme fails, the emergency switch will be activated beyond the setting limits in both directions, thus protecting the tracker drives system and the modules.

Actions Taken

Limit switch modification was done

Key Benefits

1. Generation loss and tracker system failure avoided.
2. 4000 KWh of generation saved per day.
3. System protection improved and module failures reduced.
5. Tracker drives system's safety increased.

Outcome

Post successful demonstration, 239 tracker systems were installed in 3 sites.

Value Creation Story

Reducing Generation Losses and Enhancing Life of TGB Coolers

Objective

To enhance the coolers' capacity in the cooling water system of Turbine Guide Bearing (TGB) by Installation of Duplex Filter.

Location

Greenko Budhil Hydro Power, Chamba, Himachal Pradesh

Description

The plant was facing problems with choking of the TGB coolers during the peak generation period (Monsoon Season) and experiencing forced breakdown due to rise in temperature of the TGB. Thus, resulting in generation loss due to planned outage of at least 1-2 hrs for cleaning of the TGB coolers. It also damaged the mechanical seal of booster pumps.

Root cause analysis was conducted, and it was found that increase in silt levels to 2000 ppm during the monsoon season was the reason of the choking. Corrective measures were taken through installation of duplex filter, with filters of 40 micron in the cooling line of TGB, before the booster pump, to achieve the maximum generation. Installation of the Duplex filter decreased the silt content in the TGB cooling line from 74 microns to 40 microns. The system is now operating successfully.

Key Benefits

1. Generation improved by 0.25 MU per year
2. Shut down reduced by 7 hours.
3. Life of TGB cooler and booster pump enhanced

Outcome

Improved operational efficiency and asset life

Value Creation Story

Solar panel testing at Ghani Solar Park Kurnool

Objective

Checking the health and performances of PV modules in real time at site.

Actions Taken

An in-house solar panel testing has been established at our Kurnool site to check the health and performance of the PV modules.

The facility consists of two most important equipment i.e. Electroluminescence machine and Sun Simulator Machine.

Electroluminescence (EL) Machine

The main goal of the electroluminescence test Using EL machine for the solar panels is to detect the malfunction in the junction boxes of modules. The PV modules are brought into laboratory and their health is checked at the time of installation and during operation and maintenance.

Sun Simulator Machine

Solar Simulator machine simulates air mass (AM) 1.5 and use xenon lamps to generate light to test PV modules. Solar simulator provides electrical performance of PV modules at standard test condition. The sun simulator is used for checking module quality and it also verifies eventual power losses in the modules. Solar Flash Test (Sun Simulator Test) is being conducted using Sun Simulator Machine to measure the output performance of a solar PV module to ensure the conforming operability of each PV module.

Key Benefits

- Operation & Maintenance team can check health of modules regularly at site.
- Immediate test results are available to O&M team and it will help to identify root cause of low performance and at times it could be other components.
- Logistically it is very convenient to test modules at the site and it is cost effective.
- Any reworked/refurbished modules at site can be tested before installing in strings.



Sun Simulator Machine



Electroluminescence (EL) Machine

Operational Capital

Value Creation Story

Quality concreting in extreme weather conditions

Objective

To ensure quality of the concrete while preparing it in extreme weathering conditions.

Actions Taken

Greenko has undertaken Project works in extreme cold conditions and as well as extreme hot conditions. During constructions of Tanot Wind Project in Rajasthan state and Vaishali wind project in Karnataka state the summer temperatures were more than 40 °C.

During construction of The Sorang Hydro project in Himachal Pradesh the ambient temperature during winter is less than zero.

Concreting during hot weather conditions cause the concrete to gain high early strength but consequently gain less strength in the later stage resulting in lower durability of structure. If the ambient temperature is too low, the hydration of the cement will significantly slow down, the concrete will have a reduced overall strength and will cause cracking due to ice formation.

So, our QA/QC Department has conducted experiments to study various methods and options to achieve enough quality in the concrete at extreme temperatures.

Following are some of the mitigative measures identified to be adopted at the sites in extreme temperature conditions.

At extreme hot conditions

- Monitor concrete temperature.
- Sprinkle water on stockpiles and keep them moist. This results in cooling by evaporation and is especially effective when relative humidity is very low. However, the addition of moisture shall be corrected in the mix design.
- Use cold water for mixing, which will reduce the placing temperature.
- Theoretical concrete temperatures are calculated as per IS 7861 Part 1 after taking temperatures measurement of ingredients.
- Use Cold water as mixing water (without ice)

At extreme cold conditions

- Monitor concrete temperature.
- Use hot water for mixing, which will increase the placing temperature.
- Theoretical concrete temperatures are calculated as per IS 7861 Part 1 after taking temperatures measurement of ingredients.

Key Benefits

Concreting can be done in the extreme weather conditions (day & night) to expedite the construction work without compromising the strength and thermal cracking of concrete.



Hot Water poured to Aggregate during cold conditions



Ice cubes added to water during hot weather



Measuring temperature of concrete during extreme weather conditions

Contract and Procurement Management

Greenko drives operational excellence by maintaining and continuously improving contracts and procurement excellence. It contributes to organizational objectives, manages supply chain risks through effective collaborations and competitiveness, and is supported by best-in-class technologies. The group's contract and procurement functions are centralized and place great emphasis on quality, cost efficiency, and resilience.

Greenko's Contracts and Procurement management contributes meaningfully to the organization's business economic strategy and its business plan through responsible, transparent, and effective procurement services which offer value for money, is legally compliant, and follows best practice. The C&P department aligns every business sourcing activity to the group's organizational goals and objectives. This allows the group to achieve higher business performance with improved efficiency and minimal supply chain risks.

The C&P team procures all goods and services for Greenko Energy Projects (GEP) and Greenko Assets Management (GAM) with high quality and ethical standards focused on social, economic, and environmental considerations and appropriate risk mitigation processes.

Greenko balances short, medium- and long-term benefits to the business and its partners and negotiates the techno commercial attributes and delivery schedules within the targeted price. The group formulates appropriate procurement strategies by evaluating the long-term needs of business units, as well as supply-side market opportunities and risks. This coordinated approach has increased Greenko's ability to negotiate improved terms from suppliers and manage risks, resulting in tangible commercial benefits for the Group.

Greenko further enhanced its management of procurement in the reporting period, by employing innovative contract structures for its IRESP projects. In addition, in line with the sustainable procurement practice at Greenko, the C&P team is driven to embrace circularity in its practices, and accordingly measures are under planning to extend the life of our assets and to address the end of life through the goods and services procured.



Operational Capital

Energy Storage Value Pools-Integrated Renewable Energy Storage Projects

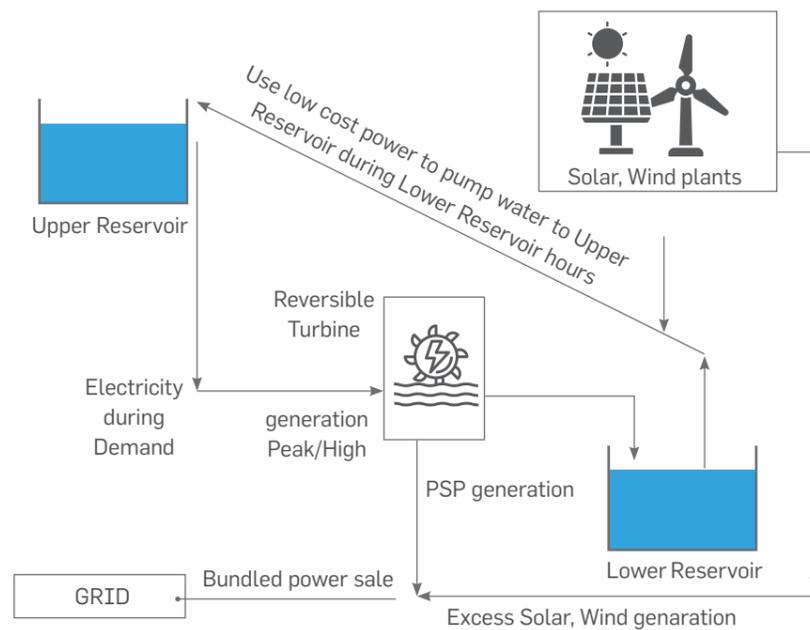
With the global energy system going through a rapid and radical transition towards Decarbonization, Digitalization and Decentralization, the importance of establishing Intelligent Energy Storage cannot be overstated. The inherent infirm and non-schedulable nature of renewable energy generation presents a huge challenge for integrating large RE capacities while maintaining grid stability. Integrating Wind and Solar energy with time tested and proven Pumped Storage Solution presents an optimal, economically viable, and scalable option to supply Schedulable Power On-Demand (SPOD) with both baseload and peak load capabilities. Renewable Energy plus Storage Projects (RESP) enable firm, flexible, schedulable, and round the clock generation of energy. In addition, it also effectively addresses the challenge of ramp-up / ramp-down requirements. The combination of renewable energy sources such as solar, wind, and pumped-hydro storage allows uninterrupted supply of electricity that is not affected by temporary shifts in weather and costs equivalent to fossil fuel-based energy.

Pumped Storage Hydro Power Project

Pumped storage hydropower project comprises of an upper reservoir and lower reservoir interconnected with a waterway, a powerhouse which contains hydropower electrical mechanical equipment, and a transmission connection to the grid. This project is operated when inexpensive electricity is available (which is typically available at night or on weekends when power demand is low or in case of excess solar generation in the daytime) is used to

pump water from the lower reservoir to the upper reservoir. Water stored in the upper reservoir is then released during peak demand periods, delivering more valuable electricity to the grid. With the introduction of renewable energy technologies, the operation of pumped storage hydropower facilities is being expanded to utilize excess energy from renewable energy systems for later use during peak demand periods.

The following diagram provides an overview of the operation of an IRESP:



Overview of IRESP



IRESP Model

Pumped Storage solution provides the necessary scale of energy storage and life cycle, resulting in affordable SPOD energy over the life of the projects. Developing such Integrated Renewable Energy Projects in Wind and Solar resource-rich locations along with standalone Pumped Storage capacities, without impacting the existing natural systems is necessary to sustainably power the future needs of our country while maintaining grid stability.

Pumped storage hydro Power Project (PSHPP) provides a zero-emission alternative to conventional carbon emitting thermal plants. Generating capacity can be quickly dispatched and ramped up to meet demand, compensate for large swings in intermittent generation power injection and provide contingency reserves to compensate generation unit outages.

The advantages of PSHPP are:

- Improved interconnector efficiency
- Reduced interconnector investment
- Reduced need for backup generation
- Increased system resilience
- Reduced system stress
- Optimized load profile through integration of hydro with wind and solar to make electricity more dispatchable.
- Has the capability of providing primary frequency control
- Can support load levelling and energy arbitrage, reducing the overall system production costs by offloading expensive peaking generation during peak-demand periods, and by increasing usage of cheap baseload generation during low demand periods.
- Enabler for Transition to Circular Economy

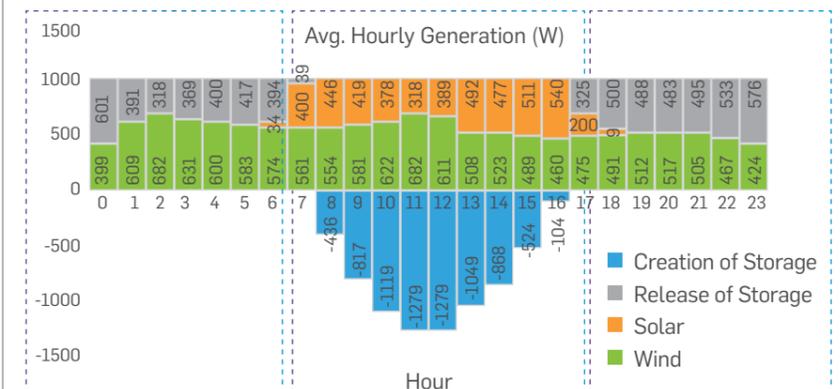
Greenko's Integrated Renewable Energy Storage Project

The IRESPs are expected to harness the power of solar and wind resources with digitally connected storage infrastructure to provide scheduled and flexible power to the grid. The pumped hydro storage system provides scale and cost competitiveness.

The IRESPs will be able to provide on-demand power which can be scheduled based on peak and base load requirement, thereby assisting with grid balancing. IRESPs are highly efficient with limited storage loss and can provide DISCOMs with ancillary storage and grid balancing services. The IRESP would also allow us to provide off-takers with flexible contract structures to suit their needs.

Following is the description of integration of solar, wind and pumped storage projects in providing the schedulable on-demand power.

- Both Solar and wind projects will operate in normal operating conditions and supply power to grid during 00:00-24:00 hrs, with maximum limit of power clamped at 1/1.2 GW
- Transmission line capacity requirement will be 1/1.2 GW only for the project capacity of 4/4.8 GW thus ensuing optimal utilization of transmission facilities



- Storage will be released in two phases, during morning and evening peak requirement times i.e. usually during period 06:00-11:00 hrs and 16:00-24:00 hr
- Storage will be created using Excess generation i.e. generation above 1/1.2 GW (from Solar and wind combined) during the day i.e. mostly during period 11:00-16:00 hrs
- Storage will be released in two phases, during morning and evening peak requirement times i.e. usually during period 06:00-11:00 hrs and 16:00-24:00 hrs

Greenko has planned to develop Integrated Renewable Energy projects with a total capacity of 40 GWh across 5 states of India, out of which two are currently in the pre-construction phase viz., the Pinnapuram IRESP, the Saundatti IRESP, and MP 30 Gandhi Sagar Standalone Pumped Storage Project (SPSP) in the states of Andhra Pradesh, Karnataka and Madhya Pradesh respectively, has a total capacity of 8.7 GW. The IRESPs are expected to harness the power of solar and wind resources with digitally connected storage infrastructure to provide scheduled and flexible power to the grid.

Operational Capital

Greenko's business model of Pumped Storage Plant combined with the Intelligent energy Platform contributes greatly to the circularity of economy and energy security by creating new sharing platforms in the sector.



Pumped Storage Plant Model

Pinnapuram Integrated Renewable Storage Project Overview

Greenko Group has conducted detailed research and evaluated suitable locations for IRESPs in India and has identified Pinnapuram, Kurnool District, Andhra Pradesh for the proposed **Pinnapuram Integrated Renewable Energy Storage Project (IRESP)**. Pinnapuram IRESP has been conceived as the Largest Gigawatt Scale integrated project with solar, wind and pumped storage components that can supply Schedulable Power on Demand (SPOD) which is Dispatchable & Schedulable Renewable Energy for the first time to consumers across India.

The Pinnapuram IRESP consists of four key components which are as follows,

- The Standalone Pumped Storage Project (SPSP)
- Solar Park development
- Wind Park
- Central Pooling Sub Station (CPSS)

HIGHLIGHTS	
Status	Pre-construction
Investment	6463.52 Crores
Location	Pinnapuram Village, Panyam Mandal, Kurnool District of Andhra Pradesh
Pumped Storage Hydro	1200 MW (9-hour storage capacity)
Solar	3000MW
Wind	500MW
Central Pooling station	220/400 KV
Length of transmission and distribution line	6 KM long 400 KV Quad Moose line from CPSS to PGCIL Sub-Station
Jobs created:	13000 (direct and indirect)

HIGHLIGHTS	
All four components of Pinnapuram IRESP are in close vicinity of each other and therefore power from PSP, Wind and Solar sources will be commonly pooled.	Key suppliers
CPSS is connected to evacuate energy nationally to multiple inter-state consumers. Greenko Renewable Energy Management Centre housing the "Intelligent Energy Platform" (to forecast, monitor, balance, and deliver the required energy and storage services) will be an integral part of CPSS.	<ul style="list-style-type: none"> • Tata consulting Engineers • EDF • AFRY • Andritz Hydro • Megha Engineering
The IRESP Project is a self-identified project which can meet the dynamic needs of DISCOMs/STUs through:	Average annual electricity generation:
<ul style="list-style-type: none"> • 24 Hours Round The Clock (RTC) Base Load Energy • 18 Hours Base Load Energy as per Demand • 12 Hour Peak Load Energy (6 hours + 6 hours) • Energy Storage Service, Grid Management, Frequency Management & Ancillary Services 	<ul style="list-style-type: none"> • Solar & Wind: 7750 Mu. • PSP: Turbine mode is 3745 MU • Pump mode is 4964 Mu

Key Elements of the Pinnapuram Standalone PSP

1. Standalone Pumped Storage Project comprises two reservoirs which involved construction of Rockfill Dam Embankments in existing natural depressions.
2. Reservoirs are located away from all existing natural water systems and have negligible catchment area. Therefore, no requirement of CAT plan.
3. No requirement of spillways in the embankments.
4. Project envisages non-consumptive re-utilization of 1.30 TMC of water for recirculation among two proposed reservoirs.
5. Adjustable Speed design with Double Fed Induction Motor Generator to operate at its peak efficiency points under all head conditions
6. Hydraulic short circuit provision kept to achieve flexibility from 0-100%
7. Availability of Spinning Reserve (Condenser mode) to meet sudden load changes in Grid. In turbine condenser mode, project can generate reactive power to support grid in case of fault.
8. Double Circuit Transmission Line proposed for Generation/Pumping of Power which will be connected at Pinnapuram IRESP central Pooling station
9. Gas insulated switchgear (GIS) are proposed
10. Part load operations can be performed any number of times in a day without impacting total life of machine.
11. Project has no issues related to siltation, flash floods, environmental release and fisheries
12. Minimal maintenance required due to silt free waters.
13. Pumped storage plant capacity is not impacted by changes in weather during the year and can be operated throughout the year, in all season, with same efficiency.

Operational Capital

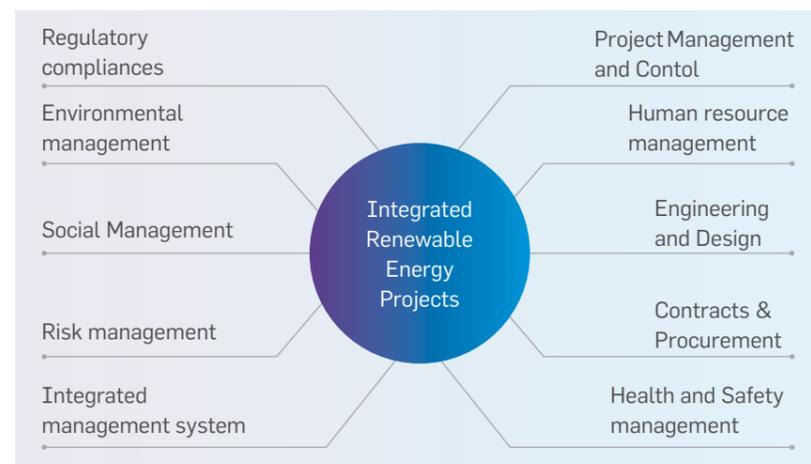
Saundatti Integrated Renewable Storage Project Overview

Greenko's second Integrated Renewable Energy Project is planned to be developed at Saundatti, Karnataka, with a Standalone Pumped Storage Project (SPSP) of 1260 MW generation capacity, 9-hour storage, resulting in a daily storage capacity of 11.3 GWh. The project is currently in the design phase and is planned to have similar components and design features as that of the Pinnapuram IRESP.

	HIGHLIGHTS	
The Saundatti Integrated Renewable Energy Project is also designed as a gigawatt Scale integrated project with solar, wind and pumped storage components.	Status	Design phase
The four key components of the project are:	Location	Saundatti IRESP is located in Belagavi district of Karnataka state
The Standalone Pumped Storage Project (SPSP)	Pumped Storage Hydro	1260 MW (9-hour storage capacity)
<ul style="list-style-type: none"> Solar Park development Wind Park Central Pooling Sub Station (CPSS) 	Wind	400 MW
	Solar	1000 MW
	Grid connection	PGCIL/CTU sub-station at Dharwad for further supply into the National Grid

Greenko's Project Management for IRESP

For managing the IRESP, Greenko has a disciplined project management team and has developed a technologically advanced project management system. In project management, Greenko follows a detailed process of self-discipline and agility throughout the stages of Initiation, Planning, Execution, Monitoring and Control and Closing. The following is the brief description of the Project Management functions which are geared to achieve the target of completing the project within 3 years.



IRESP process management

Project Management and Control (PMC)

Greenko has created PMC for governing the processes, practices, tools and other activities related to project management. PMC defines and maintains the standards for project management, monitoring and controlling the entire process of project management from Initiation to Closing of each project.

- PMC reviews the planning and monitoring of resources as per the schedule.
- Approve the Construction methods for critical components.
- Update and revise the schedule based on progress.
- Review and resolve all interfacing issues.



As the renewables share in the grid grew, the hydro and its storage ability has come back to the fore, albeit in a new format. We are sensitive to the skill gaps that we may encounter in implementing these projects and accordingly have taken action proactively. We want the project completed on an accelerated schedule and we are prepared to face challenges that come with this expectation.

Mr. Ramanujam A
SVP, PMC



The pumped storage project is material-intensive and we are aware that circular approaches have significant applications in the design, engineering, and construction. We have begun exploring options to minimize the external material use and whenever such material is used, we are sensitive that it will have to decommission after the long project life. In the design and construction, provisions are made for extending life through reengineering or refurbishing.

Mr. Mahalik KC
SVP, PMC

Human Resource Management at IRESP

Greenko has an advanced human resource management system which looks after how the Project will acquire, develop, and manage human resources throughout the Project life cycle. For IRESP, HR department has prepared a project plan which identifies and describes the processes that will be used to plan and acquire employees, train, track and ensure transition. The responsibilities of the staff are delineated and managed using the staff management process.

The key management team members, who are highly agile, diverse and experienced, involved in the IRESP project management are:

- **Project Director:** Mr. Adishesu Gopalam. He has more than 40 years of experience in all the domains of the IRESP engineering and Management.
- **IRESP Project Manager:** Mr. Ch Srinivasa Rao has 28 years of experience in project execution, Construction, Project Management and Logistics Management. He executed world's largest 816 MW DC Kurnool Gani Mega Solar Park with all business needs and schedules.
- **Head PMC (PSP):** Mr. K.C. Mahalik, has 33 years of planning and

execution experience of Hydro and Pumped storage projects.

- **Head PMC (Wind & Solar):** Mr. AVS Ramanujam, has over 25 years' experience of Wind, Solar and Hydro project management.
- **Head of Engineering – (PSP/Solar/Wind/T&D):** Mr. PM Nanda. He has more than 30 years of domain experience.
- **Lead Design Engineers:** with more than 15-20 years of experience in the specific component of IRESP: for example, pump/turbine equipment in PSP of IRESP, PV solar cells design in Solar component of IRESP, etc.,
- **Design Engineers:** with more than 5-10 years of experience in specific domains with hands on experience on design and drafting platforms.

Greenko believes that continuous learning is an indispensable tool for the growth of the organization. In this context, HR Projects has conducted a "Executive Development Training program" on IRESP Construction Methodology and Project Management with reference to all the project knowledge areas including Safety, Quality, Cost and Time management. There were 45 sessions, 3 Batches and 150 + participants. Employees from 24 locations, Pan India, from operating sites and the Head Office participated

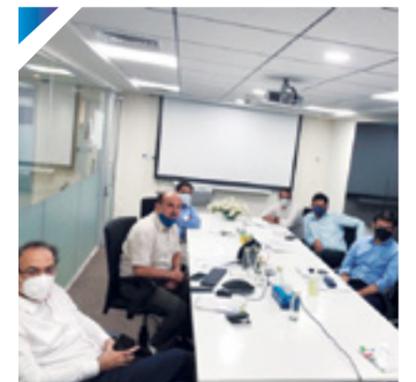
in the training, covering 450 Man-days and 3150 Manhours.

The training was delivered by highly qualified and experienced faculties from National Institute for Construction Management and Research (NICMAR), Hyderabad.



We build Flexible, Innovative, Results-Driven Teams for handling multi-GW scale IRES projects.

Mr. Krishnamurthy Sunkara
VP, HR&IR



IRESP Construction Methodology and Project Management Training

Operational Capital

Engineering and Design of IRESP

The Pumped Storage Platform is being engineered and designed completely on futuristic global business objectives of Renewable Energy parks as an Intelligent Energy Platform. Greenko aims for optimal capacity utilization of the two energy components of the IRESP viz., Solar & Wind. PSP is being designed to operate with a wide range of operational flexibility, faster active and reactive power adjustment, quick reaction time and higher efficiencies to meet the grid requirements.

PSP is planned to employ an Adjustable Speed design with Double Fed Induction Motor Generator to operate at its peak efficiency points under all head conditions to achieve a substantial increase in energy generation. The hydraulic short circuits feature two small units and enables mitigation of optimum power handling feature in the range between unit capacities. The PSP will be connected to the customer's grid through the Centralized Load Dispatch Centre of the IRESP to optimize energy export.



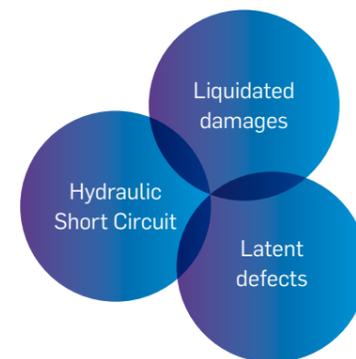
The flexibility of pumped storage hydro has been historically constrained by the interaction of the turbines, the dam, the water flow, and the institutional agreement. With adjustable speed or ternary units, the PS project can not only supply load following but, can become one of the fastest response stations on the power system. It can offer frequency regulation, whether pumping or generating and can allow pumping at less than full load, thereby increasing the flexibility.

● **Mr. Nanda PM**
SVP, Engineering Services



Contracts and Procurement for IRESP

The procurement of equipment for IRESP is novel and challenging. Therefore, the C&P strategy employs International Competitive Bidding (ICB) as an innovative contracting structure that not only allows sharing of risk and opportunities among partners but also makes the complete process transparent. This has enabled Greenko to effectively secure smart contract agreements, in line with the IRESP requirements. In addition, new C&P processes specific to IRESP were also designed and established in the current year.

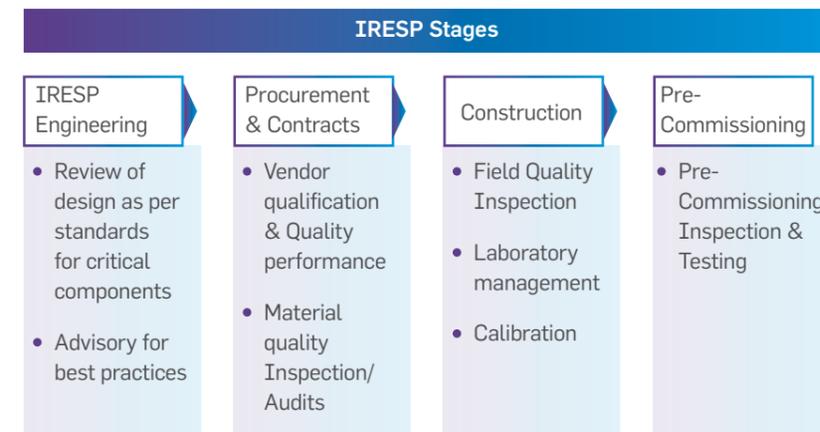


Quality Assurance and Control in IRESP

In the current reporting period, QMD of Greenko has ventured into and established novel practices, QA/QC processes, technological tools, and innovations to ensure high standards of quality while prevailing over the challenges of complexity, flexibility, and scale. For this purpose, Greenko has planned to use EPC (Engineering, Procurement, and Construction) lifecycle stage quality elements of an IRESP, as a basis to establish controls to be adopted at each stage.

Best practices in quality assurance at all stages of the IRESP project construction are adopted. QMD has mapped interaction and influence areas for key stages of IRESP, such as Engineering, Procurement, Construction, and Pre-Commissioning.

IRESP Stages



Quality Assurance Interaction & Influence

Throughout the stages, these interactions are interlaced with the IRESP design and construction. These interactions are then cascaded in terms of the controls to be carried out by the QMD function during the task implementation.

In addition, Greenko has prepared a "Quality Assurance Handbook", consisting of Civil, Electrical, and Mechanical testing procedures. These procedures are prepared based on National and International standards and codes adopted to the requirements of Greenko. The interpretation of these standards and codes in a simple and understandable way provides working flexibility within permissible limits to the field quality engineers.

Greenko has also established specific QA/QC metrics to measure and manage IRESP. SMART (Specific, Measurable, Achievable, Realistic/ Reasonable, and Time-bound) objectives are also established for each target.

QA/QC Metrics for Managing IRESP

- 1 Timely clearance of material inspections
- 2 Timely response to field quality requests
- 3 Minimization of IRESP quality risk
- 4 Minimization of quality complaints from internal and external stakeholders
- 5 Adherence to all applicable quality standards
- 6 Continual improvement in effectiveness of the strategic quality plan implementation
- 7 Digitalization and Decentralization

Quantity Surveying for IRESP

The role of quantity surveying department starts from the inception of the project, from preparing optimal quantities, preparation of initial project cost & cost planning to advising the ideal contract model. It also manages project spending / dispensing / payment recommendation as per the work done, with clear documentation targeting audit readiness. The eventual surety of the function is to close all the accounts / contracts along with closure of the project and releasing securities after successful compliance to involved warranties.

Operational Capital

Risk Management in IRESP

Greenko understands that risks are inevitable while undertaking Construction projects. The project manager at Greenko analyses risks and accordingly, controls are implemented to keep the risk level at nil or minimal.

Greenko plans their strategy based on the following four steps of risk management which prevails in Greenko project management.

- Risk Identification
- Risk Quantification
- Risk Response
- Risk Monitoring and Control

Environmental and Social Management in IRESP

Being one of India's leading independent power producer focusing on renewable energy resources, sustainability is one of the key attributes endorsed by Greenko Group. It seeks to protect our natural environment, human and ecological health, without compromising our way of life; including cross-cutting issues such as gender equality, community empowerment, and social accountability. While ensuring sustainable growth through economic and social development, and protection of environment; the primary responsibility of this department is to ensure Greenko Group's compliance to all applicable Environmental & Social (E&S) regulatory frameworks adopted by the Indian Government and/or to which the Government of India (GoI) is a signatory. Alongside, the ESMS department is also mandated to ascertain E&S considerations adopted by International Financial Institutions and it is addressed judiciously during project financing.

Therefore, with a view to understand and manage environmental, social and

corporate governance (ESG) issues, Greenko Group conducts detailed Environmental Impact Assessment (EIA) and Environmental & Social Impact Assessment (ESIA) studies.

As the department is mandated to comply with both, regulatory as well as non-regulatory requirements, Greenko Group has embarked on holistic approach in complying with E&S issues arising due to proposed developmental activities, particularly development Pumped Storage Projects.

The environmental and social governance framework adopted by Greenko Group is presented below. Although regulatory and non-regulatory framework for managing E&S issues may vary, the fundamental components of EIA and ESIA involve following stages:

- 1) Screening
- 2) Scoping
- 3) Assessment and evaluation of impacts and development of alternatives
- 4) Reporting EIA/ESIA along with Environmental Management Plan (EMP)
- 5) Review of EIA/ESIA report based on public participation
- 6) Decision-making
- 7) Monitoring, compliance, enforcement, and environmental auditing (to be taken up at project site)



General Medical & Eye Camp, Devgarh

Integrating the principles of sustainable development into Group policy presents a major opportunity as well as challenge. However, achieving this goal by adopting a framework on EIA and ESIA will reinforce use of integrated, cross-sectoral, and comprehensive approach in guiding the design and implementation of Integrated Renewable Energy Storage Projects (Solar, Wind and Standalone Pumped Storage) of Greenko Group.

Health and Safety Management in IRESP

Greenko is committed to ensure a safe and healthy environment for all employees to work in. Greenko prepares a Project Specific Health and Safety plan to protect the health and safety of personnel working in the project. All subcontractors, visitors or consultants must adhere to the provisions of this Health and Safety Plan.

Greenko believes that: All accidents are avoidable, everyone is responsible for assisting with accident prevention at his or her own level on site, Safety training is essential, Prevention is an integral part of the project management approach.

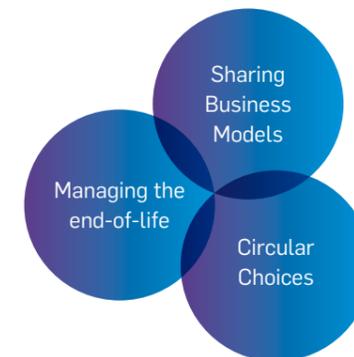
Greenko Project Management commits itself to the above philosophy and Greenko sets the objectives and targets for all its project to implement and achieve this. This is to ensure Legal Compliance, the minimisation of risks and the protection of the workforce and persons affected by company activities.

Harness Regenerative and Circular Value Pools

Greenko believes that using and reusing resources as efficiently as possible and finding value throughout the life cycles of finished products, significantly increases the productivity of the resource and thereby, reduces the cost while preserving and enhancing the natural capital. In this context, Greenko has adopted circular economic principles in managing organizational assets.

Greenko has explored circular value pools across its business by deploying a life cycle approach to business. Circularity at Greenko is harnessed at three levels.

Three levels of Circularity at Greenko



The first is the deployment of Sharing Business Models. IRESP projects are major sharing platforms of storage and other electricity system services. The group has been working and implementing the sharing generation asset model as also sharing of resources on the margins of the electricity grid.

The next circularity approach is Circular Choices. During the reporting period, Greenko has exercised caution while designing and making equipment choices keeping in mind how long these assets will deliver value. This renewed focus on extending the asset life has become now a salient part of our asset management. In addition to design and equipment choices, the existing asset

life is extended through upgradation, modernisation and periodical maintenance. In this context, Greenko has teamed up with ONYX InSight, a leading global predictive analytics and engineering firm, to modernize and upgrade 500 wind turbines.

The third and final element of Circularity at Greenko is Managing the End of Life of assets and 'everything else'. Managing 'everything else' at end-of-life was practiced always by the organization's waste management team. They are now charting out 'second life' for each of our assets and their parts at their end of life in the assigned role. In this context, in the current reporting period, burnt-out inverters of solar assets were refurbished to extend the useful life of the components and to reduce the waste generated. In addition, final disposal methods and quantities of material post its 'second life' is recorded.

Development and establishment of Standard Operating Procedures (SOPs) for the circular economy model are under process for all functions of Greenko currently. The efforts taken in the current reporting period to improve the asset life are summarised below,

1. Condition monitoring
2. Modernization and upgradation of wind turbines.
3. Preventive maintenance based on OEM recommendations and experience.
4. Adoption of improved methodology/ equipment.
5. Operation of equipment within prescribed limits.
6. Periodic Testing & calibration being carried out.

Value Creation Story

Extending Life of Inverters

Objective

To refurbish the burnt-out inverters into servicing assets, to prevent wastage.

Location

Ghani Solar Park, Kurnool

Description

On 11th June 2019, short circuit occurred to inverters O2 and O3 of the plant, leading to failures in transformers, bus bars and breakers. Entire cable vault chamber got flashed and the chamber's upper sheet was burnt. A detailed root cause analysis was conducted to mitigate the risks of reoccurrence of such an incident. Further, a decision to refurbish the inverters were taken. It would otherwise have been sent to the scrap yard as waste. A shed was erected and an in-house team along with SMA service agency got involved in the work to refurbish the inverters. Refurbished components utilized are checked thoroughly by testing at site and all components are placed under the installation standards of OEM.

Actions Taken

Refurbishment and replacement of inverters

Key Benefits

1. Reduction in electronic waste and circular approach to asset management.
2. Cost saved of Rs. 76, 39,500/-

Operational Capital

Looking Ahead

Greenko is progressively and strategically expanding its asset portfolio with nearly 8GW of capacity in its pipeline and this would contribute significantly to achieve the Group's goal of reaching 30 Billion Units electricity by 2023.

Continuous and improved emphasis will be placed on the stages of execution of the IRESP projects, through upskilling of the project team, enhanced technological capabilities in design and construction of the project and improved resource efficiency, to achieve high standards of quality in delivering schedulable, RTC energy. The focus on energy efficiency and cost optimization through technology deployment and value maximisation programs will continue. This will be achieved through skill acquisition, new processes and systems and qualitatively different partnerships.

The O&M capabilities and capacities will be enhanced in house and these will be extended to include predictive and adaptive methodologies through application of Digitalization. This drive in the coming years will supplement our capacity to extend the life, plan for second life and manage the end-of-life of products. Further, predictive and adaptive capabilities will have an aim of climate proofing assets against variation in resource availability.

Intellectual Capital

Message from COO



Greenko recognizes that the accumulated GHGs in the atmosphere and the additions till 2050 will effect changes in the climate. ↵

Dear Stakeholders,

In recent years, we have been witnessing the risk of a changing climate more vividly displayed across the continents through an increase in heat stress, precipitation, and consequent flooding, more frequent and intense cyclones and hurricanes, and spreading forest fires. The scale, magnitude, and extent of damage of these events are certainly galvanizing attention to the urgency for climate actions. The United Nations Intergovernmental Panel on Climate Change published two special reports in 2019, both of which warned about severe consequences of changing climate. Its intensity is anticipated to be much more in comparison to what is estimated in the 2015 Paris Agreement, particularly in the instance of 2 degrees temperature scenario.

