




Making Green Sustainable



About the Cover

Renewable Energy Generation Sources complemented with Long Duration Energy Storage - crafted to be cost-effective and flexible, opened up immediate possibility of affordable and Carbon Free Electricity for decarbonising the grid and the captive power systems of hard-to-abate industries. The Intelligent Renewable Energy Platform harnesses the Integrated national electricity grid to digitally connect and match and deliver Carbon Free Energy at demand points. The firm RE and locally manufactured Alkaline Electrolysers, are deployed in Novel Greenko Architecture of producing lowest cost Green Hydrogen. ZeroC molecules - ammonia, methanol etc., are now exported for global decarbonisation.

The cover depicts the novel ecosystem that Greenko has innovated to accelerate Energy and Industrial decarbonisation. This is not just a green pathway but is curated to be economically attractive and socially acceptable - thus Making Green Sustainable.



Our Vision

To lead Decarbonisation,
Digitalisation and Decentralisation
of India's Energy Sector.

Our Mission

- 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

Values SEEDIT



Stakeholder
Inclusiveness



Ethical



Innovate



Excellence



Discipline



Teamwork



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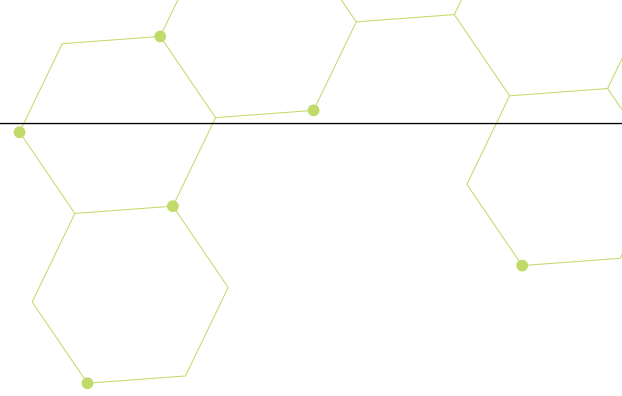


01

About the Report







Our Approach to Integrated Reporting

Greenko's 5th consecutive integrated report delineates the evolving value creation story of the business. The report shows Greenko's efforts in the transformation from a Renewable Asset Developer and Manager to becoming a Energy Transition and Industrial Transformation Solution Provider. Greenko's business model is aligned to be the significant contributor to the achievement of India's decarbonisation goals and contribute to the Net Zero ambitions of the globe and especially First Movers – both businesses and nations. The strategy and its deployment is shared in alignment with ESG aspects. The narrative of value creation and performance data and information is presented in multi capital format of IIRC. In addition, the requirements of GRI Standards and other global norms are addressed.



Reporting Boundary and Scope

The report covers the business activities of Greenko Group. It covers the operations of its Renewable Energy Assets, development of multiple Pumped Storage projects and activities on manufacturing of Electrolysers, Green Hydrogen and Green Ammonia. It focusses on material aspects relevant to its value creation - generating, retaining, distributing, protecting, and enhancing sustainable value. The Company has also mapped its performance with Sustainable Development Goals (SDGs).

To give a background perspective to our readers, we have used figures and events from the past, and to provide a future perspective, we have used statements 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 are as accurate as possible.

Reporting Period

The data in the report correspond to the progress made during the period 01st April 2021 to 31st March 2022 (Financial Year 2021-22) and 01st January 2022 to 31st December 2022 (Calendar Year 2022). However, information related to new projects and initiatives are till 31st December 2022.

Reporting Frameworks

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 toward achieving the objectives of UNSDGs. Greenko's performance is also measured as per the World Economic Forum's stakeholder capitalism indices.



INTEGRATED
REPORTING



02

Leadership Speaks



**Schematic of Ammonia Plant at Kakinada,
Andhra Pradesh**

Message from the Chairman



“Greenko has committed to be a ‘Net Zero’ Company in Scope 2 by 2025 and Scope 1&2 in the next five years and in all scopes by 2040.”

Dear Stakeholders,

The last two years are marked by climate-related events, across the world, such as excessive rainfall, floods, cloud bursts, drought, fires, hurricanes and tsunamis point to the inevitability of the planet hurting, and, ultimately becoming uninhabitable, unless urgent, collective, sensible, steps are taken on a global scale to prevent this. In tandem with this, we see across the board, increased Business and Investor engagement, by the expanding set of first movers’ coalition, Glasgow Financial Alliance for Net Zero and 1.5 Degrees Supply Chain Leaders. This is evidence that business and industry accept responsibility and sense an opportunity in climate mitigation and sustainable development action.

Consequent to India’s committed increase in the share of renewables in the electricity mix, there is acute awareness that this requires deep structural changes in regulation and policy, in technology and finance, in skills and in grid management, policy on production of green hydrogen, storage obligations for electricity generators and distributors, production-linked incentives, and a general all-round improvement in the entire related ecosystem. Greenko is an active participant in the thought and policy eco system that is working to enable this.

India is sensing an opportunity of becoming Energy Independent through electric and biogenic ZeroC fuels and “Make-in-India”, as global companies seek low carbon destinations. Interestingly, the national regulators across the globe are competing to attract the anticipated trillions in decarbonisation/green investments. The IRA bill of USA attracts green investments into their country; the Cross Border Adjustment Mechanisms aligns manufacturers and exporters in developing countries to global benchmarks. The complex labyrinth of emerging regulations across the globe and rapidly evolving technology developments and cost competitiveness landscape, presents both opportunity and risks

to Greenko's business. It is necessary to steer through this challenging environment and we, at the Board, are doing our best to address this.

Decarbonising Electricity

Greenko has committed to be a 'Net Zero' Company in Scope 2 by 2025 and Scope 1&2 in the next five years and in all scopes by 2040. Greenko also facilitates a smoother and effective transition of other businesses in India, especially in the hard-to-abate sectors, towards its 'Race to Zero'. Towards this end, Greenko has made a strategic shift from being a mere renewable energy producer to being able to address the challenges of delivering reliable renewable power, on demand, through a balanced combination of Intelligent Energy Platforms and Pumped Storage Systems (PSP). The response from the Indian Industry to this solution is very encouraging. Some industries have gone beyond procurement of Carbon Free Energy but have also partnered or invested in co-creating the solution. Companies in the public sector too have shown trust and confidence in these cost-effective, reliable and low-carbon solutions and have invited multiple bids to procure "tailored renewable energy" with energy "storage" and "cloud". As you are all aware, the first off-stream, grid-scale, long-duration-energy-storage project at Pinnapuram is expected to commence operation during the current financial year. This will herald large scale decarbonisation of the grid and many Industries, resulting in up to 50 million tonnes of CO₂ emission reduction till 2030. Greenko team is relentlessly working towards meeting the timelines and global performance benchmarks, and the stakeholders viz., customers, regulators and the society are eagerly looking forward to successful outcome of this project. The risk committee and the Board are closely monitoring all developments.

Decarbonising Energy and Materials

The emissions from electricity generation constitutes a fraction of GHG emission in comparison to emissions attributable to fuels, chemicals, and materials. Hence, it is important that the new fuels, chemicals, and materials be green with RE origin or biogenic. Both these routes require cost-effective carbon free energy for which the pivots are pumped storage, intelligent energy platform and cost-effective electrolyzers. To enable this, Greenko ventured into manufacturing electrolyzers, and Green hydrogen, fuels, and chemicals in India. This will result in deeper decarbonisation. Greenko is growing its portfolio of energy sources through PSP systems and investing in zero carbon molecules, leading the momentum towards decarbonisation of 'hard-to-abate' industrial sectors. We believe that this transition is a major route to build an Energy Independent India by 2047.

Global annual investment in clean energy infrastructure is expected to increase from around 290 billion USD over the past five years to about 880 billion USD in 2030. Annual investment in low-carbon technologies in end-use sectors rises from 530 billion USD in recent years to 1.7 trillion USD in 2030. The energy and industry transition to Net Zero is very capital intensive and requires large patient capital. For emerging and developing economies

to attract international finance will require improvements in regulatory and policy frameworks that facilitate the international flow of long-term capital to support the development of both new and existing clean energy technologies. Paris Climate Agreement and the Market Mechanisms under Articles 6.2 and 4 may support a carbon price that enables this transition to begin and scale up. Countries that speed up the processes to harness the opportunity in Paris Climate Agreement and channel the investments to right transition projects may garner early capital and build momentum.

New Organisation for New Energy

It is imperative that the organisational transformation be in sync with the business transformation. The transformed business of decarbonisation and industrial transformation solutions requires new and different competences as well as structural change in the organisation. Moreover, the employee expectations, nature of work and norms are also changing. We continue to improve on employee wages, benefits, and other service conditions. It is critical that we impart creativity and agility to our organisation as well as to the employees. We need to revisit the concept "Empowered Employee".

New Normal of Stakeholder Trust

Greenko is proud of its code of conduct and foundational values. The unwavering commitment to these in the evolution of Greenko's business activities and its business model has been a source of continued stakeholder trust in Greenko.

ESG factors such as Climate Change, Circular Economy, Diversity, Equity and Inclusion, Agility and Innovation, Digital and Cyber Security, Compliance, etc., have a linkage to the Company's ability to sustainably create value. Our main shareholders, GIC, ADIA and ORIX, view Environmental, Social, and Governance (ESG) factors, as central to their core tenets and believe that companies with innovative, creative mindset and good sustainability practices are more likely to perform well in the long term. Greenko's integrated strategy centres around value creation for all stakeholders. Greenko has articulated and internalised its ESG framework and augmented its ESG risk management.

During the reporting period, the Board and its committees continued to be active. It continued its deliberations on the Company's transformational strategy to harness the opportunities arising out of 'Energy Transition in India' and regularly reviewed strategy and capex deployment. As the Company is treading into innovative technologies, novel partnerships, and new markets, the risks are diligently identified, mitigated and appropriate provisions made for residual risk. Greenko's value creation story, delineated in this report, is about opportunity for India to harness new energy transition to Make India 'Energy-Independent' by 2047 and build 'Aatmanirbhar Bharat'. The Company is excited about the congruence of opportunity for India and itself and will be keen to listen to stakeholders' concerns and suggestions.

Om Prakash Bhatt

Chairman

Founder, Group CEO & MD's Message



**Parallel to being
“Large Scale
Clean-Tech IPP”,
we are already
an “Intelligent
Energy Market
and Deep
Decarbonisation
Specialist”.**

Dear Stakeholders,

I am delighted to share with you, Greenko's fifth Integrated Report “Making Green Sustainable”. In this report, we present our performance on financial and non-financial aspects, during the reporting period FY 21-22 and Calendar Year 2022.

As you are aware, Greenko is a leading Energy Transition and Industrial Decarbonisation Solutions Company with an operational portfolio of ~7.3 GW; pipeline of 100 GWh per day Integrated Renewable Energy Storage projects across different states in India and building manufacturing facility, 2 GW per year Alkaline Electrolyser and producing 3.1 MTPA Green Ammonia by end of 2026.

Parallel to being “Large Scale Clean-Tech IPP”, we are already an “Intelligent Energy Market and Deep Decarbonisation Specialist”. Developing “globally cost competitive long duration energy storage” and engineering “green molecules” is congruent with our transition to becoming “deep capabilities machine” and “innovation engine”. We are building world's largest energy storage cloud platform to RE-electrify to transition to Low Carbon Economy.

Greenko delivers solutions to accelerate energy transition and sustainable growth. We have architected our business to add value in the Complex and Mid-Stream segment of the Energy Transition.

Symbiotic Partnerships

Keeping with the UNFCCC's Race-To-Zero commitment, Greenko has signed 'The Climate Pledge' to achieve Net Zero, 10 years earlier, by 2040. Our business model is aligned to be a trusted partner of businesses, cities, regions, and countries that 'Race-to-Zero'.

We recognise the significance of symbiotic partnerships to co-create solutions for deep decarbonisation. Accordingly, we have collaborated with hard-to-abate sectors – depending on the context, our role varied from providing dispatchable RE solution to substitute power from captive fossil fuel-based power plants to provider of storage and energy cloud service. We formed joint venture with technology providers to manufacture electrolyzers. Our partnerships extended to enabling greening of grey molecule manufacturers to the users of green molecules.

We are working along the emerging value chains for Green Metals, Green Chemicals and Green Marine and Aviation Fuel. We are increasingly finding that industrial ecosystems realigning as value chains are decarbonising and symbiotic collaboration in this context is an opportunity, we harness.

Energy Transition – an opportunity for India

India is making tremendous progress to reach the climate goals that it announced at COP26 and subsequently communicated enhanced NDCs to UNFCCC. Today, it is amongst top three markets for energy, electricity, hydrogen, and base materials. The growth trajectory of India's economy will likely make India the leading market for clean energy in a decade.

India is expected to remain the world's fastest growing large economy for several more years, which means emissions could rise as our economy grows. But growth need not necessarily be carbon-intensive. While the developed nations must repair and refurbish their carbon-intensive infrastructure, India can decarbonise its growth. By scaling infrastructure, such as renewables, energy storage, zero carbon fuels and chemicals, circular economic approaches to manage materials economy and finally carbon capture, India can maintain a healthy growth that is significantly less carbon-intensive. India

has an opportunity to become an exporter of Net Zero Fuels and Chemicals and be the destination for low carbon-intensive manufacturing.

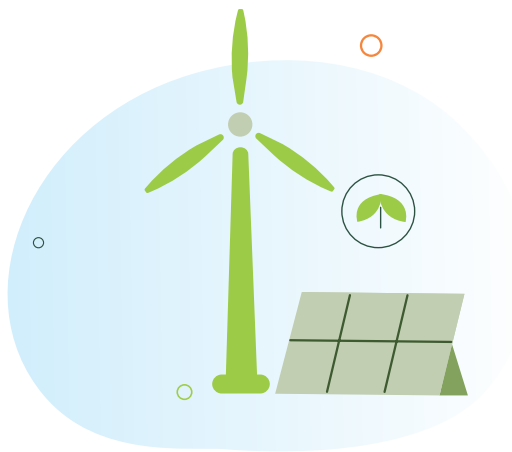
India's energy market is approx. 200 billion USD of which electricity comprises 18% and in which RE market is about 4 billion USD. In addition, the country's current energy consumption is 1.4 TWh and is expected to be 2.5 TWh by 2030. Given the opportunity of the role to play in decarbonising future needs, the growth opportunity for RE assets, energy storage and ZeroC fuels is amazing. I believe there is a great opportunity for decarbonising electricity, in parallel to engineering ZeroC molecules to displace oil and gas in many use cases. This will be a critical step in India's decarbonisation journey. Also, there are significant low hanging opportunities which the country and the industry can harness in near term.

India is blessed with geographical advantage of the Himalayas, Deccan plateau and southern peninsula, diverse climatic conditions and long coastline. The "One Grid – One Nation" initiative that we pursued over a decade is a great resource to fulfil our addition of 300 GW of RE capacity till 2030 if complemented with Intelligent Renewable Energy & Storage Platform.

Electrifying transport and producing zero carbon fuels / chemicals present a promising opportunity for India to become energy independent and even consider the potential of becoming an energy / chemicals exporter over time. India can build more RE and Energy Storage capacity – exceeding its NDC, to become a destination for Low Carbon Manufacturing and a New Energy Exporter.

India's Solar and Wind generation capacity and its cost effectiveness is amongst the top in the globe. In contrast, the present electricity architecture in India, about 407.79 GW installed capacity to meet 210 GW peak demand, is characterised by low flexibility and high cost, due to the dominant share of coal and in-firm renewables. This amongst other factors pulls down India's competitiveness as a manufacturing destination. To improve the electricity generation-supply flexibility and to generate power at a lower cost, it is imperative that the country installs Stand-Alone, Make-In India, Long Duration Storage capacity and morph the Renewable Power to Round-The-Clock. In addition, the CEA Report identifies Pumped Hydro Storage System (PSP) and Battery Energy Storage Systems (BESS)

Founder, Group CEO & MD's Message



At Greenko, our focus is to generate more value and share with all our stakeholders. Through sharing value, we contribute to the sustainable development of India and the Globe.

as the commercially deployed solutions for providing requisite storage capacity. The new flexible electricity architecture – Low-Cost Storage in sync with RE, drives the cost of power down by 20% in the next few years. Availability of low-cost decarbonised power will:

- Position India as the destination for responsible global supply chains

The Global Supply Chains with 'Net Zero' goals will prefer 'Make-In-India' due to low cost and low-carbon electricity amongst other factors

- Catalyse the manufacturing of cost-effective Zero Carbon molecules in India (hydrogen, ammonia etc.) for variety of use cases in industry and transportation in India and outside

The cost-effective Zero Carbon Molecules will not only substitute imports to support an 'Energy Independent India' but also could power the decarbonisation of many OECD countries who have declared Net Zero ambition.

Greenko envisions India as a powerhouse for global decarbonisation through transformation of its energy architecture from and to catapult 'Aatmanirbhar Bharat' to 5 trillion USD economy.

Greenko accelerating energy transition and industrial transformation

We have architected our business to add value in the Complex and Mid-Stream segment of the Energy Transition. By transforming Renewable Energy to a Firm, Reliable and On-Demand Energy, we are capable of deeper industrial decarbonisation.

While significant technology progress is required as we Race-To-Zero, greener technological options are already available in many cases. These need to be discovered and contextualised to situation. Most importantly, innovation and exploration is required to make the existing and known cost-effective, acceptable and accessible. We, at Greenko, call this "Making Green Sustainable". Unless, the known and mature technologies like pumped hydro storage is adopted with appropriate innovations or new architecture of Green Hydrogen with known alkaline electrolyzers and firm RE power is deployed or exploring use cases in specific geographies where green ammonia has near price parity with its grey counterpart, i.e. Making the Green Sustainable – it is not possible to accelerate transition to achieve 2030 goals.

To achieve the transformation of the energy architecture, we have identified projects and investments that include:

- About 15 billion USD investment over the next 3 – 5 years in Intelligent Renewable Energy Storage Platform by combining multiple RE resources (Solar & Wind) with Long-Duration, Stand-Alone, Off Stream, Closed Loop Pumped Storage Projects capable of delivering 'Firm, Schedulable & Dispatchable RE power to meet the long-term Energy & Climate goals of India and its neighbours
- About ~ 5 billion USD to produce Zero Carbon molecules at scale through electrolysis of water (including sea water) and other supplemental processes; and supply to industry, gas utilities and transportation sectors in India and outside

These projects contribute to significant reduction in Greenhouse Gases (more than 25 million tonnes of CO₂e per year beyond NDCs) and pave the way for India's transition to low carbon pathway beyond NDCs and ensure sustainable socio-economic development.

Stakeholder Trust

At Greenko, our focus is to generate more value and then share the value with all our stakeholders. Through sharing value, we 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. Further, our circular economic approaches contribute to UNSDG 12–responsible production and consumption and our commitment to social responsibility contributes to UNSDG 11–make cities and human settlements inclusive, safe, resilient, and sustainable.

Infusion of 20% of equity investment, subscription to Green Bonds of 5 billion USD and interest from many investors gives us the confidence that the stakeholders trust the Company and its business model. Going further, we will be partnering with global upstream clean energy investors and accelerate the energy transition. We are thankful to all the partners who joined us in our challenging endeavour in Pumped Storage and Energy Storage Cloud. We have actively initiated the implementation of pumped storage project at Pinnapuram and began execution at a few other sites.

Our employees and communities have been on our side through this journey, during this tough and trying times. 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 EMISSION plans.

Our new ESG Framework

Increasing focus on environmental, social, and governance (ESG) factors is a welcome development. While investor attention is increasing, the regulators in all geographies are requiring adherence to ESG. We have taken steps to be responsive to all these demands including EU Taxonomy.

At Greenko, we have been always addressing ESG aspects diligently, not just limiting to operations in our control but, the activities along the value chain. During the reporting period, we initiated deployment of a structured ESG framework. We will continue to address the risks and opportunities presented by climate change mitigation and adaptation, and circular economic approaches. On social aspects, we will improve diversity, equity and inclusion, and practice innovation across our businesses. We are delighted to report our gender pay parity which is 5.4%. Our new products and services improve the sustainability

of energy and industrial systems and services. We are curating our customer relationship commensurate to the changing profile of our products and services. On governance aspect, we will continue to reinforce digital and cyber security and deploy enterprise risk management to address the uncertainties and challenges in energy transition. Many a time, the imperative of ESG is recognised and appreciated at the highest level but, the action and momentum is conspicuously absent. At the level of senior management, incentives linked to ESG performance will drive long-term momentum.

Progress against Commitments

New Energy also heralds viable decentralised energy models. The green hydrogen and zero carbon molecules production will be significantly decentralised and would move closer to the use. Such decentralised energy system supported by well distributed water, wind, sun across the Indian sub-continent would offer significant advantages to India in self-reliance, cost-reduction, and equitable distribution of wealth. Further, these can be harnessed by growing entrepreneurship in India. With this decentralised green hydrogen and zero carbon molecule business models, we are exploring elements of Greenko 4.0 that we envisioned to reach by 2025.