At Greenko, from the inception, combating climate change is the salient purpose of our business. Our asset portfolio of renewables, during the reporting period, has avoided 8.2 Million tons of CO₂ emissions. We understand the limitation of infirm renewables to displace non-renewables that generate firm power and have some flexibility. To overcome this barrier, we are harnessing digitalization and deploying the Intelligent Energy platform and putting together multiple pumped storage projects located and designed strategically across the country to harness different value pools in the electricity system. This initiative aided by the evolution of a favourable policy ecosystem to deepen decarbonization and technological developments in renewable energy that brought in price parity of generated electricity will deliver clean electricity.

Our founders at the time of inception and thereon, always reminded us that the renewable electricity system can only be part of the solution. It can only reduce the emission by 55% by 2050, as eloquently argued by Alen Macarthur Foundation. The NET ZERO target is achievable only if non-electric uses are addressed and circular economic approaches are adopted. Many elements of Greenko 4.0, would address this challenge by working with industry and business to address their climate targets viz., Science-Based Targets, or RE 100. Further, Greenko is exploring the role it can play in renewable electrification of the transport sector. The decarbonization of the electric system and electrification in the manufacturing and transportation sector will still leave a gap to achieve NET ZERO by 2050.

It is for this reason, the leadership of Greenko included a circular economic strategic approach in our value creation model, beginning this reporting period. We have explored circular value pools across our business by deploying a life cycle approach to business. Circularity at Greenko is harnessed at three levels. The first is the deployment of Sharing Business Models. Our IRESP projects are major sharing platforms of storage

and other electricity system services. We have been working and implementing the sharing generation asset model as also sharing of resources on the margins of the electricity grid. Our next circularity approach is Circular Choices. During the reporting period, we have exercised caution while designing and making equipment choices keeping in mind how and how long these assets will deliver value. This renewed focus on extending the asset life has now become a salient part of our asset management. Further, our teams are including circular approaches in SOPs of design, procurement, and asset management. To extend the life and enhance the performance of some of our wind assets, modernization and upgradation of 500 wind turbines is initiated during the reporting period. The third and final element of Circularity at Greenko is Managing the End of Life of asset and 'everything else'. Managing 'everything else' at the end-of-life was practiced always by our waste management team. They are now charting out 'second life' for each of our assets and their parts at their end of life in the assigned role. They are also recording the final disposal of material post its 'second life'.

Greenko is committed to making decarbonization- NET ZERO by 2050, a reality, and will continue to have this as a purpose of the business. Our Climate Vision 2050, include Only Renewable Assets, Decarbonise Electricity grid, Electrify Energy, and Circular Electric Systems

Further, Greenko recognizes that the accumulated GHGs in the atmosphere and the additions till 2050 will effect changes in the climate. Our assets and their generation could be impacted and it could have a financial implication. Also, the transmission infrastructure may be impacted due to extreme weather events that may disrupt infrastructure or significant short-term changes in electricity demand. We have mapped the physical climate changes that could occur across our sites and the impact on the business. We have also charted out the climate risk mitigation plan

which includes engineering measures, changes in standard operating practices, and insurance. We would also make the climate risk a constituent of Enterprise Risk Management in the coming years. The assessment of climate risk to generation assets, T&D infrastructure, and electricity demand, would also inform our choices of locations in our growth.

Further to reinforcing natural capital through climate stewardship and circularity, we have made significant strides in intellectual capital through innovation hub interventions and IR conclave. At IR conclaves, last year, the IR champions shared success stories as to how the teams are contributing to the strategic goals of the company and all the six capitals. In this reporting period, six innovation hub sessions were conducted and 150 participants, in 24 groups generated 240 ideas in different functional areas such as engineering and design, business deployment, asset management, procurements, quality, etc. Our digitalization teams are involved in deploying sharing platforms (IEP). They are also extending the deployment of systems to improve asset management by predictive maintenance, remote monitoring and intervention, commercial activity through scheduling and forecasting, and decision making by making real-time information being available at decision points. We believe that organization development through Business Excellence, Digitalization, Innovation, and Systems Assurance is critical for the transformational journey of Greenko.

Our performance and progress on intellectual and natural capital are critical to the generation and distribution of value amongst stakeholders. We are sanguine to engage with you to understand your concerns and expectations with regard to our business and sector.

Mr. Nagendra Dandamudi
Chief Operating Officer - Organisation Development

Intellectual Capital

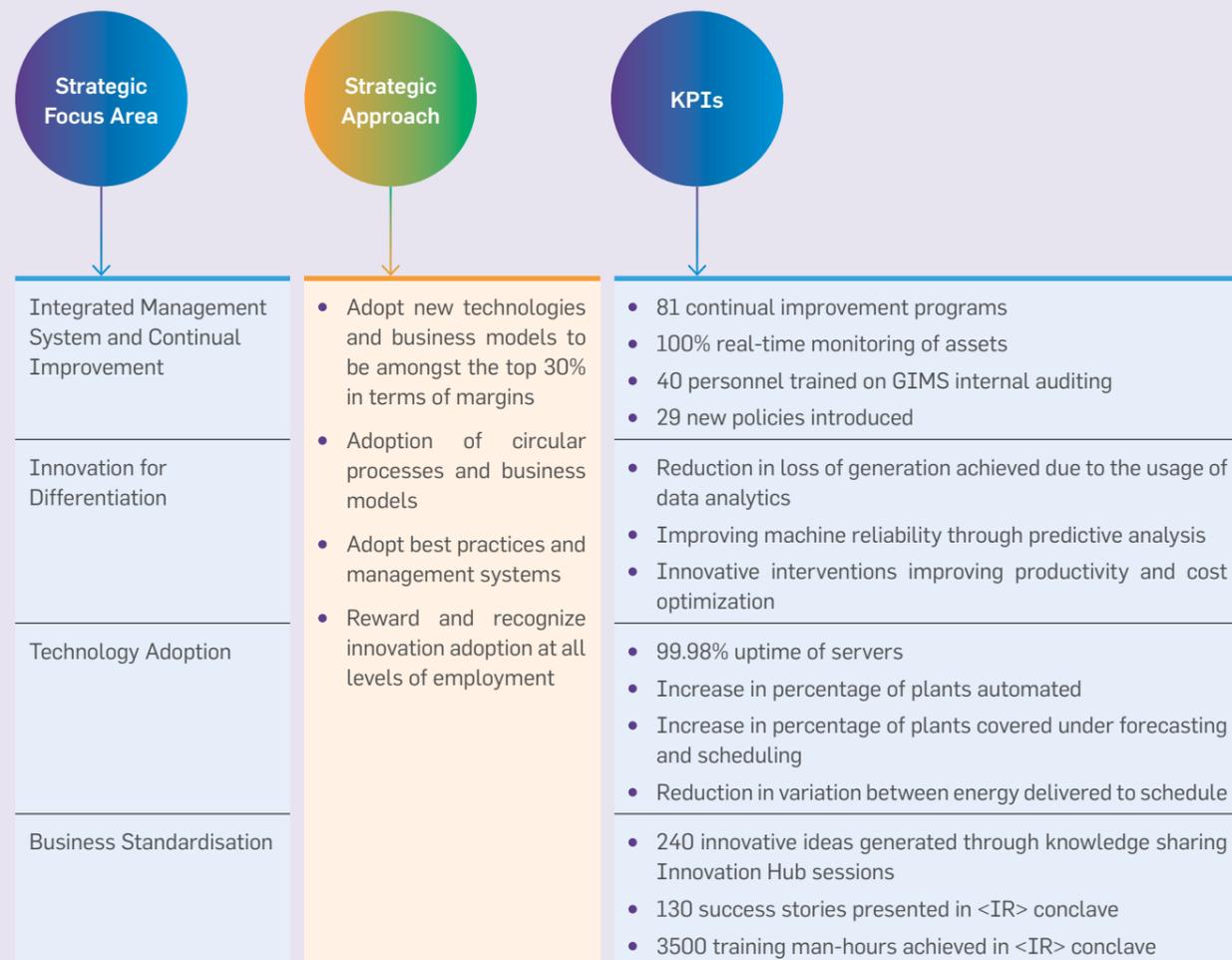
Strategic Approach

Digitalization and innovation are at the heart of Greenko's transformation towards decarbonization and decentralization. The greatest transformational potential for digitalization is its ability to break down boundaries between energy sectors, increasing flexibility and enabling integration across entire systems. The result of which is already witnessed globally through improvement in productivity, delivery of firm renewable power, smart demand response, and accessibility.

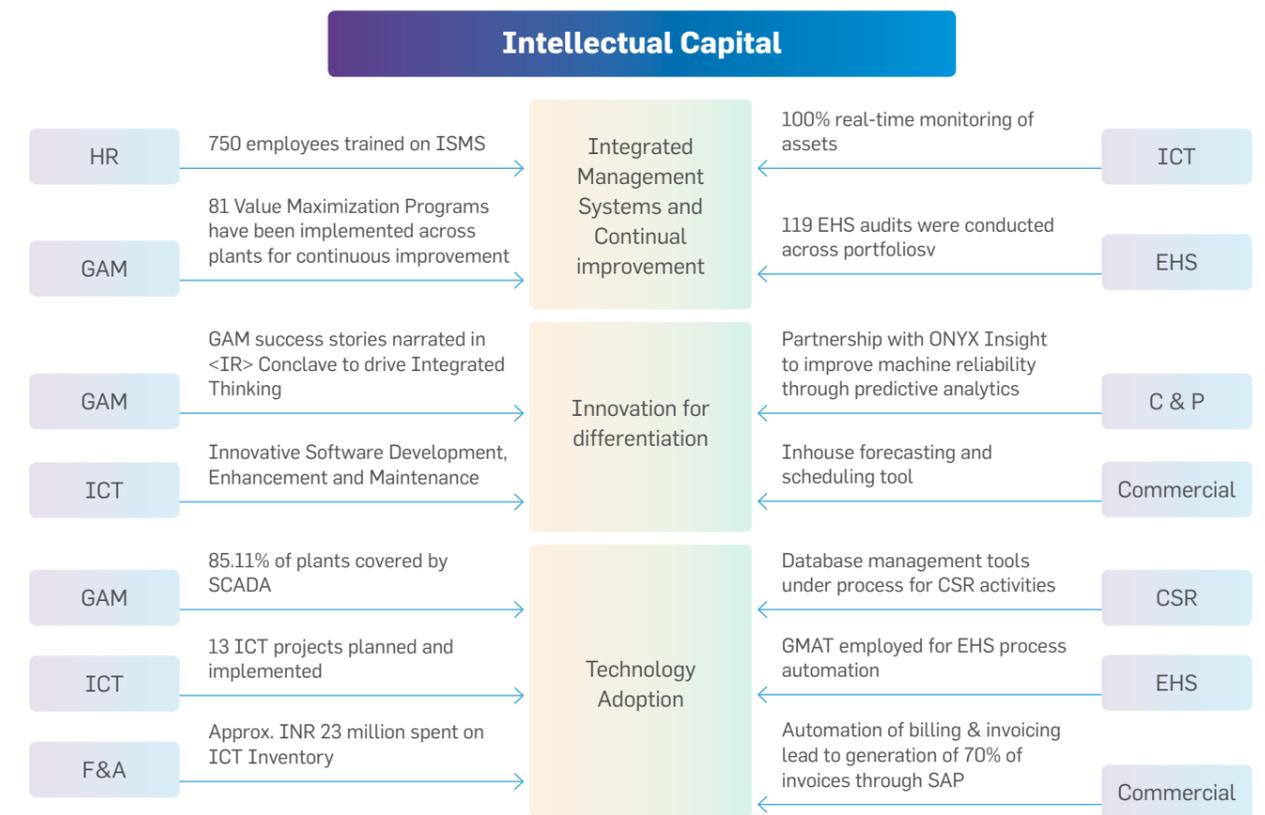
To harness this potential, Greenko continues to scale up on its innovation and digitization efforts, working towards transforming renewables to reliable, schedulable, and flexible energy through building an Intelligent Energy Platform and Pumped Storage projects for the firm and RTC energy generation, investment in advanced analytics, Internet of Things (IoT) and deployment of systems to improve asset management by predictive maintenance, real-time remote monitoring, and intervention.

To preserve and enhance value creation of its Intellectual capital, Greenko adopted the following effective strategic Focus Areas viz., Integrated Management Systems and Continual Improvement, Innovation for differentiation, Technology Adoption, Business Process Standardisation. A review of performance on various indicators of intellectual capital demonstrates Greenko's readiness for effectively establishing an Intelligent Energy Platform which will significantly contribute to the circularity of the economy.

Strategic Direction: Preserve and Enhance Innovation and Systems



Integrated Value Creation in Intellectual Capital



Journey so Far

The myriad of challenges associated with decentralization of the energy system, in the form of power quality, flexibility, reliability, improving asset level visibility as well as issues related to cyber security, implementing and integrating variable energy resources, and many more, can be effectively addressed and harnessed through rapid deployment of digitalization and innovative technological advances. In this context, in the current reporting period, Greenko continued to invest in capabilities and expertise that drive the development of technology-enabled and innovative solutions in order to meet the needs of an evolving energy market.

For this purpose, Greenko developed and established in this reporting period a comprehensive Organisation Development process, which encompasses the four key elements that govern its intellectual capital, to build capability and achieve excellence by developing, improving, and reinforcing strategies, structures, and processes. Greenko believes that organization development through Business Excellence, Digitalization, Innovation, and Systems Assurance is critical for its transformational journey. Therefore, the performance of the intellectual capital against these four key elements is monitored and enhanced continuously.

Greenko's Organisation Development Model



Intellectual Capital

Integrated Management Systems and Continual Improvement

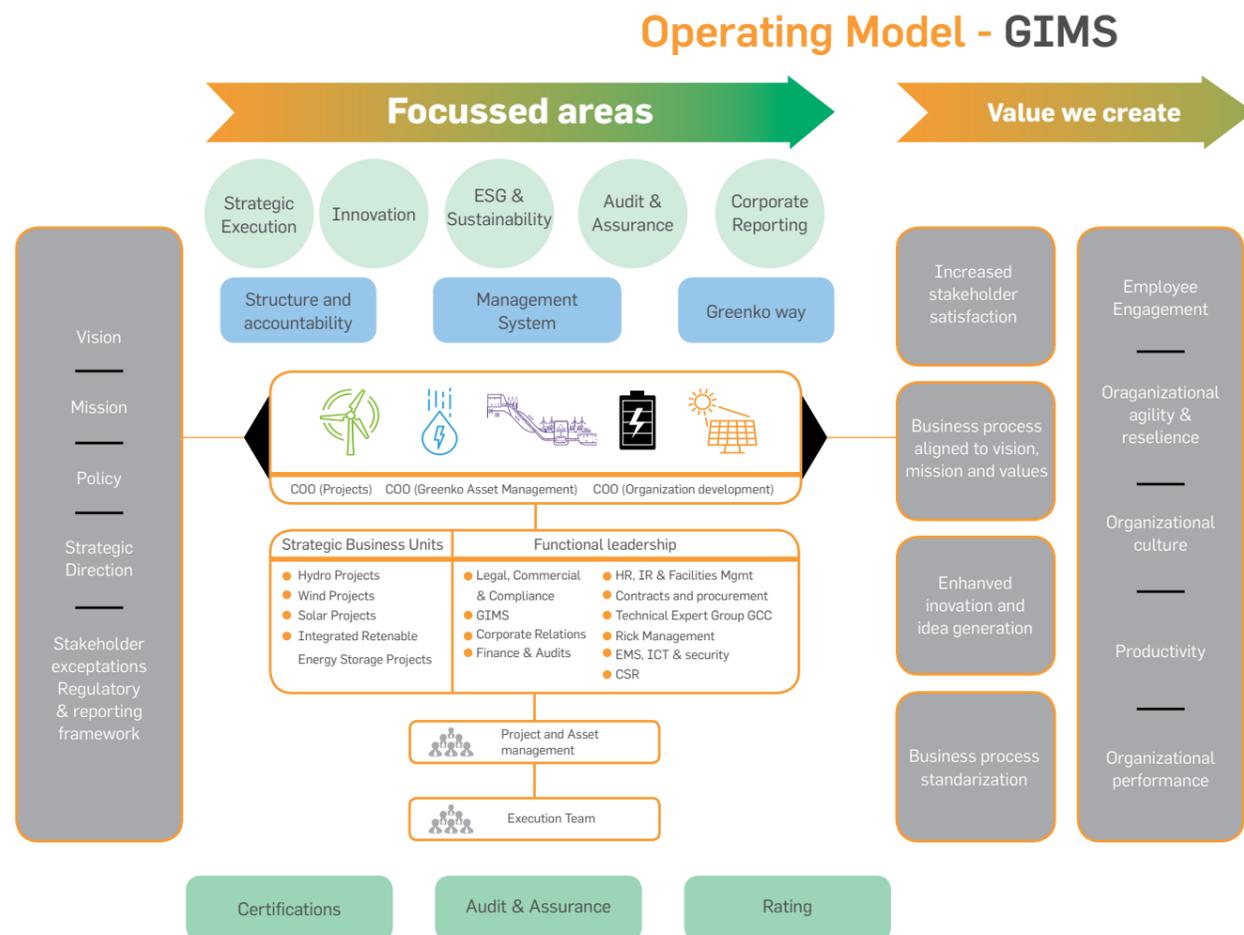
Greenko's commitment towards continuous improvement and performance excellence prompted the need for an effective management system that is integrated and agile, to respond and grow. For this purpose, Greenko has developed and deployed an Integrated Management System (GIMS) that effectively unifies all the management systems and processes across its operations to standardize,

achieve robust process management and sharing, monitoring and controlling systems, forecasting and scheduling delivery, and surveillance among many others.

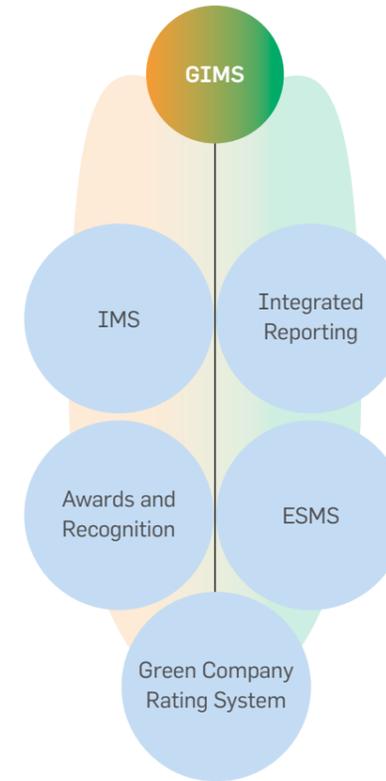
Greenko Integrated Management System (GIMS) operates in accordance with international standards and industry best practices to effectively align its numerous management systems with their respective strategies, objectives, plans, and operations. It works on the establishment, implementation, integration, and maintenance of Quality, Environment,

Health & Safety, Information Security, Energy and Social Accountability Management Systems (QEHS-IS-En-SA) as per the requirements of ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, ISO 27001:2013, ISO 50001:2018 and SA 8000:2014. In addition to ISO standards, the ESMS (Environmental and Social Management Systems) as per the requirements of IFC performance standards, Sustainability reporting as per the requirements of GRI Standards, and Integrated reporting as per the requirements of IIRC are also integrated into GIMS.

Greenko Integrated Management System Structure



GIMS Focused areas



In order to achieve robust performance management and continuous improvement, the deployed management systems and processes are periodically and consistently audited to ensure adherence and effective outcome. The IMS audits are conducted by both internal cross-functional parties and externally. The audit findings are promptly corrected through measures of continuous improvement, upgradation, and advanced technology adoptions.

In the current reporting period, EHS, GIMS, PPS (People, Process, System), OHS, GAM (Greenko Asset Management), and ESMS (Environmental and Social Management system) audits were conducted across portfolios. Contributing to the continual improvement, corrective actions were taken for the audit observations.

GIMS Audit Results across BUs

KPI	Hydro	Wind	Solar
Number of continual improvements achieved	18	54	9
Type of audits conducted			
EHS	31	41	47
PPS	15	17	27
OHS (internal)	46	50	27
GAM	24	24	18
ESMS	2	2	2
Total No of audits conducted	118	134	121
Number of audit observations received	176	167	434
Number of audit observations closed	176	161	337

Certification of sites and functions against GIMS

BU	Total sites	GIMS Implemented	External Certification	Internal (GIMS) Certified	Internal (GIMS) Audits in 2019-2020
Wind	35	10	1	6	4
Hydro	24	11	2	6	4
Solar	47	10	1	1	4
Functions	19	10	9	0	10

The scope of Greenko Integrated Management System includes certification, auditing, training, implementation and reporting of Integrated Management System (IMS), Environment and Social Management System (ESMS), Green Company Rating System, Integrated Reporting as well as awards and recognition.

The group has deployed diverse systems and associated processes across its operations for project management, asset management, information management and sharing, forecasting and scheduling energy generation, real-time monitoring and control of asset performance, surveillance, etc. All these systems and processes are integrated and managed under GIMS.

Intellectual Capital

GIMS Performance

KPI	FY 2019-20
Real-time monitoring of assets	100%
Number of persons trained on GIMS internal auditing	40
Number of rewards and recognition programs	118
Number of new policies introduced	29
Number of existing policies revised	27



Our risk-based approach to IMS audits ensure that the systems and processes are strictly adhered to while the business is progressing at breakneck speed, teams are more and more empowered and innovation is widespread.

Mr. Vidyacharan Astakala
AVP, GIMS

Innovation for Differentiation

Greenko's transformation towards GKO 4.0 highly banks on concentrated efforts and investment in promoting innovations and cutting-edge technologies in the operation and maintenance of renewable energy assets.

Integrating renewable energy sources with appropriate storage technologies to provide firm, schedulable and RTC power constituted Greenko's innovation pursuit for differentiation and competitive advantage. Such innovation included continuous improvements, marginal innovations, adoption of technologies, and planning and implementing innovative projects. In this context, Greenko carried out significant innovative interventions and value maximization programs across projects which effectively improved productivity as well as achieved cost optimization.



Value Creation Story

Blade Health Engineering and Maintenance Module

Objective

To monitor and maintain blade health across wind assets

Location

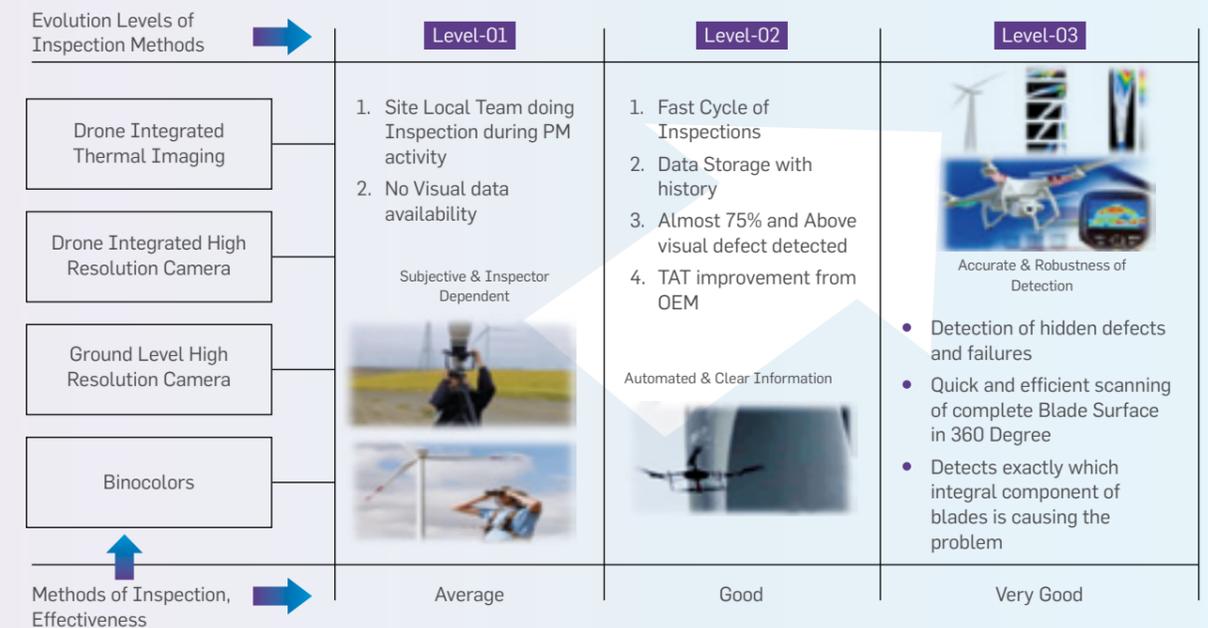
All wind sites

Description

- Monitoring of wind turbine blades with cyclic inspections for entire fleet
- Ensuring health of blades

The following measures were implemented to maintain the health of wind turbine blades;

- VG Extensions
- Blade Hydro washing
- LE Special protection application
- LE corrections and Blade Repairs
- Use of advanced sonography, Tap Hammer Device, Thermography for blade health assessment



Key Benefits

360 degree with 365 days access to blade condition owing to robust in-house data storage platform (INTELLIARE).

Outcome

Major Breakdown prevention increased energy generation during good wind period.

Intellectual Capital

Value Creation Story

Developing Centralized Knowledge Repository

Objective

Developing one lakh question bank on wind power plants

Location

GAM-wind all sites

Description

A need for a centralized knowledge repository was felt by GAM-wind. An initiative to create 10,000 FAQs was started initially and later it was increased to 1,00,000. A team was formed and identification of topics for the FAQs was planned. Frequent interactions, exchange of views and collaborative efforts were made for preparing the knowledge repository.

Final review was done at three levels by the expert panel to maintain quality, ensure that the answers are correct with respect to long term asset health and to avoid repetition.

Finally, the framed content was printed in 18 volumes and has been kept in the library. Soft copies of the same are available to employees.

This one lakh FAQs compendium has now become a knowledge capsule that is very often referred by practitioners.

Key Benefits

- Capsule of FAQs for O&M of Wind power plant was created.
- All the OEM Technologies were covered.
- Found useful in training and skill enhancement.

Outcome

Knowledge banking and sharing

Value Creation Story

Real-Time Access of Plant Data

Objective

To get real time data of plant and 100% visibility of equipment.

Location

Venus and Diamond, Karnataka

Description

- Modification in RS 485 looping of all SCB by separating the DC earthing of SCB and electronic earthing of communication cards in SCB. Finally grounded at RTU panel end-electronic earthing.
- Two separate earth pits are placed (electrical and electronic earthing) for RTU panels.
 - A. Power earthing connected to electrical earthing at RTU panel end.
 - B. Shielding of SCB, MFM and WMS systems are connected to electronic earthing at RTU panel end.
- Metallic RJ45 jacks bare used for crimping and outer shield of CAT6 cable are touched to same metallic jacks. Leakage are arrested at auxiliary DB panels.
- Maintained more than 300mm distance between power cables and CAT6 cables.

Challenges Faced

- Increasing TAT.
- Frequent SCB data communication hanging
- Gateways hanging.
- Inverter communication hanging
- Frequent Temperature alarm raise in servers

Key Benefits

- 100 % SCADA Visibility achieved.
- 100% Realtime data availability for plant performance analysis
- Reducing TAT by Immediate Fault identification and rectification through continuous monitoring
- Null interruption in SCADA visibility of all productive equipment like SCB, Inverter, MFM and WMS.

Value Creation Story

Hydraulics Analysis

Objective

To achieve maximum generation by operating the unit with best Hydraulics.

Location

Hemavathy Power & light's Pvt. Ltd, Karnataka

Description

- HLBC PH operated with 0.60 MW load & HRB PH operated with 0.60 to 0.80 MW load.
- HRB PH unit operates 24 hours a day at minimum load for the available discharge of 150 cusecs. However, since HLBC PH requires more than 150 cusecs for minimum load, HLBC Unit is operated at higher load resulting in more discharge into the intake pool of HRB PH, thereby filling the HRB pool to the brim. Once the pool is full, HLBC Unit is shut down till HRB intake goes to 868.5 meters. At 868.5 meters of TWL of HLBC, HLBC unit is started and these cycles are repeated. As a result, HLBC Unit operates for less than 24Hrs in a day.
- Energy realized between 20th to 30th Jan-2020 with 0.6 MW at HLBC and 0.6 to 0.8 MW at HRB
- During the above period, HLBC PH was operated at minimum load of 0.6 MW to gradually fill up the tail race canal which acts as head race pool for HRB PH. It was assumed that operating HLBC PH at minimum load for longer time will yield more energy at HLBC PH.
- For the same discharge there is an increase of around 3,660 KWh in HLBC 543 KWh

Outcome

Gain in Energy

1,26,086 KWh /month

Gain in Revenue

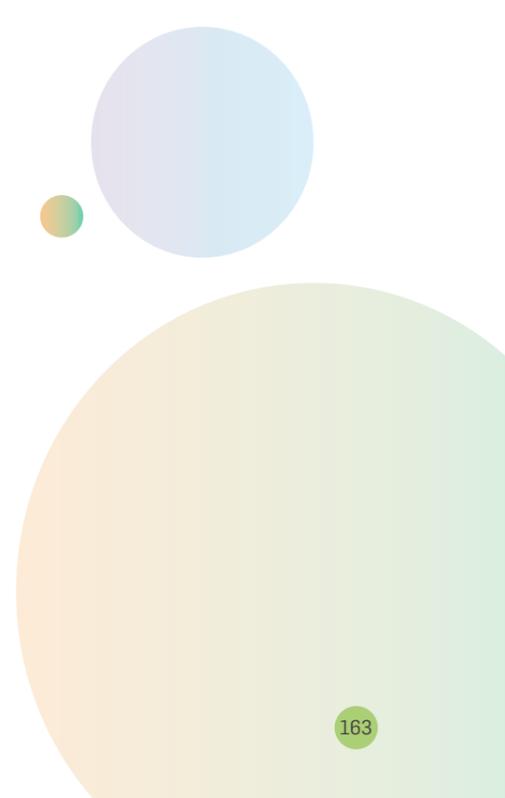
₹5,94,305/month

Energy increment of

32.87%

While Greenko makes big moves to address the challenges of future energy scenarios, it recognizes the significance of the innovation culture and hence actively promotes it. Greenko rewards innovation at all levels through a variety of innovation awards.

In addition to the value-maximizing interventions, Greenko's pursuit of innovation is addressed through continuous development, deployment, and enhancement of systems, software, and processes. The group has developed and deployed smart data analytics and predictive data simulation measures that enable asset management and tracking of maintenance, real-time and remote monitoring of performance, and collection and smart analysis of data. This helps to substantially maximize the performance of the renewable energy portfolio, reduce O&M costs through predictive maintenance, reduce the frequency of unplanned outages and limit the duration of downtime by rapidly identifying the point of failure.



Intellectual Capital

Data Analytics

Celeste Solar
Trend Analysis

Forecasting and Scheduling
Statistical and real-time forecasting model

GOMS
Tracking maintenance activities

GATS
Tracking of Assets

GEPS
Tracking of Projects

GMAT Tracker
Tracking MoM and closing actions

Predictive Measures

Drones
Maintenance of assets and Surveillance

Thermal Imaging
Observes health of modules

Predict Downtimes
Machine Learning model

Performance Indicators - Benefits of Data Analytics

KPI	
Reduction in loss of generation achieved due to the usage of data analytics from Solar assets	21.3 MU

Improving Machine Reliability through Predictive Analytics

In this reporting period, Greenko has partnered with a leading global predictive analytics and engineering firm, ONYX InSight, to improve its turbine reliability through investment in innovative digital technologies.

ONYX Insight is set to modernize 500 of Greenko's wind turbines through adoption of the latest predictive analytics. Accordingly, sensing equipment are to be installed across 500 direct drive and geared turbines and this will enable online condition monitoring of the turbines. The smart data generated through the predictive analytics will further be used to identify developing machinery failures, thus providing extended lead times of nearly 6 – 12 months to schedule repairs. This self-sufficient operations and maintenance strategy will maximize efficiency, reduce maintenance costs, reduce unplanned downtimes, improve productivity and overall lifespan of the project, in line with Greenko's circularity principles.

Forecasting and Scheduling

To effectively gauge the rapidly increasing share of renewables, with the variable generation, it is indispensable to have a competent forecasting and scheduling mechanism to maintain flexible and stable energy generation. Therefore, forecasting demand with smart data analytics and scheduling generation accordingly is critical.

In order to deliver reliable power and to meet the regulations of the government to ensure grid stability, Greenko has developed in-house infrastructure and capabilities for forecasting and scheduling of power. F&S activity is carried out by deploying statistical forecasting models and real-time weather forecasts to predict day-ahead energy. Currently, Greenko has partnered with three of the best forecasting agencies to meet the standards set by SLDC. The group's efforts and deployment of technology have yielded encouraging results in delivering power as scheduled. Greenko's forecasting accuracy increased from 95% to 98% in the current financial year, thus harnessing the value pool of RE smoothing through accurate forecasting. This capability is indicative and a forerunner to the business transformation designed to harness many new value pools in the energy sector.

Performance of forecasting and Scheduling

KPI	Hydro	Wind	Solar
% variation in energy delivered to scheduled	1.77%	1.08%	1.07%

Moving forward, Greenko has set a target to improve the accuracy of the in-house forecast model by using the Global models and integration of forecast platform with SAP S&D by the next financial year.

In addition to the forecasting and scheduling tools, the billing and invoicing activity of the commercial department of Greenko is going to be completely automated, as a transformation initiative towards GKO 4.0. In the current reporting period, 70% of the total invoices were generated through SAP. Greenko has targeted to achieve 100% automation of billing and invoicing through SAP in the next financial year.

Systems and Processes deployed across Greenko

Enterprise Information Management System

SAP S4/HANA

- Material Management
- Finance & Controlling
- Plant Maintenance
- HDM & Payroll
- S & D
- HANA Migration
- GLMS (Greenko Leave Management System)

Darwin Box

- Employee Central
- Recruitment
- Learning Management
- Succession Planning & Goal Management

- Succession Planning & Career Development
- Compensation Management

Project Management

GEPS (Greenko Energy Project System)

- Project WBS planning, activity scheduling, resource allocation & track issues.
- Project progress updates by field execution & quality team using mobile apps.
- Logistics planning and track equipment delivery to Project sites.
- Business Analytics using Sisense: Real-Time project progress Insights to the project stakeholders for decision support.

Forecast & Scheduling

Microsoft SQL Server Integration & Reporting Services provide Asset operational reports on a continuous basis for energy forecasting

Centralized Monitoring & Control Systems (SCADA)

GE Proficy: Cimplicity 9, Historian 6.1

- Integration and visibility of all plants data at GAMS command centre. Real-time monitoring of Plant parameters by O&M. Reports and Analytics for performance improvement.
- GOMS- field services operations and maintenance system

ICT Support Apps

Helpdesk

- ITIL based helpdesk for incident, change & asset management

- Network monitoring, applications availability & information security AVAYA IP Office
- Internal voice communication and conference bridges across stakeholders

Surveillance

Mind Tree Gladius

- Real-time asset monitoring through networked cameras across the group
- Assessing, Analysing, and storing surveillance data for Security Services use.

Document Management

The document control mechanism for Plant engineering, design documents, data storage, and department procedures across plants and offices.

Resource Assessment Applications

Meteodyn, Meteopole, OpenWind, Wind Farmer, WAsP

Wind Resource assessment software (s) for validating the wind data, Power Curve, identity & selection of wind farms, optimizing the Implementation strategy, validating OEM data trends, and wind forecasting.

PVSystem

Irradiance study, sizing, simulation, and data analysis of Solar PV projects

Collaboration Applications

GMAT (Greenko Meeting & Action Tracker)

- Plan and conduct business meetings, share meeting minutes, track action items unto closure.
- A social platform to engage employee affiliation to and within the Company, Training Program, Induction programs, Shared Services.

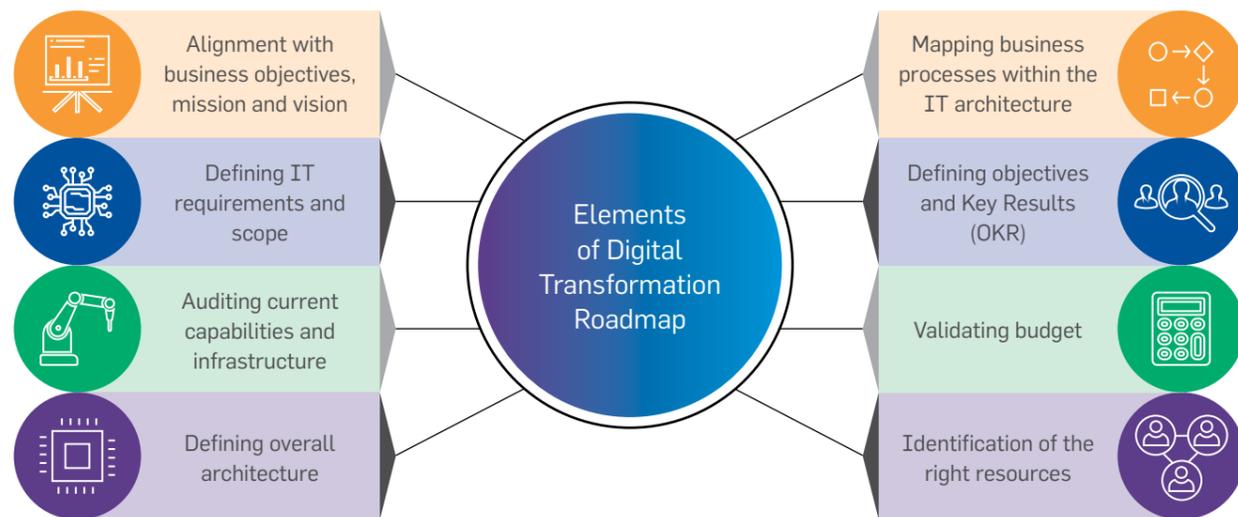
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Technology Adoption

The deep integration between energy transformation and the digital revolution is the future trend of the global energy system. Digital technologies are set to make energy systems around the world more connected, intelligent, efficient, reliable, and sustainable. In this context, Greenko is proactively leveraging digital technologies to improve operations, process automation, boost efficiency, enhance reliability, enable online condition monitoring, and overall, in the way of building intelligent renewable energy projects.

To manage the rapid growth of digitalization and to give it strategic direction within the group, Greenko has established a digital transformation roadmap in the current reporting period. The roadmap is meant to align the digital transformation with the strategic objectives of the organization.

Digitalization Roadmap



Digitalization at Greenko is achieved through proactively adopting advanced and best in industry technologies such as smart data analytics, predictive data simulation measures, ICT (Information and Communication Technology), Forecasting and Scheduling models, cloud computing, distributed computing, etc. Greenko plants are automated and the assets are monitored using IoT based state-of-the-art SCADA which enables centralized control and real-time monitoring of assets and troubleshooting. Since this is a common sharing platform, it also follows the principle of circularity in Greenko's business model. Bi-hourly monitoring of remote assets has been established using SCADA and it significantly reduced unplanned downtimes.

Digitalization across BUs

KPI	Hydro	Wind	Solar
Percentage of GAM processes automated	46%	100%	96%
Percentage of plants covered under GOMs	92%	100%	100%
Percentage of plants covered under Forecasting and scheduling	13%	100%	98%
Percentage of plants covered under Telemetry	22%	100%	NA
Percentage of plants covered under Historian	42%	100%	NA
Percentage of plants covered under IoT	4%	100%	NA
Percentage of plants covered under SCADA	42%	100%	100%
Percentage of plants covered under SAP MM	100%	100%	100%
Number of plants covered under drone usage	0	100	46
Percentage of plants covered under DMS	100%	100%	100%

Information and Communication Technology (ICT)



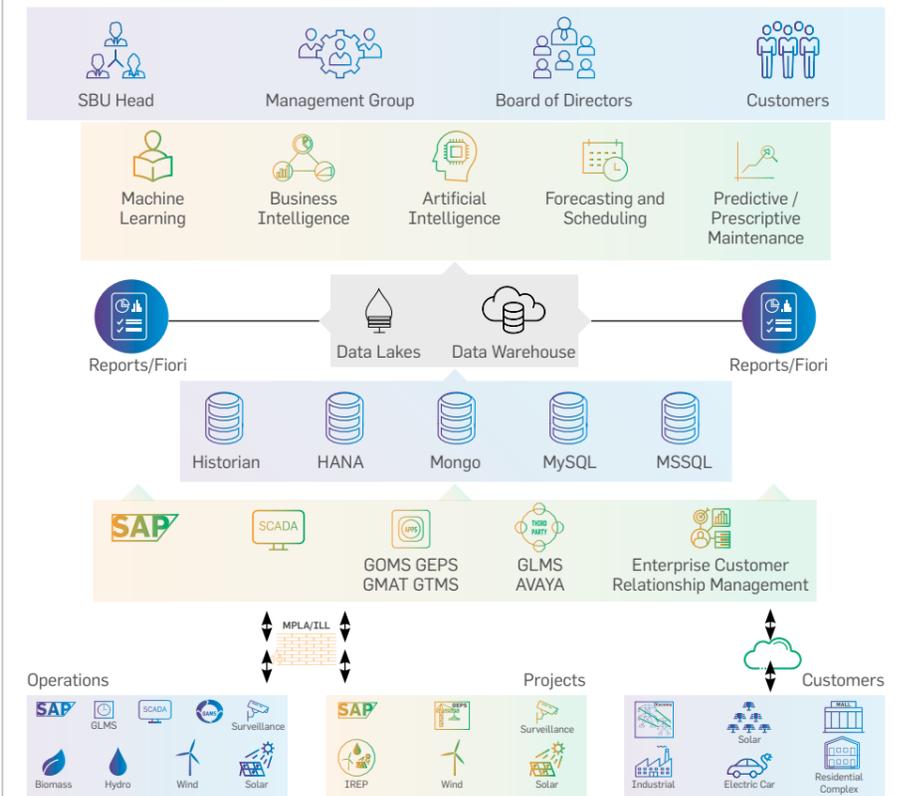
Information and Communication Technology is used at Greenko to enable seamless real-time information, data availability for decision making, remote operations and predictive and adaptive O&M. We have begun adopting circular approaches in managing ICT assets such as sharing, reusing after repairs and refurbishing.

Mr. Thirumala Raju Mandapati,
AVP, ICT

Greenko's Information and Communication Technology (ICT) focuses on improving performance efficiencies. The main objectives of Greenko's ICT are as follows

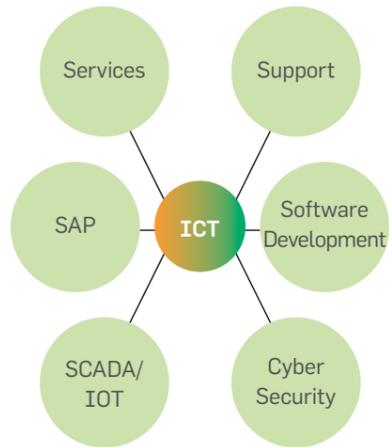
- Create new information management and analysis capabilities
- Ensure continuous availability of data/connectivity to various plant locations for real-time monitoring of assets
- Improve information security and privacy protections against cyber threats and data breaches
- Improve service delivery and timely response to new business requirements along with building new capabilities to serve long-term institutional improvements.

ICT Model



Intellectual Capital

Functions of ICT



Internet of Things (IoT)/SCADA

In addition to data analytics, Greenko also places great emphasis on the Internet of Things (IoT) in its transformation to digitalization. The possibilities of the Internet of Things (IoT) and Big Data-analytics have revolutionized the future of the energy sector. Along with Greenko's solid digital infrastructure, IoT allows remote access of data and to maximize the performance of renewable energy portfolios. Greenko has adopted the following IoT based technologies for effective project and asset management.

IoT based Technologies at Greenko

IOT based smart data logging and visualization system

IOT based industry equipment control with predictive maintenance

IOT Enabled SCADA system for Electric Sub stations

Smart Security Solutions based on IoT

Integrating Wireless Sensor Networks into IOT for security

Significant improvements achieved by IoT/SCADA deployment in the current reporting period is as follows,

- **SCADA database and Viewer Screen Development:** Development and integration of Orange Wind (633.3 MW), Skeiron Wind (384.4), Orange Solar (140 MW), and Premium & Pennar Solar (33 MW) to Greenko database and viewer screens
- VSAT testing for Tanot & Budhil
- Regen HOTO
- Live Wire Portal

Software Development

Continuous improvement and excellence in Greenko's business are achieved through development, deployment, enhancement, and maintenance of systems and software. Innovative software development enables Greenko to be technologically-enabled, smart, resilient, and dynamic in its transformation journey towards GKO 4.0. In the current reporting period, Greenko has successfully developed the following innovative software,

Greenko Ticket Management System (GTMS)

Ticket generation, management, escalation, transfer, etc. modules effectively deployed for ICT, SAP, HR, CS, and GSS functions

Health Screening Form

Employee Health Screening Form (COVID-19) along with the Control Panel, for both internal and external.

Greenko Forecast and Schedule (GKFS)

The system, currently under development, with modules for real-time, forecast, scheduled data, curtailment avoidance, deviation analysis, etc.

Greenko Merchandise Portal (GCART)

Comprehensive product information

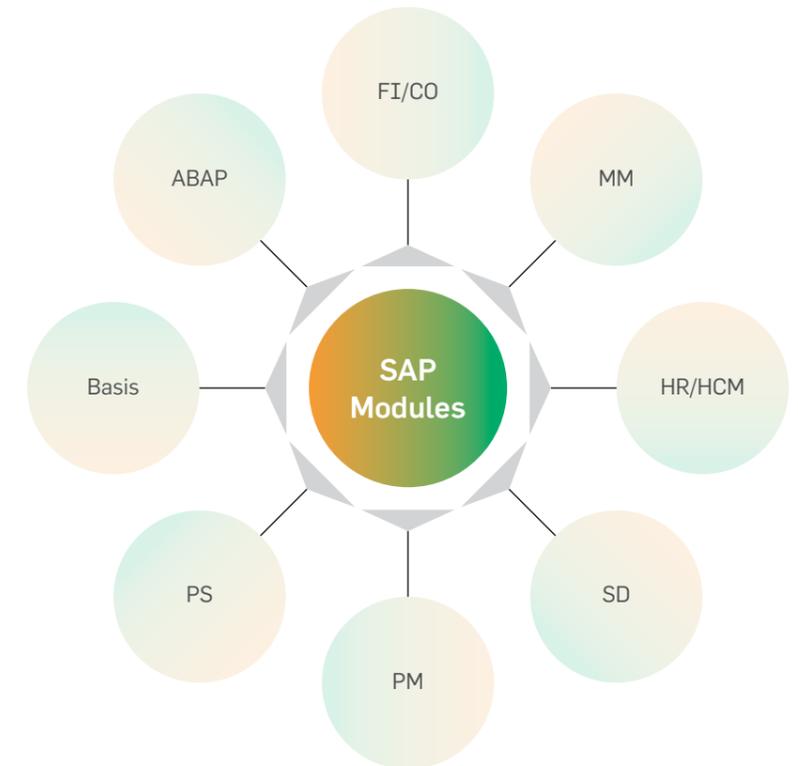
In addition to new software development, the existing systems and analytical tools are enhanced in line with technological advances and maintained continuously for performance excellence.

Software Enhancement and Maintenance

- Greenko Meeting Action Tracker (GMAT)
- Celeste (GAMV)
- Clique (GOMS)
- Greenko Energy Projects System (GEPS)
- Greenko Intranet

SAP Implementation and Management

Greenko business processes across departments are effectively automated and digitalized through SAP. The business processes supported and automated by Greenko's SAP consist of sales orders, invoice process, Procurement, Inventory Management, Vendor Payment, Payroll, and Accounting.



The significant achievements and enhancements of SAP in the current reporting year are as follows,

- Standardization of Material Master
- Implementation of Materials Management module
- Implementation of Finance and Controlling module
- Implementation of Human Capital Management module
- Migration of Orange & Skeiron Plants from Legacy systems to SAP is in progress
- Evaluation and POC of RPA for SAP process automation have been done and implementation is in progress.
- Configured and tested 40 Fiori applications for business use
- Implementation of PS Module for Pinnapuram Project
- Developed functionality in the Sales and Distribution module for multiple sales process, JMR Formats uploading, Covering letter, Invoice, and Losses forms.
- Removed 95% of Generic User ID's and created User-specific ID's.
- SAP Content server migration.

Value Creation Story

SAP HCM Module Implementation

Objective

Implementation of SAP Human Capital Management Module for 35 new operations

Innovative Modification

- Automated attendance capturing process from door controller system
- Reduced manual intervention in tax computations and statutory filings

Key Benefits

By extending the HCM Module to 35 new operations, the group has centralized employee data, Tax savings, Pay components etc

Outcome

Centralized platform for Payroll and Employee data.

Intellectual Capital

Value Creation Story

Sales and Distribution Module

Objective

To reduce manual effort and adopt automated process in Sales and Distribution function

Innovative Modification

- Sales and Distribution modules implementation for 71 new plants, across all verticals, located in different states.
- Developed customer portal for JMR inputs with workflow.
- Provision to capture all types of meters and covered sales processes related to both state utility and open Access.

Key Benefits

Automation of the following processes

- JMR to invoice generation
- Approval Mechanism for contract
- Time-of-Day tariff calculation and other pricing conditions
- Reports and invoice formats as required by business users

Outcome

Business users can generate invoices on or before 5th of every month with minimum human intervention.

Information Security Management

According to the International Energy Agency, "Digitalization is already improving the safety, productivity, accessibility, and sustainability of energy systems. But digitalization is also raising new security and privacy risks." Increased integration of digitalization in Greenko's processes and its growth towards an Intelligent Energy Platform makes information security imperative for the group.

Information security is ensured and highly prioritized in Greenko by means of its effective Information Security Management System (ISMS) which is integrated into GIMS. The scope of the Information Security System extends to all information used at Greenko Group, in all formats, regardless of the specific departments and individuals that own and manage the information at a local level. This includes information owned or processed by other organizations but relevant in their dealings with Greenko Group.

While the focus of information security capabilities is provided by the Information Security function, a number of additional departments including Legal and Registry include explicit information responsibilities and are therefore considered a part of Information security. The Information Security function provides and coordinates expertise to influence the information security approach of the Greenko Group, helping it to achieve its strategic objectives by ensuring the availability, confidentiality, and integrity of information. By recognizing the different types of information used, and the business requirements associated with each, Greenko will deliver a secure framework within which it can provide flexibility to suit organizational needs while maintaining compliance with legal obligations and sector-specific best practice.

In addition, the significant improvements achieved through ICT services and support, in the current reporting period, is as follows,

- **Business Intelligence Application:** Greenko Business Intelligence Application has been updated from 7.1 to 7.4 version to get additional functionalities and features

- **Greenko Netmon:** Greenko Network Monitoring server has been migrated from a Physical Server to a Virtual server

- **GLMS:** Greenko Leave Management System has been updated to the latest version to integrate other modules like Visitor Management, Cafeteria Management, and Access Control Module

- **Microsoft Azure AD Connect:** Microsoft Azure AD connect tool has been updated to the latest version

- Helpdesk system upgraded from Sapphire & Greenko helpdesk to newly established in-house Ticketing system tool (GTMS)

ICT performance

Number of ICT projects planned and implemented

FY 2018-19

108

FY 2019-20

13

Uptime of servers

FY 2018-19

99.5%

FY 2019-20

99.98%

Percentage of ICT equipment failures

FY 2018-19

5%

FY 2019-20

5%

Maturity level of cyber security

FY 2018-19

Level 2: Proactive

FY 2019-20

Level 2: Proactive

Average time taken to resolve tickets

FY 2018-19

29 Min

FY 2019-20

Low: 1.4 days

Medium: 1.7 days

High: 1 day

Number of ICT tickets received

FY 2018-19

11,929

FY 2019-20

7391

Number of ICT tickets received

FY 2018-19

11,929

FY 2019-20

7391

Number of ICT tickets resolved

FY 2018-19

11,929

FY 2019-20

7387

SAP Training to business users

FY 2018-19

NA

FY 2019-20

404 Man-hours

ISMS performance

13 MPLS VPN

Projects implemented

750

Number of employees trained on ISMS

Value Creation Story

Sales and Distribution Module

Objective

To bring all company codes into a single and robust platform

Innovative Modification

- Configured the new company codes as per business and statutory requirements
- Mapping of legacy GLs, Vendor codes, Customer codes with SAP codes

Key Benefits

Automation of the following processes

- Group reporting
- Intercompany transaction balances
- BRS automation
- Customer and Vendor balances reports with aging
- Asset accounting
- Depreciation calculation.

Outcome

Single platform for all company codes and role-based access minimizes manual efforts for MIS, GST filings, TDS filings etc.

Intellectual Capital

Leveraging Drone Technologies @Greenko

The use of drones at Greenko has created an array of new opportunities in monitoring, operation and maintenance of Wind, Solar and Hydro assets.

Greenko has augmented drones with advanced technologies like artificial intelligence, machine learning, data analytics enabling seamless real-time information, data availability for decision making, remote operations, predictive and adaptive Operations & Maintenance and agile project management.

Solar panels require frequent inspections to monitor their performance, as they develop issues that are difficult to detect manually

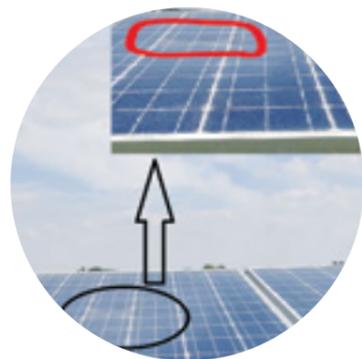
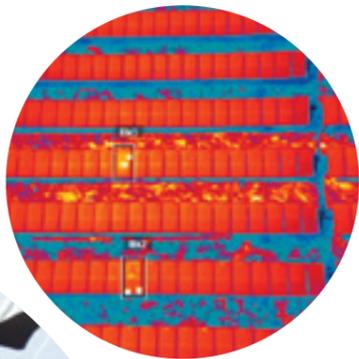
due to the size of the solar farms. Also, Wind turbine generators, gearboxes and blades require frequent inspections as they can develop cracks, fissures, and other structural issues over time that can affect its efficiency. They need periodic inspections to detect any issues. Detecting these issues and defects earlier was more time and money consuming.

Instead of manually inspecting and using a handheld thermal camera to detect defects and issues, Greenko is using drones equipped with a thermal camera to perform the inspections which improved the accuracy and

quality of data radically faster. A drone with a zoom camera can view parts of the solar panels, wind turbines and blade. Thermal imaging capabilities will be able to detect any other issues with either the solar panels, wind turbine generators, gearboxes or blades.

Drone Operations involves –

- a. Planning and acquiring data to create flight plans, orient field teams and operate drones to collect imagery and thermal data.
- b. Process data using analytics, machine learning, artificial intelligence and proprietary algorithms to analyze and validate the data to ensure accuracy and quality
- c. Actionable insights derived from the above reports and delivered to GAM operations/Project Hub for further action/follow-up at sites



GAM operational Centre

Intellectual Capital

Technology Adoption in IRESP

Innovation and technology adoption is at the very core of Greenko's shift from generation-based delivery to smart demand-based delivery through the development of Integrated Renewable Energy Projects supported by an Intelligent Energy Platform. The various technological tools that are employed in the engineering and design phase of IRESP are as follows,

Technological Tools Employed for IRESP Design

CFD Analysis	Model Test
3D modelling	Electrical Transient Analyzer Program
Structural Analysis and Design Software Application	Project Timeline Management Platforms

Business Process Standardisation

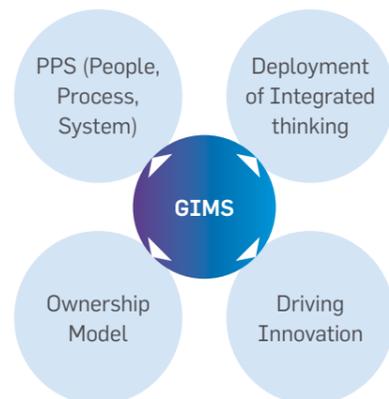
With the aim of standardizing business practices, the organisation has established Greenko Integrated Management Systems. GIMS is an instrument established to drive standardisation of processes across the operations of the group, in line with Greenko's values of compliance and ethics and in conformance with global standards. Digitalization of business processes and audits are results of this process standardization.

GIMS aims to make the business processes in the organization uniform through the standardization process to ensure that Greenko performs the same activity in the same way at different

places. In this context, under GIMS framework, Greenko's critical processes such as Asset Management, Project Management, Quality Assurance and Control, Occupational Health and Safety, Environment and Social Management, Information Security etc. are standardised and continuously improved, in line with industry best practices.

Under the framework of GIMS, all functions of Greenko have started implementing PPS and Ownership model, originally established to strengthen human capital, to standardize the process outcomes, and to own the decision-making process involved.

Business Process Standardisation at Greenko



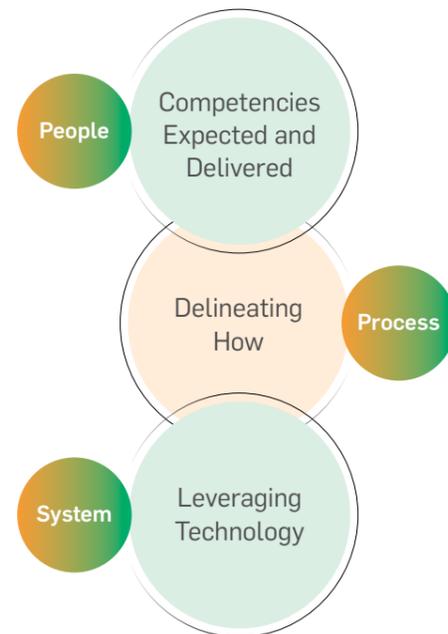
Greenko Integrated Management System (GIMS)

Greenko's robust integrated management system seamlessly standardizes the diverse systems and processes employed so that they are in line with the organization's objectives and maintains the business through an ever-changing environment. It offers best-practice guidance for operational excellence, increased efficiency, and cost optimization.

People, Process, and System (PPS) framework

The People, Process, and System framework of Greenko supplements GIMS in the management of assets and projects. The PPS was first deployed for Asset Management at Greenko. The objective of PPS deployment at GAM is to uplift the performance of the assets by way of synergizing the processes with no compromise on the essential elements like EHS. Under the framework, GAM was divided into seven key areas for which detailed processes were delineated, discussed, and adopted in these key areas.

Components of People, Process, System framework

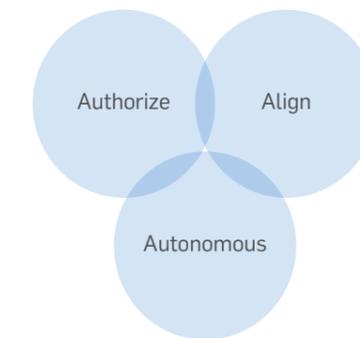


The PPS framework operates on the context that Greenko's transformation towards GKO 4.0 is possible and seamless only when people own and steer, processes are clear and understood and systems enable people to adhere and use processes for organizational objectives.

Ownership Model

Greenko's ownership model was established with the goal to create an empowered team with accountability, authority, and autonomy to achieve business goals in line with organizational values. Under the ownership model, Greenko's teams are provided with several "not-the-way" illustrations to prevent them from making wrong decisions and have access to all relevant information.

Key concepts of Ownership Model



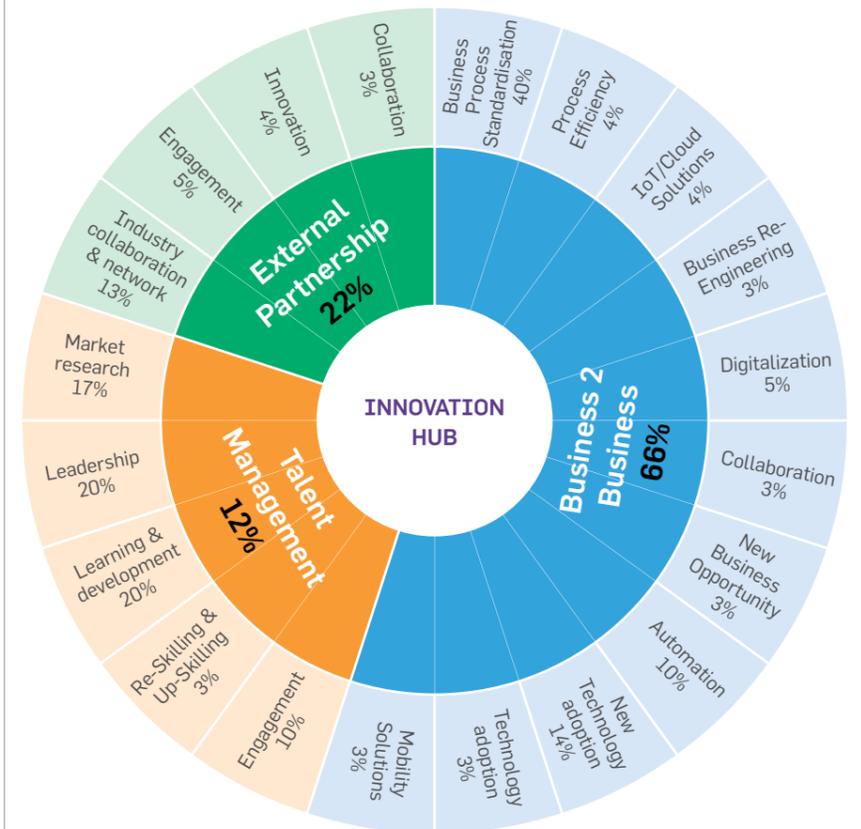
Driving Innovation

Greenko has instituted an Innovation Hub which is essentially a knowledge-sharing platform in which innovative ideas are conceived and shared among different functional areas through participative sessions, in the current reporting period. This progressive initiative is a critical component of Greenko's Organisational development and significantly contributes to and is a major driving force of the transformation journey towards GKO 4.0.

The purpose of the Innovation Hub is to identify the gaps and improvement opportunities in Projects and Operations of Greenko. The methodology employed for the Innovation Hub enables the participants to identify and analyse the important issues, gaps, opportunities, and improvement areas in the organization and subsequent preparation of an action plan to resolve

the issues identified. The establishment of an Innovation Hub is a critical step towards Greenko's innovation culture.

Key Results of Innovation Hub



In FY2019-20, six innovation hub sessions were conducted and 150 participants, in 24 groups generated 240 ideas in different functional areas such as engineering and design, business deployment, asset management, procurements, quality etc. This signifies the Co-creative culture at Greenko.

Deployment of Integrated thinking

Greenko is continuously defining, implementing, measuring, and communicating its value creation and business strategy throughout the organization, year on year. To communicate further down and deploy the business strategy and value creation model, Greenko has launched

<IR> Conclave, as the annual platform to engage its stakeholders at the sites and functions. These conclaves have become one of Greenko's flagship events attracting diverse stakeholders from GAM-Wind, Solar & Hydro and other functions from the corporate office. It brings all of them to a common platform.

Intellectual Capital

These Conclaves have endeavoured to highlight the direction that Greenko has taken to reach its goals. The objective of this <IR> conclave is to,

- To deliberate the IR process and align with strategic objectives
- To deploy Integrated thinking
- To revisit the issues that matter most in Greenko's Transformation Journey
- To share experience and success to learn together

In the current reporting period, the <IR> conclave was conducted on the theme "It's Possible" in which the IR champions of Greenko shared success stories as to how the teams are contributing to the strategic goals of the company and the six capitals of Integrated Reporting in the <IR> conclave.

Performance Highlights of <IR> Conclave

200

<IR> Champions

130

Success Stories

30

Award-Winning Stories

3500

Training Man-Hours



At Greenko, <IR> conclave drives value maximization programs. The key benefits achieved through <IR> conclave are: it has provided opportunity to connect teams across different plants, build a collaborative culture, and engage a broad range of disciplines enabling the integrated thinking for the organization's long-term vitality. 🔄



Mr. Vijay. J
Senior Manager, GIMS

Looking Ahead

GIMS is the single platform for systems and processes. As the organisation is growing at break neck speed and transforming its business model, standardisation of systems and processes and periodic checks on adherence are going to be more important.

Strengthening the digitalization of all Greenko's assets and projects will be pursued progressively by increasing the percentage of plants covered by automation, ICT, SAP, IoT, etc. The accuracy of forecasting and scheduling is targeted to be improved and integration of forecast platform with SAP S&D by the next financial year is planned.

Greenko's innovative culture will be constantly boosted through its flagship events such as Innovation Hub and <IR> conclave. Progressive implementation of the Intelligent Energy Platform, by piecing together existing digital advances on an adaptive and intelligent framework will be the focus of Greenko's journey ahead.

Human Capital



Our agile teams and multi-skilled talent pool are committed to punctiliously support the Greenko Group's vision and transformational journey. The ownership culture, taking responsibility for outcomes by each team is widespread and is extending; and we hope to become a network of autonomous and adaptive teams in the near future. It is in this context, systems and processes become more relevant and the fact that we have matured in the implementation of PPS is positive news. The rapid growth of the renewable sector poses a challenge to the availability of skills. That is why we spot them early and nurture. Further, the relatively higher growth rates at Greenko offer significantly better growth opportunities to our employees. This, amongst many other factors, is the reason for higher retention rates at Greenko. In addition, we nurture the culture of innovation amongst our employees and curate their development.



Mr. Krishna Kishore.C.
SVP -HR & EHS

Sr VP-HR Mentoring Managers



Our agile Project Human Resource Management System keeps all the entities in our supply chain to have sustainability as a prominent focussed area. A good alignment of the purpose and processes throughout the value chain is essential for unhindered project progress.

Mr. Krishnamurthy Sunkara,
VP, HR & IR



Nature of our assets is unique, and the assets are intricately linked and extensively spread amongst communities. Accordingly, our strategy and operations of security are more intelligent and technology intensive. We adopt a public-private-people approach to secure our business interests and not just assets. Our people working on sites in isolated and tough conditions require the cooperation of local communities for seamless and efficient functioning. By providing fair, safe, healthy, and lively workspaces at the sites we are able overcome the challenges a new site poses each time.

Mr. Satish Babu V
VP -HR & IR

Human Capital

Strategic Approach

The HR team at Greenko operates through the Shared Services Model with services to all support functions and businesses. Talent Acquisition, Onboarding, Induction, Compensation & Benefits Administration, HR Compliances, Learning & Development are supported through the Shared Services Team. The function supports the projects and GAM operations and ensures HR support for all projects and plant locations, working closely with the site HR Teams.

People-centric development is at the core of Greenko since its evolution. The strategy involves attracting, training, rewarding, recognizing, and evolving

the human resource, which is the heart of Greenko's business strategy. The Human Capital of the Group is agile, resilient & committed to sailing through any unforeseen turbulent/dynamic business situation(s). At Greenko, augmentation of Human Capital through the in-organic growth is more incidental to business acquisitions. The diverse competencies of its employees have helped in managing multiple projects and plants. Counting on the inherent potential and competencies of Greenko's Human Capital, the Leadership Team has always been committed to employee development to catapult growth and has forayed into new opportunities in the renewable space through Integrated Renewable Energy Storage Projects (IRESP).

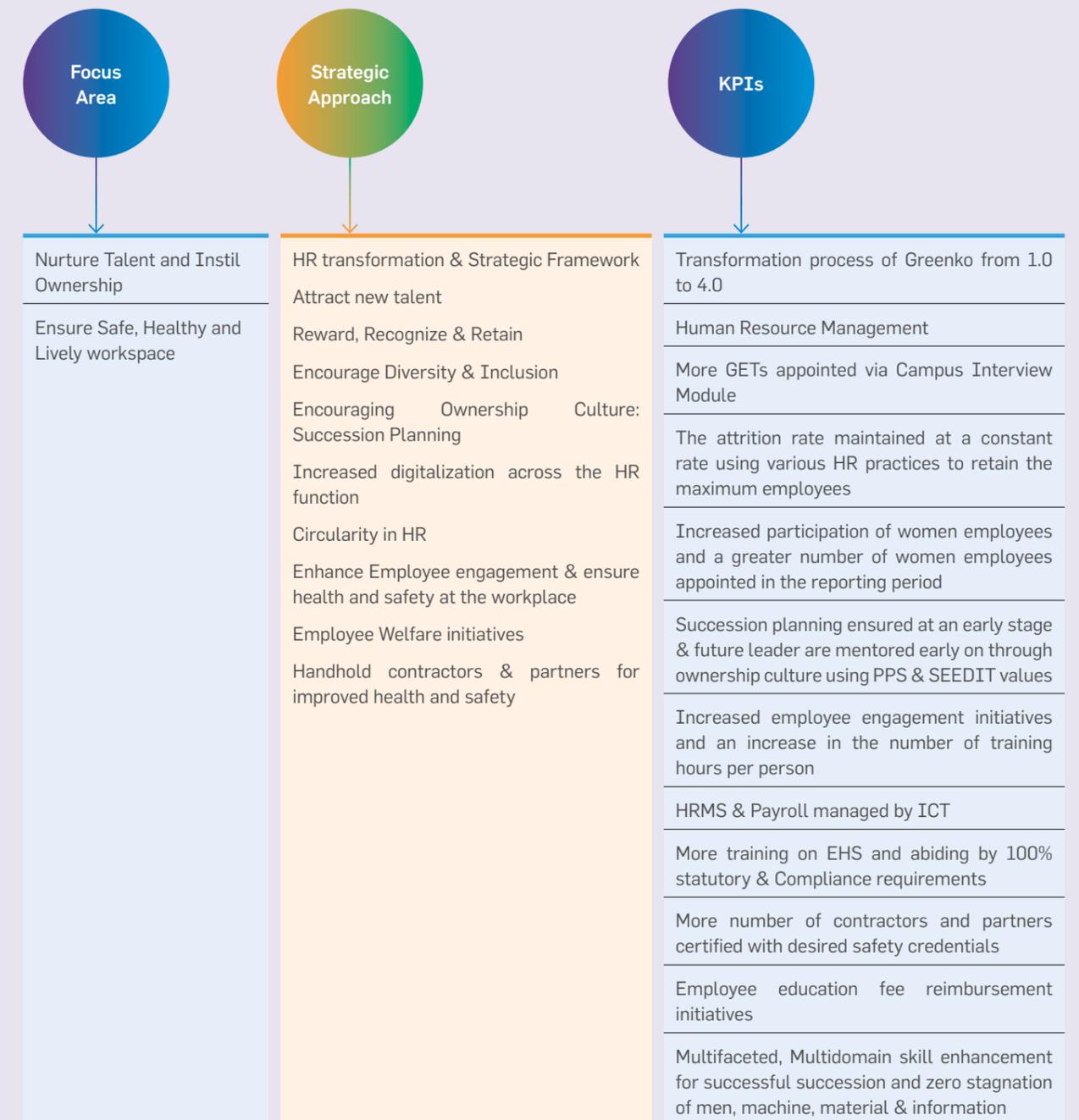
The Group believes in an ownership culture of running the business. This not only ensures employee retention and engagement at all levels, but also builds a safe, lively & healthy workplace. This unique ownership culture aids in innovation and motivation across the organization.

Greenko believes in making its standards the best in the Indian clean energy sector. The group is confident that setting financial and non-financial goals concerning economic, environmental and social factors will lead the organization towards sustainable development.



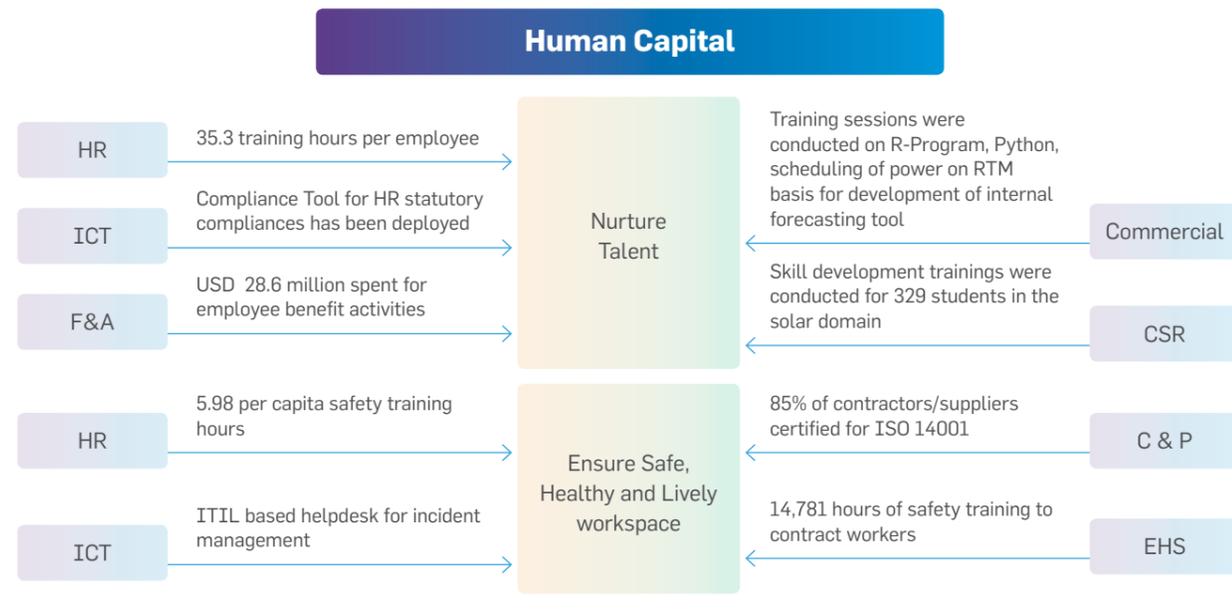
We always adopt, Reduce, Reuse, Recycle, Repair, Refuse during O&M of our assets.