We, at Greenko, realise that we are a salient part of electricity sector transformation that makes clean, reliable, and affordable electricity and reinforces #Atmanirbharbharat with #EnergySecurity and #EconomicStability. Further, we are working on the novel manufacturing architecture for zero carbon molecules with domestically manufactured cost-effective electrolyzers, for use in a range of industries across the energy chain, including the production of green ammonia, methanol, and other sustainable fuels. New Energy solutions would drive 50% of our long-term investments in the following years and contribute to 50% of our revenues thereafter. Keeping with our commitments, around 30% of our long-term investments during 2020–21, are in the new energy solutions viz. pumped storage projects and intelligent energy platforms.

We have been diligently picking organic and inorganic growth opportunities. Strategically, we have improved our access to hydro power 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 121 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

Founder, Group CEO & MD's Message

maintenance through intense deployment of digitalisation. We have been improving our asset performance and reducing the O&M costs of our wind generation under the WINSOM program. Besides significant investment focus on Integrated Renewable Energy Projects, we have continued with the renovation and modernisation of some of our wind assets. During the reporting period, we sold 5.68% of our power to the B2B segment as against 7.19% in the previous year and this demonstrates our ability to access energy users directly, which will be a salient feature in our transition to Greenko 4.0.

Our commitment to complete the IRESP in 36 months is based on a solid edifice of PPP – employee commitment, peoples' cooperation, and support of the government. We are confident to achieve the target and complete our first IRESP by Calendar Year 2023.

In the reporting period, we achieved per capita training hours of 39.33 and retention rate of 89.38%. Further, we have added significant new skills, knowledge and innovation capabilities through recruitment and corroboration. Our collaboration with C-MET to establish Centre of Excellence in Electronic Waste Recycling has resulted in development of two new technologies and we strive to maintain and enhance the same in the future. These efforts, in combination with innovation hub activities, goes a long way in upskilling and aligning the organisation to be "High Capabilities Machine" and "Innovation Engine". 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. Moving forward, we will focus on improving retention in the age group of 30–40 years.

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 are technology-intensive and require deep expertise and experience, we are joined by many new partners. We are happy to realise that the satisfaction indices of our suppliers and customers are 80% and 95% respectively.

Our collaboration with C-MET to establish Centre of Excellence in Electronic Waste Recycling has resulted in development of two new technologies.



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Our Commitment to Community

Our community development initiatives are impacted and are realigned due to the pandemic. The number of beneficiaries reached to 2,02,390. Such an increase has become possible by strategic targeting and effective investment. Going forward, we would measure both number of beneficiaries and the benefit delivered.

We realise that the energy transition and industrial transformation requires significant efforts in R&D, Education and Skilling. To address this, Greenko has partnered with IIT Hyderabad to establish Greenko School of Sustainability and Climate Change. The school, in addition to conducting doctoral and post graduate programs will also work towards extension of this program to select engineering and technology institutions and skilling for the just energy transition.

Greenko is excited "Making Green Sustainable" congruent with UNSDGs and the socioeconomic progress of India. We seek active engagement of all stakeholders in our progress and your suggestions & views are valuable to us in further improving our performance and contribution.

Anil Kumar Chalamalasetty
Founder, Group CEO & MD



Greenko Sironj Wind Power Pvt Ltd,
Tamil Nadu

03

Greenko at a Glance













**Animala Wind Power Pvt. Ltd.,
Andhra Pradesh**



















Performance Highlights

In this reporting period, Greenko continued its strong financial position, secured sustainable investments, achieved remarkable growth in both organic and inorganic assets, recruited and retained the best talents in the market, embraced innovations and technologies, optimised operational performance and increased stakeholder trust.

Greenko is committed to working towards UNSDGs, and is proud to be contributing to sustainability initiatives like SDG 7 - Affordable and Clean Energy; SDG 12 - Responsible Consumption and Production; SDG 13 - Climate Action; and SDG 17 - Partnerships for the Goals.

	FY 21-22	CY 2022	UNSDGs
 Financial Capital	BB Financial Rating (Fitch)		    
	Ba1 Credit Rating (Moody's)		
	1,000 million USD of corporate green bond offering	750 million USD of corporate green bond offering	
	241% Net Debt to Equity Ratio	289% Net Debt to Equity Ratio	
	Storage service customers aggregating to the capacity of 4,020 MW		
	Firm RE Contracts 1,400 MW		
	Collaboration in ZeroC Production aggregating to 3.5 GW		

	FY 21-22	CY 2022	UNSDGs
 Manufactured Capital	0.19 GW Capacity addition in RE assets		
	5.68% power sold in open access (B2B segment)	5.65% power sold in open access (B2B segment)	
	11,479 GWh of total electricity generated	11,695 GWh of total electricity generated	
	Wind In-Source O&M - 1,009 MW capacity		
		2 GW electrolyser manufacturing facility being built in East Coast of India	
		Two Green Ammonia plants of 100 Kilo Tonnes per Annum (100 KTPA) capacity at Himachal Pradesh and 2 million Tonnes per Annum (2 MTPA) capacity at Andhra Pradesh being built	
	1 storage asset is under construction and 7 are in pipeline		

	FY 21-22	CY 2022	UNSDGs	
 Intellectual Capital	92.5% real-time monitoring of assets			
	84% of sites covered under IMS			
	Innovated Cost Competitive Long Duration Energy Storage and Green Hydrogen Architecture			
	Engaging with NEERI, CECRI and BARC for technology development and transfer			
	Intelligent Cloud Energy Storage and Services Platform – 6 Technologies managed, and 14 states connected			
	Scaling up the recycling of End-of-Life Silicon Solar cells, Permanent Magnets, End of Life Li-ion batteries and PCB's with C-MET			
		With Indian Institute of Technology, Hyderabad launched India's first dedicated School for Sustainability and Climate Change		
	FY 21-22	CY 2022	UNSDGs	
 Human Capital	89.38% Staff retention rate		   	
	17.39% increase in per capita safety training hours from 2020-21			
	Zero Fatalities			
	Unadjusted median gender pay gap for FY 21-22 is 5.4%			
	New skills to suit ZeroC with 200 person years augmented			
	FY 21-22	CY 2022	UNSDGs	
 Natural Capital	8.69 Mt of CO ₂ Direct & Indirect GHG emissions avoided		    	
	85,991 KL of water used for operations			2,75,508.22 KL of water used for operations
	1,59,103.30 KL of rainwater harvested			27,224.76 KL of rainwater harvested
	78 types of different machinery parts across 135 operational sites are repaired or refurbished or reused or recycled to reduce life cycle environmental impacts			
		FY 21-22		CY 2022
 Social and Relationship Capital	3.49 Crore invested in community development		   	
	191 community development programs conducted			431 community development programs conducted
	254,191 people benefited from community social investment			321,053 people benefited from community social investment
	44.14% of the employees volunteered for 4,672 hours in community work			50% of the employees volunteered in community work
	550+ Professional hours spent by senior management with respect to policy advocacy			
	Partnership framework for decarbonisation affecting GHG emissions			
	33.7 million tCO ₂ e/ year			

Performance Highlights

Greenko's Partnership Ecosystem

"The Centre of Excellence shall focus on scaling up the recycling of End of Life Silicon Solar Cells, Permanent Magnets, End of Life Li-ion Batteries and PCBs. It is with great enthusiasm that Greenko and CMET partner in this endeavour, and I look forward to the success that is sure to come!"

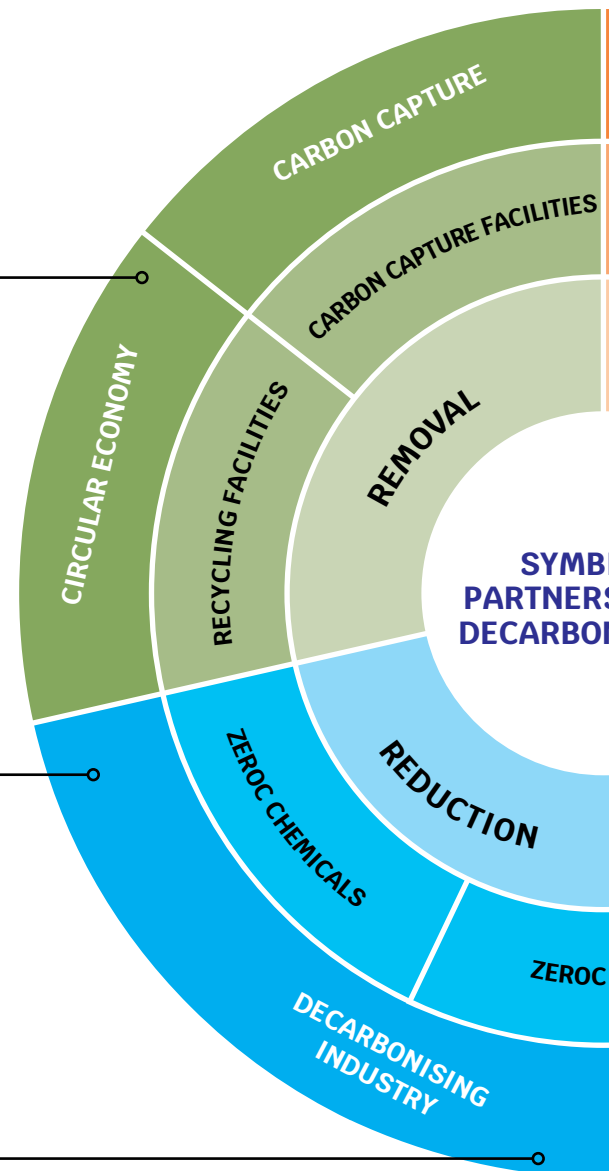
C-MET, Director

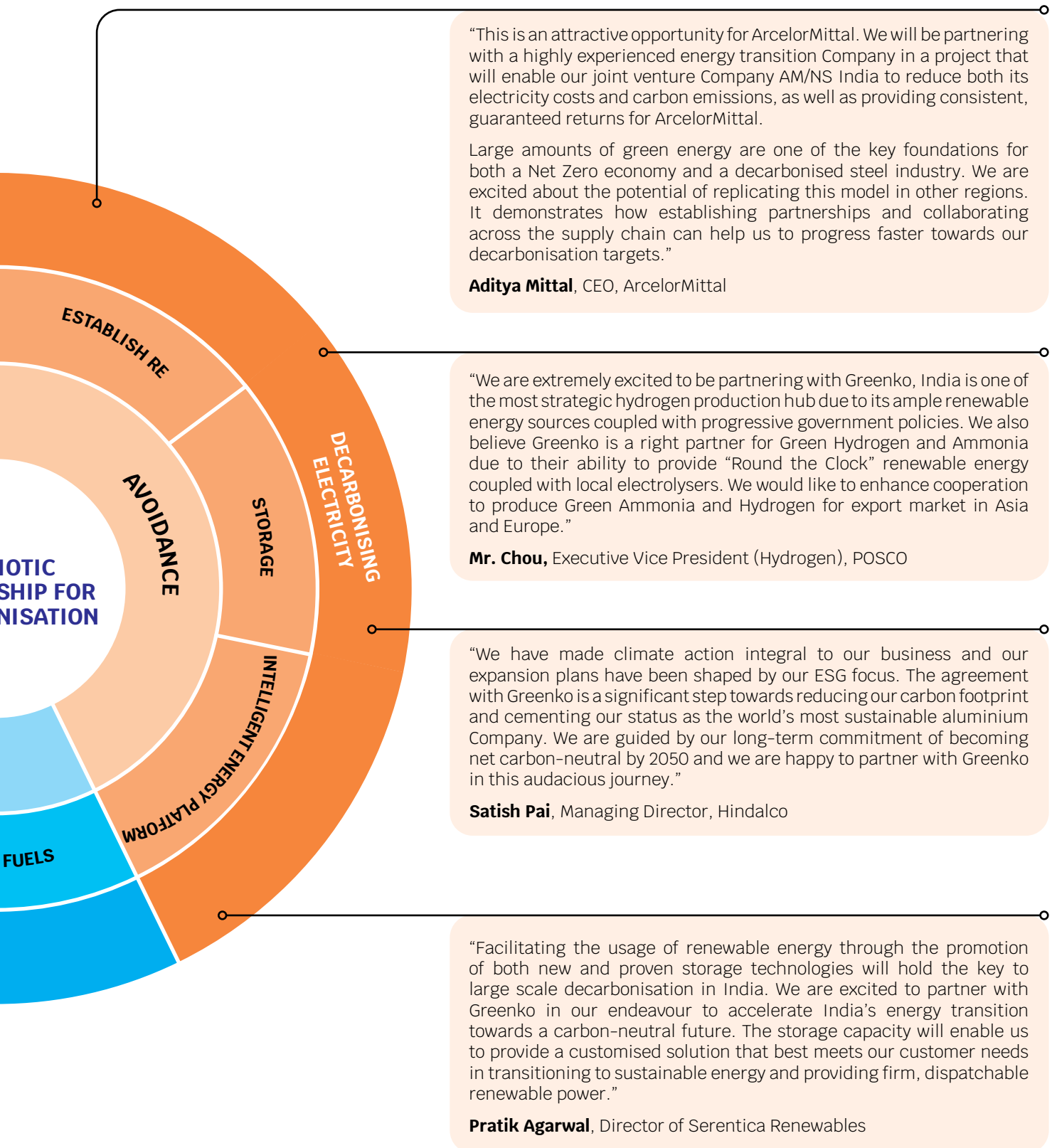
"Green ammonia, as a carbon-free fuel, and an energy storage medium, as well as a transportation vector for hydrogen, has the potential to play a pivotal role in the decarbonisation of the energy and heavy industry sectors. This MoU with Greenko further underlines Keppel's strategy to be at the forefront of providing innovative, sustainable energy solutions to help the world combat climate change."

Ms Cindy Lim, CEO of Keppel Infrastructure

"Decarbonisation is one of the major challenges of our time and needs quick action – therefore, we, at Uniper, are happy to contribute to the acceleration of the energy transition with our partner Greenko. The Greenko Kakinada project is a very promising opportunity to source green ammonia and secure the supply of low carbon hydrogen products for Germany. We are very excited about the cooperation!"

Niek den Hollander, CCO of Uniper



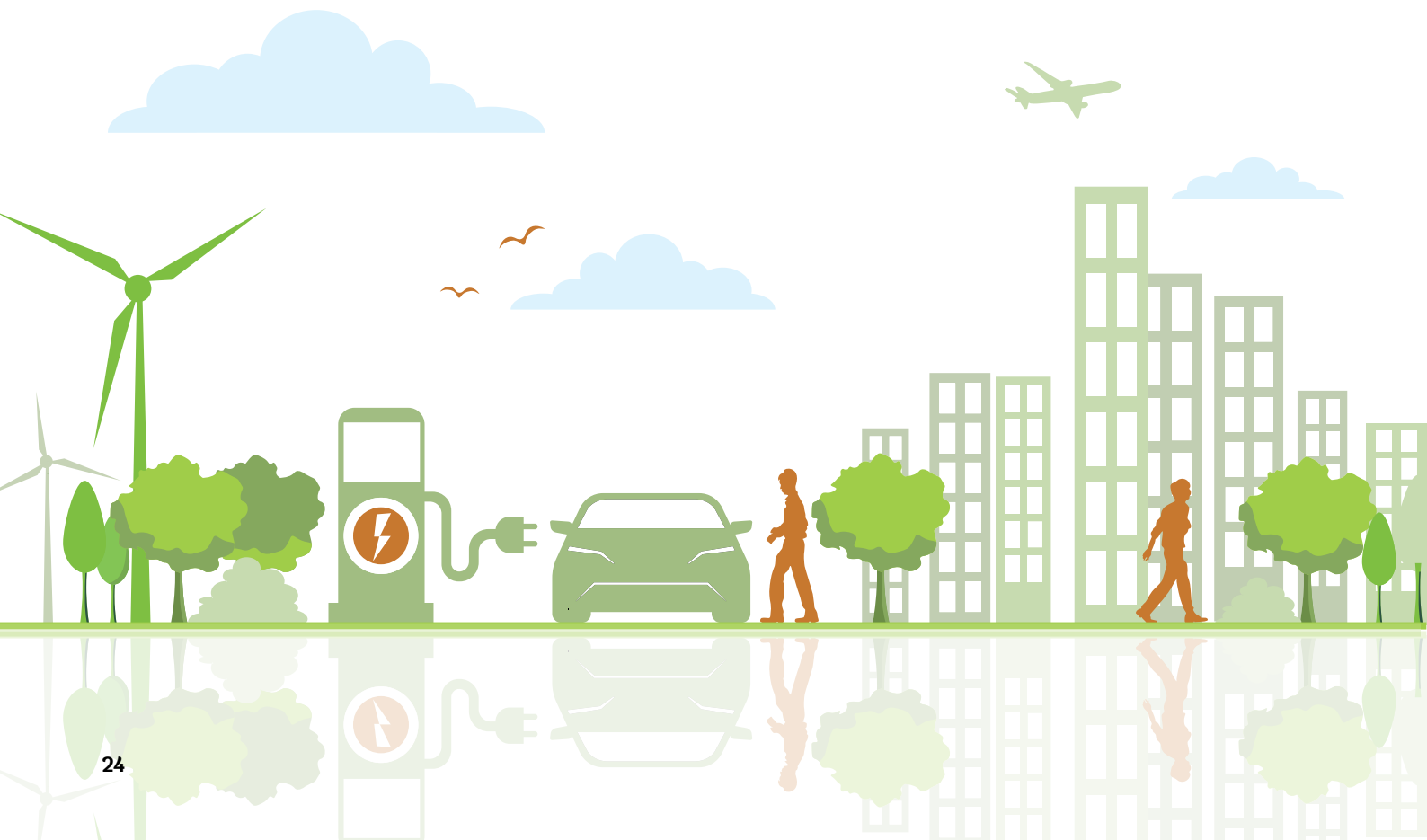


Our Business

Being a clean energy transition Company, Greenko is committed towards transforming renewable energy from variable energy to firm and controllable energy through innovative Long Duration Energy Storage Solutions and Intelligent Renewable Energy Platform to support the economy-wide shift to a low carbon and cost-effective energy mix in India. Keeping in line with the UNFCCC's Race-To-Zero, Greenko Group has signed 'The Climate Pledge' to achieve Net Zero by 2040.

Greenko's business philosophy is to lead 'Decarbonisation, Digitalisation, and Decentralisation' of India's Energy Sector. To achieve this, Greenko is ever-expanding its energy portfolio through pumped storage plant systems and investing in manufacturing electrolyzers and zero-carbon molecules. Greenko is building the world's largest energy storage cloud platform to RE-Electrify and industrialise for a smooth transitioning to Low Carbon Economy. The storage network in tandem with intelligent RE platform would track and match demand-supply patterns and balance the grid through intelligent allocation algorithms.

Greenko is poised to be amongst the top global players in decarbonisation of energy and materials, pivoting on energy storage and green hydrogen. The hallmark of Greenko Group's environmental stewardship is GHG mitigation, climate risk management, nature conservation, and circular economic approaches. To boost the transition to carbon free energy in India, the Company along with its energy partners is planning to invest 20 billion USD over the next 3-5 years. Greenko has already invested 7 billion USD, since its inception, in developing clean energy assets in India.



Diversified Assets in Renewable Energy and ZeroC Molecules

Greenko's RE Assets:

Greenko has in total 135 project sites across 15 states in India, including both the operational projects as well as the projects that are under construction. During the reporting year FY 21-22, the total gross generation from all the operational assets (Solar, Hydro and Wind) accounted for 11,479.20 MU.

Greenko's Storage Assets:

Greenko is developing multiple storage projects of about 100 GWh of storage capacity across different states in India. The Pinnapuram IRESP is being constructed with 1.6 GW capacity in Andhra Pradesh. The Saundatti IRESP has been envisaged with 2.66 GW of capacity, comprising 1.26 GW of stand-alone pumped storage, 1 GW of solar and 0.4 GW of wind energy in Karnataka. Another similar project with a generation capacity of 1.9 GW has also been planned in Madhya Pradesh. These projects have been strengthened by Greenko's recent partnerships with Adani, ArcelorMittal and Ayana Power.



Projects under construction

State	Capacity
Andhra Pradesh	1.6 GW



Projects under development

State	Capacity
Madhya Pradesh	1.9 GW
Karnataka	2.66 GW
Rajasthan (2)	4.36 GW
Gujarat	1.6 GW
Maharashtra	2 GW
Uttar Pradesh	3 GW

Greenko's Green Molecule Assets:

Greenko is building 2 GW per year Alkaline Electrolyser manufacturing capacity producing 1 Lakh TPA Green Ammonia to be operational by 2024. Further, 1 MTPA Green Ammonia manufacturing capacity will be supplemented in the next two consecutive years summing up to 3.1 MTPA capacity by end of 2026.