Strategic Direction: Attract, Retain and Nurture the Best Talent



Human Capital

Integrated Value Creation in Human Capital



Journey so far

People are the foundation at Greenko and it believes firmly that the value-based business completely is in sync with the human asset aspirations. The Human capital of Greenko has been groomed right from the beginning to understand the organizational values to achieve desired business transformations. The efforts in making its human asset multiskilled to function

in multiple domains are spearheading the smooth transitioning of the group into the next league of "GKO 3.0 and 4.0", also adding value simultaneously to all the Stakeholders.

Nurture Talent & Instil Ownership

HR Transformation Process

As Greenko transformed from GKO 2.0 to 3.0, it was imperative that its Human

asset is always motivated, committed, agile, and innovative to enable the company to navigate and harness diverse opportunities. Greenko's drive of "Creating Ownership Environment" and People, Process, System (PPS) in keeping with its values-SEEDIT, has yielded notable success in its business outcomes and innovation. The transformation journey of Greenko from 1.0 to 3.0 and the roadmap to reach 4.0 is presented in the table below.

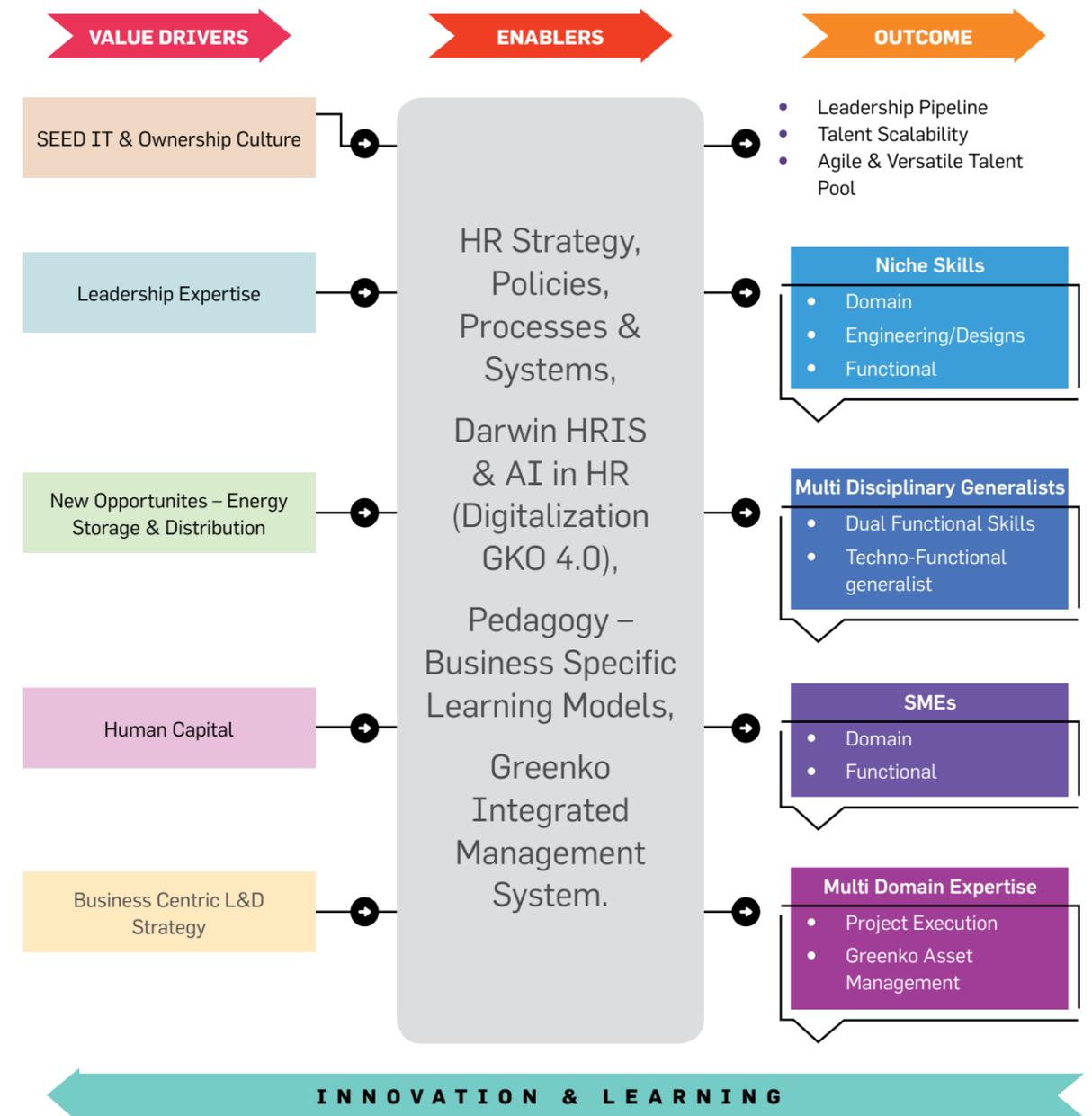
Greenko's transformation journey in the evolution of its Human Asset from GKO 1.0 to 4.0

Transformation journey	HR 1.0	HR 2.0	HR 3.0	HR 4.0
Transformation period	Standardization	Integration	Excellence	Digital Transformation
Key Achievements	Standardization of the HR policies, and procedures Development of new policies	Institutionalization of SEED IT values across the group Strategic L&D	Performance Feedback culture. PPS model Ownership model Campus hiring at premier institutes Succession planning.	Implementation of new HRMS (Darwin box) Strategic HR Learning and self-organizing teams

Strategic Framework for Human Resource Management

At Greenko, the organization has a robust HR management strategy to achieve organizational goals effectively at various levels. The organization recognizes the available skills and skillset gaps to perform the task successfully. The group effectively recognizes the levels of assessment at organizational, task & individual levels.

HR strategy for Greenko's Value Creation from 2020-2025



Human Capital

"People" are an important and valuable resource every organization or institution has. Greenko passionately believes that 'Dynamic' people can build dynamic organizations. Effective employees can contribute to the effectiveness of the organization. Competent and motivated people can make things happen and enable an organization/institution to achieve its goals. Therefore, Greenko continuously ensures that the dynamism, competency, motivation, and effectiveness of its employees remain at high levels. The group has formed a strategy for Human Resource Development/ management to be a continuous process & ensures the development of employee competencies, dynamism, motivation, and effectiveness in a systematic and planned way. The entire process of strategy formulation, including the value drivers, enablers, and the outcomes of these earmarked for the period 2020-2025, along with the innovation and learning processes constitute in a nutshell all the core aspects of cultural transformation, business partnering, employee communication, people productivity, talent acquisition & retention, learning and development, team management, etc.

Growth has been synonymous with the inherent nature of Greenko Group. With the ownership culture, the institutionalization of SEED IT (Stakeholder Inclusiveness,

Excellence, Ethical, Discipline, Innovate, Teamwork) Value System has built a strong foundation amongst employees. The above 'Value Drivers' are seamlessly integrated with the 'Enablers' to strategically create a Value Proposition with definite 'Outcome'.

The HR strategy has evolved critically, supporting the Value Drivers with desired HR Policies, Processes, and Systems.

The Digitization GKO 4.0 journey has one more milestone with the deployment of the Human Resource Information System (HRIS) through the Darwinbox HRIS tool.

The Leadership Pipeline is developed to meet the Business expansions plans of the Group and thus, opportunities are provided to the young talents who have the competence and potential to take appropriate Leadership Roles.

Talent scalability is a critical and ongoing agenda for HR to provide the required number of talented resources for new projects and acquisitions. Greenko has always grown with a mechanism of built-in talent scalability since its inception.

The pedagogy to impart requisite domain, functional, technical and other niche skills are designed specifically as per the requirements of the existing and new business opportunities at Greenko.

An agile and multi-talented versatility is built amongst employees across the Group to make them competent. At Greenko the 'Value Drivers' are supplemented by the 'Enablers', thus all the 'Outcomes' will have an opportunity to learn and unlearn with a pursuit to 'innovate' for sustenance and continued growth of the organization.

Human Resource Management at Greenko

The Human Resource Management at Greenko has structured across eight significant HR dimensions viz. talent acquisition and management, Diversity, Learning, development & Leadership Management, Succession Planning, Employee Engagement, Employee Welfare, Digital Transformation, Safety & Health. The HRM at Greenko has come a long way from Human resource policy planning (1.0) to Domain-specific skill training (4.0), the group has managed to percolate the ownership model deep down the roots of the organization and empowered its human asset to not only follow job role descriptions but, also own its outcomes.

The highly empowered workforce sets the stage for the smooth transition to Greenko 4.0. The group's focus is not only based on hiring the right people but also on retaining talent and ensuring capability enhancement of existing talent.

HR Functions



The ownership culture at Greenko has made the group the most sought after in the RE domain. Employee welfare programs, merit-based annual

performance review, and rewarding the right talent at the right time has built and sustained the company's brand image amongst its employees. The

group could retain 93% of its workforce during the reporting period and achieved a cost reduction by 10% per hire for the FY2019-20.



Training on Usage of PPE

Human Capital

Talent Acquisition & Retention at Greenko

The leadership at Greenko envisions that the assets that it creates follow principles of and be a part of nature. These assets not only include its product 'energy' as a service but also its human assets and the group envisions all its assets to be efficient, effective and balancing. In the design, execution, and operation, all the assets are regenerative, sustaining for generations and is designed to fit into a circular economy. In light of this, the group takes its human asset development as a prime responsibility and has various mechanisms to acquire and manage human talent across its business operations.

Greenko follows a unique mechanism of talent acquisition. Its casual campus recruitment policies along with an evolved induction and on-boarding process has raised the bar for the group. It not only helps to choose the best recruits, when the new hires are inducted into the Greenko family, the hiring team aims instil the company's values in the new league of employees. It includes a brief about the journey of Greenko and guides the new hires on the path to success. The induction program is designed to ensure the overall growth and development of talent. The new hires are made aware of the HR Systems & Policies, Prevention of Sexual Harassment at Work (POSH), Greenko Values System (SEED IT), Environment, Health & Safety (EHS), Greenko Integrated Management Systems (GIMS and) Information Security Management Systems (ISMS).

The group lays emphasis on behavioural & technical training, ensuring post-training efficacy in project site management performance. During the reporting period, Greenko has

successfully hired 242 new talents within an average time span of 90 days from the time the vacancy arises. Around 29% of the total hires were GETs, mainly hired through campus modules.

Statistically, the group hired a total of 332 Engineer Trainees from 2011 to 2020, over 30% with an experience range of 5 -9 years and 70% with an experience of 1-4 years. More than 100 employees who started their career as trainees are handling critical roles in the mid-level management across the group today.

Greenko believes that competency augmentation and talent development must be a continuous process, embedded with KPIs in the HR Ecosystem. An average of 35.3 hours of training per employee for a count of 2,678 employees in the year 2019-20 was achieved, a benchmark achievement in the renewable industry.

The Performance Management system with measurable deliverables through KPIs, with a weightage of 50% each for business/functional KRAs and Greenko Value System (SEED IT), has enabled the group to measure and track the deliverables in compliance with core organizational value "SEED IT". The performance appraisal system at Greenko is also instrumental for training need identification, succession planning, and career management. The leadership teams have developed resilience and built the mechanism to make sure employees working in multiple locations are motivated with a sense of ownership and to keep them attuned to organizational values.

At Greenko, employees across the group have been oriented to be steadfast, resilient, and work responsibly to handle any situation of VUCA

(Volatility, Uncertainty, Complexity, and Ambiguity). Human values and human rights are never compromised at Greenko and no violations were reported in the FY 2019-20.

The group focuses on the well-being of employees working across locations and other people around the project locations with a sense of responsibility. There are also mechanisms/ programs to extend support for education, medical needs, and employee welfare benefits according to the cadre of employees, besides provisions for group medical & personal accident insurance, maternity leaves, adoption policies, and leaves for extraordinary circumstances.

The Average Age of employees since 2012 has positively improved to 36 years in the group's business, with the induction of young talent at various levels. The robust growth of the Group since 2012 is aptly and mostly supported with the hiring of young talent Year on Year (YOY). With a headcount increase from 1,308 in 2012-13 to 2,678 in 2019 - 20, the contextual average experience of the employees 'working in' the Greenko Group is ranging from 2 - 14 years, excluding the experience of the lateral hires.

The Group has managed to retain over 93% of its employees for the reporting period. Greenko also succeeded in reducing the cost per hire by 10% for the FY2019-20 over the previous reporting period. Of the employees retained, the group could successfully earmark critical performers across its businesses, could provide the required learning curves to the identified human assets, and promoted 17% of employees to the next level on merit basis via internal deployment and competency-based transfers. The hierarchy data for the FY 2019-20 is presented below:

The Hierarchy profile for 2019-20 at Greenko

JOB LEVEL	NO. OF EMPLOYEES 2019-20
Leadership level	4
Core Leadership	22
Senior Leadership	42
Senior Management	116
Second level Managers	208
First level Managers	770
Supervisory Level (S3)	657
Supervisory Level (S2)	316
Supervisory Level (S1)	475
Trainees	68
TOTAL	2,678

Reward, recognize & Retain

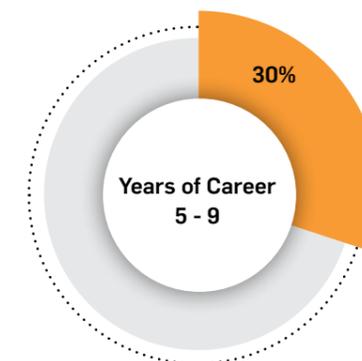
The group has established career management & development systems, where programs, training, workshops, counselling is provided to the newly hired trainees by means of an Entry Level Trainee Program (ELTP). The group involves faculties from reputed

institutions to train the hires for a challenging career via strategic HR intervention. The group also has been offering career opportunities for young Engineering students since 2011. Over 101 of the trainees have a career spanning 5 to 9 years and 231 have experience of 4 years and below.

The career management planning has been highly effective, with nearly 101 employees (who started a career as trainees) are in the Middle Management category today.

Career Growth Profile for Beginners

Career Growth for Trainees: 2011-20



Human Capital

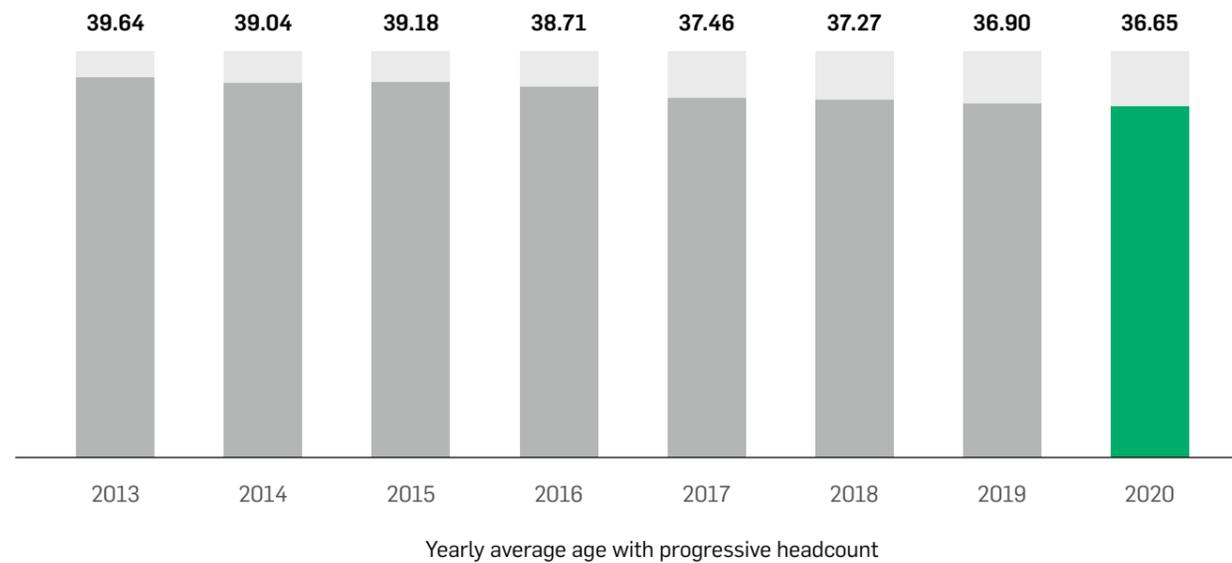
A culture which emphasizes on 'Ownership' is inculcated amongst the group employees, right from induction. It is imperative for Greenko employees to be genuinely motivated, committed, and agile to navigate through situations of VUCA (Volatility, Uncertainty, Complexity, Ambiguity),

without compromising on the quality of deliverables and stakeholders' interest.

The Average Age of employees at the organization since 2012 has positively improved to 36 years, with the induction of young talent at various levels. The robust growth of the Group since 2012

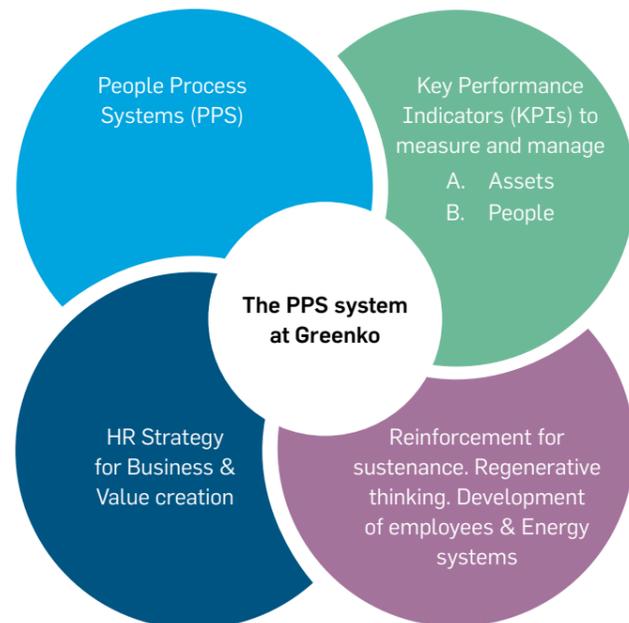
is aptly and mostly supported with the hiring of young talent Year on Year (YOY). Thus, the agility, resilience, and career management at Greenko has set a glaring example for similar business entities, and the group thus emerged unique with respect to the management of its human assets in the RE domain.

Comparative Annual Average Age Profile with Progressive Headcount



Learning & Development at Greenko

The HR along with the leadership teams have envisaged and implemented a talent mapping exercise and developed a management and leadership pipeline for the next 3-5 years (2020 – 2025). The same can be represented as:



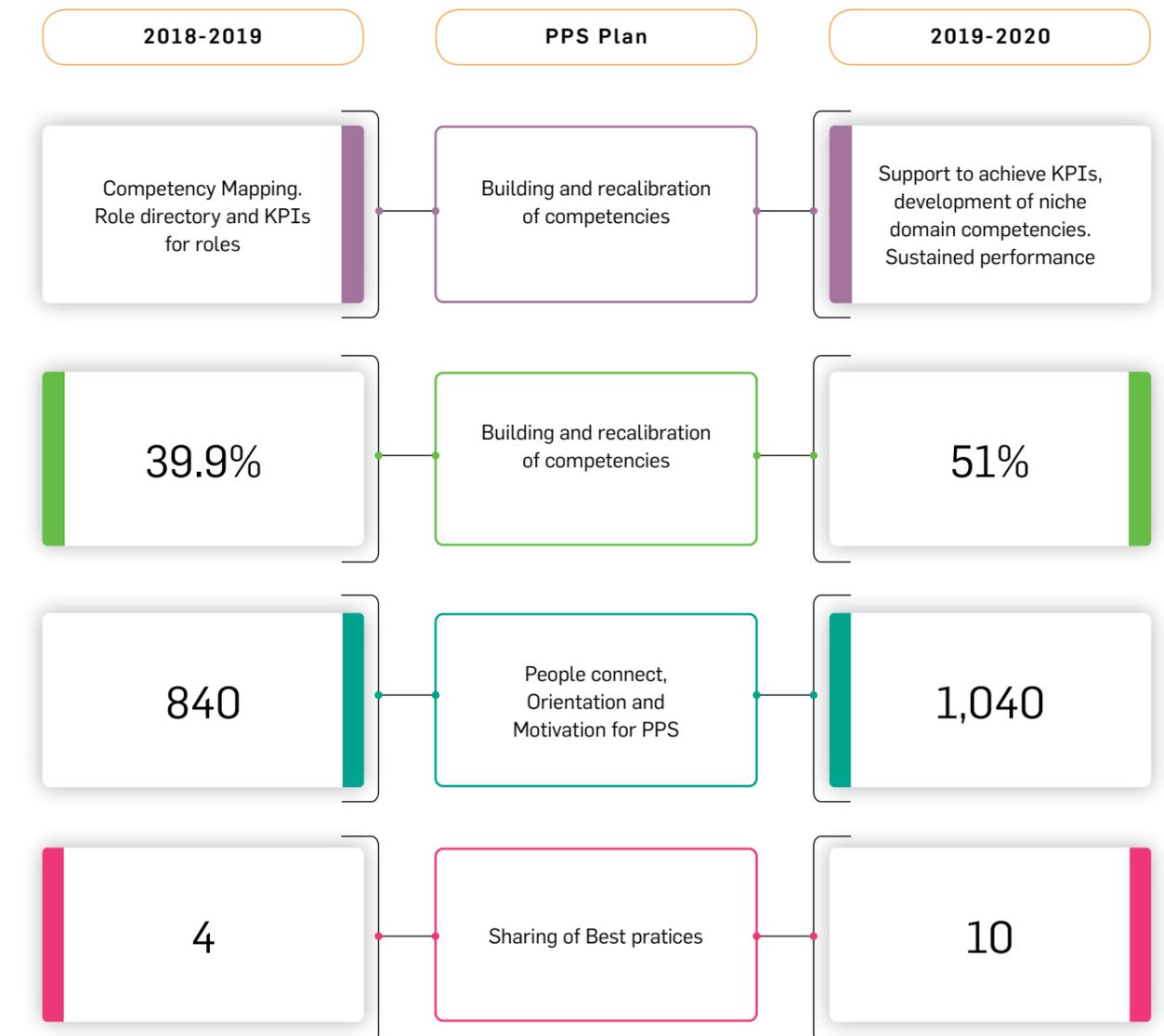
People, Process, System (PPS) has been the strategic intervention for Greenko's Asset Management (GAM) Businesses since 2018 to monitor & measure the performance of the 'Assets' and the 'People'. The GAM and HR Leadership Team have convened a 'Leadership Conference' to calibrate on the Group's vision, values, and the PPS Model. All

the GAM employees have been trained and the HR Team and GAM Leaders have put the PPS Model to work and the outcomes are 'propounding and profoundly positive' for the business.

The impact of the PPS Model in two years' time (2018-20) at Greenko has shown improved sustainable

operational efficiency and growth with the measurable performance of 'People' and the 'Assets', contributing to the regeneration of efficiency in people and operational assets, resulting in value creation through the Energy Systems of Greenko. The comparative data has been presented herewith:

Comparative Mapping of Competency as per PPS plan for 2019-20



Human Capital

The group has mapped Key Performance Indicators (KPIs) of the Businesses for each of the employee roles and measured it with predetermined metrics along with weightages assigned for employee role deliverables. The Performance Management System (PMS) was implemented with measurable weightages of 50% for Business KPIs and 50% for Business deliverables aligned to Greenko Values. Also, the KPIs, identified for each of the GAM assets (Hydro, Wind & Solar) and the performance outcomes were

measurable indicators for Hydro, Wind & Solar Operational Assets.

In the Greenko Asset Management (GAM) vertical, 559 employees with a range of competencies in multiple domains (Hydro, Wind & Solar) and 461 employees (out of 559) were found eligible to work in multiple functions in addition to their multi-disciplinary domain knowledge.

The interventions of Learning & Development in the segments of Business Domain, Environment Health

& Safety (EHS), and Behavioural & Leadership Development for 2019-20, was assessed for an 'impact evaluation' from:

- (a) Participants and
- (b) the multiple Line Managers
- (c) The combined feedback on the Learning Curve (LC) confirmed the levels of improvement in the competencies and other personal traits (refer to the table below).

Summary OF Impact Evaluation Schedule for Training Programs Conducted in 2019-2020

Category	Number of Programs & Workshops (Partial List)	Feedback on the level of learning post-training - Learning Curve (LC)			Improvement (%)
		Individual/ Participant Feedback (%)	Line Manager Level - 1 (%)	Line Manager Level - 2 (%)	
Domain (Wind, Solar & Hydro)	26	81.7	86	90	86
Environment Health and Safety (EHS)	33	78	89.3	83.9	83.8
Managerial & Leadership Development	10	63.9	77.8	74.5	72.1



CEO & MD with employees

The exponential Business growth of the group was aptly supported by the L&D interventions, which increased from 463 in 2016 to 1,661 in 2020 (an increase of 3.5 times). In 2019-20, the average Training Hours per employee increased to 35.3 Hours as against 21.8 Hours in 2016, registering a 1.65 times

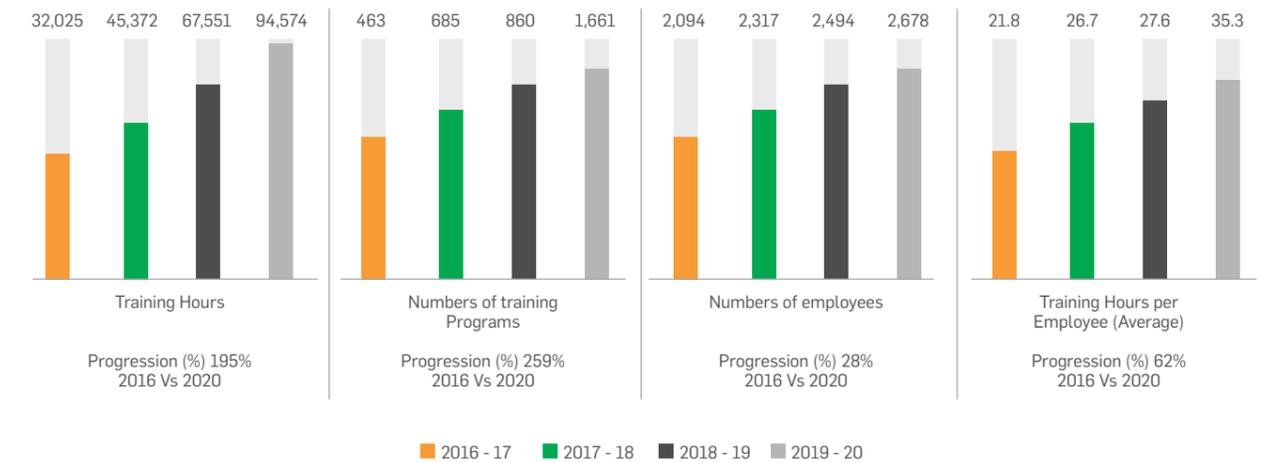
increase in the Four (4) Years, covering 2678 employees across the group.

The group has registered 94,574 hours of Training in the reporting period (2019 - 20) & it became an investment for the Group to meet the Training Needs of the Businesses. This turned out to be

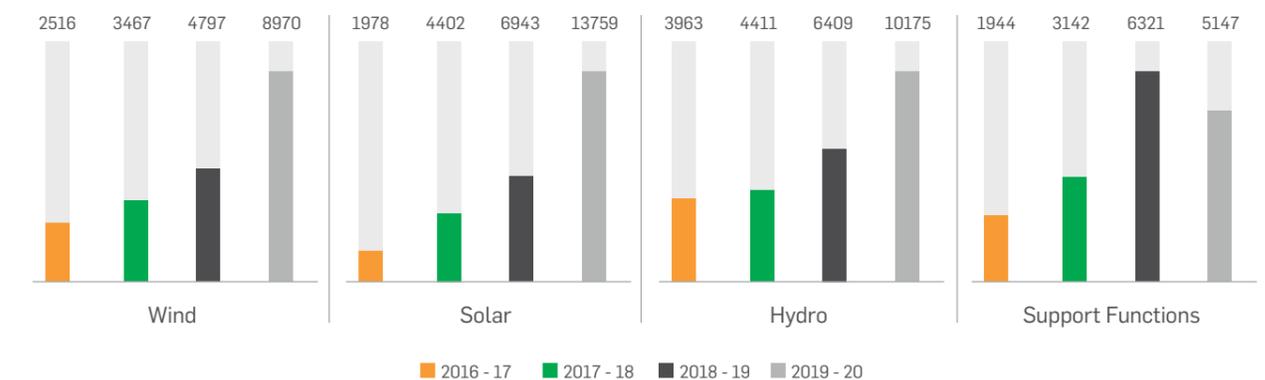
the best HR practice with a measurable and a unique value proposition, both for the organization and the employees, fulfilling the objectives of both 'organizational effectiveness' and 'individual development'. The training progression, year on year, is presented below:

The Training Progression on YoY Basis at Greenko

Learning & Development Progression for the period - 2016 - 2020



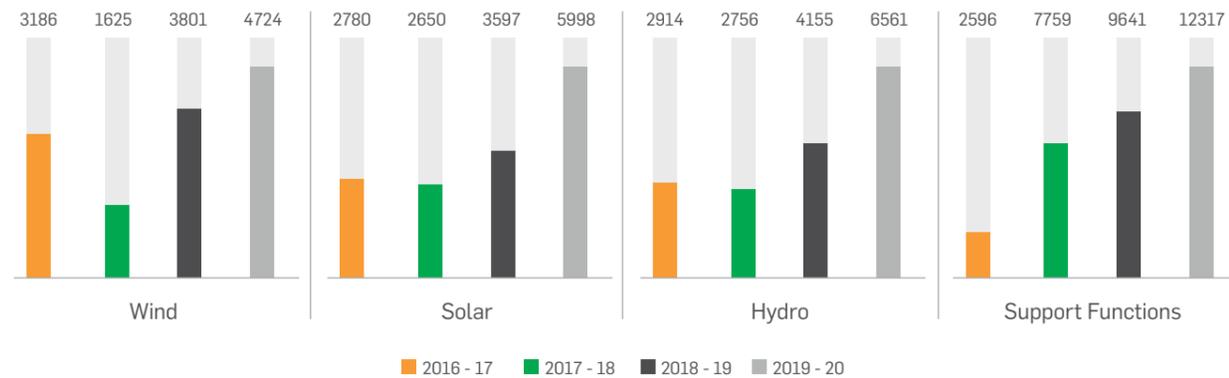
Technical/ Domain - Hours



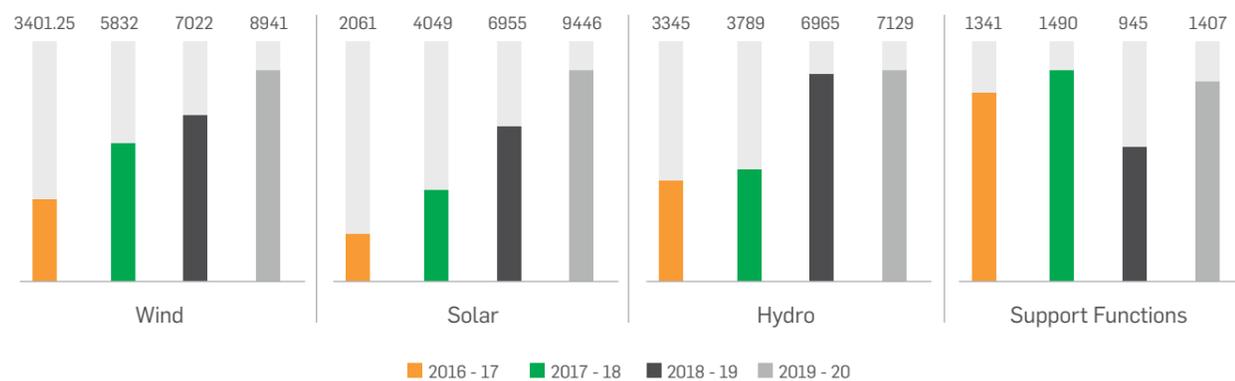
The Technical /Domain interventions have spearheaded the progress of the Group Businesses over the last 4 years- a complete picture

Human Capital

Managerial & Leadership Development - Hours



EHS - Hours



Employee Diversity

Diversity and inclusion amongst the workforce form an imperative culture at Greenko. The group ensures that Diversity as a value must be safeguarded and promoted both within the group and in all relationships with its stakeholders. At Greenko, the management realizes that everyone deserves an equal opportunity. Focusing on equal rights for people from all ethnic groups and cultures, the group has no discrimination in recruitment, location, promotion, or any matter related to employment and pro-actively removes any barriers to equal opportunity.

The initiatives at Greenko to promote gender diversity include:

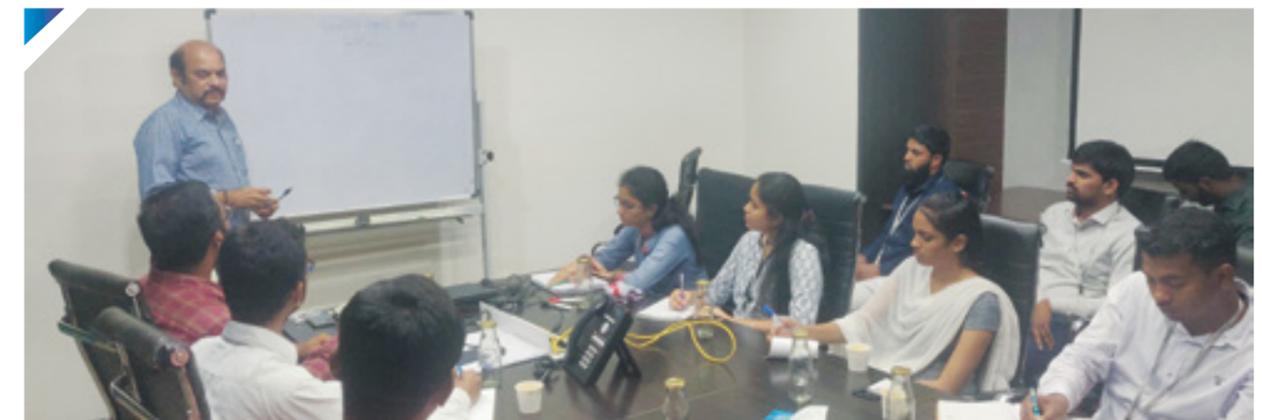
- Mainstreaming gender in policy design and project implementation
- Implementing policies to attract and retain talent and ensure a supportive environment in the workplace
- Supporting women to become agents of change and to challenge cultural and social norms in their environment

Gender diversity at Greenko was strengthened with an increase of female employees to 6.03% of the total workforce, compared to 3.92% in 2018.

Today, Greenko has become a preferred choice for women to pursue their careers in the Renewable Business Sector. Every year, the company has increased the number of women it employs and today, as compared to its year of founding, Greenko employs 42% more female employees. Also, 12.5% of the new hires amongst women (in the age group 30 to 50 Years) are offered Mid-Level Management roles. Besides, 16.9% (in the age group less than 30 Years) women employees have been hired for the First Level Management position. Greenko indeed believes in a merit-based human asset selection process that is transparent and unbiased.

Employee strength & Age-wise Distribution at Greenko

MALE Age Distribution			EMPLOYEE STRENGTH	FEMALE Age Distribution			TOTAL
<30	30-50	>50		<30	30-50	>50	
0	31	34	Senior Management	0	3	0	68
1	241	72	Middle Management	0	10	0	324
324	587	38	Junior Management	12	25	2	770
394	860	106	Senior Management	46	41	1	1,448
55	0	0	Executives/Staffs/Others	13	0	-	68
556	1,719	250	TOTAL	71	79	6	2,678

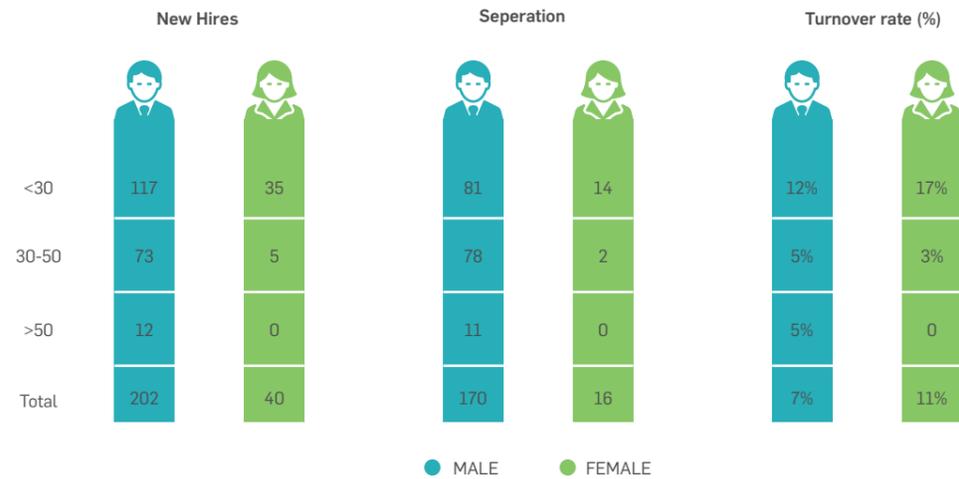


QA/QC Training session

Human Capital

Employee Hiring Profile & Turnover Rate at Greenko

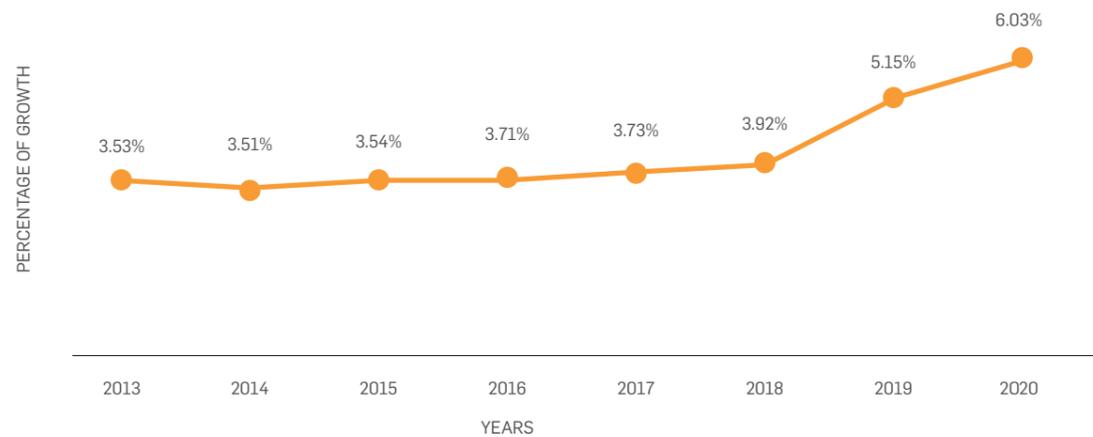
Employee Hiring & Turnover



For sustained focus to ensure equality, diversity, and inclusion across Greenko, the HR & the Learning & Development teams conducted 71 training interventions during the reporting period. Since 2012 the number of women in the workforce catapulted to record a growth of 340%, to touch 153 in 2019-20 in comparison to 45 in 2012

Workforce Diversity Profile at Greenko

DIVERSITY - WOMEN @ WORK



The group has welfare policies on Maternity Leave (26 Weeks), Adoption Leave (12 Weeks), Leave for Miscarriage (6 Weeks), Casual & Sick Leave (18 Days), and Extraordinary Leave (24 Weeks), for the benefit of women employees.

Growth and Succession Planning

As organizations globalize and compete aggressively for top talent, it is crucial that an organization plans and ensures its employees are recruited and mentored to fill the key positions within the stipulated time. This purpose can be met both by internal, enterprise-wide talent mobility and systematic process of preparing the employees to fill the vacant spaces. Organizations can alternatively scout for people via their networks and hire them for specific positions on a merit basis. However, most organizations prefer to develop people internally to be able to thrive. A new set of norms governing internal mobility is needed to do this efficiently.

At Greenko, mobility is perceived as a natural, normal progression and not as a major change in one's career; opportunities to move are extended to workers at all levels, not just managers and team leaders; and technology has enabled a streamlined mobility process for moves between functions, jobs, and projects as well as geographies.

Greenko has in place a firm and robust succession planning system wherein potential successors for earmarked critical roles are identified and groomed. During the reporting period, selected employees have undergone the required learning for the new roles in which they have been deployed. The

group has successfully chalked out a group talent segmentation exercise to identify individuals with skill sets and experience for various business functions across the organization.

Complete Groupwise Talent Segmentation Pattern



- Support Functions
- Greenko Asset Management (GAM) Hydro, Wind & Solar
- Projects
- Subject Matter Experts (SMEs)

The Leadership Team at Greenko (252) with their multi-faceted domain knowledge and functional expertise is extensively involved in developing teams across Businesses Verticals and Functions and this aids in effective succession planning for the group's business entities. Complementing the leadership team, the group also has a strong base of 68 Subject Matter Experts (SMEs) in the domains of Hydro (19), Wind (16), and Solar (33) to impart knowledge and to develop expertise in future leaders.

At Greenko there is a great balance of domain and functional skills. For a headcount of 2678, the group has 252 Leaders, at a ratio of 1:9 (i.e. One (1) Leader/ Expert for every Nine (9)

employees). Mentoring and span of control are broadly well balanced and poised with a ratio of 1:9.

The Succession planning Interventions are driven by the commitment to encourage employee innovation and to strengthen the ownership culture. Succession Plans are also evolved with definite transparency with complete involvement of the Line Managers and Business Leaders. During the reporting period, 16 senior members were certified internally as Grow Coaches, who would dedicatedly look after coaching the managerial candidates & look after leadership training interventions. Similarly, 47 senior & mid-level managers were also trained, calibrated, and certified as mentors to trainees recruited under ELTP (entry level trainee program) program.

The group has innovatively invested in human resources to make them adaptive and had a strong conviction to first leverage the in-house human resources.

Invariably, the practice of regenerative thinking has been the pedestal for the Learning & Development interventions, with an outcome of more than 21% of the 2678 employees at the organization being multi-skilled in the domains of Hydro, Wind, Solar and 17% having multiple disciplinary functional skills.

Cloning of competencies is ensured through a process involving Line Managers, through On the Job Training (OJT) and Entry Level Trainee Program (ELTP) for Engineering Trainees – to provide training on Business domains and Core Engineering (Electrical, Civil, Mechanical, Instrumentation, etc.). Each of the Engineering Trainees is bestowed with Eight (8) specially designed Domain and Engineering Books/Manuals, which goes a long way in imparting the required levels of knowledge and skills.

Human Capital

During the reporting period, 12% of employees were promoted from their existing cadre to a higher level by way of reward & recognition. Around 117 positions were filled through the internal process. The group mapped 102 critical roles across various project functions and 507 employees were identified for succession purposes.

Group Leadership has always encouraged and nurtured a sustainable working culture that promotes regenerative thinking across all employee levels. Greenko believes in the overall development of an employee and allows them to explore different areas of work. During the year, 14% of the employees from Projects and 21% of the employees from Asset Management

were engaged in a cross-functional movement across businesses, with a change of roles.

The organization Realizes the need to foster the overall wellbeing of its employees. The company has in place medical insurance for hospitalization through the Greenko Group Medclaim Policy. The Policy is a valuable welfare measure provided to all the employees of the Group at a cost to the Company and "at no cost to the Employee". Even a personal accident welfare coverage benefit is provided for all the employees, free of cost. In 2019-20, a total of 168 Medical Claims have been processed for hospitalization claims, which totalled to ₹ 1.03 Crore at the Group Level.

Employee Engagement

As many as 1567 employee engagement interventions were conducted across the group in 2019-20. These interventions have contributed in improving the work culture and further enhancing the day-to-day experience of employees. Greenko conducted several awareness programs and interventions at regular intervals for environmental and social improvement. Volunteering is a regular activity throughout Greenko. Greenko employees have volunteered for 14,065 hours in 2019-20.

Employee Welfare

Greenko provides services, benefits and facilities to employees and ensures free food, accommodation, and healthcare facilities on a need basis. The group also encourages higher education opportunities. The children of employees are also awarded scholarships for vocational training and for undertaking higher education.

In addition to fostering education, the company has introduced not just mandatory maternity leave, but also customary paternity leave. Greenko has welfare policies on Maternity Leave (26 Weeks), Paternity Leave (5 days) Adoption Leave (12 Weeks), Leave for Miscarriage (6 Weeks), Casual & Sick Leave (18 Days), and Extraordinary Leave (24 Weeks). So far, 6 women and 21 men have availed parental leave benefits in the reporting period. Providing medical insurance coverage to the family including dependent parents is also a unique feature at Greenko. Greenko is always vigilant about human rights-related issues and no human rights violation in Greenko's work environment has been reported in the FY 2019-20.

Greenko communicates and connects to employees working in multiple locations across plants and projects, extensively through the Greenko intranet (<http://intranet.greenkogroup.com/>). Also, the group has maintained a culture of Greeting employees on various important occasions like birthdays, marriage days, employee engagement. Learning & Development Program Schedules, Employee Policies, HR Help Desk services, Greenko leave Management System (GLMS), Greenko meeting & Action Tracker are the different points of communication. The intranet covers news updates, announcements, knowledge repository, reports, and manuals. The corporate communication also publishes "Vconnect", a quarterly magazine for

employee communication and various updates of the Group.

In an endeavour to enable skill development of young students in the Solar domain, to improve chances of employment, Greenko provided 329 students with practical training and real-time experience and offered a certificate of merit in 2019-20. Out of

the trained students, 133 have been employed as on 31st March 2020.

For the year 2019-20, for pursuing higher education, 321 Employee Children were extended support through Tuition Fee Reimbursement. For Higher Education and 12 employees have been provided 100% education fee reimbursement. The data is represented below:

Employee Education Support Initiative (CSR) Profile

MONTH	SCHOOL FEE REIMBURSEMENT				COLLEGE FEE REIMBURSEMENT	
	25%	40%	50%	100%	25%	50%
June'19	32	0	8	2	0	1
August'19	62	0	2	0	0	7
September'19	50	0	5	0	0	10
November'19	65	0	7	0	0	10
March'20	0	47	8	2	0	3
Total	209	47	30	4	0	31



Together with local schools, Greenko employees organized volunteering activities to plant trees in the communities

PLOG RUN

Under the Swachh Bharat campaign, WWF India has partnered with United Way for the 'India Plog Run', organised on 2nd October, in 50 cities across India to spread awareness and inspire action against plastic waste. It is an initiative by Ramakrishna G, an advisor with United Way and Guinness World Record holder for environmental projects on the amount of trash collected.

About 30 Greenko employees joined in the run at Fabexpress Corpo Suites, Hitech City, Hyderabad. We covered a total area of about 5 kilometers and picked up plastic waste. We collected approximately 200 kilograms of plastic in 2 hours, which was then disposed of at a recycling center.

Participants from Greenko at the Plog Run in Hyderabad. ©Farida Tampil WWF-India



We depend on resilient and thriving local communities wherever we operate, and strive to be a good corporate citizen.



Human Capital

Digital Transformation – A beginning towards Greenko 4.0

Automation/digitalization at Greenko has eliminated the chances of human error and has helped in streamlining the process with less human intervention. It gives the workforce better visibility of the various tasks, can pinpoint bottlenecks and suggest areas of improvement, and increases the overall productivity. It also helps in managing deadlines and reduces the amount of time needed to complete a task. This has resulted in higher productivity rates for routine tasks, with the additional benefit of freeing up employees' time to concentrate on more complex and significant assignments.

Digital transformation at Greenko comprises of managing employee data, leave & attendance, hiring, on-boarding, separation, performance management, payroll, compensation and benefits administration, learning and development through the implementation of the Darwin Box

HRIS (Human Resource Information System) tool.

As a part of the HR digitization plan, all the HR statutory compliances at Greenko are integrated through a 'compliance tool' and has been deployed in the reporting period. With the help of the tool, the group HR monitors and manages compliances effectively.

The Greenko leave management system (GLMS) is also Implemented and being used as on date. Progressively, the leave management will be an integral part of the Darwin HRIS.

HR Circularity

At Greenko, Circularity is also a key indicator for the HR function, which emphasizes that people and their capabilities should be the ultimate criteria for assessing the development of an institution and at no point of time the human asset be allowed to stagnate in a single role/function. The KPIs for Circular thinking makes it imperative to reshuffle people continuously without

allowing any stagnation (in the same role w/o promotion, cross functional placement etc). Also, it emphasizes on orienting a greater number of employees towards regenerative thinking.

Greenko understands that talent and the potential of Human Capital can be leveraged for various business functions by making the human asset multi-skilled / domain talented to excel in Hydro, Wind, Solar and other business functions. This strategic approach from HR has significantly contributed to no redundancy, wastage, or stagnation of human resources and contributes to the principle of circularity which states no stagnation of man, machine, material, and information be there. The roles and responsibilities of employees are oriented based on the individual competencies and evaluated for deliverables with the KPIs as a process, to decide on the change of roles and promotions in 3 years, for an employee.

Greenko's Circular Aspect of Human Asset Management

Circularity aspects in Human Capital

- No stagnation of man, machine, materials and information
- 461 employees being multi-skilled and with talent to work across multiple functions

Greenko's growth and agility in the renewable industry space, has always been reinforced by its diversified talent pool. The company's young talent, from trainees to mid-level to senior

management, is inculcated to be agile and competent for the business deliverables of the key stakeholders. In a strong workforce of 2678, the group has identified 559 employees who have

a range of competencies in multiple domains. 461 out of these were also found exceptionally talented to work in multiple functions across the business.

Ensure Safe, Healthy & Lively Workplace

Occupational Health & Safety Measures at Greenko



Health and Safety has always been on the top of our minds in asset management and projects. This is not just limited to our direct employees but to everybody on the site including contractor employees and visitors to the site. As the impacts of global warming increase, we anticipate increasing severity of heat stress and accordingly will schedule and manage our working outdoors.

Mr. Mohan Rao M
AVP – EHS

Greenko has an objective of 'Zero Occupational Health & Safety related incidents' across its operations. The group is committed to providing a Healthy & Safe work environment for all its employees, contract workers, visitors, and stakeholders engaged in business operations.

To achieve this objective, the group has conducted a series of risk assessments and surveys across its business units & has identified and recorded all the core health and safety issues material to the organization. Further, action plans are formulated, and resources are allocated to address these identified risks according to priority.

Risk registers are maintained at all plants and the same is being updated at regular intervals for taking appropriate action based on priority. As a risk mitigation method, Greenko believes in the hierarchy of controls, that is for controlling any risk, all the necessary controls in combination, and in the correct order taken to bring the risk level to "As Low As Reasonably Practicable" (ALARP).

At Greenko, Business unit-specific Health and safety plans are developed involving BU leads, EHS team, and plant leads, which are in line with ISO 45001:2018 & the same are put in place at all plants. The H&S system processes such as work permits, risk assessment, lockout tagout, emergency rescue, and monthly review are defined, monitored, and analyzed to ensure

effectiveness. People Process System audits are conducted across plants for H&S management by external agencies to identify system gaps and process effectiveness to improve O&M and EHS results.

Need-based safety training is regularly provided to all of Greenko's employees and contract workers. The number of



Fire drill at Ghani solar park Kurnool

Human Capital

hours devoted to the safety training of employees and contract workers has significantly increased by 41.1% over the previous year. The number of hours devoted to the safety training of contract workers alone was 14,781 Hrs. in 2019-20. A pool of competent people is developed across all business verticals, by organizing training under the acronym matrix. Special Certification from Global Wind Organization (GWO) on Work at Height Training has been provided for selected wind BU team to enrich their competency levels in the execution of "Height Work Jobs". There were 520 first aid trained people, 590 emergency response trained people spread across the plants and projects during the reporting period.

The group has also conducted a series of risk assessments and surveys across its business units & has identified and recorded all the core health and safety issues material to the organization. Further, action plans were formulated,

and resources were allocated to address the identified risks according to priority. In the reporting period 2019-20, such action plans formulated and implemented included electrical safety initiatives such as installation of smoke detectors & fire alarms, nomination of dedicated electrical safety officers, placement of insulated rubber mats as per voltage requirements, job specific trainings, first aid trainings & CPR demo etc.

The initiatives on Human safety included; ultrasound snake repellents, vehicle management procedure, theme-based campaigns, provision of barrel handling trolleys to avoid manual handling of materials, EHS awareness initiatives for GSS teams, Safety induction initiatives, site safety awards etc.

Greenko also Celebrated National Safety Week from 04 Mar'20 to 10 Mar'20 with a theme to "Enhance Health & Safety Performance by

Use of Advanced Technology" The weeklong celebrations were organised across plants with active participation & involvement of workers and stakeholders. We have also organised various training programs, competitions for awareness and motivation of workers. The best performers in the competitions were rewarded. Several other Safety initiatives celebrated in the reporting period included, Firefighting table talk, Safety training for school children & ISO 45001 online training to develop internal auditors.

Greenko believes that inculcating a healthy and safe work culture among the employees is essential to avoid unsafe acts and incidents. To encourage safe behaviour among its workforce, the organization has Behaviour-Based Safety (BBS) mentoring by experts at regular intervals. 84 hours have been spent on BBS mentoring activity during 2019-20, which is 9.33 times more than the previous year.



Employees taking Safety pledge during Safety day celebrations

Comparative Proactive Indicators

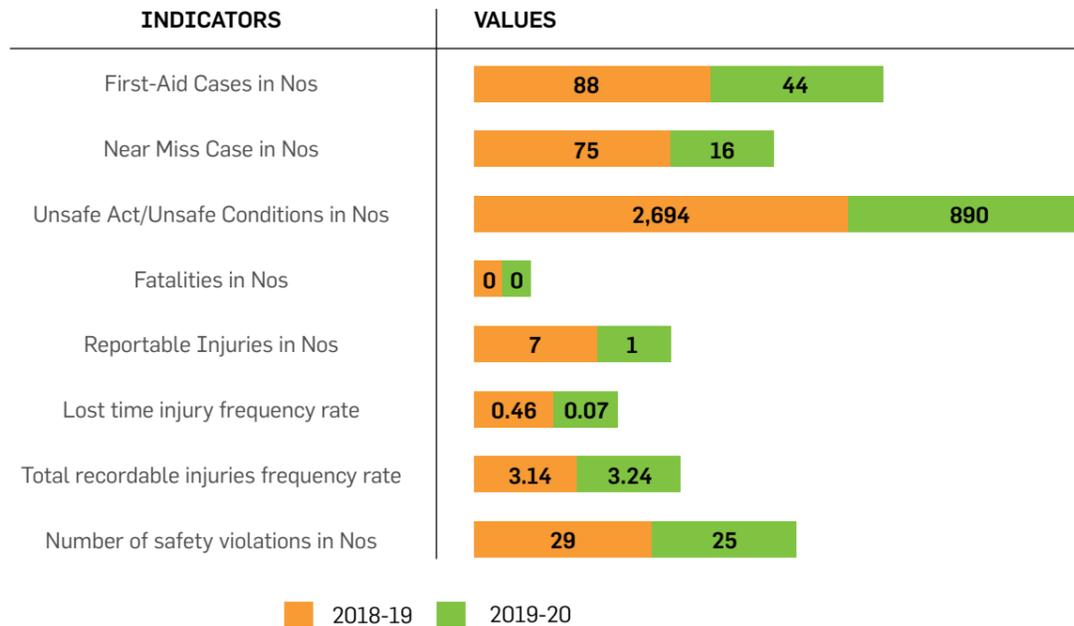
Sl. no.	Indicators	Unit	2018-19	2019-20
1	Safety Training hours Internal (For employees of Greenko & Contractor)	Hrs	26,027	36,730
2	Per capita safety training hours (including Contract Workers 2019-20)	Hrs	13.01	5.98
3	Toolbox Meetings	No	47,699	83,183
4	Type of audits	NA	EHS	EHS
5	Number of audits	No	137	308
		Hydro	29	51
		Wind	32	69
		Solar	76	185
6	Number of audit observations closed vs received (under each type)	No	Hydro 269/341 Wind 122/155 Solar 264/492	Hydro 164/196 Wind 73/97 Solar 129/176
7	EHS intervention & celebrations	No	160	317
8	EHS Committee meetings	No	676	922
9	EHS Induction	No	2,455	2,173
10	Number of Mock drills carried out	No	294	420
11	Total number of first aid trained persons	No	430	520
12	Total number of Emergency response trained persons	No	465	590
13	Total number of EHS	No	21	34



GAM wind IR Champions

Human Capital

Reactive Indicator Profile

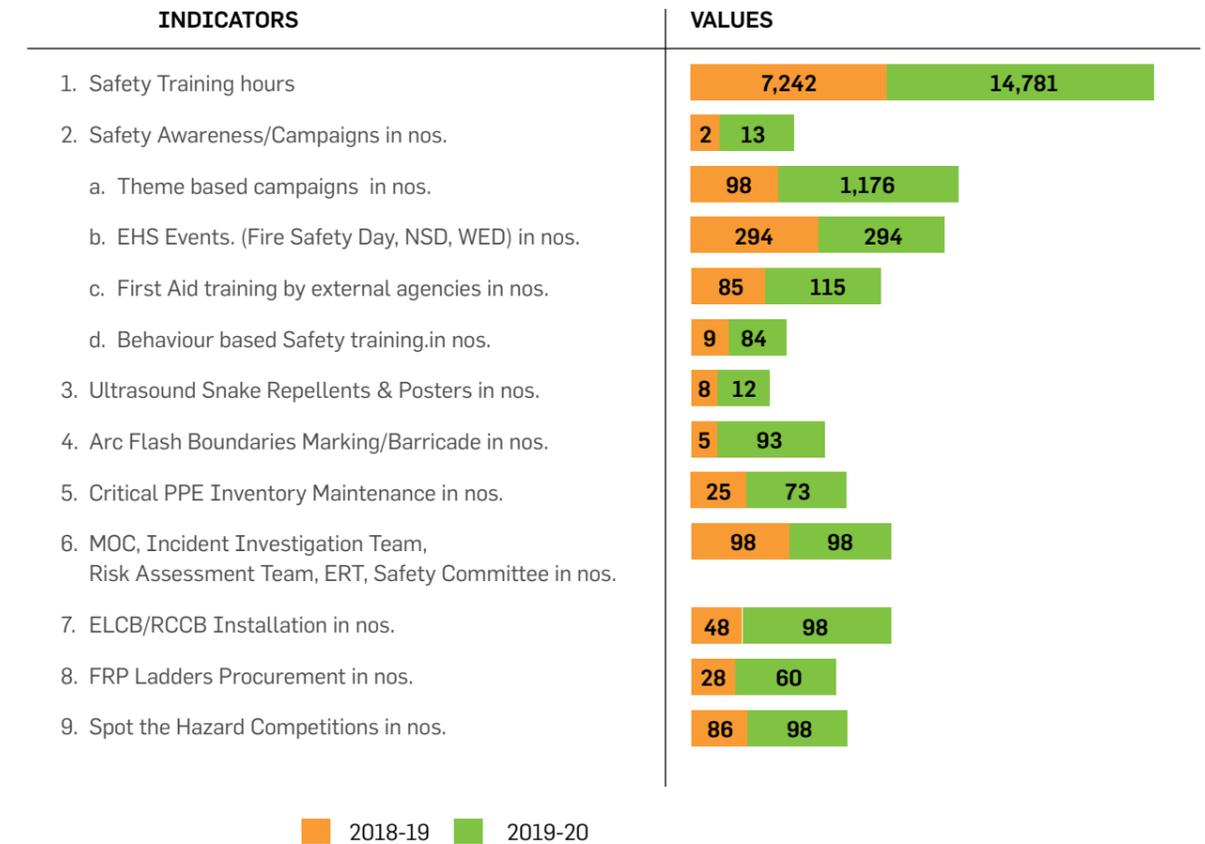


For incident management, the group has tied with local hospitals, dedicated emergency vehicles, EHS walk down inspections to control unsafe acts and unsafe conditions and has taken immediate actions to avoid incidents. During the reporting period, 890 unsafe

acts/unsafe conditions were identified by such inspections, which was 3 times less over 2018-19. To ensure a safe and healthy workspace, all plant workers are covered under periodical medical check-ups, once

in a year. A total of 420 mock safety drills have been carried out. 2,173 EHS induction programs have also been conducted in the reporting period.

Contract Workers Health & Safety



As part of its Health & Safety motivation and employee participation, Greenko conducts several awareness programs and interventions at regular intervals. Greenko also conducts special safety training to inculcate safety culture among the local public and children in communities where they operate. Awareness sessions are also arranged in schools about road safety and home safety.

Prevention of Sexual Harassment (PoSH)

This platform takes care of reporting & resolving complaints involving sexual harassment at the workplace for all employees. Regular sensitization workshops & awareness sessions are held for all employees, right from their induction into the company.

This platform comes in handy for the management of the human resource in general & women welfare in particular. The group also conducts preventive healthcare awareness programs and regular health check-ups for women and the women employees can access yoga , gym, and sports facilities at some of the group locations.

Human Capital

Greenko Security Systems (GSS)

Right from the beginning, the endeavour of Greenko is to build a great security culture. It has put in place the Greenko security services (GSS) to take ownership of physical security. Operationally, GSS is the check and control tool for the reconciliation of men and material by monitoring the material movement through an application. Integrated electronic surveillance at Greenko Group functions on multiple window design principles, by providing live monitoring & recording reviews on a 24/7 basis to the central Security Control Room located at the HO in

Hyderabad and to the site-based security control rooms.

GSS – Operating Principle

The operating principle of GSS is People-Process-Technology.

People: GSS recruits, trains and develops Security staff to cater to the growing needs of the Organization. GSS has been continuously conducting trainings and updating the staff with latest technology tools being introduced for Security systems.

Process: GSS has identified all its processes and mapped them with input

and output requirements of connected processes of other functions. GSS developed and implemented GSS framework for its effective functioning and continual improvement.

Technology: GSS has been using the latest technology tools and techniques available in the market to accommodate the increasing needs of the growing organization. Greenko uses the latest technology such as High-tech CCTV Cameras, Control rooms, Real-time analytics, intel network etc. By using the technology GSS developed an effective and intelligent surveillance system.

life of old CCTV cameras were adopted by modifying them for a second life. A few Mannequins are located at certain locations to mimic security guards to reuse the old security uniforms.

During the reporting period, no or minimal electronic waste was generated by GSS. No violation of any human rights, such as forced or involuntary labour, violation of human rights during security operations, health & safety practices of contractors, non-usage of PPEs, etc. were observed.

From a traditional Man-guarding model of security, Greenko has embarked on a journey to transform the GSS team which has a 360-degree vision and visibility of Greenko's business to secure

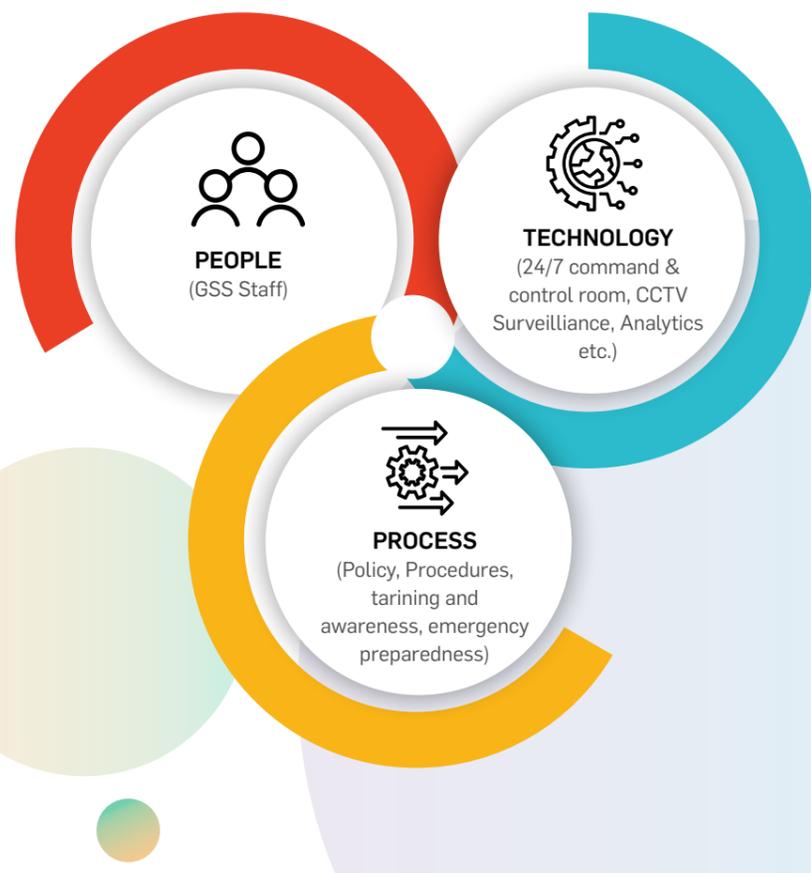
its men, asset and environment. GSS is integrated into business operations which places it in a much better position to understand the business requirement based on data and threat perceptions.

To cater to the needs of a growing organization, GSS has been continuously improving by conducting regular training, informal interactions, and exposure to contemporary concepts. Due to the well-developed systems and processes, GSS was able to implement the Security systems quickly and successfully at various Wind, Solar, Hydro sites and in the acquired sites. Now GSS is preparing itself for the ensuing task of handling the upcoming gigantic IRESP projects of Greenko.

Looking Ahead

Greenko aims to continue to deliver value to its people by attracting, training and retaining multifaceted employee competencies and expertise to groom the future leaders early on. It also plans on improving its diversity by constantly building a work environment that provides equal opportunities to all gender and ethnic groups. A strong EHS system at Greenko is continuously improving and evolving to achieve the desired business outcomes without any risks to its entire work environment. In the year 2019 – 20, Greenko had evolved a detailed succession plan for asset management, projects, and support functions, to meet the demands of the future and promising careers to the most potential and competent employees. We are looking forward to becoming the employer of choice in the energy sector. This entire scenario appears highly promising for grooming and polishing the human assets to be highly motivated, agile, and performance-oriented, to take the business to newer heights in a sustainable manner.

GSS framework



The aim is to integrate security management with business. GSS works as an alert mechanism with an effective surveillance process. GSS conducts vulnerability assessment, Risk Assessment, and countermeasure analysis at all the sites on a periodic basis, based on which, security controls i.e. manpower and technology is deployed. The GSS works by responding to risks as they arise. GSS believes that effective delivery of safety and security is possible through technology with an efficient human network for quick responses to alerts, while staying within the domains of the location and applicable laws. All site activities are continuously monitored by both the monitoring stations to provide instant response.

Along with 90 direct Greenko employees, 1915 indirect third-party employees and 48 contractors, GSS has been working to harness digitalization to improve efficiency and deliver 24*7 power on real-time basis. Internal strengthening of security systems is an ongoing process. During the reporting period, efforts to Reuse / extend asset



Social and Relationship Capital



Sustaining and enduring relationships with all stakeholders is crucial for long-term value creation in any organization. At Corporate Social Responsibility (CSR) Department, we focus on fostering community engagement and development in the regions of our operations. Our operations at all our sites are intricately linked with the lives and livelihoods of the people. So, we cannot underestimate the role of CSR in creating value for business and society.

Mr. Diwakar CVS
VP CSR

Strategic Approach

Greenko's partnership with communities, contractors, and suppliers enables it to complete projects in the stipulated deadline, manage assets efficiently. Further, the transition from GKO 3.0 to 4.0 requires Greenko to develop new partnerships and engagement models. The transition to 4.0 warrants that the leadership at Greenko must envision the energy assets to create/ follow

principles to be a part of nature and at the socio-economic front, deliver energy security and economic stability. Greenko believes that while delivering multiple values to the economy, society, and environment the regenerative and circular model will deliver sustained returns to its stakeholders.

As Greenko transitions to GKO 3.0 and 4.0, developing and nurturing qualitatively different relationships and partnerships are imperative. In this pursuit, Greenko has invested

600+ professional hours in regulatory and policy-making decisions regarding tariff, electricity act amendments, etc. The senior management is actively participating with central and state governments in important aspects, viz. storage policy, hydro policy for India.

Greenko is positioned at the nexus of energy, technology, transportation, capital markets, strategic alliances and considers the nature of its operations, as an opportunity to touch and contribute to many lives. Greenko's partnership



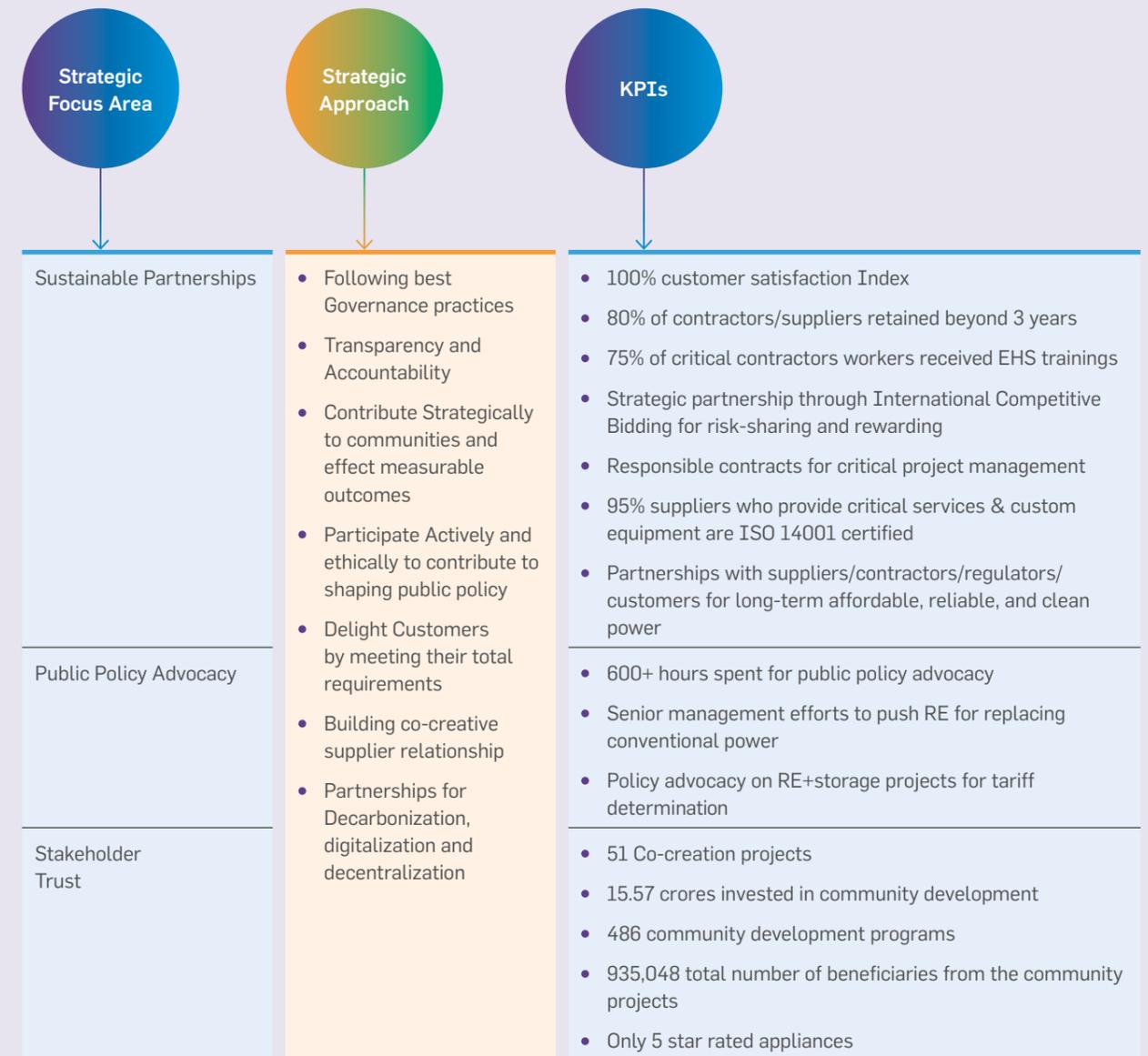
Tree plantation drive with the local community at Devarakonda, Rayala Wind Farm

with communities enables a strong, collaborative "best-in-class" partner model to help stakeholders implement transformative business models, launching platforms to accelerate paths to a clean economy, enabling social equity and wealth creation for disadvantaged communities, driving the Circular Economy. With more than a decade of experience in renewable

development and energy investment, the Greenko team has a demonstrated track record of creating lasting relationships to build successful business platforms. All the functions and sites at Greenko contribute to reinforcing stakeholder trust. Greenko is driven to provide lasting and replicable outcomes, by leveraging combined experience and the "best-in-class" partnership

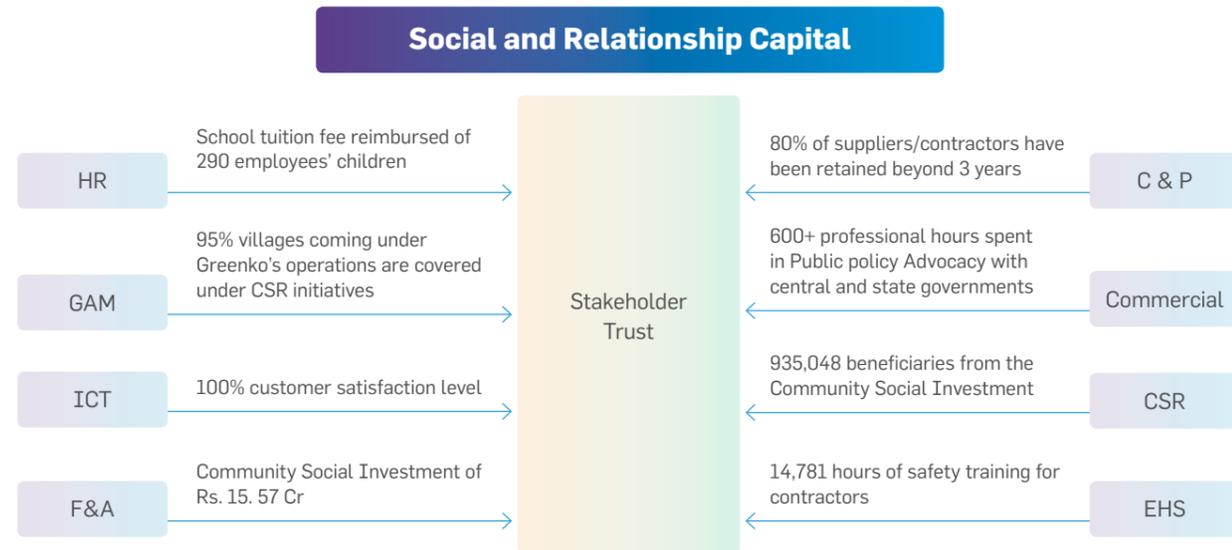
model. Using a holistic approach, the organization helps its clients to solve present problems while planning for the future. Greenko has been engaging to assist public policy formulation to promote schedulable /Round-the Clock renewable power. Performance on social and relationship areas indicate the constant reinforcement of trust by the stakeholders.