Projects under development

State	Capacity
East Coast India	2 MTPA
Himachal Pradesh	100 KTPA

Portfolio in Operations

Solar Assets

The country's current solar installed capacity is around 60.81 GW¹, out of which, Greenko has installed 2.2 GW of solar PV accounting to 3.81% of total solar capacity installed in the country. Greenko is planning to implement a solar PV park in partnership with tier-I technology suppliers as it has now gained sufficient expertise in intelligent energy services and solutions.

Contribution in total power generation	Operations across	Operating Capacity (in GWp)	Inverter installed (Nos.)
19%	9 States	2.175	3,366
No. of Solar Sites	Transmission Lines (in Km)	Solar Modules (in Nos.)	Revenue (in USD Mn)
54	248	6.67 million	209.08

“GAM Solar is responsible for managing the Solar Assets optimally to enhance value to our investors by empowering people with core SEEDIT values driven by well-established KRA framework with specific Key Performance Indicators.”

Ramprasad N,
VP, GAM-Solar



Achintya Solar Power Pvt Ltd,
Telangana

¹ Ministry of Power

Wind Assets

India has the 4th largest installed capacity of wind power across the world. The Indian Government has taken many initiatives to harness full spectrum of wind energy potential by enacting a National Offshore Wind Energy Policy and providing robust support by way of generation-based incentives. Greenko's wind assets, located in multiple wind zones of India contribute to 36% of its energy generation.

Contribution in total power generation	Operations across	Installed Capacity (in GWp)	No. of wind farms
36%	7 States	3.192	56
Transmission Lines (in Km)	Turbines (in Nos.)	Revenue (in USD Mn)	
4,218	2,170	418.1	

As of 31st May 2022, the total installed wind power capacity was 40.79 GW² of which Greenko's share is around 3.2 GW accounting for 7.85% of the total installed capacity.



Greenko Sironj Wind Power Pvt Ltd,
Tamil Nadu

²Ministry of New & Renewable Energy

Portfolio in Operations

Hydro Assets

According to the Central Electricity Authority’s estimation, India is the fifth-largest hydropower generator in the world. India has a hydropower potential of around 250 GW in total. Further, 56 number of pumped storage projects have been identified with potential capacity of 94 GW. In addition to this, hydro-potential from small, mini & micro schemes has been estimated as 6.782 GW from 1,512 sites.

Contribution in total power generation	Operations across	Operating Capacity (in GWp)	No. of Hydro Sites
45%	4 States	1.789	25
Transmission Lines (in Km)	Turbines (in Nos.)	Revenue (in USD Mn)	
253.58	64	95.9	

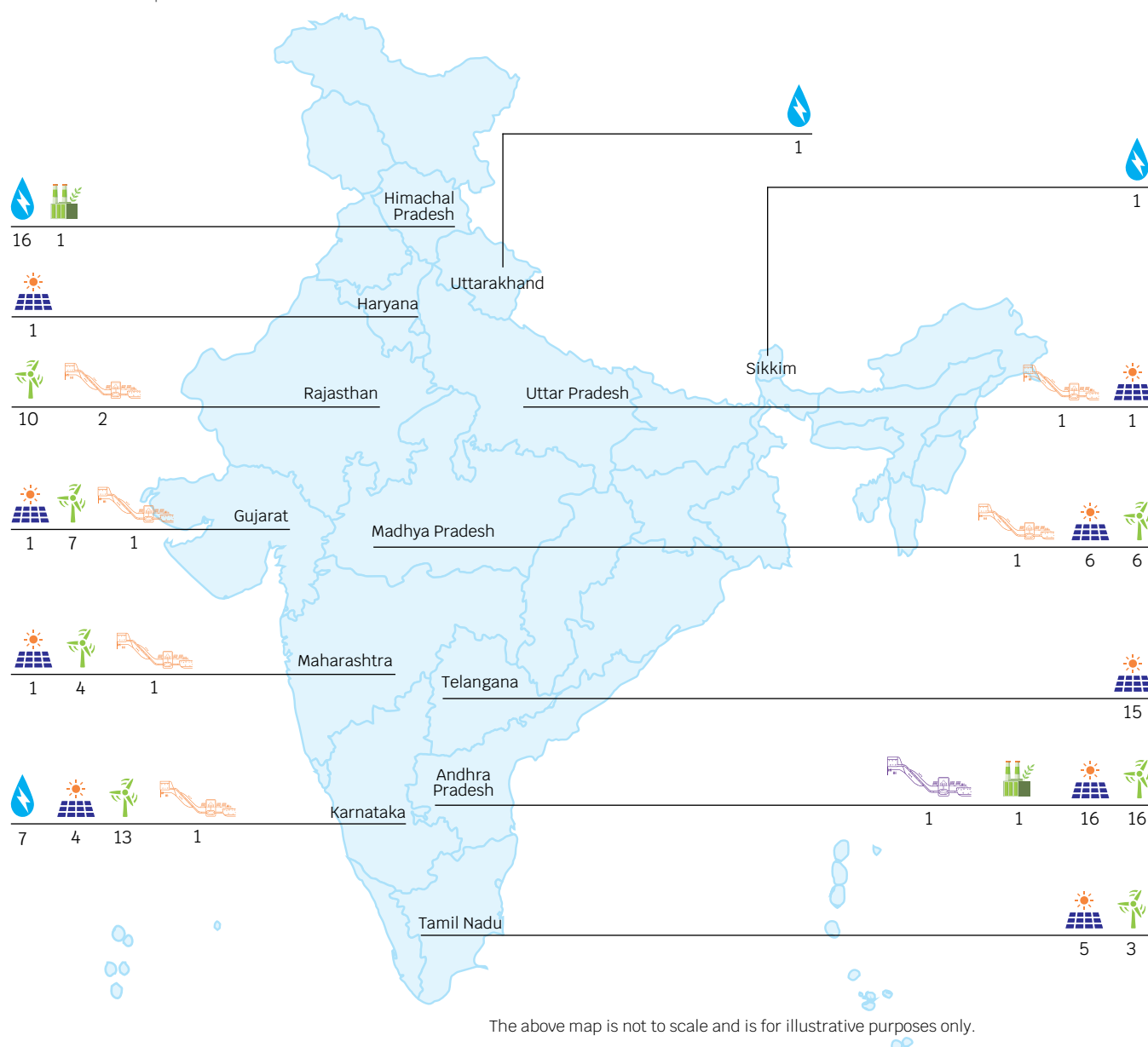
India has installed 4.89 GW of small hydropower plants as per MNRE, out of which Greenko owns around 1.79 GW, 36.60% of total installed capacity.



Everest Power Pvt Ltd,
Himachal Pradesh

Strategically Located Asset Portfolio

Greenko Group owns and operates largest renewable asset portfolio – wind, solar and hydro power generation plants, with an installed capacity of 7.3 GW strategically located all across India to harness national and other electricity grid infrastructure. Greenko is developing grid scale, off-stream, long duration energy storage projects across India. Using the Carbon Free Energy and locally manufactured Alkaline Electrolysers, it is setting up Green Molecule manufacturing facilities for exports and domestic use.



					
Hydro	Solar	Wind	IRESP under development	IRESP under construction	Green Ammonia
25	54	56	7	1	2

Journey So Far





PSP Pinnapuram,
Andhra Pradesh

Awards and Accolades





Awards and Accolades





04

Governance at Greenko - Reinforcing Trust




**IRESP, Pinnapuram,
Andhra Pradesh Site Model**

Corporate Governance

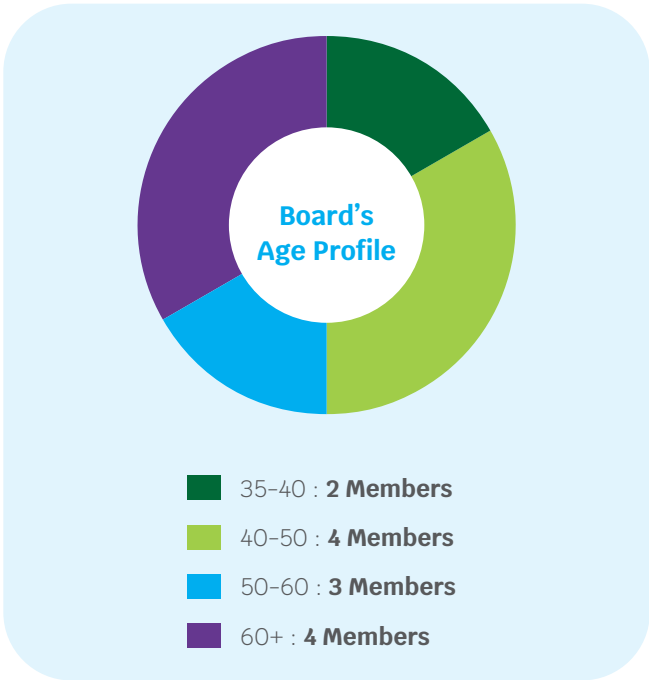
At Greenko, Governance is an art of directing and controlling the organisation through balancing the needs of the various stakeholders. Greenko understands that conflicts of interest between the various stakeholders have to be skilfully resolved and the processes, procedures and policies are implemented with transparency and accountability. Its major shareholders include GIC, Sovereign Wealth Fund of Government of Singapore and Abu Dhabi Investment Authority (ADIA), Sovereign Wealth Fund of Government of Abu Dhabi, ORIX Corporation and Greenko Ventures Limited.

Greenko Energy Holdings Limited ** – Board Members

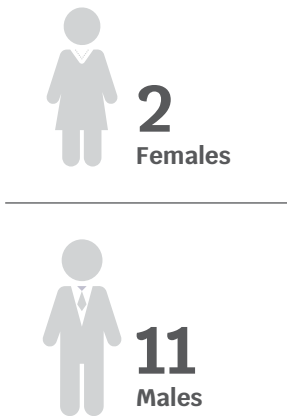


Board Members

Independent	<ul style="list-style-type: none">Mr. Om Prakash BhattMr. Nassereddin Mukhtar MunjeeMr. Mark Gainsborough
Non-Executive	<ul style="list-style-type: none">Mr. Chin Hau Boon, GICMr. Kunnasagaran Chinniah, GICMr. Jason Sian Chuan Chan, GICMs. Nicole Goh, GICMr. Hidetake Takahashi, ORIXMr. Blake Anthony George Calogero, ADIA
Non-Executive-Resident	<ul style="list-style-type: none">Mr. Neernaysingh MadhourMrs. Kamalam Pillay Rungapadiachy
Executive Directors	<ul style="list-style-type: none">Mr. Anil Kumar ChalamalasettyMr. Mahesh Kolli



Board's Gender Diversity



** Greenko Energy Holdings Limited is the parent Company of Greenko Group

Board's Skill Matrix

Board Directors/Role	Skills					
Mr. Om Prakash Bhatt <i>Independent</i> ● 50 years						
Mr. Nassereddin Mukhtar Munjee <i>Independent</i> ● 45 years						
Mr. Mark Gainsborough <i>Independent</i> ● 40 years						
Mr. Chin Hau Boon <i>Non-Executive, GIC</i> ● 25 years						
Mr. Kunnasagaran Chinniah <i>Non-Executive, GIC</i> ● 35 years						
Mr. Jason Sian Chuan Chan <i>Non-Executive, GIC</i> ● 25 years						
Ms. Nicole Goh <i>Non-Executive, GIC</i> ● 16 years						
Mr. Hidetake Takahashi <i>Non-Executive, ORIX</i> ● 30 years						
Mr. Blake Anthony George Calogero <i>Non-Executive, ADIA</i> ● 15 years						
Mr. Anil Kumar Chalamalasetty <i>Executive</i> ● 20 years						
Mr. Mahesh Kolli <i>Executive</i> ● 20 years						

Years of Experience

●

Energy /
Infrastructure Sector

Strategy

Technology /
OperationsRisk &
OpportunityRegulation /
PolicySupply
Chain

Governance Framework

Greenko has a robust top-driven corporate governance framework with well-drafted principles and policies. The governance framework at Greenko helps meet the Company's financial, operational and strategic goals. It builds a strong relationship between its shareholders, stakeholders and board members. Key points considered while preparing the framework are:

- Kind/type of business entity
- Company's portfolio and evolution stages
- Resource availability
- Investor's expectations
- Statutory requirements

The Company's governance framework is structured based on the following six principles:

1. Ethical approach – culture, society; organisational 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

Elements of Greenko's Corporate Governance Framework

1. Directing for long-term goals

Greenko aligned its mission and vision to shareholders' values and growth. To achieve the vision and harness all the value pools, the Company focusses on its long-term goals and architecting solutions to address emerging challenges as the globe pursues sustainable development goals.

2. Best in the Board

Greenko ensures diversity in its board members and offers a range of core skills and experiences relevant to the Company's successful operation. The chairman or lead director conducts internal evaluations on certain aspects of Greenko.

3. Orderly voice to shareholders

At Greenko, shareholders can participate in decision-making through the Executive Directors' campaign and give their viewpoints if necessary. The Group follows best governance practices like including

qualified and competent directors in Board, assessing the Board mandates, undertaking performance evaluation, and keeping an 'evergreen' list of suitable candidates to fill Board vacancies. The Group conducts orientation sessions to address the Company's operation, governance-related education and board expectations. The Company maintains an engaging Board environment, where directors question and challenge management decisions.

4. Define roles and responsibilities

At Greenko, there are written directives for Board and all the committees outlining their job role and responsibilities. Audit, nomination, remuneration, and "special committees" were established to assess potential transactions or business prospects. The CEO of Greenko leads management, reports to the Board, and creates and implements business strategy. The Board is led by the chair who works for the Company's long-term benefits.

5. Emphasise integrity and ethical dealing

Greenko has mechanisms to address a conflict-of-interest, has a code of business conduct and formulated a whistle-blower policy. To maintain integrity in the organisation, Greenko has appointed a Compensation Committee to evaluate performance, and make compensation decisions. The performance of executive directors, including CEO is compared to predetermined benchmarks and compensation is aligned to performance.

6. Effective Risk Management

The Board reviews risk management practices and the Company's risk tolerance. The Board evaluates the system's effectiveness or appoints an independent third party for the same. The management at Greenko takes care of the existing and emerging risks that the Company faces. The adequacy of the risk management system is evaluated regularly, and management's assumptions are frequently questioned.

Board's Evaluation Process

The Board follows a formal structure for evaluating its performance and as well as that of its committees and individual Directors, including the Chairman of the Board. The evaluation process is carried out through a questionnaire covering various aspects of the Board's functioning, such as board's structure, purpose and culture, its functions, internal controls, responsibilities of the board and performance and effectiveness of the meetings.

Board Committees

Audit and Risk Committee

The Committee defines each audit activity's scope and plans and manages the audit. The Committee is responsible for evaluating the integrity of financial statements, adequacy of internal financial control, risk management system and communicating the Company's financial performance. The audit committee reviews and monitors the effectiveness of the internal audit function and the auditor's independence and performance. It recommends to the Board the appointment, reappointment, approving remuneration, and terms of appointment of auditors with respect to independence and objectivity. The Committee is required to meet at least three times a year, including once before the finalisation of annual accounts and once every six months.

Remuneration and Nomination Committee

The primary responsibility of the Committee is to formulate Greenko's remuneration policy, pension rights, compensation payments, share options, and incentive payments for all the executive directors including chairman of the Company and determine the remuneration and benefits package payable to the Directors under the existing policy. The Committee determines the criteria for hiring the key executives and board members and evaluates their performance against the targets for awarding incentives. The remuneration and nomination committee ensures that a succession plan is in place and looks after contractual terms of termination, and any payments made thereof, are fair to the individual and the Company. The committee is also responsible for any other matter considered material by the Board of Directors with changing market dynamics.

Capital Delivery Committee

The role of the Committee is to assist the Board of Directors with the oversight of the development and adoption of appropriate governance, monitoring and reporting frameworks for new projects such as pumped storage projects with respect to risks interdependencies and milestones. The committee also overlooks, reviews, and recommends approval of capital expenditure for the IRESPs and makes recommendations to the Board concerning the release of funds associated with project delivery after ensuring the smooth functioning of the projects as visible from the achievement of the milestones.

Code of Conduct

Greenko has a clearly defined Code of Conduct to run the business in an ethical, transparent and accountable manner. Greenko develops capacity among its employees to follow the Company's code of conduct to deal with business situations and make decisions accordingly. The Company has a robust mechanism to address any violation of code of conduct.

The Company's code of conduct includes:

- Professional Integrity in relationship with customers and suppliers
- Relationships with Competitors
- Bribes and Kickbacks
- Communication
- Gifts and Entertainment, Conflict of Interest and Confidentiality
- Workplace Safety
- Political and Charitable Contributions

"At Greenko, we have appropriate risk management framework and risk governance mechanism, which enables us to take critical business decisions to effectively navigate the dynamic business environment and protect stakeholder interests. In pursuit of our strategic priorities and business goals/objectives, we continue to identify, assess, evaluate, prioritise all the emerging/existing risks, and develop & implement appropriate risk response plans within the organisation."

K.R. Sivakumar

Chief Risk & Compliance Officer and Vice President – ERM

Greenko's Organisational Structure

Greenko's organisational structure is in transition from being a mix of lean and functional to mix of flat and matrix organisation. Fostering cross-team collaboration and shared resource planning across projects characterises the seeds of new organisation characteristics.

(For detailed portfolios, refer Annexure - I)



Risk Management

Key to sustained business is to rigorously monitor and efficiently manage the risks. In a highly regulated electricity markets and volatile and price-sensitive global market, Greenko with long-term investment horizons, require a risk-intelligent approach. The Board and the management committee review the risk management regularly and steer the management action.

Risk Governance

Greenko understands the numerous opportunities for its business are accompanied with varied risks. The Group has in place a robust risk management system and a specialised department to ensure that the risk management tasks are well-implemented, and the risk mitigation plans are in place. The risk governance is led by the management and ably supported by secretarial, legal and ESG to drive the risk management mechanism in an effective manner.

Risk Management Framework

The Greenko Risk Management Framework (GRMF) which has been framed combining elements from the Committee of Sponsoring Organisations of the Treadway Commission (COSO) and Operationally Critical Threat, Asset, and Vulnerability Evaluation (OCTAVE). The Board of Directors and the audit committee at Greenko review the control systems periodically for timely identification and management of risks. The top leadership at Greenko understands the importance of GRMF as it helps them keep a track of the risks in operations and helps them to achieve business objectives.

At Greenko, the first consideration of management is that the strategy for IRESP should fall under the risk management framework; then the size, time, scale and location for IRESP is decided. The primary focus for attaining Greenko's business objectives is on its business strategy and goals, which are split into sub-goals for several activities, including GAM, Commercial, Projects, Procurement, and other areas.

“Risk Management is not a theoretical construct and it has to be grounded on the context of the business and not just business operations but its strategic objectives.

Moreover, proper mitigation will help to control volatility & regular monitoring gives comfort in identifying changing trends.”

Rajendra Prasad L
VP, Risk Management

Climate Risk Assessment and Management

Climate Risk Assessment and Management at Greenko entails proactive and systematic identification and analysis of climate change risks to Greenko's operations. Greenko is evaluating climate change risks at intervals across all its operating sites.

Climate Risk Governance

The Company's climate change strategy addresses both adaptation and mitigation.

- 1. Adaptation** - The Company evaluates the impact of climate change on its operations and adopts a more modernised, innovative, flexible, and resilient system.
- 2. Mitigation** - The Company focusses on reducing greenhouse gas emissions in its operations and value chain.

Further, Greenko's business growth is architected to mitigate emissions in Energy and Industry-addressing the challenges in hard-to-abate sectors.

Climate Risk Assessment

Greenko has performed an impact assessment of various climate change scenarios in 2020, including the policy scenario of acceleration of renewable energy adoption by the Government of India and the physical scenario of climate change RCP 4.5. This modelling output is also used for evaluating new assets and technologies.

Climate Risk

- 1. Physical Risk** - Greenko evaluates physical climate risk to its assets and the electric system. The possible material impacts on installations, including the uncertainties in resource availability for generation constitute physical risk.

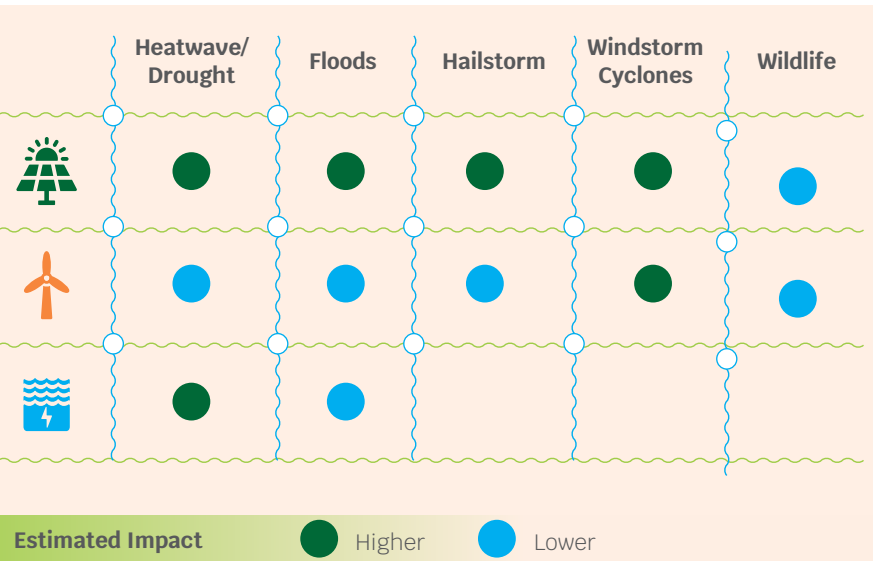
- 2. Transition Risk** - The risk associated with the process of global decarbonisation and its reflection in India (regulatory changes, market prices, technological, reputational, etc.)