Strategic Direction: Pursue Stakeholder Trust Reinforcement & Public Policy Advocacy



Social and Relationship Capital

Integrated Value Creation in Social and Relationship Capital



Journey so Far

The external operating environment in which the businesses operate, various critical stakeholders such as communities, contractors, suppliers, regulators, customers have a profound impact on any business. Greenko understands this and utilizes these multi-faceted stakeholder relationships to form the basis of strong partnerships which aids the group in creating value and sharing value on a long-term basis. Greenko works to increasingly engage its Stakeholders in all the company's activities and operations. Throughout the value chain, Greenko interacts with thousands of people and organizations that are critical to its social and relationship capital, which is a fundamental element for the sustainable performance of the company. Greenko has made advances with measures such as International competitive bidding & responsible contracts in its strategic partnerships that are risk and reward sharing and delivers value for all the stakeholders.

Sustainable Partnerships

Strategic Alliances

Greenko strives to build partnerships with suppliers, contractors, regulators, and customers based on trust and shared values that are essential for working cohesively and effectively over the long term to deliver affordable, reliable, and clean power. The mission of Greenko is to stimulate technology cooperation, to enhance the development of alliances, and to assist developing partners, consistent with their respective capabilities and national circumstances and priorities.

Greenko enters partnership with suppliers and contractors after diligent screening and performance evaluation based on criteria such as Quality, Delivery, Quantity, EHS compliance, and statutory compliance. Selected contractors are also given Health & Safety and skill development training. In the reporting period, 75% of Greenko's contractors' skills were upgraded through training.

Greenko passionately believes that Vendors are the co-authors of their success story. The group believes in trusting and enduring partnerships to endorse the high quality and value of the asset being constructed. The onboarding process for all vendors is conducted through a pre-qualification exercise, which ensures vendor credentials and capability to execute assignments; adherence to health, safety, and environmental norms; and compliance with statutory requirements, including human rights. The performance of the vendors is evaluated at regular intervals in a transparent manner & provides timely feedback for their improvement and development.

Few contractors/suppliers with whom Greenko has made valuable purchases are Siemens Gamesa, Risen, Huawei, TATA Power Solar, Toshiba, and ABB. The group also have entered strategic partnerships with MP Solar Project and Tata Power Solar during 2018-19. Greenko has entered into long term

agreements with suppliers for WTGs, Modules, Conductors, Insulators, and SCADA. The group has also tied up with Tata Consulting Engineers in collaboration with EDF, France for the Pinnapuram PSP project as a review consultant, wherein Megha Engineering was given the contract of civil works, hydro-mechanical works, while Andritz Hydro is the partner for design, supply, erection, testing & commissioning of electro-mechanical package. Apart from this, several other local vendors are engaged for project management at various stages on need basis.

Responsible Contracts



To drive fundamental changes needed over the next decade, one has to be willing to think big, look beyond boundaries to the entire value chain, and actively partner to drive sustainability at scale.

Dr. M.M. Rao
SVP Contracts and Procurement



Evaluation based on life cycle costing is a desirable approach which will be adopted in a phased manner across procurement operations. This is in keeping with the expectations of our stakeholders as they seek assured returns in the long term.

Mr. Mohiddin SK
SVP Contracts and Procurement



Procuring goods and services for an organization requires thorough understanding of supply chain management & considers factors such as ethical issues, sustainability & risk management. I am happy to say that the entire procurement process such as liaising with stakeholders, negotiation of contract development, purchase strategies et al are being revisited and moulded to enable fit-to-purpose. The introduction of International bidding process (ICB), for critical project implementation provides an opportunity for global players in the bidding process and helps Greenko in finding the most suitable and apt candidate for its critical projects. The ICB clearly establishes the terms and conditions pertaining to risks, so that the vendor is well aware of the probable risks and their mitigation before the contract is materialized and this is also in line with the IRESP contract terms & references.

Mr. Prakash Krishna Chaganty,
AVP, Contracts & Procurement

Social and Relationship Capital

The IRESP contracts are categorized into 2 high-value packages, as electromechanical and civil/hydronechanical. Also, the contract agreements are again based on two aspects, design consultants and consultants for reviewing the designs from ownership perspectives. This also takes care of the standard requirements of the World Bank and Funding agencies.

The project procurement begins with an International bidding process (ICB) with pre-qualification criteria on technical and design aspects. This ICB provides an opportunity for global players and helps Greenko in selecting the most suitable and apt candidate for its critical projects.

In the ICB, the terms and conditions pertaining to risks are clearly highlighted by Greenko, so that the vendor is well aware of the probable risks and their mitigation before the contract is materialized, this is also in line with the IRESP contract terms & references.

All the IFC guidelines are followed for the tendering process. The innovative step being Risk Sharing with the contractor/vendor. Before the tenders are passed, transparent technical discussion rounds happen to understand the risks and their mitigation beforehand.

All these processes of ICB, until the final project execution, is handled by Greenko since the group has the capability to handle the entire project's procurement and contracting process based on best practices adopted globally.

Responsible Supply Chain Management

Greenko considers the contractors, vendors, suppliers, OEMs and consultants as partners in progress. This approach has delivered value for the business through stable and sustained partnerships.

KPIs FY 2019-20

- **95%** of contractor satisfaction level
- **80%** of supplier satisfaction level
- **80%** of suppliers/contractors retained beyond 3 years
- **10** No. of events conducted for suppliers & contractors
- **99%** of contracts awarded through an open & competitive process
- **2** No. of long-term agreements entered with suppliers/manufacturers
- **85%** of orders delivered on time

- **100%** of Contractors & Suppliers based on Health & Safety practices
- **85%** of Critical Suppliers ISO 14001 certified & RoHS complied by 2020
- **100%** of Statutory & Regulatory Compliance by suppliers

The sourcing activities of the business are aligned with organizational goals and objectives at its root. This alignment allows the business to achieve higher business performance with higher efficiency and minimal supply chain risks.

In the light of increasing resource scarcity in India, promoting resource efficiency (RE) and integrating circular economy thinking becomes imperative to Greenko's business and can contribute to the long-term availability



IRESP Pre Bid Bidding Meeting

of resources for inclusive economic development in India. In this pursuit, green innovation value chain (GIVC) framework is adopted for environmental and financial comparisons.

Greenko has 45.1% share of local suppliers, chosen on merit basis. This is achieved through hand holding and working with local potential suppliers over a period.

The changes benefitted the organization in many ways:

- **8%** of price savings by the development of new vendors/cost analysis/negotiation
- **80%** of innovative ideas implemented keeping in view the 5R principles of Right Materials, Right quality, Right quantity, Right Time, and Right price.
- Introduction of BoT (Robotic process automation) for automation of Material Master creation and vendor code creation in SAP

Greenko has entered into a framework of agreements with leading turbine suppliers for securing turbine requirements, since the cost of turbine constitutes a significant proportion of hydropower and wind energy project costs. Turbine suppliers are limited and the demand for turbines outstrips the manufacturing capacity, hence establishing such framework agreements go a long way in smooth execution of contracts and procurement related to turbines. To date, the company has purchased hydro turbines for high-head hydropower projects from Alstom, hydro turbines for low head projects from BFL Turbines, and wind turbines from GE Energy, Gamesa, ReGen Powertech, and Suzlon.

Operating equipment for solar energy projects primarily consists

of solar panels, inverters, cables, solar mounting structures, trackers, and the evacuation system. Greenko purchases major components such as solar panels and inverters directly from multiple manufacturers. There are several suppliers in the market and those suppliers are selected based on expected cost, reliability, warranty coverage, ease of installation, and other ancillary costs. Greenko's primary solar panel suppliers are Trina Solar, Chint Solar, and Risen. Greenko also sources solar inverters from SMA Solar.

In 25% of incidents, approximately, Greenko has incorporated supplier suggestions in decision making. One of the examples being of Tata power's involvement in the MP project from the Design phase itself and the incorporation of few improvement suggestions given by them during project execution.

In the reporting period, Greenko entered MoU with Tata Power Solar for setting up 180 MW Solar Power Generation system at Shivpuri, Madhya Pradesh and it also entered long term contracts with ONYX Insight to modernize 500 wind turbines.

Greenko has retained 80% of its suppliers in the reporting period and conducted 10 events with critical suppliers & contractors in the FY 2019-20, to discuss the roadmap for the next 5 years. Greenko also received the Sliver Award for green procurement practices for one of the group companies in 2019-20.

Green Initiatives

Some of the 'Green initiatives' at Greenko include procurement of only Energy Star labelled electrical appliances. Encouraging energy efficiency retrofits to move towards securing a BEE (Bureau of Energy Efficiency, India) 5 -star rating. The group has also ensured that Vendors must provide consolidating packages, wherever applicable, instead of shipping the same individually; which not only saves the cost but also help the

organization to reduce the impact on the Environment by reducing truck trips, internal movement of the vehicle from the warehouse to the Flight loading area and vice versa, till the goods reach its final destination. This would result in an Estimated GHG emissions reduction of 50%. Greenko has also taken care to keep 85% of its Critical Suppliers ISO 14001 certified & RoHS complied by 2020. Some initiatives were also taken in the direction of "Smart Logistics" to make the supply chains more effective & efficient at each step, with improved end to end visibility, choice of shortest deployment routes and improvement in the way goods are transported, control of inventory & mobile assets & timely stock replenishment. This also aids in reducing GHG emissions.

Transmission and Interconnection

The availability of transmission infrastructure and access to a power grid or network is critical to a project's feasibility, Greenko ascertains transmission capacity from public sources and owns proprietary data during the prospecting stage. Greenko discusses availability with the relevant state utilities and files an application with the relevant authorities to interconnect with the network. Power from wind and solar farms is typically evacuated to the relevant grids through high voltage transmission lines from dedicated pooling stations that result in stable energy transmission and minimizes electricity grid stability issues.



Transmission and Interconnection work at Chamba cluster

Social and Relationship Capital

Closer to Customer

The customers profile has changed significantly during the recent years. Earlier, it was only the distribution companies of the state governments but, it now includes bulk electricity consumers like industries, commercial establishments and anonymous customers on exchanges. While we are presently delivering electricity and some green attributes to limited customers, very soon we will deliver many more electricity plus services to multiple sets of customers.

Customer Profile

90%

Public Utilities

8%

Private Customer base

2%

Exchange sale Based on the PPA capacity tied up

KPIs FY 2019-20

Customer Satisfaction Level

10 for Utility Customers (on a scale of 1-10)

9.5 for open access clients

7 Number of new customers added in FY2019-20

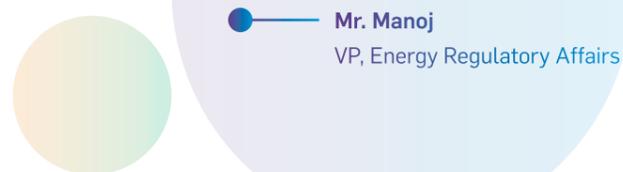
The distribution utilities who are customers of Greenko often face challenges due to the inherent non-firm nature of renewable energy supplies. Greenko understands these challenges and works in cooperation with them to address and provide electricity on demand by forecasting the schedule to a feasible extent. The performance record of Greenko in providing power as per schedule is demonstrated by low penal charges. The industrial and commercial bulk users face

challenges from the transmission and distribution utilities due to frequent changes in regulator determined charges for wheeling, banking, etc. In such situations, Greenko works with the regulator and utilities to provide an uninterrupted and reliable power supply to industrial and commercial customers. Greenko also sells power on the energy exchanges and interacts with both the operating exchanges in India to make the trade more effective and rewarding to the involved parties.

Public Policy Advocacy



Our assets and infrastructure have life cycles of 20 years & beyond. Hence our investments are intended to experience many political and economic cycles. It is critical for our business to continuously be a part of public policy formulation and contribute towards it. India is pursuing energy security, financial stability, and affordable, clean, and reliable power to steer its sustainable growth. Our policy advocacy is to support India in achieving this objective.



Mr. Manoj
VP, Energy Regulatory Affairs

At Greenko 600+ professional hours were spent by senior management in engaging with the regulatory and policymaking institutions, in the current reporting period. The officials at Greenko are constantly engaged in providing constructive feedback regarding government policies & regulations, highlighting the urgent need for storage policy/ mission and Hydro policy for

India. The efforts are bearing fruit in the form of hybrid tenders from SECI & fast tracked proposals for introducing hydro purchase obligations. Also, the senior management is putting continuous efforts in bringing awareness and importance about Schedulable power (RE on demand) to replace conventional fossil fuel with RE. Greenko has indeed come a long way from making strategic

alliances, developing contractors, earning stakeholders based on trust and shared vision of supplying clean and affordable power to participating actively in regulatory affairs and advocating the Decentralization of RE. The Group has made significant contributions to CERC for significant policy formulations.

Greenko's efforts in policy Making/ Regulations are summarized below:

For Connectivity Regulations:

- Consideration of Renewable generation asset + Storage as an eligible entity for applying for connectivity to the ISTS network

For Tariff Determination:

- Inclusion of "Renewable hybrid energy project" and "Renewable energy with storage project" as eligible Renewable generation asset.
- Inclusion of operational norms for "RE + Storage" projects to be considered for determination of tariff
- Inclusion of definition of "Storage" including pumped storage project for integration with RE generation asset to be considered as RE project

For Inter-State Transmission (charges & Losses) Regulations

- Rationalization of Transmission charges based on the utilization of the transmission asset by the user

Draft Report on Optimal Generation Capacity Mix for 2029-30 by CEA

- Inclusion of "Pumped storage projects" as key energy storage asset for emerging energy shifting requirement, along with an increase in Renewable generation proportion

Contribution to Regulatory Policy Matters

50 hours

Connectivity Regulations

80 hours

Sharing of Inter-State Transmission Charges and Losses Regulations

50 hours

Terms & Conditions for Tariff determination from RE Sources

Stakeholder Trust



We identify opportunities for organic business growth and the resources that we are scouting for are intricately linked to lives and livelihoods of communities and ecosystems. We are seeking a long-term residence of the location and hence short-term bargains have no place in the deal. Also, as the climate changes due to global warming are going to become more in the medium and long-term, it is important that the climate risk assessment is considered in the choice of geographies and resources.

Mr. Prasad Joshi
VP, Business Development

Social and Relationship Capital



We will continue to enhance the vitality of our region through our ESG (Environment, Social and Corporate Governance) Practices and ensure that our region endures and thrives, making positive contributions to the communities we serve.

Mr. Sandeep P
AVP, Strategic Planning Group

Stakeholder Engagement

Engaging with our stakeholders is an essential component of our sustainability strategy. Such engagements are carried out throughout our operations. Our key stakeholder groups include customers, shareholders, bankers, regulatory authorities, employees, suppliers, and local communities. We follow a specified mode of engagement with each of these stakeholder groups. We have established effective two-way communication with our stakeholders, allowing us to create and maintain enduring relationships with all of them. Our engagement with our stakeholders has helped us meet their expectations, thereby providing us with an opportunity to effectively respond to stakeholder concerns. The table below presents our engagement mode and the areas of interest of various stakeholder groups with whom we have engaged for developing this report.

Stakeholder Group	Modes of Engagement	Area of Interest
Shareholders, bankers & financial institutions	Regular Board of Directors meetings, Annual Reports, communications with CEO	Group performance, Policy Compliance and major projects
Regulatory Authorities	One to one engagement and Annual Reports	Compliance
Employees	Employee engagement interventions, Performance review and feedback, Town Halls meets, One-on-One meeting, Training, Health check-ups, Safety Committee Meetings, Food and Welfare Committee meetings, Inter-departmental meetings, Sports and Recreation activities, Denunciation channels	Career development and management, skill enhancement and building a repository of required skills
Suppliers	Contract management and one-to-one engagement	Product quality, Pricing, and availability, technical requirements, environment aspects, safety, pricing, and payment terms
Local Communities	One-to-one meeting, Public Consultations, Grievance Redressal Meetings, Focused Group Discussions, etc.	Community needs and concerns, rural infrastructural development support, health camps and support, educational interventions, scholarship programs support, environment protection and plantations etc.
Customers	Customer feedback, one-to-one Engagement, Monthly, Half-yearly and Annual reviews	Product Quality and Safe Practices

Community Engagement

The organization understands that project execution can lead to many challenges on legal, public relations, and other aspects which may impede Greenko's ability to meet defined development and construction targets. Some challenges about the clean energy projects, in general, are concerned with potential environmental, noise, health or aesthetic impacts, impacts on property values or the rewards of property ownership, or impacts on the natural beauty of public lands and rivers. Greenko addresses all these concerns beforehand through ESIA during the project planning and ESMS during the project operation for smooth functioning and execution of its projects by winning the confidence of the local stakeholders.

Greenko passionately believes that it is imperative to have a positive relationship with the communities in which they operate. In this regard, the group has invested and will continue to invest in local communities by supporting continuing educational development and awarding scholarships to local students.

Value Creation for community

Greenko's business model contributes to creating long term value creation for the communities in which they live, operate, and society as a whole. As a socially responsible organization, Greenko is committed to serving the neighbouring communities and making a positive difference to their quality of life through proactive and responsible initiatives in education, health, rural development, environment, and livelihoods.

Contribution to Communities, FY2019-20

935,048

Total number of beneficiaries from the Community Social investment

14,065

Number of hours volunteered by employees

486

Number of Community development programs

220

Number of community development support requests received

272

Number of structured engagements with community

92%

Community satisfaction index

199

Number of community development support requests addressed so far

95%

Operations covered under CSR programs

51

Number of co-creation projects done through the participation of local community / local bodies/ line departments

Rs. 15.57 Crores

Community Social Investment

Social and Relationship Capital

Education Initiatives

Greenko's major focus in education domain is to provide access to quality education in the neighbourhood communities. It works with government-managed schools focused on improving the quality of education and support educators and their students, ultimately helping schools, teachers, and students thrive within all areas of education. During the FY 2019-20, Greenko focused on various projects and interventions such as the Construction of School Infrastructure at Government Schools, improving the quality of education in Government Schools by way of providing additional Teachers, Support for Students, and Classroom Infrastructure in Government School through Smart Class Systems with LED TV & Sound Systems, Promotion of Sports and Cultural activities in local schools. There were 85 such activities conducted in the reporting period, benefitting 31,141 students.

Providing Vidya Volunteers to Government Schools

Non-availability of quality education facilities, shortage of competent teachers in Government schools, lack of functional infrastructure and difficult familial circumstances resulting in poor performance of students and high dropouts is one problem which needed immediate intervention. Greenko initiated this intervention with the objective of ensuring access to equitable and quality primary and secondary education, leading to relevant and effective learning outcomes in rural communities. It also helped to maintain the student-teacher ratio in Government Schools.

Key Components Developed

- Providing Vidya Volunteers who can act as additional teachers for a period of 1 to 3 years
- Hiring educated youth with relevant qualifications from the same Village or nearby villages in the same Mandal/block

Key Interventions

After a close deliberation of the requirement, the CSR team at Greenko initiated the process of carrying out need-based assessment surveys, in consultation with various local stakeholders in the intervention areas. Based on these assessments, Greenko initiated this project in 3 Government



Smart learning initiatives from Greenko to local schools

Schools of Andhra Pradesh and 1 in Himachal Pradesh, benefitting around 416 students.

The services of Vidya Volunteers ensure regular functioning of the Schools. Monthly remunerations are paid to the school administration by Greenko and it is transferred to Vidya Volunteers. The project faces various challenges such as identification of qualified teachers in local areas, accommodating the number of teachers, and disparities in the treatment of Vidya teachers from regular teachers.

Impact

- Significant improvement in attendance and delivery of regular classes

- Employing adequate number of teachers for subjects like Social Science, Computer, etc.
- Inspiring young minds of Vidya Volunteers, bringing new teaching methodology to benefit students with activity-based learning, extracurricular activities, and improvement of core subjects such as maths and language.



Vidya Volunteer Support by Greenko

Health Care Initiatives

The healthcare sector plays a critical role in maintaining the health and well-being of a population. It also contributes to the economic development of the country. Greenko's focus areas included the implementation of health and welfare initiatives for local communities.

Under health programs, General and Specific Health Camps were organized, healthcare services through mobile clinics were offered, with extensive focus on primary health services that aimed to increase equity and access to healthcare services by supporting the existing healthcare system. During the FY 2019-20, major initiatives like General Health and Eye Screening Medical Camps, Diagnostic Screening and Treatment (DST) Eye Camps, and Mobile Clinic Health Camps were organized. In this pursuit, 263 such activities were conducted and it benefitted 26,671 people.

The Diagnostic Screening and Treatment Eye Camps provided service to the local community and offered treatment to patients diagnosed with cataract and other refractive errors, with an endeavour to eliminate the threat of blindness.

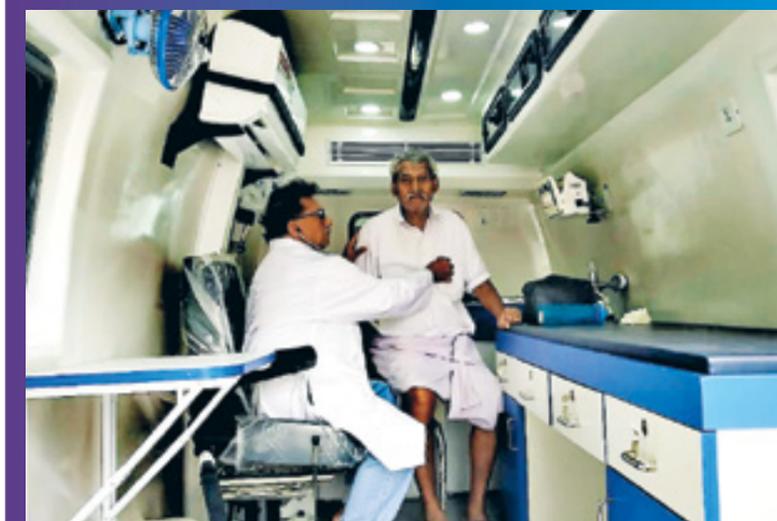
Greenko's initiative for Mobile health units (MHUs) steer better healthcare outcomes, promote value-based care, and improve patient access to care. The types of services rendered through MHUs included

- General health screening and treatment of general illnesses
- Treatment of minor ailments and first aid

- Diagnostic services for BP, Diabetes, CBP, etc.
- Referral of complicated cases
- Early detection of infectious and non-communicable diseases
- Ante-natal and Post-natal check-up
- Treatment of common childhood illnesses such as diarrhoea, ARI, Pneumonia, and other illnesses
- Adolescent care including lifestyle education, counselling, treatment for anaemia, and other minor ailments

General Health and Eye Screening Medical Camps

The group has set up 'General Health and Eye Screening Medical Camps' with an aim to bring awareness among the deprived population in the neighbouring communities, who have no access to basic or advanced healthcare services or knowledge about the diseases they are suffering from. Greenko's medical camps provided free medical advice and medicine to such people in neighbouring communities.



Mobile Clinic for the local Community

Social and Relationship Capital

Rural community upliftment

The progress of India significantly depends on the prosperity of its rural population. Greenko has been involved in various initiatives for creating lasting social impact. Greenko's efforts aim to bring about a paradigm shift and facilitate transformative change towards building an inclusive India.

Some of the initiatives implemented under the rural development programmes of local communities around Greenko's operational areas included provision for Reverse Osmosis (RO) Plant for Drinking Water at Village Level, Establishing Open well and Borewell for drinking water, Installing Street Lighting Facility at Village Level, Construction of Community toilets at Village level, repair of roads and Bus Shelters & Construction and repair of existing drinking water systems. During the current reporting period, the number of hours volunteered by employees for community development also increased by 14% over the previous year.

During the FY 2019-20, Greenko undertook 28 such projects which benefitted almost 6800 people.

The Program was initiated in 2016-2017 and till the reporting period (31st March 2020) the following milestones were achieved)

- **17** RO Plants installed and in Operation
- **6** RO plants installation in Progress
- **15** ROs are to be executed
- **35** Villages covered
- **34000** people directly benefitted from operational plants
- **50, 97,257** litres of safe drinking water supply for the reporting period.

Skill Development Initiatives

The Greenko Skills' development initiative under CSR, aims to train local youth for employment through the Skill Development Centre. Greenko also undertook a major Skill Training program in Computer Skills for educated youth through its Computer Training Centre.

Environmental Initiatives

To promote a green and clean environment, the organization proactively implemented Plantation drives for local plant species, Environmental awareness campaign in schools, Local Biodiversity Conservation programs, and initiatives to protect the local heritage site. During the FY 2019-20, Greenko undertook 3 such drives to benefit nearly 3500 people.

Greenko also aims to preserve heritage through promotion of local cultural activities, national integration activities and supports local traditional festivals and fairs. During the FY 2019-20, Greenko undertook 53 such Major drives which benefitted almost 86,217 people.

Greenko's Swachh Himachal Abhiyaan - 3 tons of plastic waste cleared from Himalayas

Greenko is proactively contributing towards the ongoing efforts of the local Government for adoption of Improved Hygiene Practices and effective Solid and Liquid Waste Management by 2022. Greenko as a part of its environment improvement interventions has undertaken a Greenko Swachhta Abhiyaan in the neighbouring villages, located in and around its operational areas in Himachal Pradesh. Major hurdles identified for its implementation include improving waste management in rural areas and the development of Institutional capacity, financial capacity, and creation of public awareness. Greenko intends to create holistic awareness among community members about adverse effects of climate change and the urgency to keep the state clean and green through measures involving behavioural change about

sanitation, street cleaning and creation of community social infrastructure.

Key Components Developed

- IEC Campaign through display of Banner on Swachh Bharat at prominent locations
- Road shows & involvement of school children
- Plog Run/Green Walk/Cleanathon
- Picking plastic waste by employee volunteers
- Distribution of dustbins, non-plastics bags

Key Interventions

A total of 12 hydel plants participated in the program, including 5 schools. Many dignitaries from government, central forces, and various civil participants along with Greenko's employees participated in the campaign. The popularization of the campaign was made through display of Banners on Swachh Bharat at prominent locations, Road shows, Open Assembly and Oath taking ceremonies to encourage maximum participation. The campaign involved innovative activities such as Plog Run/Green Walk/Cleanathon, Picking the plastic waste, distribution of non-plastic bags was also carried out at the event. The event was phenomenally successful, however some intrinsic challenges included attitudinal issues among villagers about collective association and problems related to permission from the school authorities.

Impact

- Significant improvement in community attitude regarding proper disposal of garbage
- During the campaign, 3 Tons of plastic waste was collected and deposited with the local Gram Panchayat/Municipality for safe disposal
- Reduction in complaints about unhygienic conditions
- Inculcated individual ownership for bringing change through cleanliness of surrounding areas



Swachh Himachal Abhiyaan campaigns

Co-creation Initiatives

Co-creation is a collaborative process where players from different sectors – such as companies, social sector organizations, financial institutions, or government bodies – come together to co-design and co-implement new or improved products and services that address the essential needs of underserved populations. In the process of co-creation – peers across sectors work hand-in-hand to design and implement solutions based on a shared vision. This results in addressing society's challenges at scale while achieving economic gains. Co-creation represents a fundamental shift in the interaction between the business, social, and public sectors to create shared value. In the reporting period, Greenko could successfully undertake 51 innovative co-creation community development projects. Some of them are summarized here:

1. Providing smart class system & play equipment to government higher school at Hemavathy Hydel

plant in Hassan (Karnataka). This initiative changed the conventional study model into a more innovative, fun & easy to learn interactive mode, helping the children to complete basic education in a better manner and promises a bright future for them.

2. Providing LED streetlights in Gram Panchayats under Amar power Private Ltd. jurisdiction, Karnataka. This lighting initiative not only helped the gram panchayat with lighting source but also helped in saving cumulative energy annually, leading to a reduction in carbon dioxide
3. To solve the problem of garbage collection & disposal, Greenko aided operation and maintenance of garbage disposal bins at the village neighbouring Kurnool ultra-mega park, Andhra Pradesh. The group provided about 150 garbage bins to be maintained at strategic locations, which is shifted to a community garbage yard by 4 municipal staff

and Greenko pays for them as well. This green initiative resulted in good hygienic conditions benefitting 2000 people.

4. To overcome the inadequacy of drinking water availability in the local communities around Greenko's Budhil Hydro plant, Himachal Pradesh, a program was initiated to supply 4000 L drinking water daily to 5 villages using water tankers, benefitting 3000 people.
5. During the stakeholder assessment in the area surrounding Vyshali Energy Pvt Ltd. (Wind site), Karnataka, Greenko provided a 1000LPH RO plant for Kumtagi village. The safe water provision initiative benefitted 550 households, comprising 2500 people and supplied safe drinking water 12 hours a day, safeguarding them against water-borne infections and saving time spent in fetching water from long distances.

Social and Relationship Capital

Looking ahead

Greenko looks forward to strengthening the social and relationship capital to craft a co-creating ecosystem of stakeholders that will enable the transformation of electric system in India. It looks forward to increased engagement with public policy and develop partnerships for complementing its capacity to steer transformative changes in the energy system. Further, the customer profile is changing and the products and services Greenko offers will change and Greenko will have to 'go -closer-to-customer'. All these pose new challenges and we will address these going forward.

Greenko is constantly working towards setting community development targets and goals for 2021. The goals set under the above-discussed focus areas that are in line with the SDGs 2030 are as under.

- Education: To be able to make a difference to about 15,000 students through its interventions in government-run schools, among children and the community around its operational presence.
- Healthcare: To be able to provide access to quality Healthcare to over 50,000 people living in communities around operational presence.

- COVID-19 mitigation measures and contributions
- Rural development: To be able to improve the living standards of over 100,000 people, mainly by way of improving basic amenities and rural infrastructure in the neighbouring villages.
- Livelihoods: To be able to provide an opportunity for improving the livelihoods of over 25,000 people, mainly by way of providing skill training in neighbouring villages.
- Environment: To be able to plant and care at least 200,000 trees in and around the group's operational presence and neighbouring communities.
- Impact Assessment: Conduct a third-party impact assessment of CSR interventions and SROI of the projects commenced and delivered by Greenko.

Through sustainable partnerships with suppliers, customers, regulators, the government and community, Greenko looks forward to generating and delivering value to all stakeholders.

"Grow ,Use & Share" We always ensure that forests and tree plantations are duly regenerated. Regeneration is usually done through active planting or organic farming.

Response to COVID -19

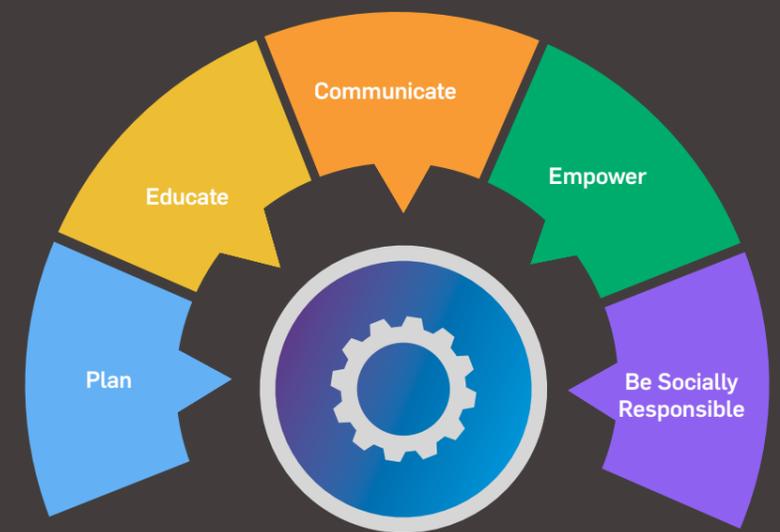
We were always there when needed

Greenko is aware that Compassion, Planning, Management and Technology plays a major role to keep our people safe and operations running during the COVID-19 times.

As a socially responsible company, supporting employees and operations is at the core of our culture. This is a responsibility we have taken seriously as we all are working through this uncertain time.

Our utmost priority at this time will continue to be focused on the health and safety of our employees, stakeholders and the communities we serve. We're doing everything we can to continue delivering the electricity needed to the country during these challenging times.

Our COVID-19 response is broadly categorized as



Contribution of 1 cr. to Sikkim Govt.



Relief Measures on COVID_Ghani Solar Park



Social and Relationship Capital

Plan

Greenko has a mature system of Business Continuity Plan and Emergency response Plan and has been continuously conducting mock drills and tabletop exercises on the possible emergency situations. Leveraging the commitment to its theme 'it's Possible', Greenko has shown its strategic preparedness by analyzing future risks the Company could face with respect to the pandemic effects. A COVID-19 Response Committee was formed to oversee organizational preparedness and management of the pandemic from a business continuity as well as employee safety perspective. In addition to segregation of essential and non-essential staff, location-wise Emergency Response Teams were formed and work from home or sites was assigned on a rotational basis. It is also essential to state that all the business operations of Greenko with respect to Power Generation, Transmission & Distribution and Renewables were fully operational during the outbreak with all due care and precautionary measures in place.

Educate

During this unprecedented situation of COVID - 19 Pandemic, Greenko has given top priority to its Employees Health & Safety. They have initiated special risk mitigation measures for prevention & spread of contagious disease, this is being practiced by educating employees over New norms of Social distancing, Hygiene practices, Screening of employees & stake holders and focus on disinfection and online health monitoring of employees were carries time to time.

Greenko has also imparted training over work resumption post lockdown to all employees in its business, Viz. 5260 Employees in a span of a week to cope up to the new requirements.

Apart from ensuring a safe strategy to combat the COVID-19 crisis in the short-term, Greenko have also initiated long-term resilience mechanisms to respond for future risks/ disasters. This

warranted the upgradation of Greenko's Business Continuity Plans to acquaint itself with a new normal condition post lockdown, also warranting a handholding of various divisions to articulate site-specific mechanisms and establishing operational strategies for unhindered and smooth business continuity.

During the initial period of COVID – 19 spread in other countries and declaration of global emergency by WHO, the group had anticipated huge crises with respect to employee moment, plant & office operations and the senior management quickly planned and implemented decisions to manage operations by keeping 20% employees strength at work and rest working from their home and on need basis can login for necessary support to ensure uninterrupted power supply to the stake holders. Since initial phase itself this global scenario was addressed and various operational, health & safety related challenges were readily handled. The timely action proved to be a blessing in disguise to run the business operations smoothly by keeping minimum manpower & resources.

Communicate

Greenko understands that while providing autonomy to its employees is essential in keeping with its ownership culture, so employees feel empowered to deal with any quickly evolving situation. This autonomy must be combined with establishing a two-way communication that provides a safe space for employees which has a freedom of expression, as well as monitoring adherence to any policies regarding new business situations including the pandemic scenario.

The strategic Response to the pandemic at Greenko has been formulating stringent COVID management measures, which can be summarized as:

Employee Safety:

- Various modes of communication such as messages, email, mobile

apps, websites and signage to employees, vendor partners and visitors, which included dos and don'ts, travel advisories, counseling with respect to health issues, and stress management during the pandemic

- A few organizational policy changes were carried out to accommodate the new normal way of working such as remote working, leaves, flexible working, asset management etc.
- Greenko Created and promoted situation-based continuity plans covering aspects of evacuation, isolation, medical advice, and sanitization of its office facilities
- Establishment of procedures for reporting and quarantining, and support to suspected or confirmed cases of COVID-19
- Implemented zoning of office space to restrict employee movement and ensure appropriate social distancing
- Ensuring extensive sanitization and disinfection of premises as well as vehicles used for employee commute, besides fumigation of all the external areas
- Enhancing preparedness measures/procedures such as augmentation of healthcare facilities, ambulance availability, thermal scanners, essentials like masks, gloves, sanitizers and medicines, and timely counselling for employees
- Extensive engagement with suppliers and vendors on precautionary measures and chalking out the future course of action for unhindered business continuity
- ensuring arrangements for safety and comfort of employees at Greenko campus and for employees engaged onsite.

Empower

Greenko adhered to all the advisories laid down by the local government at all its business facilities / sites & offices were either shut down or operated with bare minimum staff to ensure critical support. The group invoked business continuity plans across its locations pan India to ensure that they delivered & fulfilled all their commitments towards all the stakeholders.