Risk Mitigation Measures

Greenko's risk mitigation measures include:

- 1) periodically monitor and identify short-term climate changes such as temperature, precipitation, wind speeds, extreme weather events and plan mitigation measures in operations which in many cases is reinforcing disaster prevention and impact minimisation.
- 2) proactively protect and minimise the effects of climate change on Greenko's assets due to change in resource pattern viz., wind speeds, radiation and river flows and the surrounding community, and
- 3) appropriate weather insurance covers to protect the assets from the extreme weather events.
- 4) Reduce GHG Emissions as per our Net Zero by 2040 plan.

Scenario Planning – Risks and Opportunities





ESG Framework

The Company has identified key Environmental, Social and Governance factors for business activities based on its relevance to business context, investor interest and peer practices. The Environmental, Social, Governance and Risk Management systems are aligned to address these ESG factors.

Environmental	Social	Governance
Net Negative Carbon Footprint	Empowered Workforce	Code of Conduct
Adapt to and Harness Climate Change	Safety and Health First	Whistle Blower Policy
Protect Biodiversity	Focus on knowledge, experience, and retention	ESG Commitment
Adopt Circular Approaches	Investment in training and innovation	Independent and Diverse Board
Diligent Environmental and Social Behaviour	Customer Relationship Management	Remuneration Policies
Disclose Environment and Social Performance	Responsible Supply Chain Management	Risk Management
	Public-Private-People Partnership (PPPPs)	Information and Cyber Security
	Employment and Wealth Generation	Materials and Fair Disclosure
		Related Party Transactions
		Tax Transparency

The ESG Risk Framework is appended in Annexure – II.

Integrated Management System

To deliver best-in-class solutions, to achieve superior sustainability practices, high OHS, and good information security, Greenko Group has adopted Greenko Integrated Management Systems (GIMS) and updates it continuously to suit the needs.

GIMS integrates:

- Quality, Environment, Health & Safety, Information Security, Energy, and Social Accountability Management Systems (QEHS-IS-En-SA) as per ISO standards;
- ESMS (Environmental and Social Management Systems) as per IFC performance standards;
- Integrated Reporting as per the requirements of IIRC and GRI.

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, our sustainability strategy is inspired by our vision and mission. Through unwavering focus on ESG, the sustainability is integrated into GIMS to achieve continual improvement. The ambitious actions towards achieving our Net Zero commitment get fast-tracked by using our GIMS framework.”

Syed Saleem Basha
AVP, GIMS



05
Our Value
Creation
Framework



**SEI Arushi Pvt. Ltd,
Andhra Pradesh**

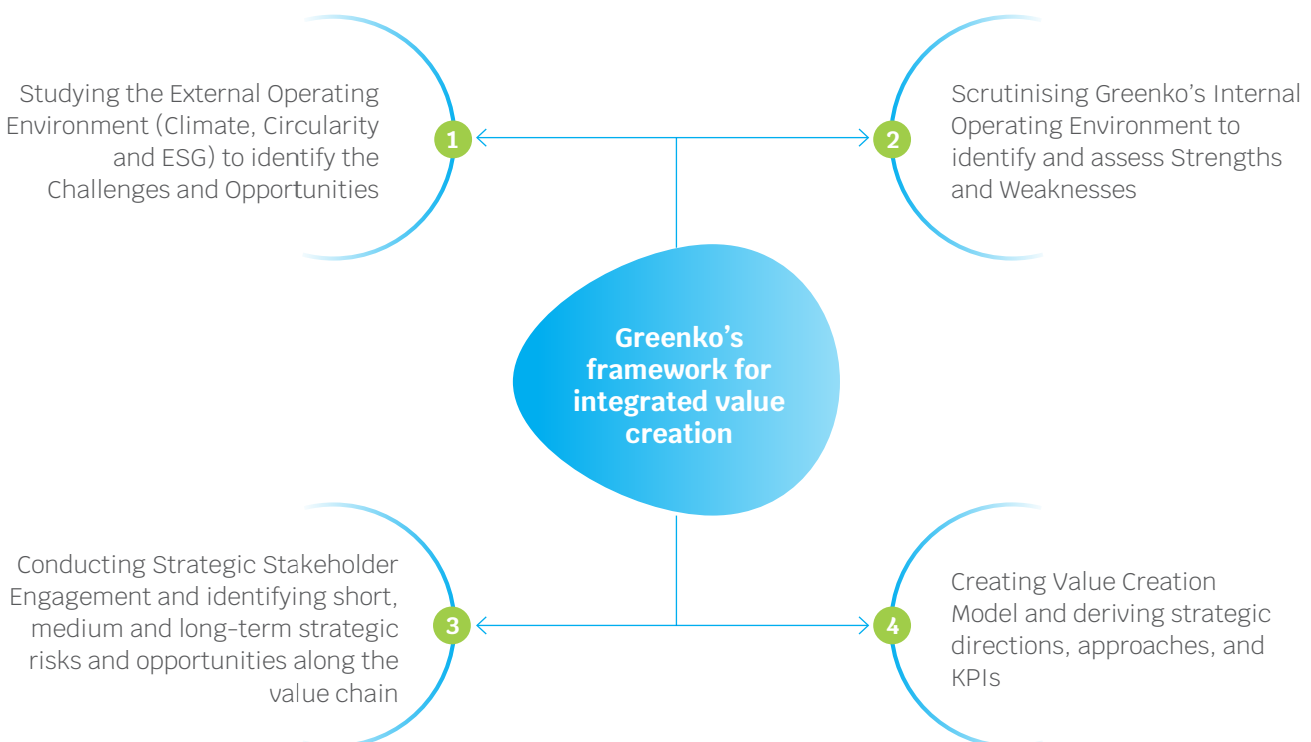
Integrated Value Creation Process

The transformative journey from GKO 3.0 to GKO 4.0 involved carving out and deploying a strategic plan to harness the value pools in the electricity and energy systems of India as the nations' race-to-zero to address the ambition of Paris Climate Agreement. Greenko's DNA and values are providing strategic direction to progress through a changing environment.

Greenko has evolved as a champion shaping the decarbonisation of energy and materials. Greenko is partnering with multiple stakeholders, in fit-for-purpose models, along the value chain of energy and material's decarbonisation. Greenko has played a major role in India's policy framing ecosystems to shape the evolution of RE hybrid energy projects, tariff determination for RE plus storage projects, aiding the inclusion of the definition of 'storage' for pumped storage projects to integrate with RE generation.

Integrated Value Creation Framework

The purpose of Greenko's integrated framework is to provide sustainable solutions throughout the value chain by utilising value pools in dynamic internal and external operating environments. This integrated framework is created to give each function and business activity strategic direction so that they can each contribute to Greenko's transformation and value creation.





Animala Wind Power Pvt. Ltd,
Andhra Pradesh

Integrated Value Creation Model

Greenko's value creation framework is woven into every action and project that it undertakes. We support our performance pillars (people, planet and prosperity) through application of the strategic framework. We respond to the challenges facing our planet through new models and diversification of business that involves – Making Green Sustainable with positive impact on people and planet, and prosperity.

INPUTS ➤ We draw from various capital resources which help us manage in creating and delivering value to our stakeholders.

Prosperity – Respect and Progress



Financial Capital

Preserve and enhance value for Shareholders

Diverse sources of capital

Gross debt
Raising of Green bonds
Equity Infused

Reliable and Sustainable Long-term Cash Flows

- Diverse power sale contracts
- Cost reduction initiatives
- Cost savings by self O&M
- The pursuit of organic and inorganic growth opportunities

People – Respect and Progress



Human Capital

Attract, retain and nurture the best talent

Continuous skill enhancing trainings to Employees and Workers

- Health & Safety training
- Specialised Domain training for Storage and New Energy Asset Management
- Cross-functional and business roles

Intelligent Technology assisted environment in the workspace

Digitalisation for Empowered and Exciting workspace
Augmenting new skills and roles for new business



Manufactured Capital

Ensure sustainable operations & projects

RE Assets

Diverse and balanced portfolio (Solar, Wind, Hydro) diversified across geography (within 15 states) Owned O&M Infrastructure

Storage Assets

Pumped Storage assets (under development)

- Low construction complexity design
- Strong execution track record
- Experienced contractors
- Effective project management

New Energy Assets

- Cost-Effective contextual architecture
- Industrialising mature technologies
- Localising the Value



Intellectual Capital

Innovate and continuously improve the competitiveness of our energy solutions

Extensive Organisational knowledge

- Greenko Integrated Management Systems
- Life Cycle approach
- Cost-Effective and Contextual solutions
- Explore, discover and industrialise to accelerate transition

Digitalisation

- Implementation of GOMS, SCADA & SAP
- Introduction of BoT (robotic process automation)
- Intelligent RE & Storage Platform

Research and Development

- Partnerships with R&D Institutions
- Sponsor R&D
- Technology Transfer

Planet – Protect and Enrich



Natural Capital

Preserve and enhance nature

Reliance on Natural resources (Wind, Water, Sun)

- Responsible suppliers
- Economic approach
- Net Zero Roadmap
- Solutions for decarbonisation of Energy and Materials
- Water stewardship
- Repair and refurbish infrastructure
- Asset sharing



Social & Relationship Capital

Reinforce stakeholder trust and develop co-creative partnerships

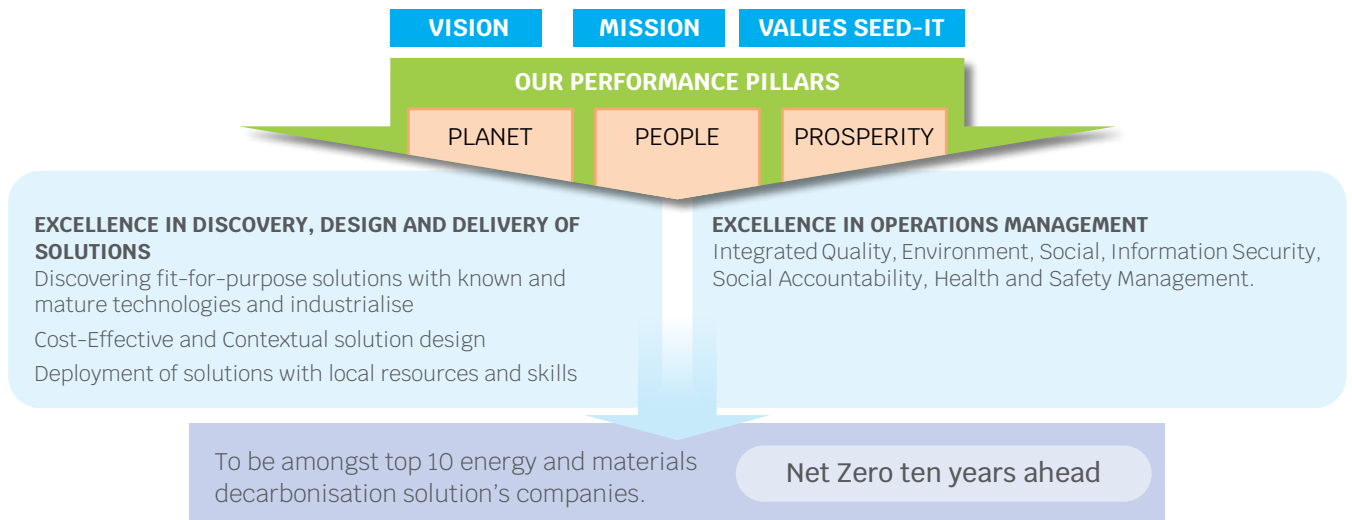
Public policy advocacy

- Cocreative partnerships with customers, peers and others along the decarbonisation value chain
- Proactive engagement with public policy
- Corporate Social Investment
- Employee volunteering

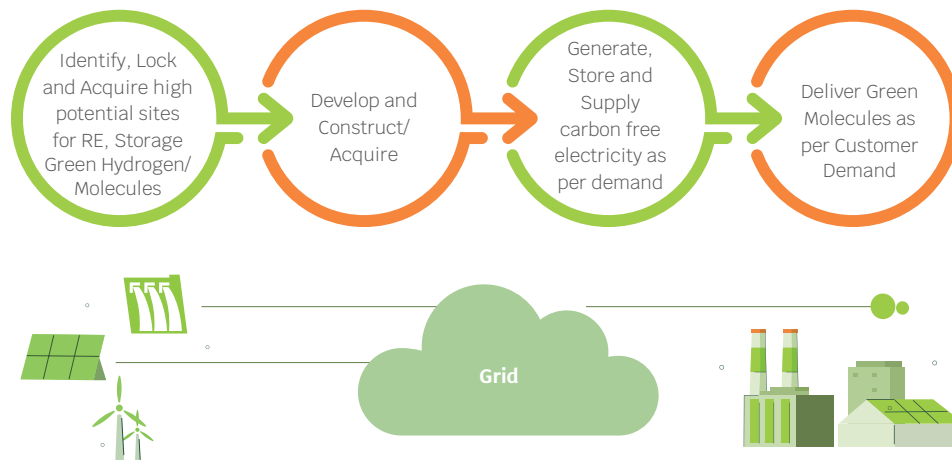
BUSINESS MODEL

We Deliver Reliable and Sustainable Contracted Long-term Cash Flows through Disciplined and Diversified Portfolio Development

The Core Businesses of Greenko are i) Renewable energy asset construction/acquisition, generation and supply, ii) Pumped Storage assets construction, storage, generation and supply, iii) Zero Carbon Molecules (Green Hydrogen, Green Ammonia & Green Methanol).

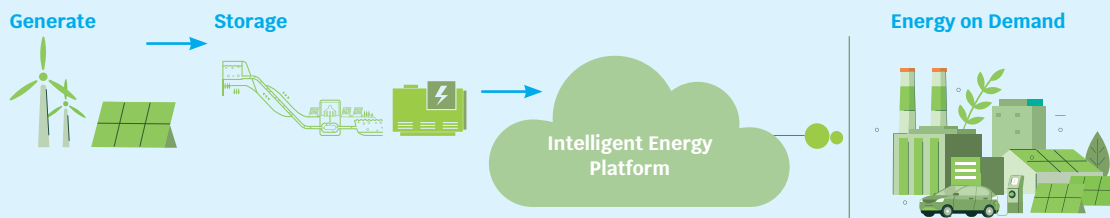


Greenko's Value Chain



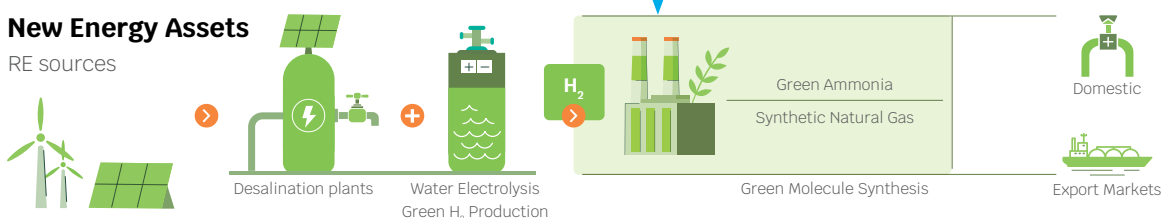
Pumped Storage Assets

We are at the forefront of this cutting-edge technology leveraging our experience.



New Energy Assets

RE sources



OUTPUTS

With all the resources that we have, we ensure that we develop and deliver to the satisfaction of our stakeholders.



Financial Capital

Revenue generated

- USD 685.36 million revenue from the sale of power through the exchange
- USD 9.2 million revenue from the sale of REC certificates
- USD 28.49 million revenue from GBI

Credit ratings achieved

- A+ Credit rating

Storage assets

Multiple revenue streams with long-term PPAs for IRESPs

7 standalone storage contracts aggregating to the capacity of 4,050 MW are signed:

- Two PPAs with SECI for sale of 690 MW of power
- One PPA with Ayana Renewables Power Private Limited for storage of 1,000 MW of power
- 100 MW RTC JV with Hindalco
- 1,500 MWh supply of CFE JV with Serentica
- 1,000 MW JV with JSPL
- 6,000 MWh with Adani
- 1,250 MW strategic alliance with AMNS
- One PPA with AM Green Energy Private Limited

Green hydrogen assets

- 1 MTPA Green Ammonia facility on the west coast with ONGC
- 250 KTPA of Green Ammonia delivery by 2026 with Keppel Infrastructures
- ~1 million tonnes of Green Ammonia and ~ 180 KTPA of Green Hydrogen by 2030 to POSCO
- 250 KTPA Green Ammonia JV with UNIPER



Manufactured Capital

RE assets

- 11,479 MU of Renewable Energy generated
- Healthy PLF maintained at 23.4% (Solar), 41.9% (Hydro), 23.12% (Wind)
- Grid availability 99.72% (Solar), 99.5% (Hydro), 98.95% (Wind)

Storage assets

- 2 storage assets are under construction
- 5 storage assets are in pipeline

New energy assets

- 2 GW Electrolyser per year is under construction in the East Coast of India
- One Green Ammonia plant of 100 Kilo Tonnes per Annum (100 KTPA) capacity at Himachal Pradesh
- One Green Ammonia plant of 2 million Tonnes per Annum (2 MTPA) capacity at Andhra Pradesh



Natural Capital

Preserve and enhance nature

Decarbonisation

- 47.32 MtCO₂e avoided

Environment improvement

- 10,511.4 tonnes PM10 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
- Habitats for birds, fox, and fish restored
- 234,856 saplings planted

Circular Economy

- Value generated through repair/refurbish and asset sharing
- Electronic waste avoided through reuse after repair/refurbish

Climate Adaptation

- Reduced losses in employee productivity
- Reduced weather-related breakdowns
- Improved access to O&M
- Reduced erosion



Human Capital

Improved knowledge and skills among the workforce

- 16% increase in training hours/employee
- 89.38% of staff retention
- 6.17% of women in workforce
- Reduction in the average age of employees from 36.65 years to 35 years
- 1% attrition rate for employees for new hired
- Enhanced project-management skills
- Acquisition of New Energy skills



Intellectual Capital

- 95% ICT regulatory compliance
- 92.5% of plants covered under SCADA
- 92.33% of plants covered under SAP
- 107 continual improvement programs
- 99.98% uptime of servers
- Intelligent Cloud Energy Storage and Services Platform -6 Technologies managed and 14 states connected
- Partnership with C-MET - PCB and Li-Ion Battery recycling technologies developed
- Partnership with IIT-H for School for Sustainability and Climate Change
- R&D with NEERI, CECRI and BARC, Sponsorship and technology transfer



Social and Relationship Capital

- Engaged with policy-making to effect regulations/guidelines for Curated and Storage Services
- Fit-for-Purpose partnerships along the Decarbonisation value chain
- 95% customer satisfaction index for utility customers
- 80% of contractors/suppliers retained beyond 3 years
- 29,028 hours of safety training for contractors
- 191 community development programs

OUTCOMES

We recognise the impacts which emanate from the capitals and output we deliver. Hence, this contributes to the improvement of quality life in the society and create sustainable value.

Value delivered

Financial Capital

- Interest and bond proceeds
- Dividends
- Remuneration to employees
- Local area infrastructure improvements
- Taxes to the Government
- Contribution to community through CSR

Manufactured Capital

- Industrial infrastructure
- Grid performance
- Clean and reliable energy

Natural Capital

- Decarbonisation
- Improved air environment
- Reduced electronic waste and conservation of virgin materials
- Restoration of nature
- Community adaptation to climate change

Human Capital

- Improved quality and quantum of employment
- Up-gradation of skills

Intellectual Capital

- Technology development and transfer

Social & Relationship Capital

- Inclusive development in regions of operations
- The improved policy environment for decarbonisation
- Improved business opportunity and wealth for suppliers

Value retained

Financial Capital

- 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

Manufactured Capital

- Asset Health
- Asset Life
- Improved Asset Performance

Natural Capital

- Uninterrupted and stable supply chain
- Predictable wind, solar and hydro resources
- Compliance with regulations
- Community trust
- Uninterrupted operations
- Improved O&M

Human Capital

- A highly skilled and motivated workforce
- Agile and autonomous networks
- Fair, safe and healthy workspace

Intellectual Capital

- Digital Infrastructure
- Protocols and Standards
- Improved operational performance
- Seamless information flow and decision-making
- Exclusive rights or licence on technologies

Social & Relationship Capital

- Attainment of long-term stable and effective relationships with contractors & suppliers
- Increased stakeholder trust
- The favourable policy environment for New Energy product and services
- Attainment of knowledge on evolving technologies
- Diversified customers and customer-centric business approach

Contribution to UNSDGs







Mallana Dam Site,
Himachal Pradesh

External Operating Environment

Energy system and its transition is complex and riddled with multiple trade-offs. This is evidenced by recent geopolitical developments and macroeconomic turbulence, calling for a balanced approach that delivers on the imperatives of sustainability, affordability, security, and access transition. The pandemic, the steep economic rebound, and the war in Ukraine have successively disrupted energy supply and demand, causing significant consequences for people, companies, and economies around the world. This demonstrated that the energy transition is not immune to the impacts of major environmental, economic, and geopolitical events; the trade-offs exist and require a balanced approach. Such an approach is required to establish a resilient energy transition capable of achieving long-term climate ambitions, regardless of the challenges that might impact the journey.

As the energy system reconfigures to a low-carbon future, temporary supply-demand imbalances can happen differently in various geographies. The diversification of the energy mix with fossil and non-fossil sources can help strengthen energy security. Countries can engage in dual diversification: diversifying their fuel import partners in the short term and their energy mix in the long term. Current energy security constraints provide an opportunity to accelerate the transition through increased clean energy interventions and transforming energy demand pattern. Renewable energy capacity installations set a record in 2021 with 290 gigawatts (GW) of new wind and solar capacity added worldwide, and solar cumulative capacity crossing 1 TW in May 2022, still falling short of 2030 targets and Net Zero ambition.

Technology, financing, and policies are engaging the most attention of companies' and governments to decarbonise the supply side.

Demand-side initiatives, such as the First Movers Coalition, designed to create demand for technologies and measures for Net Zero are being operationalised. These must be rapidly replicated to incentivise investments in low-emission technologies and production assets.

Further to accelerating the demand for Net Zero technologies and production assets, multistakeholder collaborations between suppliers and customers (e.g. zero/low-emission product offtake agreements, circular decarbonisation projects, etc.), between industry and cross-industry peers (e.g. carbon capture infrastructure, collaborative platforms for decarbonisation, etc.), and between the wider industrial ecosystem of stakeholders (e.g. collaborative research for low-carbon technologies etc.) will be critical to overcome decarbonisation choke points and accelerate the industrial transformation towards Net Zero.

This decade is the window of opportunity to prevent the worst consequences of climate change. In the face of present energy crisis, it is critically important to speed up action on the path to Net Zero emissions while addressing energy security needs.

The context of India and some developing countries is different from that of many developed nations. India is blessed with resources of wind, solar and water combined with vast coastline and complex terrain that supports generation and storage of renewable energy. "One Nation, One Grid" further strengthens the above advantage. It offers an opportunity to substitute fossils in new capacity of electricity generation and substitute oil & gas - which is being presently imported, with electric and nature-based fuels and chemicals. This is the plan that Prime Minister has outlined in his Independence Day speech as Energy Independence by 2047.

India at the Cusp

Energy is central to achieving India's development ambitions such as electrifying each home, developing infrastructure driven by urbanisation, rising incomes and industrial activity. Transition to electrified mobility and industrial applications would add to the demand of electricity. India's growth in demand for energy would be 30% to global energy demand growth by 2035. As per India Brand Equity Foundation (IBEF), the economic development in India has stimulated the demand for electricity and the total consumption is expected to reach 15,280 TWh in 2040, from 4,926 TWh in 2012. Thus, India has to focus on decarbonising the "growth energy" unlike the priority of decarbonisation in developed World to phase out the fossil-based power generation.

India is becoming a major global energy player with a strategic interest in well-functioning energy markets. All four major energy-consuming sectors – industry, household, transport, and agriculture are expected to see a rise in demand. Energy consumption in the country is forecast to grow at around 4.5% annually to 2035 (up from 3.5% from 2000–2017).

Similarly, the nature of Indian power demand is also evolving. India's uptake of renewables is driven by the advent of new and cheaper energy technologies and the need to reduce air pollution which results in more than one million premature deaths in India each year. The electricity constitutes 15% of final energy consumption in India and the demand is set to keep growing at 5.8% per annum. Also, the per capita electricity consumption in India is 1,010 kilowatt hours (kWh), against a world average of 3,200 kWh.

Further, India is the third-largest producer and consumer of electricity in the world and has an installed power capacity of 407.79 GW as of September 30, 2022. The installed renewable energy capacity (including hydro) stood at 164.93 GW,

representing 40.04% of the overall installed power capacity. Solar energy is estimated to contribute 60.81 GW, followed by 41.66 GW from wind power, 10.68 GW from biomass, 4.89 GW from small hydropower, and 46.85 GW from hydropower. The non-hydro renewable energy capacity addition stood at 4.2 GW for the first three months of FY23 against 2.6 GW for the first three months of FY22.

Further, by 2029–30, CEA estimates that the share of renewable energy generation would increase from 18% to 44%, while that of thermal energy is expected to reduce from 78% to 52%.

Opportunity for India

The scale of India's demand and its stage of development together present an opportunity for India to emerge as a global leader in offering decarbonisation solutions. This opportunity could position India to achieve durable economic growth and global competitiveness over the coming decade.

The country has set an ambitious target to achieve a capacity of 500 GW of non-fossil based power generation capacity by 2030. To meet this target and further to tackle the annual coal demand supply mismatch, the Ministry of Power has identified 81 thermal units which will replace coal

with renewable energy generation by 2026. Also, India is blessed with a variety of renewable energy sources, like biomass, the solar, wind, geothermal and hydropower which are local resources available in abundance making it cost-effective and ensure energy security. Utilising the available natural resources coupled with appropriate storage solutions can generate cost-effective demand – following RE.

Further, India can also produce Zero Carbon Fuels and Chemicals using renewable energy. India's target is to produce 5 MT of green hydrogen by 2030. India's electrolyser manufacturing capacity is projected to reach 8 GW per year by 2025. The cumulative value of the green hydrogen market in India could reach USD 8 bn by 2030 and India will require at least 50 gigawatts (GW) of electrolysers or more to ramp up hydrogen production, proving India has a great opportunity in the sector too. Pursuing this opportunity will reduce reliance on imported oil, improved air quality, and increased renewable energy supply.



**Greenko Rayala Wind Power Pvt Ltd,
Andhra Pradesh**

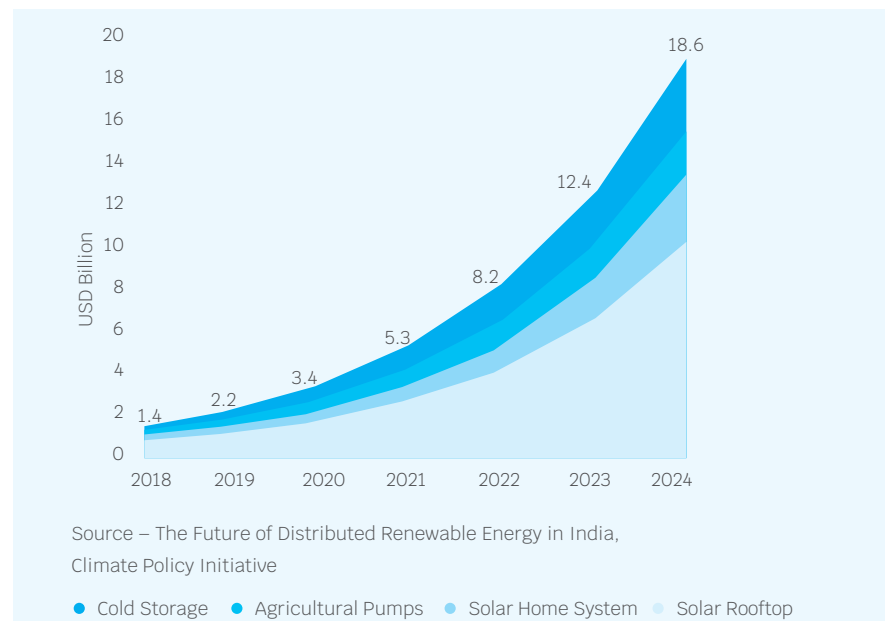
RE Technology Progress and Price Parity

The solar power sector in India is experiencing significant growth in the past and in recent years the new solar installations have slowed as the government introduced basic customs duty on the import of solar modules and cells. Currently, about 70% of India's solar capacity comes from imported solar cells, which are locally assembled into panels and then used for grid or rooftop installations. The new duty may encourage domestic manufacturing in the long run, but it has significantly increased the cost pressure on under-implementation solar projects for now.

Presently, solar accounts for less than 4% of India's electricity generation, and coal is close to 70%. By 2040, they converge in the low 30%, and this electrifying turnover is attributed to policy initiatives and targets set by the Government. The Indian electricity sector is at the cusp and there is huge potential not only for large PV plants but, also for small distributed renewable energy sources like solar rooftops, solar pumps, cold

storages etc. Solar energy is now the lowest-cost source of new energy in India. Spain, India, and the Middle East will continue to be the markets with the lowest solar Levelised Cost of Electricity (LCOE). Meanwhile, average module efficiency continues to increase, surpassing 22.5% in PERC monocrystalline cell commercial production. Solar energy has the

potential to meet the energy needs of low income residential groups and thereby, can also help in achieving 100% electrification of households. Further, the Performance Linked Incentive scheme by Government of India has triggered the domestic manufacturing of solar panels and this could even lead to further lowering of price.



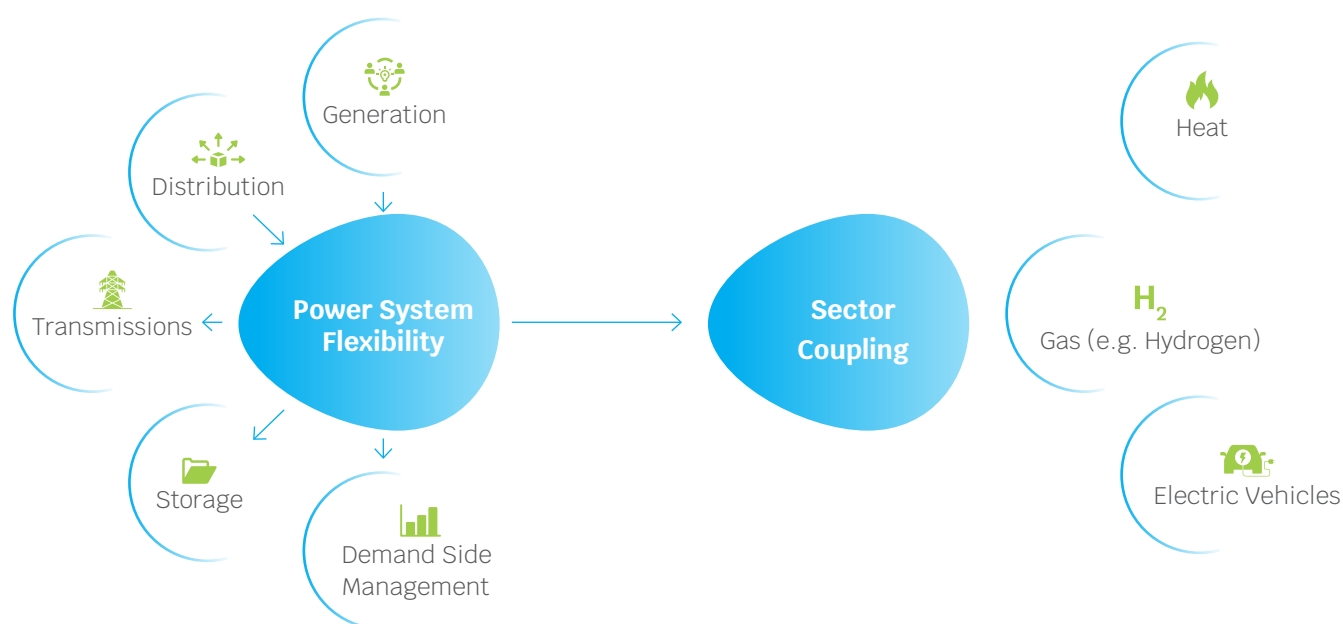
Power System Flexibility as the share of RE increases

There is a paradigm change in our power system operations. In the past, fully controllable power generation followed non-controllable load demand. With renewable energy, generation is no longer fully controllable due to weather fluctuations leading to uncertainty in generation output. The variability of RE resources requires the adoption of grid-scale energy storage technologies to complement these sources. Power system flexibility is defined as the ability of a power system to manage the variability and uncertainty of demand and supply reliably and cost-effectively across all relevant timescales. The deployment of variable renewable energy sources is accompanied by challenges such

as increase in system requirements for balancing supply and demand. To effectively aid the transition from fossil fuels and ultimately to Net Zero levels, it becomes necessary to identify and exploit various flexible system integration sources in all stages viz., Generation, Distribution, Storage.

International experience suggests that a diverse mix of flexibility investments is needed for the successful system integration of wind and solar PV. Operational Complexity rises as the share of variable renewables rises. Hydro Power and Pumped Storage systems are flexible renewable energy sources in India for a long period. The

need for flexible energy system was realised during the pandemic and hence, Central Electricity Regulatory Commission (CERC) has come up with the regulation to operate coal-fired power plants with minimum generation levels at 55%. This has proved effective in increasing the capability of coal-fired plants to accommodate Variable Renewable Energy (VRE). Supply-side Flexibility System integration further includes grid reinforcement and planning to effectively accommodate VRE energy generation.



RE Electrification

For energy system to undergo global transformation, to transition towards decarbonisation, all the activities such as buildings, transport and industries must be electrified as much as possible. Once electrified, the source of electricity generation should be renewable energy, making it RE-Electrifying.

Electrifying final consumption and then using electricity from renewables is an effective way to bring about the energy transition. However, RE-electrification faces operational challenges by looking beyond the generation side of the power system and tapping all available sources of flexibility. One such challenge is particularly the case for flexibility of demand over a wide range of time scales.

Therefore, to deliver this new system in a cost-effective manner, 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. The integration of smart approaches in combination with digitalisation is key to reduce the risk of rising peak loads, to expand opportunities for renewable power utilisation, and to avoid the need for massive

investment in building new grid infrastructure. Smart electrification with renewables thus creates a virtuous cycle, where electrification drives new uses and markets for renewables, which then accelerates the switch to electricity for end uses, creating more flexibility and thus driving further renewables growth and technological innovation. Growth and innovation also reduce costs and create additional investment and business opportunities.

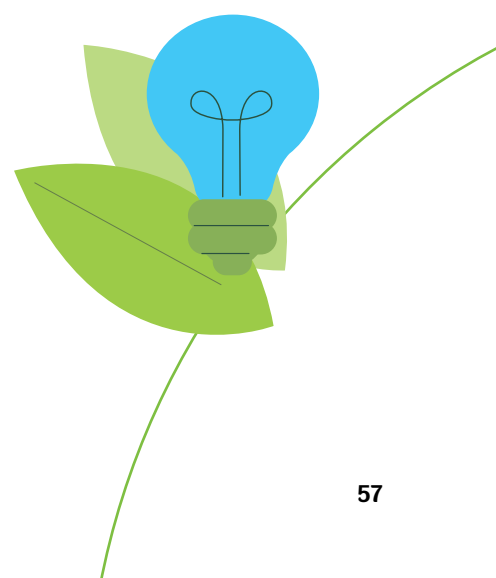
Decarbonisation of Energy and Industry

India is one of the largest energy producers and consumers in the world. Energy sector accounts for 73% of GHG emissions which is the result of cumulative energy usage in iron and steel industries, petrochemical industries, transport sectors, residential and commercial buildings. Some of these sectors such as transport, residential and commercial buildings can be RE-electrified directly.

However, for the sectors dependent on natural gas, petrol, diesel, carbon monoxide etc., for a chemical reaction, the necessary chemistry may be performed by alternate green chemical e.g., in steel industry the reduction agent Natural gas can be replaced by Green Hydrogen; or

the same chemical produced with Zero emissions e.g., Ammonia for fertilizers. In addition, the 'hard-to-abate' industrial sectors such as shipping, aviation, mining, and heavy industry, should also be RE Electrified and use green fuels such as E-methanol for shipping.

Green hydrogen and its derivative molecules are expected to evolve as an alternative fuel or chemical replacing fossils or fossils' derived chemicals, especially in energy and GHG intensive processes. The exponential growth in the electrolysis project pipeline in 2020 and the unprecedented interest around hydrogen as a decarbonisation tool have been driven by a combination of falling costs of RE and Electrolysers; and policy support.



Variable Renewable Energy (VRE)

As this share of variable renewable generation continues to increase, India's power system will have to evolve and modernise to respond to grid stability challenges. There is a need for an accelerated deployment of assets such as utility-scale storage in order to store power when it is available in abundance and provide firm power later, during the evening peak hours or at other times when generation is low, but demand is high. This is where, Energy Storage Systems will play a crucial role in increasing the system flexibility to not only accommodate the demand requirements but for effective grid management as well.

Energy Storage Market

The energy storage market in India witnessed a demand of 23 GWh in 2018 with 56% of the battery demand coming from the power backup inverter segment. Moreover, the report titled 'Advanced Chemistry Cell Battery Reuse and Recycling Market in India' anticipates that the total cumulative potential for battery storage in India will be 600 GWh by 2030 considering a base case scenario and with segments like EVs and consumer electronics projected to be major demand drivers for the adoption of battery storage in India. The report further suggests that by 2030, the demand for batteries is expected to grow four-fold to reach an annual rate of 3,100 GWh, it said, adding this shows a growth of 16 per cent CAGR through 2020-30. Besides, the NEP draft report 2022 also predicts that India will need a Battery Energy Storage System (BESS) of 51 gigawatts of storage capacity by 2031-32.

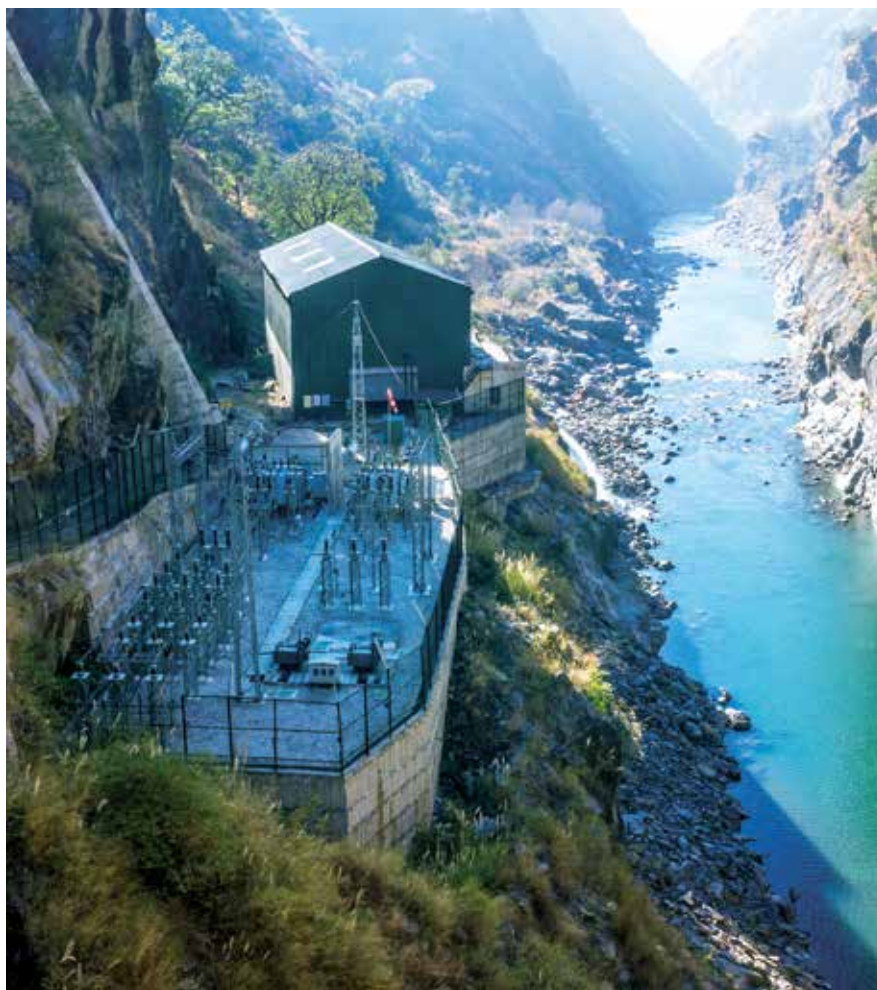
The electricity sector in India has undergone rapid transformation in recent decades. At COP26, India announced the highly ambitious goal of decarbonising energy to 50% and

achieving 500 GW of fossil fuel free generating capacity by 2030. As per the draft National Electricity Plan of CEA, the non-fossil fuel-based capacity is likely to increase to 592 GW in 2031-32, which includes 467.4 GW of variable renewable energy (VRE) based installed capacity.