Greenko has ensured to appoint members from every function and discipline to assist in pandemic times. Further, in most cases, team members step out of their day-to-day roles and dedicate most of their time to virus response. The most significant aspects of the functional teams included ensuring: a) employees' health, welfare, and ability to fully perform their roles; b) financial stress-testing and development of a contingency plan; c) supply-chain monitoring & strengthening; d) rapid response, and encouraging development of a long-term resiliency; & e) coordination and communication with relevant stakeholders.

It was also essential for Greenko to Ensure that liquidity is enough to weather the storm. Businesses must define scenarios tailored to the company's context. For the critical variables that will affect the business, revenue, and cost, Greenko has put in place various analytics to generate the most feasible scenario of business continuity in the pandemic. Also, it has taken a critical accord of its financials (cash flow, P&L, balance sheet) in this scenario to identify triggers that might significantly impair liquidity. Further, Greenko has been working on network optimization and searching for and accelerating qualification of new suppliers in the current crisis to ensure resilience in their supply chain—an ongoing challenge that the COVID-19 situation.

The Key Steps Taken for Ensuring the smooth business continuity included:

- Enhanced communication and coordination with clients

- Enabling remote working for employees via secure laptops and desktops, with information security controls
- Increased bandwidth capacities for data networks and associated IT infrastructure
- Leveraging collaboration platforms extensively
- Framing of guidelines for employees to work from home, including sensitizing them about the aspects of confidentiality, data privacy and cyber threats
- Lesioning with service providers to enhance capabilities for required support

Greenko has devised a work resumption post lockdown work procedure, which comprises:

- Screening of employees
- Self-Monitoring of Health
- Travel
- COVID - 19 Protocol for any person infected or having symptoms
- PPE Usage etc.

As COVID-19 is rapidly spreading in the country & cases are sporadically popping up in the entire country and some cases were also noted in Greenko's office campus, they have devised a COVID - 19 task force with the involvement of top management to ensure quick response over medical needs and quarries.

The Main tasks of COVID – 19 task force include:

- a dedicated COVID -19 help line number - any employee from any part of India, can call on this number 24*7 for real time monitoring and support
- COVID – 19 Help line number to address and resolve employees' quarries in real time

- Extending all possible Support & Help to employees for their medical and emergency needs
- Suspected & Quarantine suspected employees to be tested as per medical advice and approved testing protocols
- To track the contacts of suspected/infected employees and follow the regulations of quarantine etc. to avoid further spread.

The journey of COVID 19, evolving situation and Greenko's proactive planning and action continues in the right spirit and direction.

Socially responsible

During this COVID-19 Pandemic, Greenko played an important role to mitigate the effects in rural areas and in the neighboring areas with various initiatives.

- Responding to the on-going COVID 19 Pandemic with several local initiatives and contributions to the State and Central Government agencies (PM CARES and Chief Ministers Relief Funds)
- Distribution of groceries to the needy migrants and poor people in the neighboring villages and towns
- Distribution of Masks, Sanitizers, and Thermal scanners to the local Gram Panchayats and Contribution to COVID-19 relied on funds at District/Sub Divisional/Tehsil/Zilla Parishad levels, etc.)
- Providing PPE Kits to the frontline warriors including Police, Municipal, Medical, and Traffic control Staff in various States

Health Camps were conducted at regular intervals influencing the general health and hygiene behavior among the locals improving the local sanitation conditions

Natural Capital



We continued with our pursuit of mitigating impacts through positive compliance and adherence to ESIA and ESMP; and restoring nature through habitat restoration at our sites. We also undertook conservation efforts in partnerships with WWF and the Forest Departments. As the physical impacts of climate change are becoming more visible through frequent occurrence of extreme weather conditions and increase in severity of such incidences, we have undertaken climate risk assessment of some sites and have identified the mitigation measures to address these risks. Considering that these physical climatic changes are uncertain, we are considering improving the asset agility through digitalization as the first defence.

Also, some of our assets are nearing their half-life. We are witnessing the importance of 'repair, refurbish, re-machine and reuse' and these measures are dovetailed into "Self O&M". The circular economic measures in our operations are aimed at transforming 'liability of electronic waste' into 'value' for our operations or for others. We will undertake mapping for 'second life' and 'end of life' of assets in the coming years.

Mr. Syed Saleem Basha
AVP, GIMS



World Environment Day celebrations
GRI102-21,29,31,40,42,43,44, 103-3

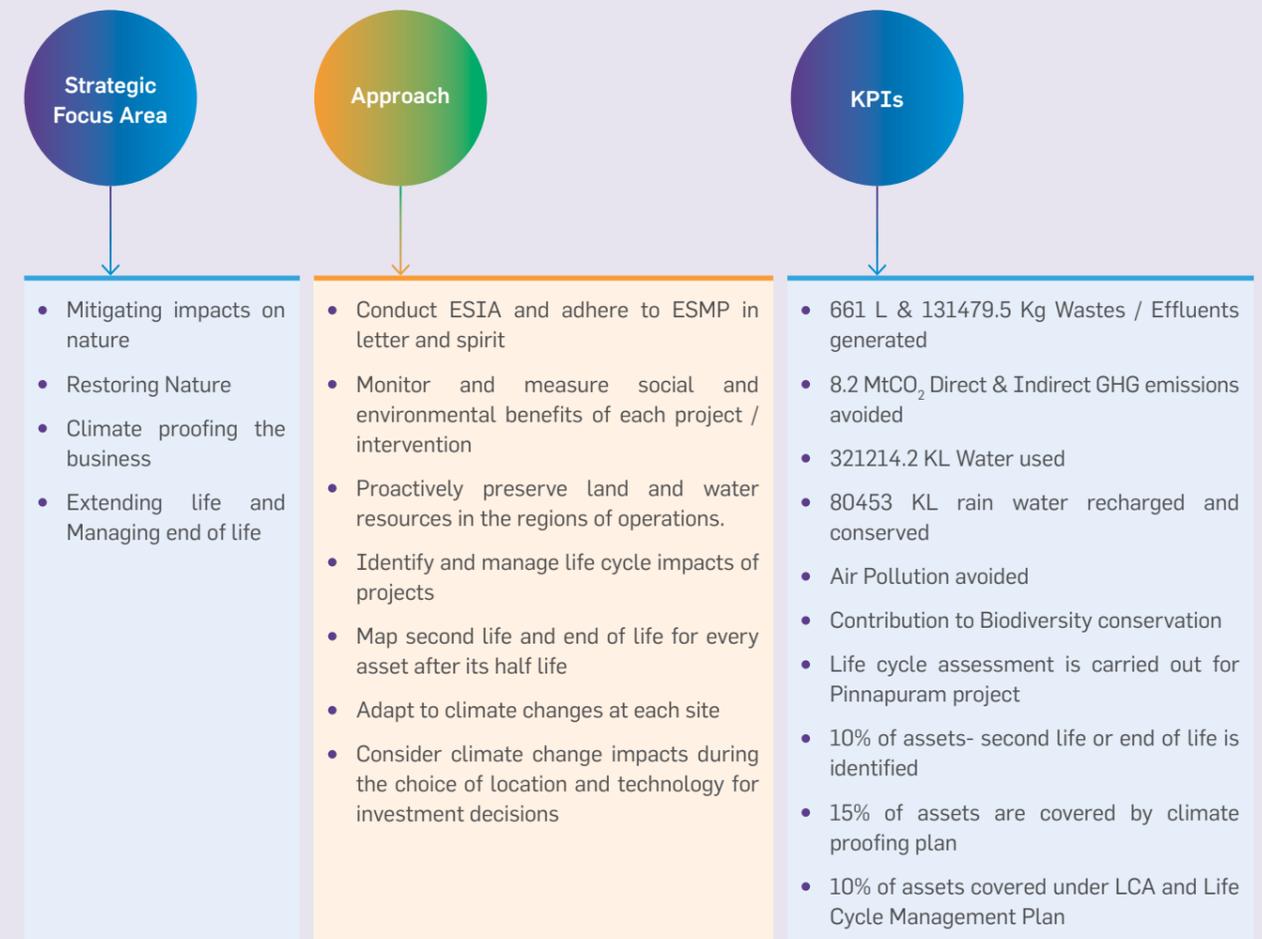
Strategic Approach

Across all sites, Natural Capital considerations (air, water, and soil) and climate change issues are integrated into Greenko's decision-making at all stages: i.e. design stage, operation stage, and above all, the way it deals with the external world. Greenko's focus on life cycle has become more relevant

and extension of life, second life, and end of life has been integrated into asset management and project planning and execution. The impacts of physical climate change are being identified, mitigated, and managed. Every department, functions, specifically project and asset management teams, contribute actively to caring for the environment. The annual Review of

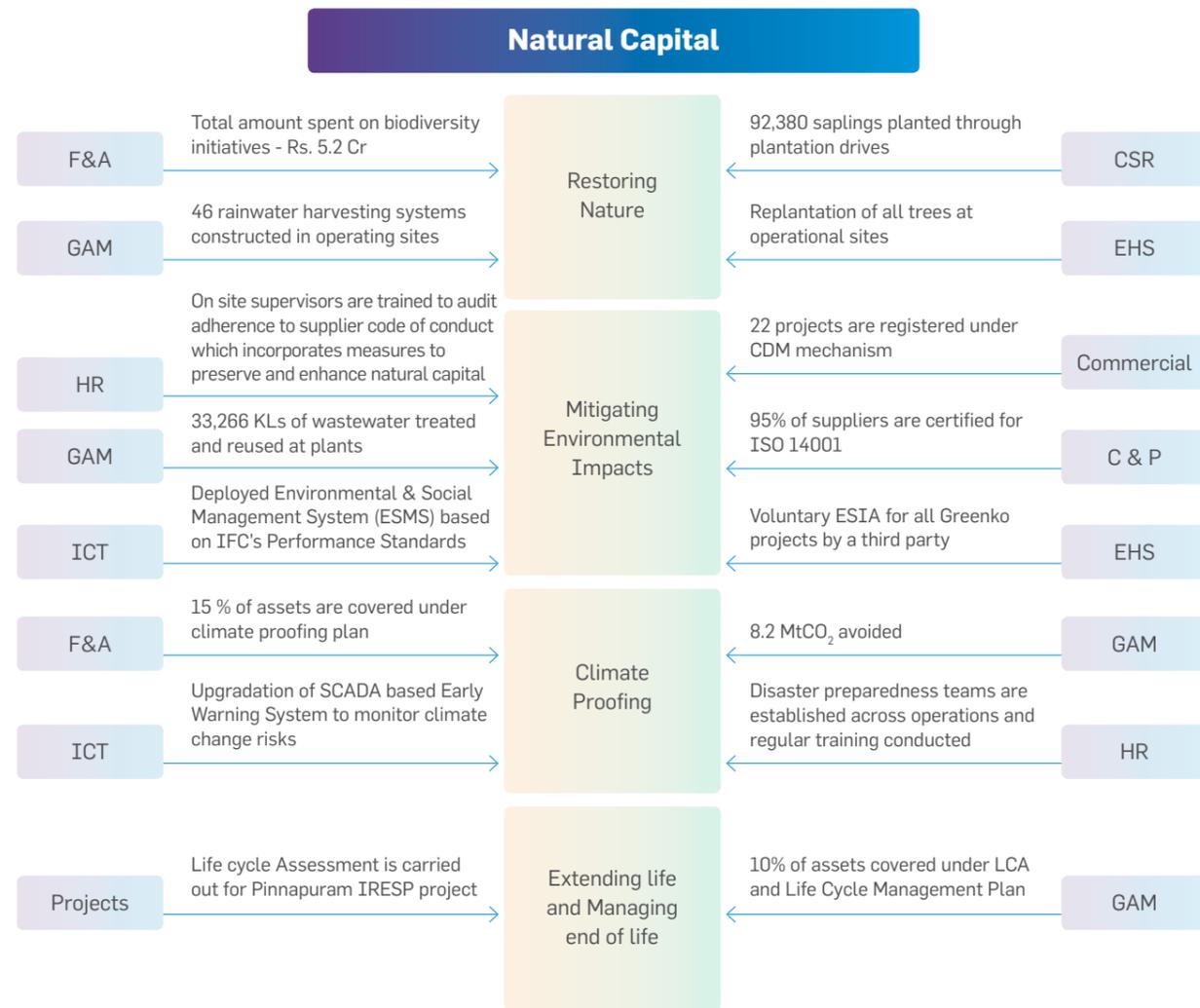
Greenko's performance during the reporting period demonstrates the continuing efforts in minimizing the use of resources and generation of waste. Going forward, Greenko has set short-term and long-term targets for protecting and enhancing Natural Capital.

Strategic Direction: Preserve and Enhance Nature



Natural Capital

Integrated Value Creation in Natural Capital



Journey so Far

Greenko has identified aspects of its business that impact the environment, the risk they pose to the Company's business, and the opportunities they offer. Greenko's business is designed to harness the opportunities in the transition to sustainable development. The organization has carefully designed programs to manage the impacts

on the environment. Climate action and management of energy, water, and waste are the key elements of its environmental sustainability program across its operations. Greenko has undertaken various projects and contributes to the conservation of terrestrial ecosystems at their sites, recharges and reuses water, conserves soil and natural drains.

Greenko understands and believes that timely and sufficient availability of natural resources is imperative for the continuity of business operations. Greenko has been proactively working towards preservation and conservation of nature in and around its operations and elsewhere in eco sensitive zones and habitats of threatened species.

Mitigating impacts on nature

Environmental Impacts & Mitigation Measures

Greenko assesses the environmental impact of its projects at the planning stage for promoting broader mitigation and conservation strategies. The Company has endeavoured to understand the direct and indirect impact of its activities and focus on efforts to streamline its operations most efficiently. Greenko carries out an Environmental and Social Impact Assessment (ESIA) study prior to the project development, in line with the requirements of ten Equator Principles; eight International Finance Corporation (IFC) Social & Environmental Sustainability Performance Standards (PS); and IFC Environment, Health and Safety (EHS) Guidelines. All new projects developed by Greenko have undergone ESIA to proactively mitigate any issue that adversely impacts natural capital. All impact mitigation measures in ESMP, which have arisen out of this voluntary ESIA, have been taken up for implementation. Further, Greenko has implemented the following related initiatives:

Environmental Stewardship Measures



Responsible sourcing

The Company works towards procuring green alternatives from the suppliers, continuously engaging with the suppliers

actively through green procurement initiatives. Greenko is also committed to adopting a procurement process that adopts Ethical, Environmental, and Social principles.

Further, green procurement initiatives help Greenko in preparing for the future regulatory environment and long-term cost-saving opportunities.

Major responsible procurement initiatives

Creating awareness in vendors/suppliers on environmentally preferred goods and services

Making at least 95% of critical suppliers ISO 14001 certified and RoHS compliant by March 2024

Inclusion of environmental specifications and evaluation criteria as per emerging technologies in centrally managed procurement

Developing a collaborative approach to optimise information-sharing, consistency and performance measurement and Life-cycle analysis

During the FY 2019-20, Greenko made significant procurement of Green Alternatives and initiatives

Green Alternatives

Procurement

Procured Energy Efficiency Equipment

Procured only Energy Star labelled electrical appliances

Initiatives

Ensuring Bureau of Energy Efficiency (BEE) Guide Lines

Planned to encourage energy efficiency retrofits in order to move towards securing a BEE (Bureau of Energy Efficiency, India) 5 star rating

These initiatives combined with planning the transport for consolidating packages by the vendors have significantly reduced the scope of 1&2 GHG emissions up to 50%. Internal movement of the vehicle from the warehouse to the Flight loading area is also monitored to achieve and maintain the outcome of GHG emissions reductions. Greenko also ensured that its major suppliers (95% in all) are upgraded to ISO 14001 certification and are RoHS compliant.

Contribution to climate change mitigation

Greenko recognizes the fact, that climate change is an important issue that can significantly affect the lives and health of various stakeholders. Extreme weather conditions leading to natural disasters like strong and frequent storms can adversely affect the supply of power and damage generation and grid infrastructure.

Greenko has avoided 8.2 million tons of CO2 emission by generating clean energy. In addition, the group has, till date, registered 22 Clean Development Mechanism (CDM) projects with UNFCCC.

Natural Capital

GHG emissions avoided

KPI	FY 2019-20	FY 2018-19
Direct and indirect GHG emissions avoided	8.2 million tons of CO ₂	5.9 million tons of CO ₂

Direct and Indirect GHG emissions

Scope	Emissions (tCO ₂ e)	Coverage
Scope 1	1286.98	a. Stationary combustion - Diesel consumption in DG sets b. Mobile Combustion - Fuel consumption in company owned vehicles c. Fugitive emission - SF6 leaked in circuit breakers
Scope 2	22,967.38	Electricity purchased from the grid
Scope 3	1,746	a. Employee and monitored contractors' business travel b. Employee commute

Emissions avoided (in tons)

tNOx
 FY 2018-19 34,439
 FY 2019-20 **47,851.2**

tSOx
 FY 2018-19 52,376
 FY 2019-20 **71,776.8**

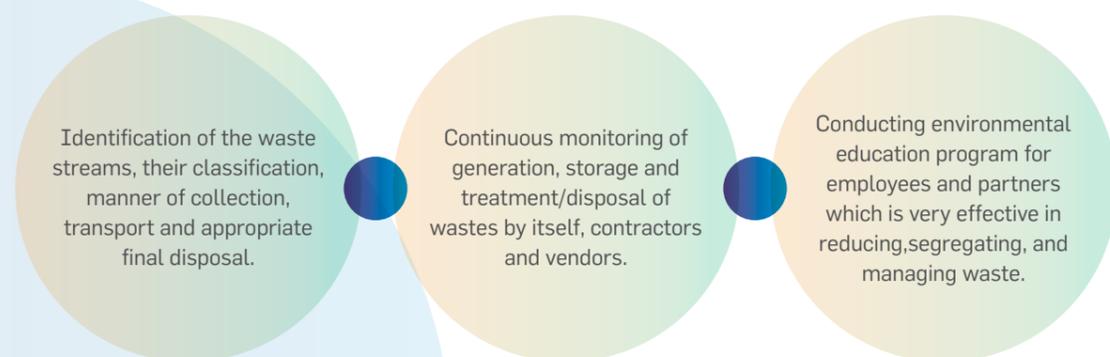
tPM10
 FY 2018-19 7,031
 FY 2019-20 **9769.62**

For more details on Greenko's GHG emissions and inventory standards used please refer **Greenko's GHG Accounting Manual**

Waste management

Greenko is committed to continually improve its Waste management practices at all of its facilities. The Company's waste management adheres to the principles in Environment and Social Management System. The ESMS requires conformance to legal requirements along with reduction in waste generation through reuse or recycle, whenever possible.

Waste Management Procedure as per ESMS



Hazardous Waste

Waste management	Hydro	Wind	Solar
Used batteries (kg)	327	1329	4041
Used Oil (kg)	9420	26139.75	4208.8
Chemical waste (kg)	30	620	2
Oil soaked cotton /cloth (kg)	959	22465	310

Non-Hazardous Waste

Waste management	Hydro	Wind	Solar
Non Hazardous waste (in Kg)			
Packaging waste	170	587	1712.5
Paper waste	122	259	210.5
Metal scrap	153	395	15013
Wood	8242	2830	7515
Plastic and rubber waste	186	175.5	7860.2
Kitchen waste	4345	7630	3658.5
E-Waste (in Kg)			
Information technology and telecommunication equipment	16	70	32.5
Consumer electrical and electronics	376	22.5	147
Significant Spills (in Kg)			
Oil Spills	56	548	32
Chemical spills	0	25	0

Wind, solar and hydro projects do not consume any fuel for power generation. Thus, the material consumption in these plants is only towards the O&M of plants.

Hazardous Waste

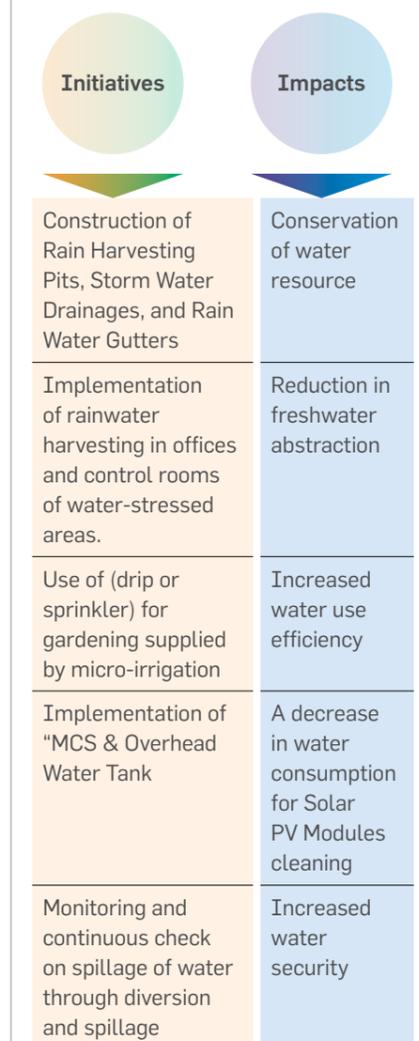
Waste management	Hydro	Wind	Solar
Lubrication Oil (engine oil, gear oil, etc) consumed (in liters)	2089	38543	2259.6
Turbine Oil (in litres)	18249	10283.65	0
Transformer Oil (in litres)	3512	10681	115322
Grease (in kg)	825	65808.71	1145.75
SF6 Gas (in kg)	25	0	0

Greenko carries out its waste management program with the help of an authorised third-party, which involves monitoring garbage collection, segregation and disposal of all the waste generated at the operating premises. Some are sold to authorised recyclers and some to hazardous waste treatment facilities and some others are landfilled.

Water Management

Greenko continues to monitor and reduce its freshwater usage, as operations have a significant impact on the withdrawal or discharge of water in the regions where it operates. The main uses of water are for cleaning solar modules, construction activities, domestic use, and biodiversity purposes. At all sites, Greenko diligently does rain water harvesting, adopts drip or sprinkler irrigation and water conservation measures in cleaning.

Initiatives in Water Conservation and their Impact



Natural Capital

Improving ground water table by adopting check dams, canal augmentation, rainwater harvesting etc. at our Ghani Solar Park, Kurnool.

Greenko constructed 22 check dams without disturbing the natural drains. It also helped with 12 km of ground water table recharge canal augmentation which were routed to a reservoir. This harvested rainwater is being used for module cleaning purposes. A pond has been excavated at plant area to divert rainwater and store the water being used for module cleaning and plantation. The capacity of the Reservoir is 4,00,000 KL. Its major benefit was improvement of ground water table by adopting check dams, canal augmentation, rainwater harvesting etc.



Reservoir and check Dam construction at ghani solar park

	Hydro	Wind	Solar
Total quantity of water used for plant operations (in KL)	0	1543.58	112145
Total quantity of water used for office and domestic purposes (in KL)	11530	12702.54	183293
Total quantity of wastewater treated and reused (for gardening, plantation etc) (in KL)	306	0	32960
Total Number of rainwater harvesting systems available (in KL)	0	9	37
Total quantity of rainwater collected and consumed (in KL)	0	225	80228

While adopting new technology, the Company evaluates and considers its feasibility, considering water efficiency as one of the critical deciding factors. Greenko owns and occupies significant area through which natural drainage flow, water recharge and storage is carried out. It manages the drainage flow in such a way that it harnesses the water resource first for the use of the community and then for its own purposes. At many sites, it has managed regional level watershed development and enhanced water availability in the region.

Energy Efficiency Initiative

Greenko has undertaken multiple initiatives for energy efficiency at its operating locations which are enlisted below:

- Procurement of Energy Efficient Equipment based on Bureau of Energy Efficiency (BEE) Guide Lines,
- Replacement of conventional Lights and Use of CFL & LED lighting
- Regular maintenance of the auxiliary equipment,
- Operational management of hydro plants- arresting water leakage through proper grouting work in powerhouses,
- Commissioning energy-efficient 5-star rated ACs and
- Lighting controls automation with the installation of an outdoor light sensor timer.



Earlier: T.G HALL with conventional lightnings at Dikchu HEP



Now: T.G HALL with CFL & LED lighting at Dikchu HEP

Restoring Nature

Biodiversity

Greenko is committed to design and implement projects based on extensive Environmental Impact Assessment (EIA). The company brings the best efforts to avoid setting up its operations that have potential impacts on biodiversity. Further, Greenko takes proactive measures to restore, protect, and enhance biodiversity. The projects undertaken by Greenko in this direction comprises of habitat conservation, natural or sustainable farming, protecting sea-based wildlife systems, fish seeding initiatives. Further to this, there is an extensive activity of tree plantation at all its operation sites. In pursuance of commitment towards Biodiversity Conservation and Sustainable Management of Living Natural Resources, Greenko is supporting various projects in various areas.

Greenko understands the role of plantation in protecting their sites and enhancing the productivity of its operating resource from soil bonding to minimizing impacts of natural disasters, rainfalls, etc.

Performance of biodiversity conservation initiatives

	Units	Hydro	Wind	Solar
Number of Trees Planted	Number	1010	15,786	75,584
% plant survival over the last 3 years	Number	61.6	82.58	78.93
Total greenery area developed	M ²	12,132	82,657	45,6062.2
Number of Biodiversity conservation programs done	Number	13	25	44
New bird nests provided	Sites	0	96	252
Existing nets protected	Sites	0	37	7
Fish seedings did	Kgs or Number	1,00,000	0	0
Number of Noise mitigation measures taken	Number	30	23	3

Initiatives on Biodiversity Conservation and their Impacts

Activities	Progress
Habitat Conservation and Species Recovery of Great Indian Bustard (GIB) Location: Rollapadu Wildlife Sanctuary along with Forest Department, Government of Andhra Pradesh	"Habitat Conservation and Species Recovery of Great Indian Bustard (GIB) at Rollapadu Wildlife Sanctuary (RWS)".
Conservation of Olive Ridley Turtles in Andhra Coast (With WWF)	The Disentangling Sea Turtles project offers the chance to join a turtle conservation project to help protect these iconic creatures in an Andhra Coast. The project is done in partnership with WWF.
Demonstration Natural Farming at Gani Solar Park (With the collaboration of Sri Sri Institute of Agriculture and Technology, Bangalore)	
Construction of Fisheries Hatcheries for Trout at Sangam Busty, North Sikkim District, Sikkim	

The 2020 global Living Planet Index shows an average 68% fall in monitored vertebrate species populations between 1970 and 2016. As per the report "Living Planet 2020", India, with over 45,000 species of plants in only 2.4 per cent of the world's land area, has already lost six plant species to extinction, according to the IUCN Red List. To slow down and mitigate the Bio Diversity loss, Greenko will initiate conservation of one endangered species, each year, in the regions of its operations. During the last few years, it contributed to conservation initiatives of Olive Ridley Turtles and Great Indian Bustard, this year it is focusing on Red Panda.

Natural Capital

Great Indian Bustard (GIB)



Zubin Ashara



Olive Ridley Turtles

Natural Capital

Climate proofing the business

Climate risk Assessment and Management at Greenko

Renewable energy has proven to be a key in the transition towards a low carbon future and to meet the 2°C climate goal, thus minimizing the catastrophic impacts of climate change as well as addressing the growing energy demand. However, like every other sector, renewables are also susceptible to the impacts of the changing climate.

Greenko has conducted Climate Risk Assessment and Management as part of its decision-making system, with an aim to make informed choices, building capacity, planning, and prioritizing mitigation and adaptation measures to reduce its vulnerability to climate change. In this view, Greenko has integrated the climate risk assessment and management aspect in its existing risk management framework, to proactively and systematically identify and analyse potential climate-related hazards to Greenko's operations, based on historical events, trends, forecasts, and projections.

Physical Risks

In this context, Greenko has assessed the impact of physical risks across different stages of its operating lifecycle, such as,

- Physical impact on renewable resource potential
- Physical impact on generating assets
- Physical impact on Transmission and Distribution infrastructure

Key Climate Change Risks associated with Greenko's Generating Assets

Wind	Hydro	Solar
Projected changes in wind speed	Projected change in rainfall patterns	Projected changes in solar irradiation and cloudiness
Projected changes in the daily or seasonal distribution of wind	Extreme precipitation events leading to flooding	Projected changes in mean temperature
Projected changes in air density	Projected decrease in hydro generation potential with increased melting of glacier in the long term	Projected changes in wind speed

In this context, Greenko has conducted a climate risk assessment for six of its critical operating sites to assess and manage climate risk vulnerability of assets and its productivity. The six sites are as follows,

- Ghani solar, Kurnool, Andhra Pradesh
- SEI Adhavan, Tamil Nadu (Solar)
- Sneha Kinetic (Dikchu Hydropower project), Sikkim
- AMR Power, Karnataka (Hydro)
- Rayala Wind, Andhra Pradesh
- Tanot wind, Rajasthan

Greenko has studied projected climate change impacts on its operations using IPCC's RCP 4.5 scenario which is the low-medium emission pathway (equivalent to 1.7-3.2°C temperature increase). The climate change projections were studied for the period of 2020-2039 (Short term) and 2040-2059 (Medium Term).

The climate risk assessment reveals that the transition risks are already well addressed by Greenko. The physical risk for operations related increased heat stress will be mitigated through water conservation and harvesting measures. The physical impacts on resource availability viz., wind pattern, solar radiation and hydrological flows is to be addressed through agility and predictive and adaptive capabilities through Digitalization.



For more details on Greenko's Climate Risk Assessment and Management please refer **Greenko's Climate Change Report**

Extending life and Managing end of life

Lifecycle management at Greenko

A Life Cycle Assessment (LCA) was conducted for an onshore 500MW wind plant, 3000MW solar and 1200MW pumped storage hydro plant as part of Greenko's Integrated Renewable Energy Project (IRESP) according to the ISO 14040 and 14044 standards. An LCA is usually conducted for analysing the environmental impact of a product/system across the various

stages of its lifecycle. In this case, the goal of the LCA study is to analyse the environmental impacts associated with the production of electricity from Greenko's different renewable energy technologies i.e., onshore wind plant, solar plant and a pumped storage hydro plant and explore the consequence of extension of life and end of life management. A process-based LCA approach was utilized for this study.

A cradle-grave LCA study was conducted i.e., the environmental impacts are calculated over the entire lifecycle of the renewable

energy technology plants involving the extraction of raw materials, manufacturing of the components, assembling, transport, operation, maintenance and end-of-life treatment. The functional unit for this LCA study was defined as 1MWh of electricity generated by the corresponding renewable energy technology plant. The lifetime of the onshore wind plant, solar plant and pumped storage hydro plant was assumed to be 20, 25 and 50 years respectively. The reference flows for Greenko's renewable energy technologies are as follows:

Reference flows for Greenko's renewable energy technologies

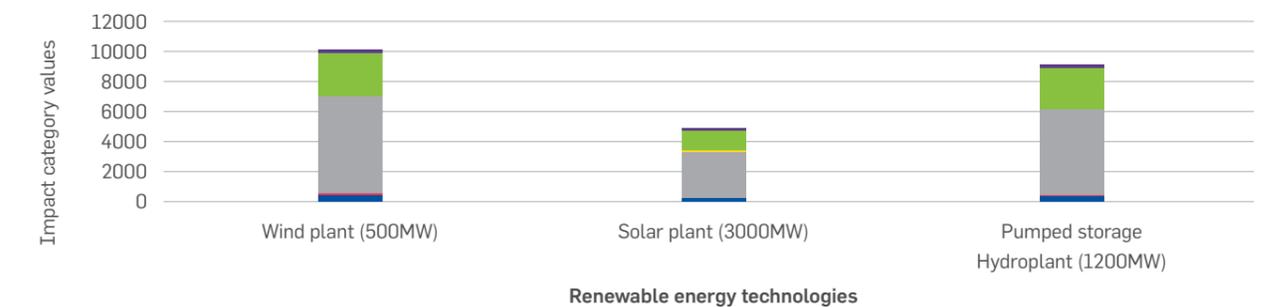
Renewable energy technology and power rating	Lifetime of the plant (years)	Total electricity generated over the lifetime (MWh)	Reference flow
Onshore wind plant (500MW)	20	24,000,000	4.1666 x 10 ⁻⁸
Solar plant (3000MW)	25	163,750,000	6.106 x 10 ⁻⁹
Pumped storage hydro plant (1200MW)	50	187,250,000	5.340 x 10 ⁻⁹

The results are presented as per two different scenarios i.e., the baseline scenario and after adjusting the storage function of the plant scenario.

Baseline scenario:

The graph below shows the overall potential environmental impacts of a 500MW wind plant consisting of 250 turbines (with a rating of 2MW per turbine), a 3000MW solar plant consisting of 3749991 solar panels, 500 inverters and a 1200MW pumped storage hydro plant, covering the entire lifecycle of the respective power plant, per MWh of electricity generated.

Environmental impacts of Greenko IRESP



- Freshwater aquatic ecotoxicity (kg 1,4-dichlorobenzene eq.)
- Human toxicity (kg 1,4-dichlorobenzene eq.)
- Photochemical oxidation (kg ethylene eq.)
- Eutrophication (kg PO4 - eq)
- Climate change (kg CO2 - eq)
- Acidification potential (kg SO2 - eq)
- Terrestrial ecotoxicity (kg 1,4-dichlorobenzene eq.)

Natural Capital

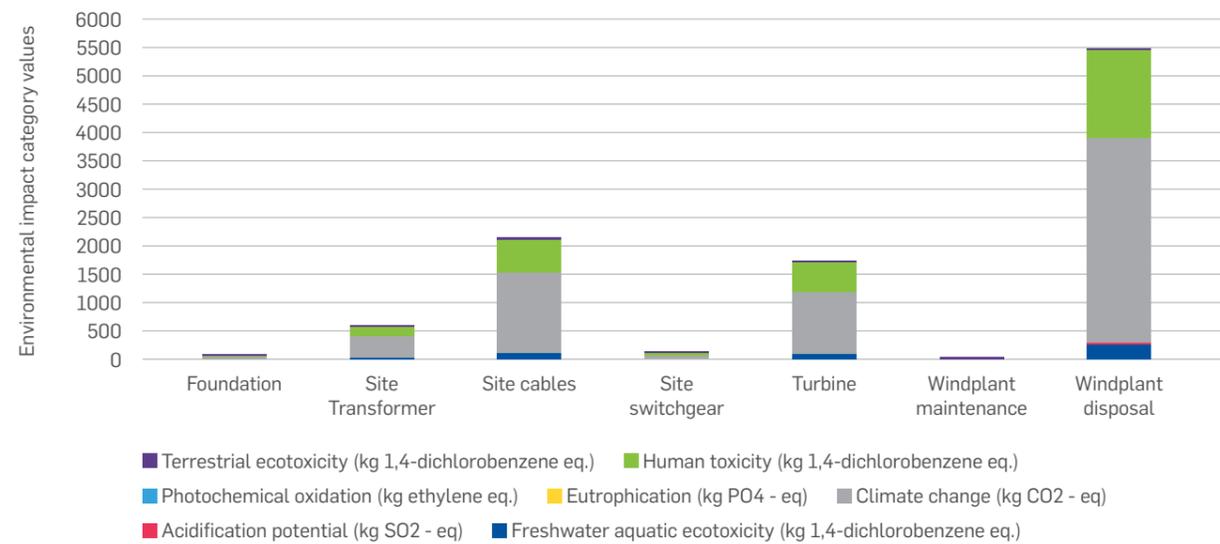
From the above figure, it can be seen that the onshore wind plant has the highest impact followed by the pumped storage hydro plant and solar plant. The lifecycle stage impacts for the respective plants are discussed more in detail below.

Impacts per lifecycle stage:

Wind plant:

The below figure represents the potential environmental impacts of raw material and component production, use and maintenance and disposal stages of the lifecycle of the onshore wind plant. The graph shows that the component production and end-of-life treatment stages contribute the most towards the environmental impact of the wind plant. The results show that for the wind plant components, the site cables and turbine contribute most significantly to the environmental impact categories. Similarly, the disposal stage contributes to at least 50% of the total environmental impact of the wind plant. This is due to the reason that after usage, as part of the end-of-life treatment, the majority of the raw materials (around 70%) used in the various components of the wind plant are landfilled and it results in a higher impact in the disposal stage.

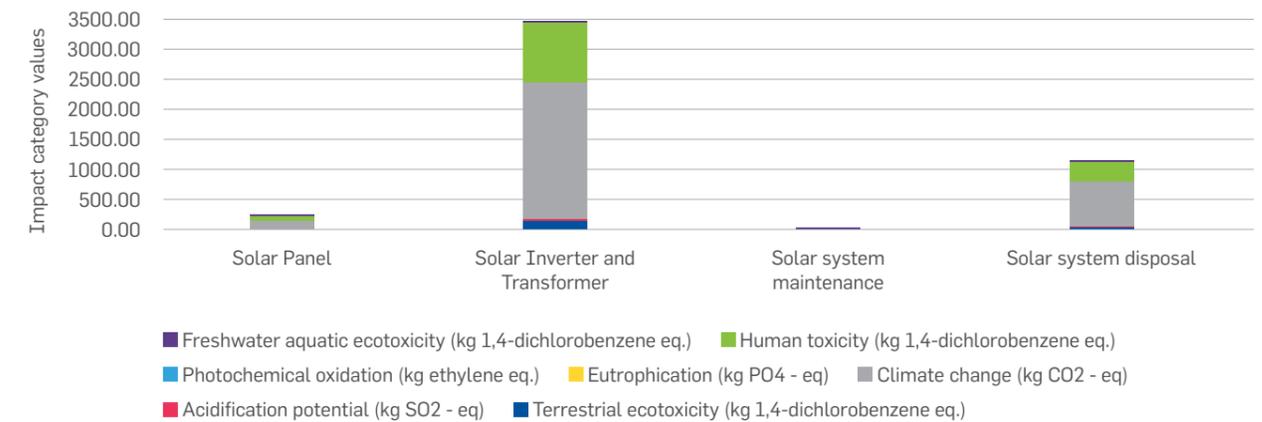
Environmental impacts for 1MWh of electricity production from a 500MW wind plant



Solar plant:

The below figure represents the potential environmental impacts for raw material and component production, use and maintenance and disposal stages of the lifecycle of the solar plant. The graph shows that the component production and end-of-life treatment stages contribute the most towards the environmental impact of the solar plant. Of the solar plant components, the solar inverter contributes the most towards the environmental impact categories. Similarly, the disposal stage contributes to around 20% of the overall environmental impact of the solar plant. This is due to the reason that after usage, as part of the end-of-life treatment, the majority of the raw materials (around 70%) used in the various components of the solar plant are landfilled and it results in a higher impact at the disposal stage.

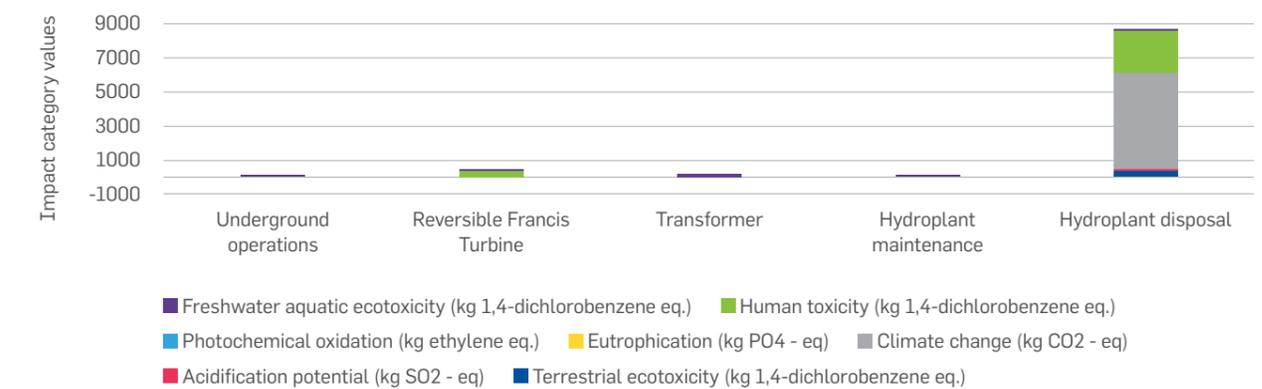
Environmental impacts for 1MWh of electricity production from a 3000MW solar plant



Pumped storage hydro plant:

The below figure represents the potential environmental impacts for raw material and component production, use and maintenance and disposal stages of the lifecycle of the pumped storage hydro plant. The graph shows that the component production and end-of-life treatment stages contribute the most towards the environmental impact of the pumped storage hydro plant. Of the pumped storage hydro plant components, the reversible Francis turbine contributes the most towards the environmental impact categories. Similarly, the disposal stage contributes to more than 90% of the overall environmental impact of the hydro plant. This is due to the reason that after usage, as part of the end-of-life treatment, the majority of the raw materials (around 70%) used in the various components of the pumped storage hydro plant are landfilled which results in a higher impact in the disposal stage.

Environmental impacts for 1MWh of electricity production from a 1200MW pumped storage hydro plant

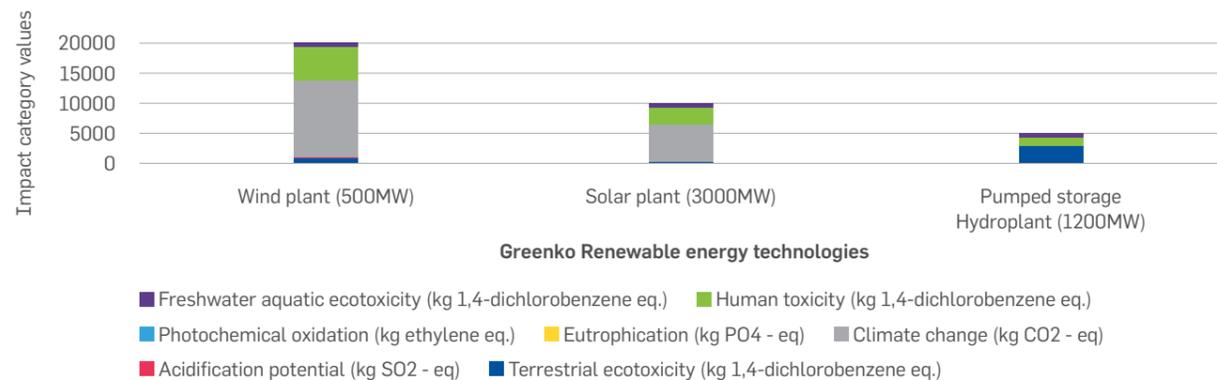


Natural Capital

After adjusting the storage function of the plant scenario:

The below figure shows the environmental impacts per MWh of renewable energy technologies after adjusting the storage function of the hydro, solar and wind plant. The pumped storage hydro plant has a much lower impact than the wind and solar plants because the pumped hydro plant will generate more energy from its storage during its entire lifecycle than the wind and solar plants. This energy stored in the storage system will be generated during the period of high demand, which will result in more electricity generation by the hydro plant, from storage and therefore reduce the energy generation of solar and wind plants across its lifecycle.

Environmental impacts after adjusting for storage function of hydro, solar and wind plant



Sensitivity Analysis:

A sensitivity analysis is conducted to test the robustness of the LCA results and it provides an evaluation of the underlying assumptions and choices made for the LCA, which aims to provide an understanding and importance of these choices. In this study, a sensitivity analysis was performed by varying the lifetimes of the wind, solar and pumped storage hydro plant. The results are provided separately according to both the baseline scenario and after adjusting for the storage function scenarios of the power plant.

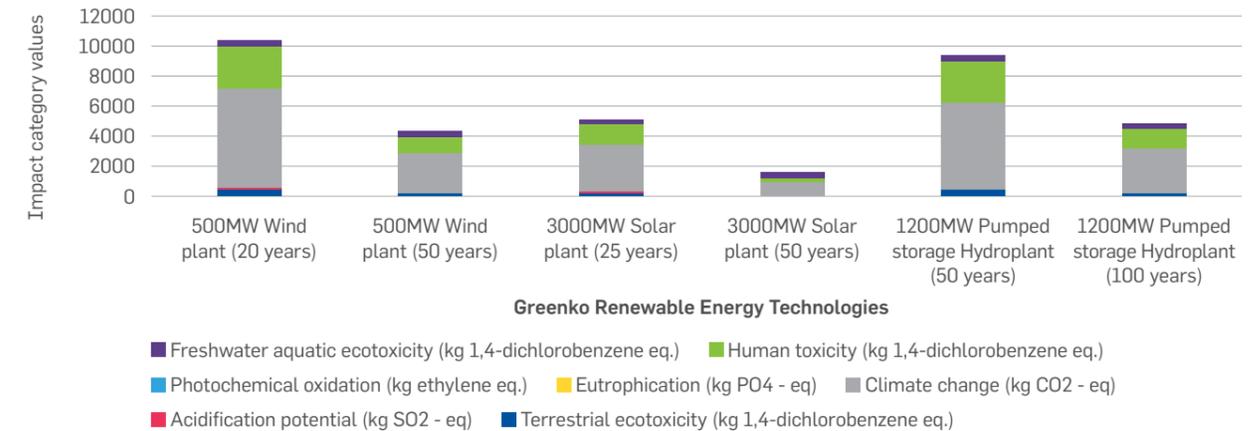
Renewable energy technologies' lifetime:

Baseline scenario:

The lifetimes of the wind, solar and pumped storage hydro plant are designed for 20, 25 and 50 years respectively. However, this may vary according to the specific operating conditions of the plant. The power plant lifetime is an important assumption in the LCA because the environmental impacts are calculated over the lifetime of the plant, for every MWh of electricity generated. As such, the changes in the lifetime of the plant could have a substantial overall effect on the impacts produced by the corresponding power plant.

The below graph represents the sensitivity analysis results, when the lifetimes of the wind, solar plant were increased to 50 years each and the pumped storage hydro plant's life was increased to 100 years respectively in comparison to the baseline scenario results. The graph shows that the overall potential environmental impacts decrease by at least 50% when the lifetimes of the wind, solar and pumped storage hydro plants are increased to 50, 50 and 100 years respectively. Therefore, the results imply that the impacts per MWh directly correspond to the specific power plant's lifetime.

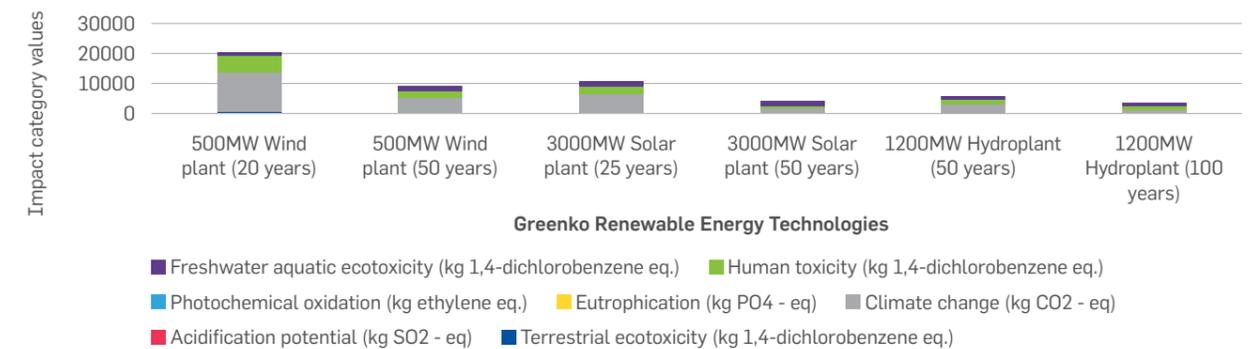
Sensitivity Analysis



After adjusting for the storage function scenario:

The below graph shows the results of the wind, solar and pumped storage hydro plant whose lifetimes have been increased to 50, 50 and 100 years respectively after adjusting for the storage function in comparison to the original results. Similar to the above graph, the overall potential impacts decrease by at least 50%, when the lifetimes of the wind, solar and pumped storage hydro plants are increased to 50, 50 and 100 years respectively, after adjusting for the storage function.

Sensitivity Analysis



Conclusion:

Thus, from the LCA study, it can be understood that the production and disposal stages contribute the most towards the environmental impacts of the onshore wind, solar and pumped storage hydro plants. Although nothing much can be done by Greenko with respect to the production of the raw materials and components used in the plants, some measures can be taken by Greenko to ensure the proper recycling and reuse of raw materials used in the various components of the different renewable energy technology plants after usage and ensure that the raw materials doesn't end up in landfills. A sensitivity analysis was also conducted to understand the influence of the varying lifetimes on the overall environmental impacts of the power plants.

Overall, the study represents a robust and good reflection of the potential environmental impacts of Greenko's onshore 500MW wind plant, 3000MW solar plant and 1200MW pumped storage hydro plant. The LCA is based upon accurate product knowledge and current state-of-the-art technology used in the LCA field, both in terms of methodologies used and datasets used to account environmental impacts as well as the LCA tools and software applied.

Natural Capital

Events and Awards

1. Earth Hour celebrations

Earth Hour at Greenko focused on enhancing awareness on biodiversity loss. Greenko joined hands with millions of people across the globe, to switch off lights at the business premise with a commitment to:

- 1) # Give up Paper Waste
- 2) # Give up Plastic Waste
- 3) # Give up Transport Emissions for cleaner air
- 4) # Give up Electronic Waste

2. Employee Volunteering with WWF for Earth Hour at Hyderabad Schools

Greenko is a responsible employer, cultivates consciousness towards its employees to participate in corporate volunteer programs.



Employee Volunteering with WWF for Earth Hour at Hyderabad Schools

3. Greenko at India Plog Run: corporate volunteering programs

Greenko has participated in the United Way INDIA PLOG RUN as a tribute to the Father of the Nation Mahatma Gandhi on his 150th birth anniversary.

4. World Water day

World Water Day is an annual UN observance day (22 March) that highlights the importance of freshwater. Greenko celebrated this with high enthusiasm and committed itself to preserve natural resources.

5. World environmental celebrations

At Greenko, sustainability is the very foundation of our business. In our operations, we endeavour to integrate biodiversity and environmental protection. Since inception Greenko has been celebrating World Environment Day by conducting many programs on the conservation and protection of biodiversity.

Sponsorship Awards

Greenko supporting biodiversity: The Sanctuary Wildlife Awards 2019

Sanctuary Nature Foundation, sponsored by DSP Mutual Fund and IndusInd Bank and supported by Greenko, presented the 20th Sanctuary Wildlife Awards at the National Centre for the Performing Arts (NCPA) in Mumbai on December 24, 2019. The Sanctuary Wildlife Awards were instituted in the year 2000 and over the last two decades, we have been honoured to recognize these Earth Heroes, to shine a light on their work, and express our gratitude for their selfless work.



The Sanctuary Wildlife Award-2019



Looking Ahead

Greenko is striving constantly to reduce its carbon & water footprint, and material usage by adopting new technologies. With a focus on the Circular Economy, Greenko is accelerating its efforts in 'self O&M' and looking forward to developing partnerships for exploring 'second life', 're-engineer' 're-manufacture', and 'reuse' options for its assets, at the end of its life cycle.

Moving ahead, we look forward to planting 2 Crore trees by 2030.

The organization looks forward to complete the main tasks under the Habitat Conservation and Species Recovery of Great Indian Bustard (GIB) at Rollapadu Wildlife Sanctuary, Demonstration of Natural Farming setup, starting farmer exposure visits, and setting up Fish Hatcheries in Sikkim. Greenko is also progressively assessing Climate change impact and adaptation measures to mitigate business risks.

Greenko is committed to ensuring the long-term survival of the endangered species Red Panda in Sikkim state of the eastern Himalayas.

Epilogue from the President and JMD



Dear Stakeholders,

Greenko's Integrated Report, this year, diligently accounts for advances we made against strategic objectives that we set for ourselves on all the six capitals- financial, operational, intellectual, human, social, and relationship and natural. We have intensified our efforts to (1) accelerate deep decarbonization of the energy sector, (2) promote new sharing platforms heralding a circular economy, and (3) contribute to public policy to support a decarbonized, digitalized, and decentralized electrical system.



The circular economy that closes the production-consumption cycle has the potential to bridge the gap of the remaining 45 % of GHG emission reductions to reach the net-zero GHG emissions by 2050. ↗

Climate change continues to pose a significant risk to society, our planet, and the future. The focus so far has rightfully been on renewables and efficiency improvements to address climate change and the reduction of emissions. Yet, renewable energy can only reduce 55% of global GHG emissions and leaves a 45% gap to reach global climate ambition. As we have been witnessing, the in-firm renewables can only marginally affect the shift away from carbon-intensive energy. We, at Greenko, envision the use of firm and flexible renewable power to achieve deep decarbonization and reduce GHG emissions by 55%. Bridging the 45% gap requires a disruptive transformation. We need to reimagine the ways we generate and deliver goods and services. The circular economy that closes the production-consumption cycle has the potential to bridge the gap of the remaining 45 % of GHG emission reductions to reach the net-zero GHG emissions by 2050. And we at Greenko, as you have seen through the report, have made significant advances in circular business models, extending the life and managing the end-of-life of our assets. Some steps, at the design, planning, and procurement stages of new assets are being pursued in the right earnest. Our new initiative of modernizing 500 wind turbines is an important circular initiative of reengineering to extend life. More importantly, our new projects in pumped storage and intelligent energy platform are 'sharing models of circular economy' delivering firm and flexible electricity and 'electricity plus' services to various stakeholders of the electrical system.

This transformation of renewables to firm power at utility-scale will become the mainstay in powering India to sustainable development. Renewable power displacing oil and gas - in industry, power, and transport-

and coal-in industry and power- would contribute to the energy security and economic stability of India. Greenko, from its inception, has been contributing to sustainable development and its scale and extent have changed as it progressed. Presently, its scale and size; expertise and access; make it possible to address the challenge of powering India's growth with clean, reliable, and affordable electricity and also to achieve energy security and financial stability. Our business directly contributes to UNSDG 13- Climate Action and UNSDG 7- Affordable and Clean Energy and UNSDG 12-Responsible Consumption and Production goals. We recognize that the planet is at the brink, as argued in the recent 'Living Planet Report 2020', and we have to re-envision our relationship with nature. We will contribute to the conservation and restoration of nature at our sites and across the interconnected planet.

Investors across the globe are excited about the multitude of benefits that firm and flexible RE presents. This is evidenced by the infusion of USD 824 million equity into our company and the successful issuance of green bonds of USD 1,035 million. The former one had "Honourable Mention" by Asian-mean Counsel 2019. A recent report Making Green Bonds Work: by Oxfam mentions that Greenko has been very effective and diligent in delivering environmental and social benefits. As always, Greenko will address investor expectations to the letter and spirit. The resurgent investor and stakeholder alignment could enable India to provide clean, reliable, and affordable electricity to power growth, ensure energy security, affect economic stability, and drive deeper decarbonization. The policymakers and regulators have recognized the opportunity and are architecting a new energy policy ecosystem to incentivize #AtmanirbharEnergyForIndia.

While contributing to deep decarbonization, we also realize there will be physical climatic changes that would occur and are occurring, and it would impact our business as it is dependent on the climate. This year we have begun addressing transition and physical risks of climate change to our business. We would supplement these efforts in the coming years to improve our climate risk disclosures.

Through the report, you may have already noticed the convergence of multiple initiatives towards organizational development, which is critical for successful Greenko 3.0 & 4.0. The empowerment model and People-Process-System are now supplemented and reinforced by the spread of a) Integrated Thinking which aligns each employee to the organizational goals; b) Innovation Hub architecting pathways for doing things in different ways; c) Digitalization helping the seamless flow of information and analytics and finally d) Assurance of systems and processes to ensure that the organization adheres to standards and quality.

Greenko will continue to curate its business efforts to contribute towards sustainable development and delivering value to all stakeholders. In this endeavour, stakeholder/s continued engagement is extremely valuable. My colleagues and I will be eager to listen to your concerns and suggestions.

Mahesh Kolli
President & Joint Managing Director

Living Planet Report 2020



The economic growth over a century has driven exponential human improvements. Yet, as the 'Living Planet Report' points, this has come at huge a cost. The significant decline in a species population from the tiniest creatures to the canopy is worrying. The Homo sapiens have to re-establish symbiotic relationships with nature. This is possible. Just as we reimagined our energy systems and are clawing back to nature, #It'sPossible to re-envision our food and fibre and most of our production and consumption system, in harmony with nature. I am in no doubt, and the report reinforces, that the planet is at the brink. Fortunately, never were we so well prepared to address the challenge than today. We should be prepared to press RESET.

- Mr. Mahesh Kolli



WWF Living Planet Report 2020

Annexures

A. Contribution to UNSDGs

Direct Contribution to UNSDG

Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all

Target	Indicator	Contribution/Approach
7.2 By 2030, substantially increase the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption	6.2 GW of installed capacity

Goal 12. Ensure sustainable consumption and production patterns

Target	Indicator	Contribution/Approach
12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	12.6.1 Number of companies publishing sustainability reports	Publishing sustainability/integrated report annually
12.2 By 2030, achieve the sustainable management and efficient use of natural resources	12.2.1 Material footprint, material footprint per capita, and material footprint per GDP	Reduced material consumption
	12.2.2 Domestic material consumption, domestic material consumption per capita, and domestic material consumption per GDP	45.1% proportion of spending on local suppliers/contractors

Goal 13. Take urgent action to combat climate change and its impacts

Target	Indicator	Contribution/Approach
13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries	13.1.1 Number of countries with national and local disaster risk reduction strategies	Climate risk assessment conducted at some sites and mitigation plans are being implemented
13.2 Integrate climate change measures into national policies, strategies, and planning	13.2.1 Number of countries that have communicated the establishment or operationalization of an integrated policy/strategy/plan which increases their ability to adapt to the adverse impacts of climate change, and foster climate resilience and low greenhouse gas emissions development in a manner that does not threaten food production	8.2 million tons of CO2 equivalent direct and indirect GHG emissions
		Greenko has established an integrated risk assessment and management framework with Standard Operating Procedures (SOP) for disaster warning and Management

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Target	Indicator	Contribution/Approach
13.3 Improve education, awareness-raising, and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning	13.3.2 Number of countries that have communicated the strengthening of institutional, systemic and individual capacity-building to implement adaptation, mitigation and technology transfer, and development actions	<ol style="list-style-type: none"> Disaster preparedness teams are established across operations and regular training conducted Climate risk mitigation strategy based on the Early Warning System

Indirect Contribution to UNSDG

Goal 1. End poverty in all its forms everywhere

Target	Indicator	Contribution/Approach
1.5 By 2030, build the resilience of the poor and those in vulnerable situations and reduce their exposure and vulnerability to climate-related extreme events and other economic, social, and environmental shocks and disasters	Number of countries with national and local disaster risk reduction strategies	Community engagement to address climate change-related effects on society

Goal 3. Ensure healthy lives and promote well-being for all at all ages

Target	Indicator	Contribution/Approach
3.8 Achieve universal health coverage, including financial risk protection, access to quality essential health-care services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all	3.8.1 Coverage of essential health services	Interventions to promote access to quality healthcare for local communities by conducting regular health camps which benefitted 26,671 people
	3.8.2 Number of people covered by health insurance or a public health system per 1,000 population	Medical insurance coverage to employees' family, including dependent parents, at no extra cost to the employee.

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Target	Indicator	Contribution/Approach
4.3 By 2030, ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university education	4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex	321 School and college tuition fee reimbursements for employees' children and 12 Vocational and Professional higher education fee reimbursements offered to employees

Target	Indicator	Contribution/Approach
4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs, and entrepreneurship	4.4.1 Proportion of youth and adults with information and communications technology (ICT) skills, by type of skill	<p>329 youth received practical training in the solar domain, out of which 133 have been successfully employed</p> <p>Greenko has established a computer training center for skill development of local youth</p>
4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive, and effective learning environments for all	4.a.1 Proportion of schools with access to (a) electricity; (b) the Internet for pedagogical purposes; (c) computers for pedagogical purposes; (d) adapted infrastructure and materials for students with disabilities; (e) basic drinking water; (f) single-sex basic sanitation facilities; and (g) basic handwashing facilities (as per the WASH indicator definitions)	31,141 students benefitted from Classroom Infrastructure in government schools with provisions for Benches, Chairs, Uniforms, Play Equipment, Smart Class Systems LED TV & Sound Systems, etc.
4.c By 2030, substantially increase the supply of qualified teachers, including international cooperation for teacher training in developing countries, especially in least developed countries and small island States	4.c.1 Proportion of teachers in (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at a relevant level in a given country	Providing Vidya Volunteers as additional skilled teachers to government schools through our interventions to improve the quality of education

Goal 5. Achieve gender equality and empower all women and girls

Target	Indicator	Contribution/Approach
5.1 End all forms of discrimination against women and girls everywhere	5.1.1 Whether or not legal frameworks are in place to promote, enforce and monitor equality and non-discrimination on the basis of sex	Strict adherence to Prevention of Sexual Harassment (POSH) codes
5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	5.5.2 Proportion of women in managerial positions	12.5% of the new hires amongst women are in Mid-Level Management roles. 16.9% have been hired for the First Level Management position.

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Goal 6. Ensure availability and sustainable management of water and sanitation for all

Target	Indicator	Contribution/Approach
6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	6.1.1 Proportion of population using safely managed drinking water services	34,000 people benefitted from 5,097 KLs of filtered water supplied to communities through RO Plants installation intervention
6.2 By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	6.2.1 Proportion of population using safely managed sanitation services, including a hand-washing facility with soap and water	Construction of community toilet facilities benefitting 6,800 people
6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing the release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally	6.3.1 Proportion of wastewater safely treated	33,266 KLs of wastewater treated and reused for gardening, plantation, etc
6.4 By 2030, substantially increase efficiency of water across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and considerably reduce the number of people suffering from water scarcity	6.4.1 Change in water-use efficiency over time	46 rainwater harvesting systems were constructed. 80,453 KLs of rainwater collected and consumed / recharged.

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Target	Indicator	Contribution/Approach
8.6 By 2020, substantially reduce the proportion of unemployed youth and those that are not engaged in education or training	8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training	329 youth received practical training in the solar domain, out of which 133 have been successfully employed 242 new talents hired
8.8 Protect labour rights and promote a safe and secure working environment for all workers, including migrant workers, particularly women, and those engaged in precarious jobs	8.8.1 Frequency of fatal and non-fatal occupational injuries, by sex and migrant status	Zero fatal incidents

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Target	Indicator	Contribution/Approach
9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020	9.c.1 Proportion of population covered by a mobile network, by technology	13 ICT projects planned and implemented

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Target	Indicator	Contribution/Approach
15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	15.2.1 Progress towards sustainable forest management	92,380 saplings planted and also transplantation initiatives taken up at sites
15.9 By 2020, integrate ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies and accounts	15.9.1 Progress towards national targets established in accordance with Aichi Biodiversity Target 2 of the Strategic Plan for Biodiversity 2011-2020	82 Biodiversity enhancement programs conducted

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B. GRI Content Index

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102-6	Markets served	40, 86, 122	1. Purpose-Driven Business 2. External operating environment 3. Financial Capital
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102-33	Communicating critical concerns	69	Risk management
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102-36	Process for determining remuneration	64	Remuneration and Nomination Committee
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GRI Standards	Description	Page No.	Remarks
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204-1	Proportion of spending on local suppliers	211	Social and Relationship capital
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205-2	Communication and training about anti-corruption policies and procedures	68	Compliance and Ethics
205-3	Confirmed incidents of corruption and actions taken	NA	
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	NA	
300	Environmental Standards		
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302-1	Energy consumption within the organization	229	Natural capital
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302-3	Energy intensity	229	Natural capital
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302-5	Reductions in energy requirements of products and services	136, 213	1. Operational Capital – Value maximisation programs 2. Natural capital – Energy Efficiency Initiatives
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303-3	Water recycled and reused	230	Natural capital
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	231	Natural capital - Biodiversity
304-2	Significant impacts of activities, products, and services on biodiversity	231	Natural capital
304-3	Habitats protected or restored	231	Natural capital
304-4	IUCN Red List species and national conservation list species with habitats in areas affected by operations	NA	
305-1	Direct (Scope 1) GHG emissions	228	Natural capital
305-2	Energy indirect (Scope 2) GHG emissions	228	Natural capital
305-3	Other indirect (Scope 3) GHG emissions	228	Natural capital
305-4	GHG emissions intensity	228	Natural capital
305-5	Reduction of GHG emissions		Natural capital
305-6	Emissions of ozone-depleting substances (ODS)	NA	
305-7	Nitrogen oxides (NOX), Sulphur Oxides (SOX), and other significant air emissions	228	Natural capital
306-1	Water discharge by quality and destination	230	Natural Capital
306-2	Waste by type and disposal method	229	Natural capital
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307-1	Non-compliance with environmental laws and regulations	68, 227	1. Compliance and Ethics 2. Natural Capital
308-1	New suppliers that were screened using environmental criteria	227	Natural capital – Responsible sourcing
308-2	Negative environmental impacts in the supply chain and actions taken	227	Natural capital- Responsible sourcing
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GRI Standards	Description	Page No.	Remarks
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	197	Human Capital – Employee welfare
401-3	Parental leave	197	Human Capital – Employee welfare
402-1	Minimum notice periods regarding operational changes	NA	
403-1	Workers representation in formal joint management–worker health and safety committees	200	Human Capital - Safe, Healthy and Lively Workspace
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	201	Human Capital - Indicators for Preventive Action
403-3	Workers with high incidence or high risk of diseases related to their occupation	200	Human Capital - Safe, Healthy and Lively Workspace
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405-1	Diversity of governance bodies and employees	64, 193	1. Committees of board 2. Human Capital – Diversity
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406-1	Incidents of discrimination and corrective actions taken	197	Human Capital – Employee and social welfare
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	NA	
408-1	Operations and suppliers at significant risk for incidents of child labor	NA	
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410-1	Security personnel trained in human rights policies or procedures	204	Greenko Security Services

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GRI Standards	Description	Page No.	Remarks
411-1	Incidents of violations involving rights of indigenous peoples	227	Natural capital
412-1	Operations that have been subject to human rights reviews or impact assessments	227	Natural capital
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412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	209	Social and Relationship Capital – Responsible Contracts
413-1	Operations with local community engagement, impact assessments, and development programs	215, 227	1. Social and Relationship Capital – Value Creation for Community 2. Natural Capital
413-2	Operations with significant actual and potential negative impacts on local communities	NA	
414-1	New suppliers that were screened using social criteria	210	Social and Relationship capital
414-2	Negative social impacts in the supply chain and actions taken	227	Natural capital- Responsible sourcing
415-1	Political contributions	212	Social and Relationship Capital – Public Policy Advocacy
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416-2	Incidents of non-compliance concerning the health and safety impacts of products and services	NA	1. Social and relationship capital 2. Natural Capital
417-1	Requirements for product and service information and labeling	NA	
417-2	Incidents of non-compliance concerning product and service information and labeling	NA	
417-3	Incidents of non-compliance concerning marketing communications	NA	
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	170	Intellectual Capital – Information Security Management
419-1	Non-compliance with laws and regulations in the social and economic area	NA	

C. List of Acronyms and Abbreviations

Abbreviation	Meaning	Abbreviation	Meaning
ADIA	Abu Dhabi Investment Authority	DG	Diesel generator
ALARP	As Low As Reasonably Practicable	DISCOM	Distribution Company
APPC	Average Power Purchase Cost	DMS	Document Management System
ARI	Acute Respiratory Infection	DST	Diagnostic Screening and Treatment
A T & C	Aggregate Technical and Commercial	EBA	Economic & Business Analysis
B2B	Business to Business	EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
BBS	Behavior Based Safety	EHS	Environment, Health and safety
BES	Battery Energy Storage	EIRR	Economic Internal Rate of Return
BSE	Bombay Stock Exchange	ELTP	Entry Level Trainee Program
BoT	Robotic Process Automation	EOL	End of Life
BU	Billion Units	EPC	Engineering, Procurement and Construction
BHEEM	Blade Health Engineering & Maintenance Module	ESIA	Environmental Social Impact Assessment
C&P	Contracts and Procurement	ESMS	Environmental and Social Management System
CAES	Compressed Air Energy Storage systems	ESG	Environmental Social & Governance
CAGR	Compound Annual Growth Rate	EU	European Union
CAPEX	Capital Expenditure	EVs	Electric Vehicles
CCO	Chief Compliance Officer	EWS	Early warning system
CCTV	Closed Circuit Television	FCAS	Frequency Control Ancillary Services
CDM	Clean Development Mechanism	FDI	Foreign Direct Investment
CEO	Chief Executive Officer	FICWA	Institute of Costs and Works Accountants of India
CER	Certified Emission Reduction	GAM	Greenko Asset Management
CERC	Central energy regulatory commission	GATS	Greenko Asset Tracking System
CII	Confederation of Indian Industry	GDP	Gross Domestic Product
CFC	Chlorofluorocarbon	GBI	Generation Based Incentive
CFL	Compact Fluorescent Lamp	GEPS	Greenko Energy Project Systems
CFO	Chief Financial Officer	GETs	Graduate Engineering Trainees
CMM	Contracts and Material Management	GIC	Government of Singapore Investment Corporation
CO2	Carbon Dioxide	GIMS	Greenko Integrated Management Systems
COO	Chief Operating Officer		
COSO	Committee of Sponsoring Organizations		
CSI	Corporate Social Investment		
CSR	Corporate Social responsibility		

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Abbreviation	Meaning
GHG	Greenhouse Gas
GLMS	Greenko Leave Management System
GMAT	Greenko Meeting and Action Tracker
GOI	Government of India
GOMS	Greenko Operations Management System
GRI	Global Reporting Initiative
GROW	Goal Reality Options Way Forward
GRMF	Greenko Risk Management Framework
GS	Gold Standard
GW	Gigawatt
GWO	Global Wind Organization
H&S	Health and Safety
HCM	Human Capital Management
HEP	Hydro Electric Power
HO	Head Office
HP	High Pressure
HR	Human Resource
HRMS	Human Resource Management System
HT	High tension
I/O	Input/output
ICB	International Competitive Bidding
ICSI	Institute of Company Secretaries of India
ICT	Information and Communications Technology
IEA	International Energy Agency
IESA	India Energy Storage Alliance
IEX	Indian Energy Exchange
IFC	International Finance Corporation
IIRC	International Integrated Reporting Council
IMS	Integrated Management System
INR	Indian Rupee
IoT	Internet of Things
IRESP	Integrated Renewable Energy Storage Projects

Abbreviation	Meaning
IREBP	Integrated Renewable Energy Storage Projects
ISMS	Information Security Management Systems
ISO	International Organization for Standardization
IT	Information Technology
ITIL	Information Technology Infrastructure Library
JMD	Joint Managing Director
kL	Kilolitre
Km	Kilometer
KPI	Key Performance Indicator
kV	Kilovolt
kWh	Kilowatt-hour
LCA	Life Cycle Analysis
LC	Learning Curve
LCOE	Levelized Cost of Energy
L&D	Learning & Development
LED	Light Emitting Diode
Li-ion	Lithium ion
LP	Low Pressure
LT	Low Tension
M&A	Mergers and Acquisitions
MD	Managing Director
MHU	Mobile Health Unit
MTBF	Mean time Between Failures
MU	Million Unit
MW	Megawatt
NDC	Nationally Determined Contributions
NPA	Non-Performing Asset
NSE	National Stock Exchange
OCTAVE	Operationally Critical Threat, Asset & Vulnerability Evaluation
O&M	Operations and Maintenance
OEM	Original Equipment Manufacturer

Abbreviation	Meaning
OHSAS	Occupational Health and Safety Assessment Series
OPC	Open Platform Communications
OPD	Outpatient Department
OJT	On the Job Training
PAT	Profit After Tax
PHSE	Pumped Hydro Storage System
PLC	Programmable Logic Controllers
PLF	Plant Load Factor
PMC	Project Monitoring Cell
PMS	Performance Management System
POSH	Prevention of Sexual Harassment at Work
PPA	Power Purchase Agreement
PPS	People, Process and System
PS	Performance Standards
PSH	Pumped Storage Hydro
PSP	Pumped Storage Plant
PV	Photo Voltaic
QA	Quality Assurance
QC	Quality Control
QEHS-IS-En-SA	Quality, Environment, Health & Safety, Information Security, Energy and Social Accountability Management Systems
QMS	Quality Management System
QMD	Quality Management Department
R&D	Research and Development
RE	Renewable Energy
REC	Renewable Energy Certificate
RO	Reverse Osmosis
ROCE	Return on Capital Employed
ROE	Return on Equity
ROHS	Restriction of Hazardous Substances Directive
ROI	Return on Investment
RSPM	Respirable Suspended Particulate Matter

Abbreviation	Meaning
RTC	Round-the-Clock
SAP	Systems, Applications, and Products
SAT	Site Acceptance tests
SBU	Strategic Business Unit
SCADA	Supervisory Control and Data Acquisition
SECI	Solar Energy Regulatory Commission
SF6	Sulphur Hexafluoride
SLDC	State Load Dispatch Center
SMEs	Subject Matter Experts
SPOD	Schedulable Power On-Demand
SPSP	Standalone Pumped Storage Project
TDS	Total Dissolved Solids
TNI	Training Needs Identification
TRCI	Trash Rack Cleaning Machine
TCFD	Task Force on Climate Related Financial Disclosures
UAT	Unit Auxiliary Transformer
UDAY	Ujwal Discoms Assurance Yojana
UI	Unscheduled Interchange
UNFCCC	United Nations Framework Convention on Climate Change
UNSDGs	United Nations Sustainable Development Goals
UPS	Uninterruptible Power Source
USD /USD	United States Dollar
VCS	Verified Carbon Standard
VRE	Variable Renewable energy
VUCA	Volatility, Uncertainty, Complexity and Ambiguity
WINSOM	Wind in Source of Operation & Maintenance
WEF	World Economic Forum
WWF	Worldwide Fund for Nature
WTG	Wind Turbine Generator
YoY	Year on Year

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