Achieving the above objectives entails enabling policy and regulatory framework for integrating requisite quantum of renewable energy in the grid. One of the critical enablers for the integration of very high share of renewables will be energy storage. As per the generation planning studies, Pumped Hydro Storage (PSP) capacity of about 6.81 GW with 46.65 GWh of storage is required by year 2026-27 to fulfil the storage requirement of the Grid.

The storage capacity requirement increases to 70.38 GW (18.82 GW PSP and 51.56 GW BESS) with storage of 392.78 GWh (135 GWh from PSP and 257.78 GWh from BESS) by the year 2031-32. Recognising the above requirement, Ministry of Power has outlined trajectory of Energy Storage Obligation. The Energy Storage Obligation (storage on energy basis) varies from 1% in FY 2023-24 to 4% in FY 2029-30.

Within the various storage technologies, PSP has multiple advantages, particularly in the context of grid scale, long duration applications. Globally, there is a revival in PSP with significant capacity under construction. In India also, multiple PSP plants are under construction.



**Greenko Sumez Hydro Energies Pvt. Ltd.,
Himachal Pradesh**

Special Measures to Promote Growth of RE

Firm Energy / Round-The-Clock (RTC) Power

To overcome the issues of intermittency and low-capacity utilisation of transmission infrastructure, the mechanism of 'bundling' has been brought out by Government of India. To ensure uninterrupted firm power round-the-clock, RE is bundled with power from other sources or combined storage. Such bundled power is supplied to the distribution Company (DISCOM) thereby obviating the need for DISCOMs to balance power. With the aim of promoting RE power and to provide Round-The-Clock (RTC) power to the DISCOMs from renewable energy sources, Ministry of Power has issued RTC power Guidelines in 2020.

A steady increase in the demand for Round-the-clock (RTC) power is witnessed. Some of the utilities in India have already gone through the transparent procurement process and have contracted for stand-alone storage capacities. The key objective is to serve the round-the-clock demand requirement of discoms through RE sources. As the demand for Energy Storage Contracts increases, varied contracts such as contracting of 'storage capacity' on a 'standalone basis', peak power, dispatchable RE contracts are emerging.

Additionally, there is good traction on the private sector procurement as well. Many of the large Commercial and Industrial (C & I) consumers with climate mitigation commitments have set a target for procuring RTC power from RE sources for meeting its demand requirements. This, along with policy support, will further open the market for Energy Storage.

Renewable Purchase Obligations (RPO)

Uniform Renewable Purchase Obligations (RPO) have been introduced wherein all electricity distribution licensees have to consume a specified minimum quantity of their total requirements from Renewable Energy Sources.

As per the Ministry of Power (MoP) order dated 22nd July 2022, the RPO is as per the table below:

Year	Wind RPO	HPO	Other RPO	Total RPO
2022-23	0.81%	0.35%	23.44%	24.61%
2023-24	1.60%	0.66%	24.81%	27.08%
2024-25	2.46%	1.08%	26.37%	29.91%
2025-26	3.36%	1.48%	28.17%	33.01%
2026-27	4.29%	1.80%	29.86%	35.95%
2027-28	5.23%	2.15%	31.43%	38.81%
2028-29	6.16%	2.51%	32.69%	41.36%
2029-30	6.94%	2.82%	33.57%	43.33%

Hydro Power Obligations (HPO)

Hydro Policy, 2019 was notified by Govt. of India on 8th March, 2019, where in Hydropower Purchase Obligation (HPO) will be met only by energy produced from large hydro projects (LHP), including pumped hydro, commissioned after 8th March, 2019, and up to 31st March, 2030.





Power House under construction, Pinnapuram PSP, Andhra Pradesh

Circular Economy

Circular Economy practices can also augment climate change mitigation by increasing the life cycle of materials and thereby reducing the corresponding GHG emissions associated with the manufacturing process, transportation of raw materials. Material efficiency plays a significant role in promoting circular economic business models. Take-Make-Waste linear models when replaced with circular models can have impactful results in decarbonising the systems. Life cycle emissions of solar and wind systems will also be drastically reduced since a major portion of emissions is from the fabrication of systems. The barriers like government regulations, technological feasibility, consumer behaviour, and expectations should be handled efficaciously to establish synergies between decarbonisation and circular business models.

The three circular approaches

Eliminating waste and pollution, we reduce greenhouse gas emissions across the value chain

1

Circulating products and materials, we retain their embodied energy

2

Regenerating nature, we sequester carbon in soil and products

3

Up to 45% of emissions associated with industry, agriculture, and land use that the energy transition can't address, can be tackled with circular economic approaches.

For example, in buildings and construction, by eliminating waste, sharing buildings more, and by reusing and recycling construction materials, we can reduce the emissions from construction materials by 38% by 2050.

Likewise, in agriculture, shifting to regenerative production, practices, eliminating food waste, and using better and upcycled ingredients in our food products and menus, we could halve food system emissions by 2050.

Carbon Capture, Usage and Storage (CCUS)

CCUS that can capture and make effective use of the high concentrations of CO₂ emitted by industrial activities can also play a key role in decarbonisation. CCUS technologies offer significant strategic value in the transition to Net Zero:

- CCUS can be retrofitted to existing power and industrial plants
- CCUS can tackle emissions in sectors where other technology options are limited, such as in the production of cement, iron and steel or chemicals, and to produce synthetic fuels for long-distance transport (notably aviation)
- CCUS can remove CO₂ from the atmosphere by combining it with bioenergy or direct air capture to balance emissions that are unavoidable or technically difficult to abate

There are around 35 commercial facilities applying CCUS to industrial processes, fuel transformation and power generation, capturing 45 Mt CO₂. CCUS deployment has grown substantially in recent years, with around 300 projects in various stages of development across the CCUS value chain and is expected to capture over 220 Mt CO₂ per year.

Nevertheless, even at such level, CCUS deployment would remain substantially below what is required in the Net Zero Scenario.

The key to a successful CCUS policy for India is a framework that supports the creation of sustainable and viable markets for CCUS project outcome. The framework must consider the fact that the private sector is unlikely to invest in CCUS unless there are sufficient incentives to do so (or conversely penalties from inaction), or unless it can benefit from the sale of CO₂ or gain credits for emissions avoided under carbon pricing regimes. Direct capital grants, tax credits, carbon pricing schemes, operational subsidies, regulatory requirements, and public procurement preference for low-carbon products are some of the policy measures required for CCUS to become a reality in India.

Nature Based Solutions (NbS)

NbS mitigate climate change by capturing CO₂ from the air and sequestering it in plants, soils, and sediments. Some of the examples are forests to regrow, restoring coastal wetlands, and switching to restorative agricultural practices, such as cover crop rotation, that support healthy soils.

NbS also play a key role in climate change adaptation and building resilience in landscapes and communities. Several nature-based solutions are being used by the World Bank to help manage disaster risk and reduce the incidence and impact of flooding, mudslides, and other disasters. They are a cost-effective way of addressing climate change while also addressing biodiversity and land degradation and address several problems at once.

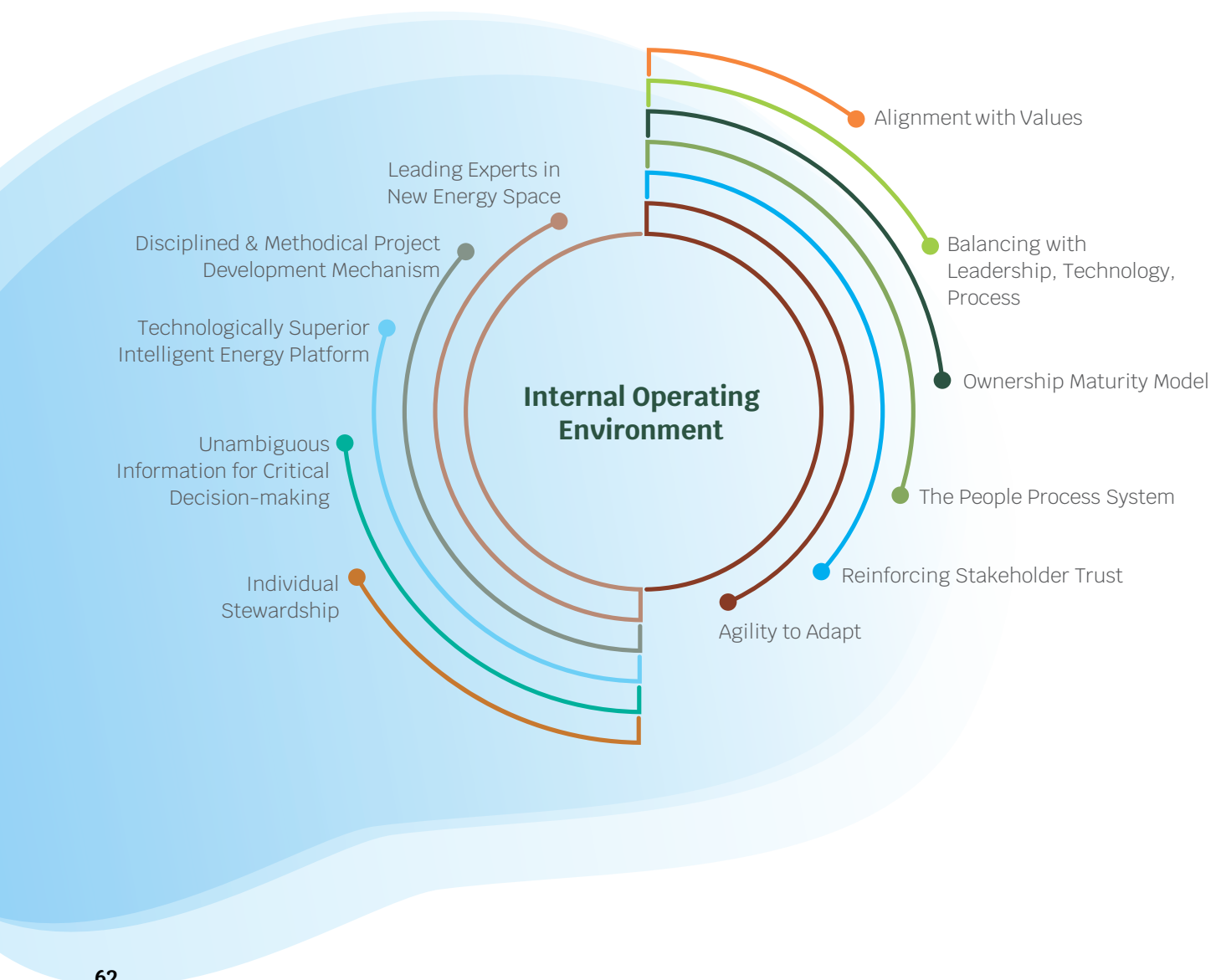
Based on the existing evidence, taking account of associated uncertainties and the time needed to deploy safeguards, UNEP estimates that by 2030, nature based solutions implemented across all ecosystems can deliver emission reductions and removals of at least 5 GtCO₂e per year, of a maximum estimate of 11.7 GtCO₂e per year. By 2050, this rises to at least 10 GtCO₂e per year, of a maximum estimate of 18 GtCO₂e per year. This is a significant proportion of the total mitigation needed.

“At this momentous time, we are embracing a tremendous transformation in the energy landscape, which is spurring on remarkable changes to our markets and organisations. We are seizing the previously untapped potential of the energy sector, and creating long-term worth with innovative energy services. It’s essential that we now assess our business strategy from a sustainability perspective to address the impacts of climate change. In order to turn ‘Green Electrons’ into ‘Zero Carbon molecules’, we require abundant green electricity, as well as electricity at a reduced cost – and our analysis and predictions show us that this is achievable.”

Prasad Joshi
Vice President, Business Development

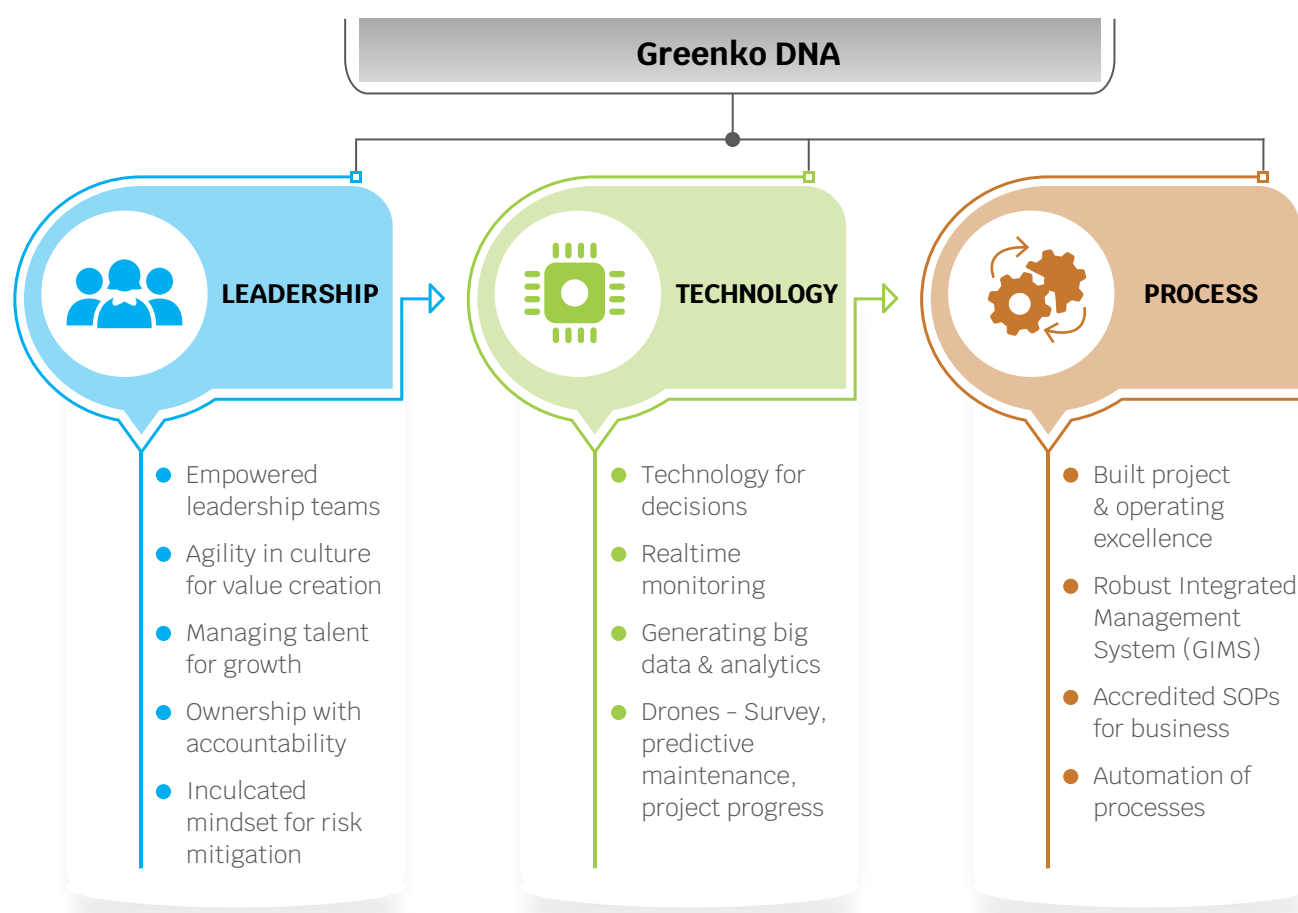
Internal Operating Environment

Greenko makes sustained efforts to harness opportunities posed by the external environment through responsive alignment of internal environment. Greenko analyses its internal operational factors to identify the critical strengths and weaknesses which helps Greenko in refining and enhancing its internal culture, capabilities, and competencies to align with the requirements of business growth. Through a continuous evaluation mechanism, Greenko has identified the following eleven key internal operating elements to serve as focus areas for evolving into a more resilient, sustainable, responsible, and transparent business entity.



Alignment with Values

The business operations at Greenko are driven by its vision, guided by aspirations, and living by its values. Greenko's SEEDIT values serve as the foundation for endeavouring culture, stability, and growth. Institutionalisation and adaptation of Greenko values have been a remarkable journey through learning and development interventions. SEEDIT values have been effectively communicated to the employees. Induction programs are being conducted to impart the knowledge of SEEDIT values to new employees, thereby aligning them with the Greenko standards. Greenko not only inculcates values but, believes in living by them and further aids the workforce to follow the same. The appraisal system at Greenko is entirely merit-based and the organisation rewards equal weightage to performance and adherence to SEEDIT values.



Balancing Leadership, Technology, and Process

Greenko endeavours to improvise the elements of Leadership, Technology, and Processes to develop a strong, and resilient organisation. Greenko believes that the critical elements for improvising performance are strengthening and preparing the employees for future leadership roles, effective utilisation of technological tools and processes. Greenko's strong leadership and governance framework is guiding

the Group to position itself for long-term value creation by harnessing growth opportunities. Greenko has a well laid leadership development program to impart knowledge and develop expertise in future leaders. Greenko is continuously upgrading its technology and systems and processes. Management systems with underlying feedback, measurement loops, and performance improvement methods are also adopted. Greenko's DNA focusses on the maintenance of the balance among Leadership, Technology, and Processes.

Ownership Maturity Model

The human assets form the core of Greenko operations and they are agile, resilient, and responsible groups steering Greenko through a successful path by mitigating all the short and long-term risks. At Greenko, each employee is a responsible steward, an embodiment of values, and strives hard to reinforce the brand. At Greenko, augmentation of Human Capital through inorganic growth is more incidental to business acquisitions, spanning across its

various businesses viz. Hydro, Wind, Solar, storage and new energy (ZeroC). The diverse skill set of the workforce has helped in establishing the synergic relationship between various stakeholders and also in successful project delivery. The organisation is becoming multi-skilled and multi-functional by exploring new project arenas. The organisation believes in the ownership model to develop a team with the traits of accountability, authority, and autonomy to emerge as a successful organisation. This has proved effective by bringing out innovative ideas and motivating the workforce to make the right decisions at the right time.

The People Process System

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

- To build and recalibrate competencies of human asset
- To internalise in GAM, Intelligent Storage operations & New Energy platform for enhanced process efficiency

- To connect people to motivate overall PPS implementation
- To share best practices across businesses
- To achieve the established business targets to aid transformation
- To aid Greenko to excel in GKO 4.0 and evolve further



The People – Expectations & Competencies

The impact of the PPS Model in four years 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 weights assigned to employee role deliverables - Talent Management

- The Performance Management System (PMS) was implemented with measurable weights - 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 centralised teams like Tech services
- Checks & balances and the way forward, when falling short of targets

Also, the KPIs identified for each of the verticals viz., GAM, Storage and New Energy and the performance outcomes are measurable indicators. In Greenko, majority of the employees are multiskilled having multi-disciplinary domain knowledge and are eligible to work in multiple functions, thus reaffirming the circular approach in business management.

The System

The analytical management systems deployed for tracking project and asset management include 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 realtime 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 model and PPS framework implementation.

Agility to Adapt

The agility to adapt among all levels is the sole creditor for the organisation to undergo a smoother transition from GKO 1.0 to 2.0, GKO 2.0 to 3.0 and then to 4.0. The policies and internal support extensions for imparting the level of ownership and authority have proved effective for the younger workforce to develop competencies and potential to take up the leadership roles. Further, the leadership pipeline is designed in such a way that it meets the business expansion plans of the Group, thereby helping the younger generation to climb up the ladder. Talent scalability is a critical and ongoing agenda for HR to provide the required number of talented resources for new projects and acquisitions.

Individual Stewardship

Greenko finds its success from the sense of responsible stewardship the workforce has gained through these years. Employee welfare programs, merit-based annual performance reviews, and talent recognition are salient factors for retention of 89.38% of its workforce during the reporting period.

Unambiguous Information for Critical Decision Making

Availability and flow of information from one level to other is the major requisite for effective decision making. Greenko has established advanced information technology systems to evolve a real-time monitoring system to supervise the progress of project execution and asset management and thereby, enable the availability of information to all on a need-to-know basis. This helps in eliminating conflicts, delays, and frictions among the stakeholders and also in developing a sense of stewardship.

Technologically Superior Intelligent Energy Platform

The proper management of project execution, storage project operations, follow-ups, and asset governance following high standards requires a sound knowledge of digital solutions with higher efficiencies. Greenko continues to excel in these areas by employing a range of digital and decentralised solutions for carrying out the business in a sustainable and accountable manner. This asset base is being significantly augmented to create an Intelligent Energy Platform.

Disciplined & Methodical Project Development Mechanism

Greenko follows a meticulous approach for carrying out the business activities like project execution, management, and delivering the final solutions in a self-disciplined and agile environment. Discipline is one of Greenko's core values to define process orientation, effective deployment of competencies appropriately, and using systems adequately. Therefore, it has developed an in-house state-of-the-art project monitoring system known as Greenko Energy Project Systems (GEPS) for tailoring robust and real-time project management, QA/QC, engineering, logistics, material management, and stores. Greenko has developed into an exemplary player by carrying out the business in a disciplined and agile manner and is the paradigm for the best practices in project execution with minimisation of operating costs.

The table below mentions the capabilities possessed by Greenko with respect to executing the pumped hydro-power storage projects and establishing the new energy platform.

Leading Experts in New Energy Space

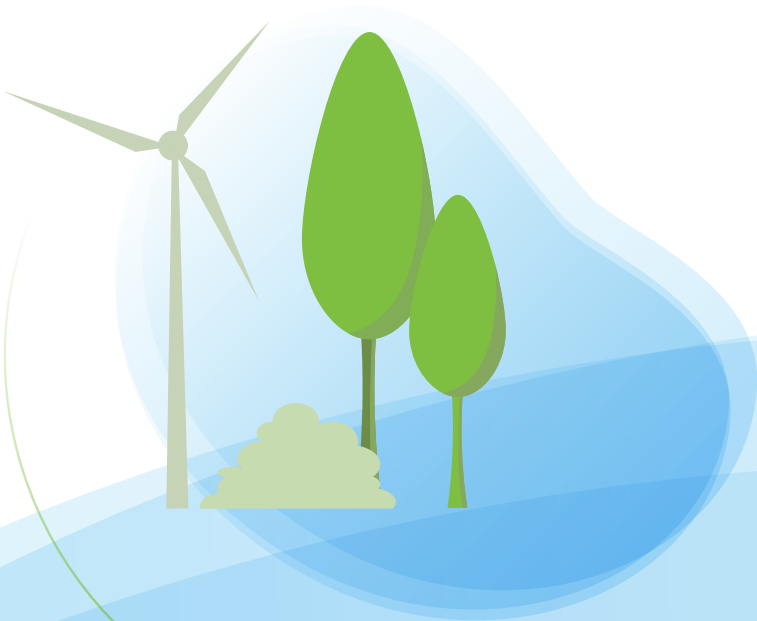
Greenko team has developed distinctive expertise in various renewable energy, storage recruiting necessary expertise, redeploying, and training the existing employees to take new roles. This has allowed Greenko to emerge as a significant market player to constantly create innovative, novel, and futuristic solutions for delivering sustainable value. Greenko believes that the expertise and competencies gained through these years will help in addressing the new risks and challenges and will lead to a smoother transition further.

Reinforcing Stakeholder Trust

Stakeholder engagement and inclusiveness have been the prime objective of Greenko’s operations and are evident from Ownership Maturity models and SEEDIT values. The above ‘Value Drivers’ are seamlessly integrated with the ‘Enablers’ to strategically create a Value Proposition with a definite ‘Outcome’. Most of Greenko’s business models are Public-Private partnerships and this has proved effective for Greenko to foster and nurture

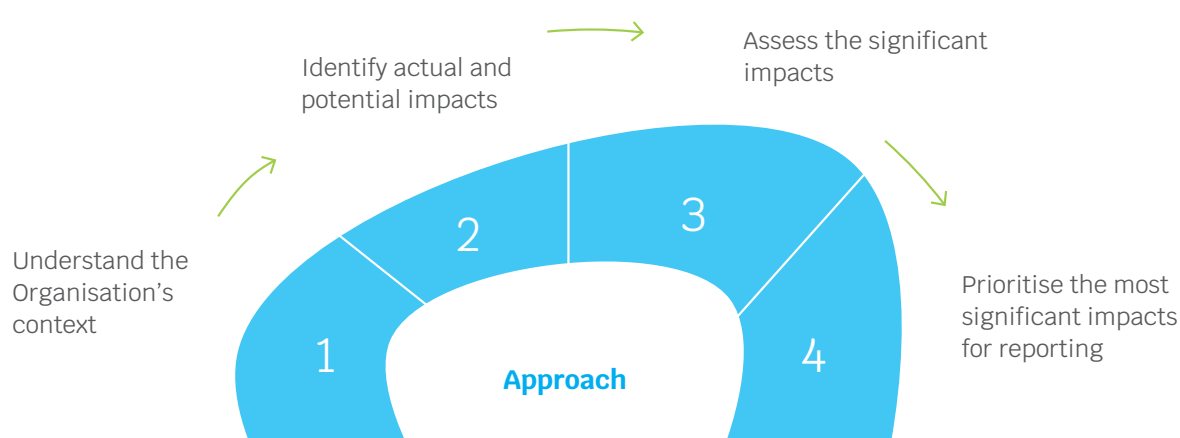
relationships with stakeholders at all levels, which further helps in strategy development and decision making. Ownership model and PPS are aided with HR strategy to support the inclusive growth among the workforce with suitable policies, processes, and decisions. The bedrock of the Company’s reputation is the trust which it has gained through all its years of operations amongst all stakeholders. These elements are also embedded in Ownership Maturity Model and PPS systems.

Execution Steps	Greenko’s Capabilities
Construction of Pumped Hydro Storage Projects & New Energy Projects	<ul style="list-style-type: none">○ Significant expertise in Pumped Hydro components (Civil & Electro-Mechanical works), Storage project operations, chemistry & electrochemistry○ Construction of 1st Pumped Storage is underway
Offering Energy Solutions with AI/ML-based energy scheduling & dispatch capabilities	<ul style="list-style-type: none">○ Greenko has extensive large-scale SCADA expertise○ Network management solution being built together with industry-leading experts including PRDC, Siemens & OSI
Marketing of products/services to DISCOMS and other potential customers	<ul style="list-style-type: none">○ Strong relationships with DISCOMs/Regulators, ability to influence regulation and demand for such services○ Tie-ups with State-owned utilities (NTPC, NHPC)

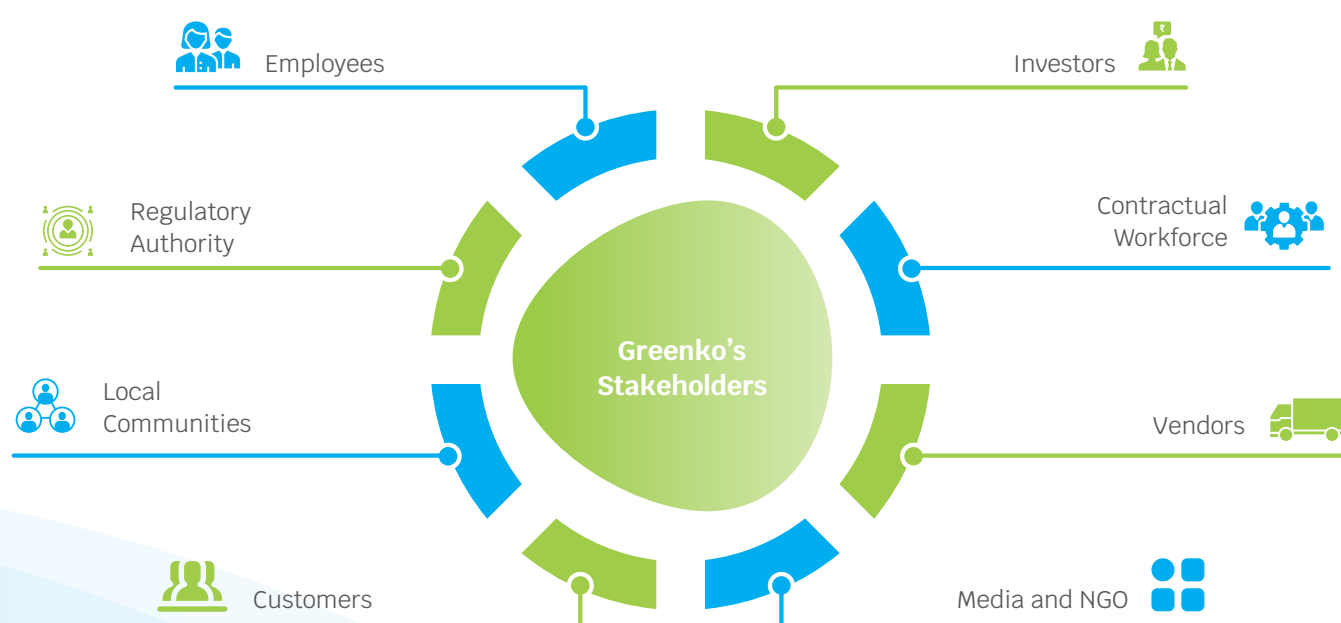


Materiality & Stakeholder Engagement

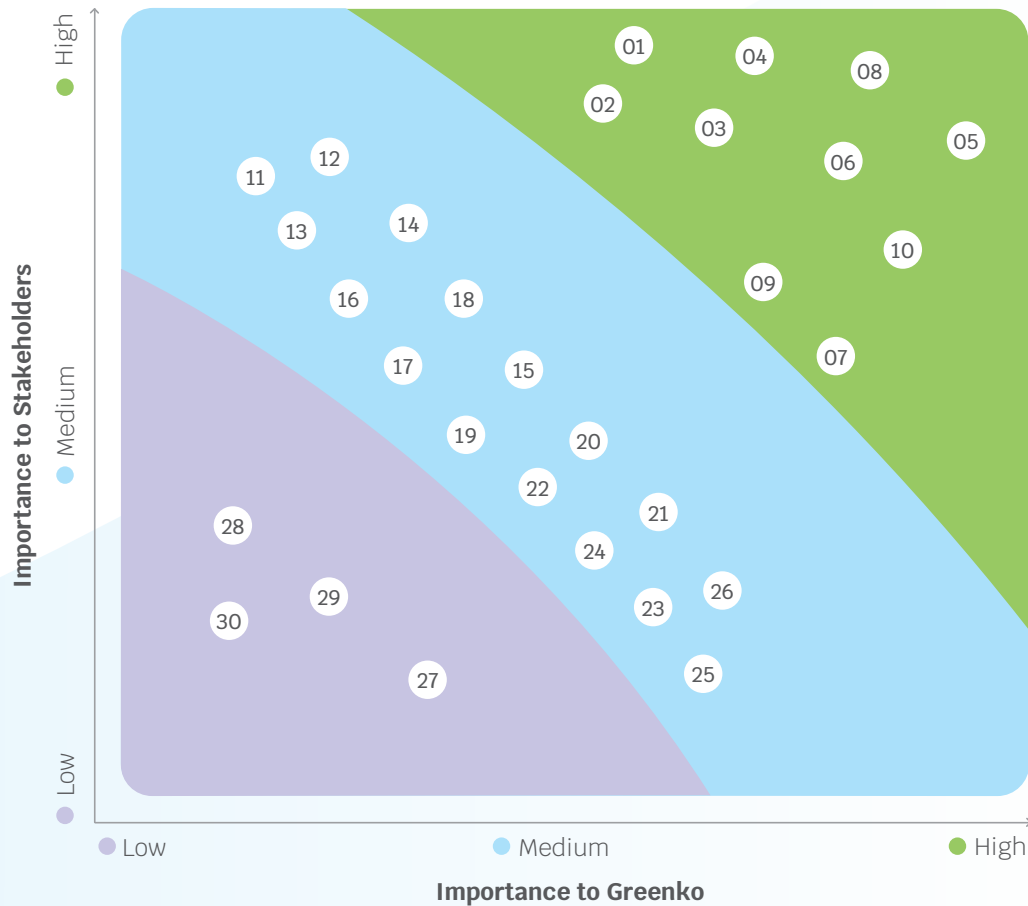
Greenko believes an extensive internal and external stakeholder engagement helps the organisation in creating and delivering shared value for all its stakeholders. In brainstorming sessions, the Group reviewed materiality matrix developed in 2020, to identify the revised priority issues in line with its vision and new business model.



Stakeholder engagement - The Greenko way



Materiality Mapping



Material Topics

High Priority	Medium Priority	Low Priority
1. Economic Performance	11. Stakeholder Engagement	27. Energy Management
2. Energy Value Pools	12. Regulatory Compliances	28. Succession Planning
3. Excellence, Adoption, and Management of Assets and Projects	13. Risk Management	29. Grievance Mechanism
4. Health and Safety	14. Diversity	30. Land Management
5. Community Development Initiatives	15. Waste Management	
6. Innovation and Technology Adoption	16. Talent Acquisition and Retention	
7. Public Policy Advocacy	17. Skill Enhancement	
8. Climate Proofing	18. Employee Welfare	
9. Sustainable Partnerships	19. Employee Engagement	
10. Talent Acquisition and Retention	20. Transparency	
	21. Regenerative and Circular Value Pursuit	
	22. Anticorruption	
	23. Sustainable Supply Chain Management	
	24. Human Rights	
	25. Life Cycle Management	
	26. Biodiversity	

The Materiality Mapping Impact Assessment is appended in Annexure - IV.

Decarbonisation Solutions Platform

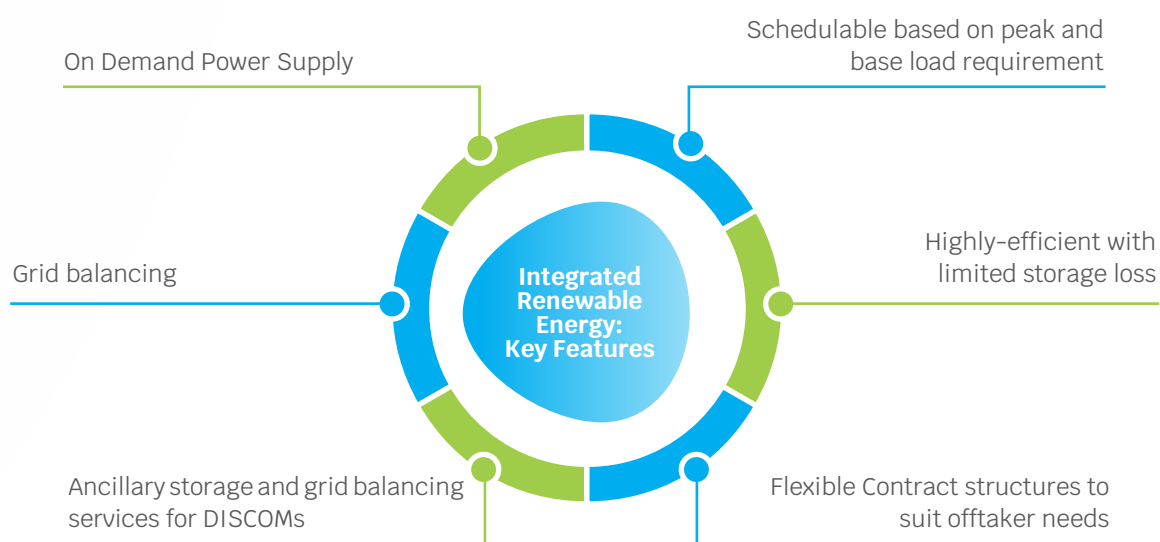
Greenko being leading energy solutions provider constantly explores the opportunities for growth in alignment with its long-term mission and strategise new business models for harnessing the value pools. Greenko is pioneer in developing sustainable solutions to harness new energy value pools supplying Demand-Following Electricity, Green Molecules as fuels and feedstock to accelerate energy and material decarbonisation, which mainly includes Pumped Storage combined with Intelligent Renewable Energy Storage Platforms and Zero Carbon molecules. The ongoing developments are anticipated to foster growth position for the Company as the leading decarbonisation solution provider in the energy and industry sectors and augmenting the country's ambition of energy independence and Net Zero goals.

“As Greenko looks to cement its first mover advantage in the large untapped Energy storage market, we are on-course to become a complete end-to-end decarbonisation solution offering for large industrial conglomerates across steel, aluminium, refineries, fertilizer companies etc. with our unique and cost parity offerings across carbon free energy, electrolyzers, green hydrogen, green ammonia and a lot more value-added solutions to come in near-future.”

Seshanka Palukuri
AVP, Strategic Planning Group

Next-Generation Green Energy

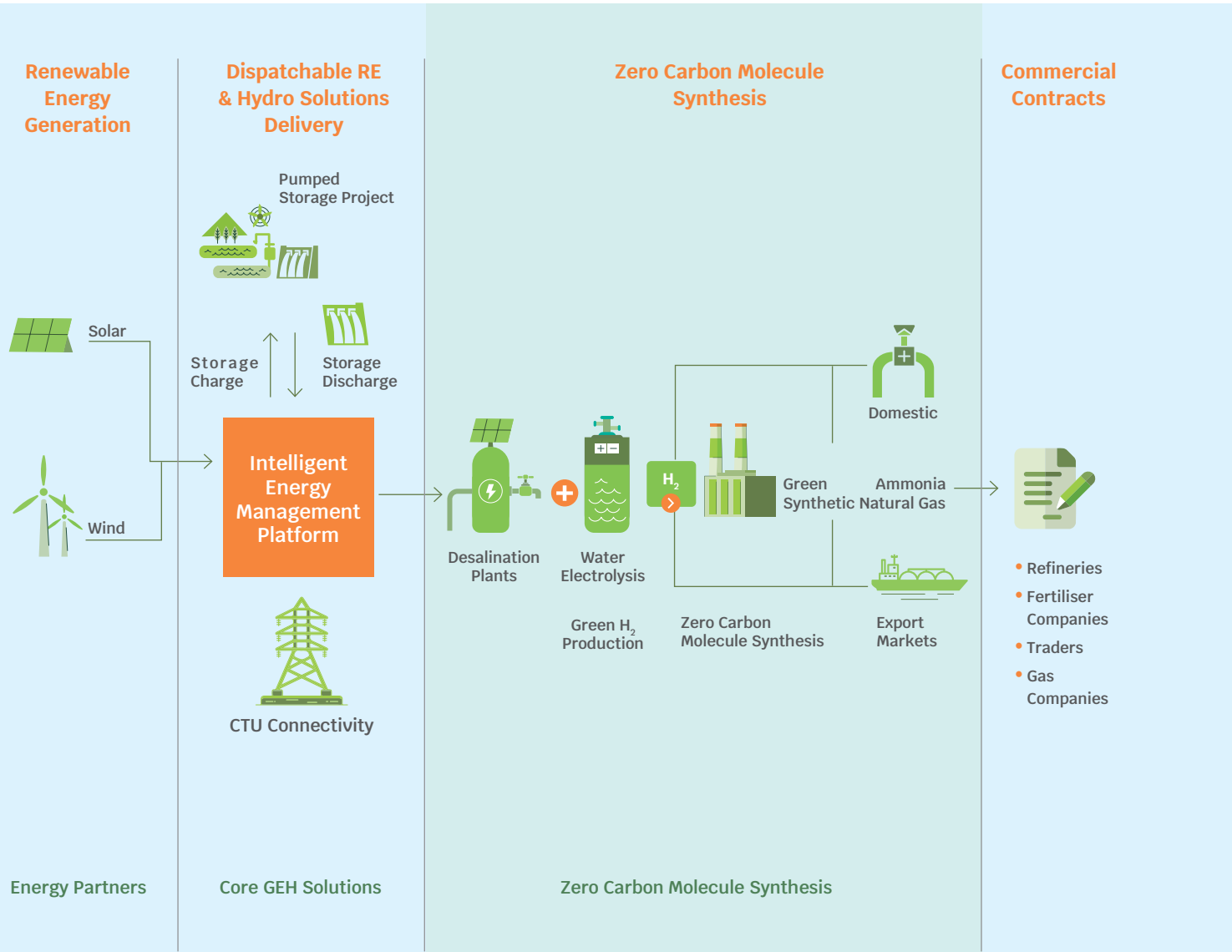
Greenko IRESP (Intelligent Renewable Energy and Storage Platform) is the centrepiece in Greenko's decarbonisation solution architecture which is currently under development across 4 states of India with a total capacity of 15.82 GW. IRESP are expected to harness the power of solar and wind resources with digitally connected storage infrastructure to provide scheduled and flexible power to the grid.



Greenko’s Green H₂ and Energy Carrier Architecture

Greenko PSP projects using renewable energy from Solar and Wind projects enables the production of Green Hydrogen which could be further synthesised to Zero Carbon molecules and transported to the market in the form of green ammonia or synthetic natural gas.

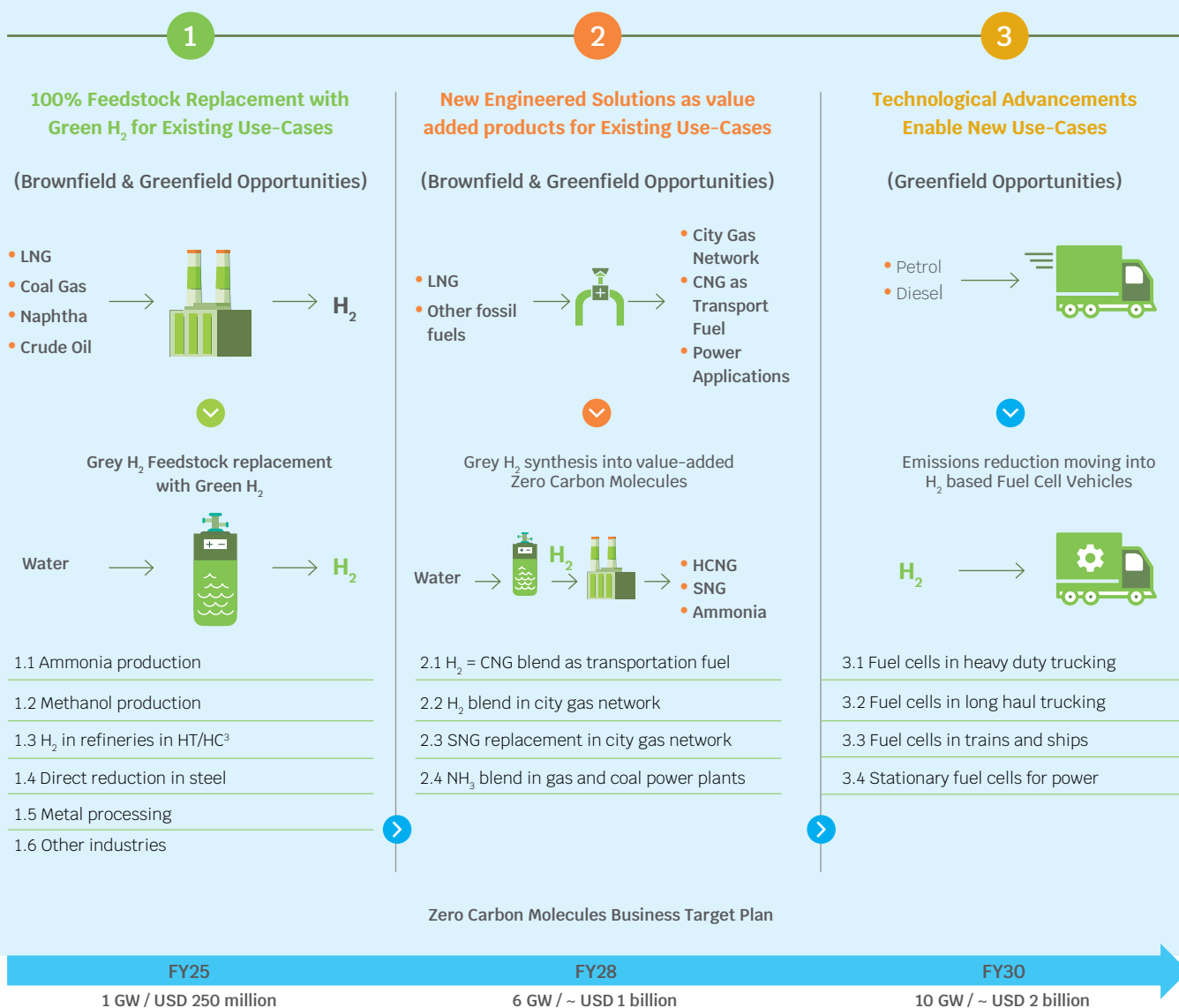
Green H₂ and Energy Carrier Architecture



Zero Carbon Molecules

This business models aims in producing Green Hydrogen through water electrolysis using RE power, Synthesising Green Hydrogen into value-added Zero carbon molecules, Hydrogen as fuel in Fuel cell electric vehicles (FCEVs).

Green H₂ and Energy Carrier Architecture



“Sustainable energy is essential for sustainable development. Greenko ZeroC is transforming sustainable energy architecture by manufacturing Green Hydrogen and Ammonia through firm RE and Alkaline electrolyser, which in the medium term accelerate the energy transition.”

Prasad Munakala
AVP, ZeroC

06

Our Performance Pillars

Prosperity – For All

People – Respect and Progress

Planet – Protect and Enrich



**Animala Wind Power Pvt Ltd,
Andhra Pradesh**

Message from the CFO



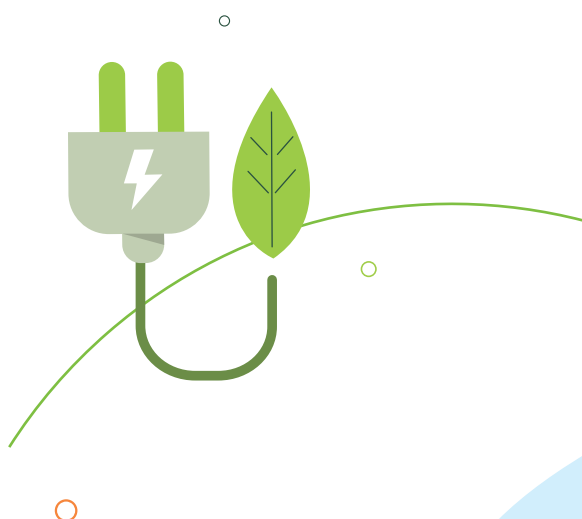
As a part of our journey towards GKO 3.0 and 4.0, we started to deal directly with customer for the sale of variable renewable energy through open access and firm renewable energy through innovative PPAs in keeping with recent provisions in the regulations for energy storage 4.0.

Dear Stakeholders,

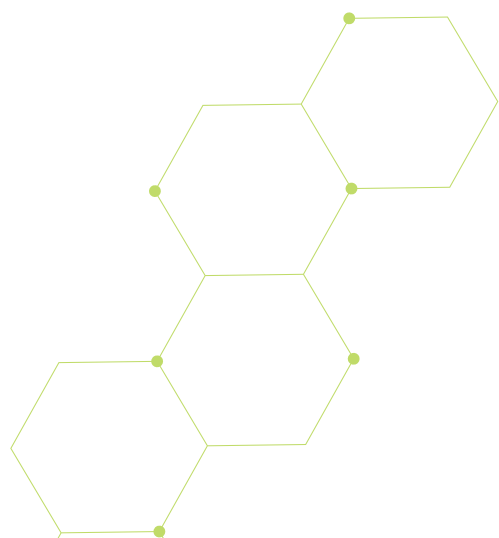
Through our fifth Integrated Report, we wish to present to you our non-financial as well as economic performance for the Financial Year 2021-22. We, at Greenko, endeavour to involve all the relevant stakeholders during the process of substantive decision-making in order to arrive at an informed and well-consulted decision. Due to our sustainable practices and balanced financial position, we have been amongst the top 3 clean energy companies globally. The Group has well diversified sources of revenue – diversified renewable generation technologies and diversified PPA structures, which include the Feed-in tariffs, APPC tariffs, and Third-party direct sales.

As a part of our journey towards GKO 3.0 and 4.0, we started to deal directly with customer for the sale of variable renewable energy through open access and firm renewable energy through innovative PPAs in keeping with recent provisions in the regulations for energy storage 4.0. We are integrating ESG into operations, and developing and deploying risk management framework.

We could enhance the RE generation by 16.07% in the current financial year by increasing our wind portfolio capacity by 14% over the previous year. We could also successfully raise funds to the tune of USD 750 million through green offshore bonds with our Net Debt to Equity ratio standing at 2.42x. Stable operations and improving receivables profile would help us in reducing our debt and improve our capex spending within the next 3 financial years. During the reporting period, our EBITDA rose by 24% from 430.74 (million USD) to 570.24 (million USD). Significant share of our capital expenditure is for developing and construction of our pumped storage projects. This also shows our commitment towards aligning our thoughts and investments with the expectations of our shareholders for investments to provide solutions for energy transition and industrial decarbonisation.



We could enhance the RE generation by 16.8% in the current financial year by increasing our wind portfolio capacity by 14% over the previous year. We could also successfully raise funds to the tune of USD 750 million through green offshore bonds with our Net Debt to Equity ratio standing at 2.42x



We strive continuously to align ourselves with the vision of our leadership for achieving Net Zero GHG emissions in our operations and mitigate the physical and transitional climate risks that our operations encounter. We endeavour to align our operations with the goals of UNSDG 7 Affordable energy, 11 sustainable cities and communities, 12 responsible consumption and production and 13 climate action.

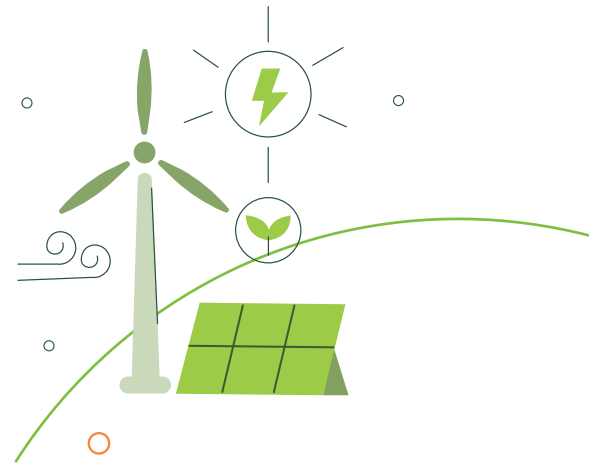
We shall continue to work towards generating economic value for all our stakeholders including the shareholders through responsible and sustainable operations and practices.

Vasudeva Rao Kaipa
Chief Financial Officer

Message from COO - GAM

At GAM, we strive constantly to optimise our operational efficiency by implementing circularity in terms of all aspects from raw materials to manpower. We are improving the performance and health of our RE assets by various measures including eliminating generation losses via reduction in reactive power requirements - through appropriate modifications to inverters - with OEM validation; inclinometer software correction for tracker operation of modules and use of vortex generators on WT blades for better aerodynamic performance. We use SAP, PM modules & in-house applications (GOMS) enabled platforms for procurement and inventory management to reduce the TAT - and achieve operational excellence. We constantly work on upgrading the skills of our manpower for independent O&M, predictive maintenance through state-of-the-art CMS technology, safety of operations to meet all the regulatory compliances.

Our WINSOM (in-sourcing of Wind Turbine O&M) is currently 3 years old and carries a glorious history of successfully managing over 1,100 MW of wind assets. We also understand that constant upgradation of knowledge base is critical for our business & therefore our CoE constantly works on accurate predictions with respect to our asset's health and condition as they age via using best-in-class technological interventions, enabling us to develop the root cause



Our WINSOM (in-sourcing of Wind Turbine O&M) is currently 3 years old and carries a glorious history of successfully managing over 1,100 MW of wind assets

analysis capabilities for critical components & working out on circularity options for silicon solar cells, lithium batteries etc. We have in place exclusive site-specific health & safety plans, which are constantly upgraded via awareness campaigns and regular interventions with respect to significant HSE aspects viz. electrical safety, working at height, Contractor Management and other vulnerable areas, steadily improving the safety culture. Our people are the foundation of our business and we have always believed in promoting a diverse and inclusive workforce while maintaining a safe workplace adopting global safety standards to make our shopfloors -GEMBA. We regularly align with third party with respect to baseline knowledge, competency & compliance and also have in place the CAPA for bridging the gaps.

We ensure that all GAM employees constantly upgrade their skills with respect to knowledge, competence behaviour with respect to continuous development by means of continuous L&D more via internal capacity building. Digitalisation plays an important role in decision making by means of dashboards with respect to operations, KPIs, improvement opportunities, alarm systems, seamless connectivity (high bandwidth connectivity, OPC, AWS Cloud storage), early warning systems, automated ticketing with escalation for job completion, digital recording of maintenance activities for review of diligence, quality and safety aspects & drone-based turbine blade inspection with automatic image identification for faster turnaround of repair/rectification works.

We generate value in GAM by having a meticulous approach to identifying, justifying economic value creation - VMP projects, such as: implementing POCs for Yaw mis-alignment correction to align the nacelle to the wind direction to extract the maximum energy from wind, VG Installation in V87, Blade hydro wash /LEP management (which helps in generating more lift for blade results in higher PR and generation), wedge connector installation in 33 kV line to reduce the line loss, installing trash rack cleaning system in Hydro plants for improving availability and repowering of solar plants by additional DC capacity.

We align with external vendors for a B2B integration, and we understand that a responsible sourcing is crucial to our business and brand value. We have an approved supplier list which is arrived through a systematic and critical evaluation. We also advocate green procurement by going paperless in our documentation. Some of the key considerations of our deep decarbonisation goals include evaluation of scope 2 emissions, LCA, carbon foot-printing etc. for our procurements.

We are opting for RE-based power for our solar and wind assets in non-generation hours. Open access allows

us for decarbonisation and HT consumption at 2 wind assets being replaced with green energy allows us for accessing more than 1 MW contract demand also meeting the regulatory requirement. We have also automated our power scheduling and energy billing in a fully automated initiative deploying robotic application (BOT).

Our rural development programmes are more focussed on improvising basic amenities for our rural communities especially in street lighting, solid waste management, potable drinking water, approach roads, skill enhancement for rural youth for creation of sustainable livelihood opportunities. We are also making our CSR commitments more robust and driving deeper impacts on the desired community by setting up metrics based on a bottom-line concept.

At GAM, we have conducted IMS awareness trainings for all employees including contract employees, in Operational Plants to set the platform for implementation of IMS across the GAM Sites. We have already established IMS Documentation in 100 Operational Plants including Business Continuity Plans and Health and Safety Plans. We created a pool of 99 internal auditors with the support of GIMS by engaging them in all kinds of audits to ensure the continuous compliance with the requirements, establishing a Green Company Rating System Framework with the support of GIMS, implementing it across 11 Operational Plants.

We have established RAMP (Risk Assessment & Mitigation Panel) team to manage the operational risks in GAM. The management methodology focusses on the process of dealing with risk, which includes risk assessment, risk decision-making, and implementation of effective risk controls. RAMP identifies the risks, devises mitigation plans, and evaluates the performance. Site level risk teams have been established that are actively analysing risk and monitoring mitigation performance concerning dependency on OEM, Contractor engagement & management, large correctives, operational competencies, emergency planning, system failure, re-engineering, non-compliances, cyber security, business continuity, change of law. The entire RAMP process is meticulously audited, documented, and in compliance with the integrated management system.

I wish to acknowledge the support and trust of all stakeholders in making Greenko's journey focussed and sustainable, meeting the set targets while delivering value to all stakeholders.

Haridas Menon,
COO, GAM

Message from COO – GEP

In line with the commitment made by Greenko towards Net Zero emission by 2040 against National Target of 2060, we have taken steps by identifying various projects across the country. While identifying the site, adequate care is taken in identifying large barren lands, good topography & favourable geological conditions with minimum loss to nearby villages, and minimal disturbance to natural flora & fauna.



We are on a continuous basis upgrading our technical knowledge and adapting new innovative technologies to reduce the time and cost

Our Pumped Storage Development Portfolio comprises of:

- a) Standalone closed loop off stream reservoirs
- b) Connected to catchment/stream linked reservoirs
- c) Pumping from existing lower reservoir schemes

Utilising the major Transmission grid system available across the country, we run the Pumping schemes with the help of Solar, Wind energy produced elsewhere in the country.

To bring the various experiences available across the world, we have selected Consultants with the experience and awarded them Owners Engineers role. By virtue, of having the various consultants like AFRY, TCE- EDF and SMEC as owners engineer, the knowledge sharing across the job site is being ensured and allowing us to explore new innovative ideas.

In the last one year, we could bring in interest among various E&M contractors like GE and Voith for various projects under pipeline apart from Andritz who is already engaged.

We have taken major infra companies like Larsen & Toubro, MEIL, HES Infra and Ritwik as Partners/Contractors for execution.

With inhouse Designs Team support and vast knowledge they bring to the table, we could bring the cost around ₹ 5 Crores per MW.

We have robust QA-QC & HSE support function to handle all associated assignments and in-house tests effectively and efficiently and with a periodical validation through certified accredited agencies/laboratories/institutions on critical parameters as well.

Risk assessment during various stages of the projects is being carried out and the mitigation measures are being taken time to time.

Our site-level organisation structure has a blend of in-house experienced crew along with outside industry

technocrats/experts with a view to build these projects on fastrack mode. These industry experts come with knowledge on advanced technology of latest construction methodologies. The Project Management team is on constant watch from time to time and corrective measures are taken to catch up schedule.

This year, considering the huge projects under pipeline, we have recruited 65 PGET's/GET's from reputed universities like IIT Dhanbad, IIT Hyderabad, NIT Warangal, JNTU Hyderabad and NICMAR. These trainees are given intensive training at Project sites to make sure that, they are ready to act independently in the next project postings.

The USP of all these projects is completing the Projects with 36 months from the date of start of construction. There is senior level committee that is formed to address technical challenges which we encounter during the execution and these specific challenges are addressed in a timebound manner within 72 Hours, thus helping the project schedule.

We have also adopted new innovative ideas by moving from AFRD to GFRD and Rock fill embankment to CSG dams. By moving from Rock fill embankments to CSG, we could create an additional storage capacity and thereby having an option to increase overall rated capacity of the projects. We have created cross passages in Tunnels to ensure no slippages in critical path timelines.

We have created a robust CCTV surveillance system in the project, wherein all the critical components of the projects are live streamed and being monitored.

I strongly believe that with the positive attitude and expertise available within the team, I am confident that, we will commission Pinnapuram Project in the next financial year.

Wishing a grand success & bright future ahead.

Krishna Tungaturthi
COO, PSP & IREP

Message from COO – ZeroC

Greenko ZeroC is a manifestation of our founders' vision to create increased energy security for India, enable India to export energy out for the first time and lead deep decarbonisation for the industrial sector. Our utility scale integrated renewable energy storage platform delivering 100+ GWh of RE-RTC (Renewable Energy Round-The-Clock) carbon free energy, coming online by 2027, will allow us to not only integrate renewables with industrial sector but also be the key driver to generate carbon emission free molecules, via Green Hydrogen. Our unique architecture with capable and motivated teams will allow us to do this at the most competitive costs globally, outpacing countries like Australia, Middle East, Chile, and others.

In our first year, to secure our supply chain of electrolyzers – a key Green Hydrogen technology requirement along with RE-RTC, with limited availability globally, we have entered an exclusive partnership for the region with John Cockerill from Belgium. John Cockerill is the largest electrolyser manufacturer in the world with 33% market share. They are the sole producer of the most powerful electrolyser stack in the world capable of generating 1300 Nm³/hr of hydrogen rated at 6.5 MW per stack. Together, we will be establishing a 2 GW per annum production capacity electrolyser factory in India, the largest



Our project pipeline includes 100 KTPA production in Himachal Pradesh, 1 MTPA production each in Andhra Pradesh and Tamil Nadu and a 1 MTPA joint production with ONGC



of its kind globally. This will give ZeroC strategic depth in this nascently evolving domain while also showcasing our leadership in the “Make in India” objectives of the Indian government.

Further demonstrating our unique Green Hydrogen architecture, we have established strong partnerships in both domestic and international markets including for export and production of Green Hydrogen & Green Ammonia. We have signed unique partnerships with the likes of Uniper from Germany, POSCO from South Korea, Keppel from Singapore among others for offtakes and joint investment accords with ONGC and others, all globally reputed names in their businesses. It is estimated that the market potential of hydrogen is ~100 GW in the long term. A 1 GW of green hydrogen project, we will entail an investment of USD 3.5 billion. across the entire value chain. This presents an opportunity for the country and Greenko ZeroC has ambitions on being a leading player in this emerging new energy market. The above steps, including significant policy advocacy with both GOI and various state governments position us towards achieving significant growth ambition for our organisation in the coming decade.

On the projects front, GZC is developing a capacity to produce 3.1 MTPA Green Ammonia. We will serve in not only substitution of grey industrial feedstock but also export for new-age applications of power generation and mobility, both domestically and globally. Our project

pipeline includes 100 KTPA, production in Himachal Pradesh, 1 MTPA production each in Andhra Pradesh and Tamil Nadu and a 1 MTPA joint production with ONGC.

On the operational side of the business, we have developed a strong team of key experienced professionals from oil & gas, fertilizer, design, and process engineering background with a cumulative experience of over 200 years in our unit. This year, we plan to significantly expand our team under various verticals of engineering, project management, procurement, business development, finance, and others.

We have leveraged Greenko's established effective management practices with implementation of our GIMS, HRMS, GMAT and other systems and processes across the business. We are confident of delivering affordable zero carbon fuels to the global markets starting 2024 to enable global energy transition.

I wish to acknowledge the support and trust of our leadership, the ZeroC team and the wider Greenko family in making Greenko ZeroC's journey thus far highly successful. We will continue in our endeavour for excellence and success on all fronts, delivering value to our stakeholders in the coming years.

Gautam Reddy Kumbam

COO – Greenko ZeroC



Schematic of Ammonia Plant at Kakinada



Prosperity - For All

Financial Capital

Manufactured Capital



**PSP Pinnapuram,
Andhra Pradesh**

Financial Capital

Strategic Approach

Greenko is committed to transitioning to a clean energy business and in doing so, has kept its focus on decarbonisation, digitalisation and decentralisation. Greenko harnesses opportunity as the country and the globe is transitioning to new energy that is consistent with the Paris climate goal and ambition. As this requires significant patient capital, Greenko continues to improve its debt capacity and access to capital.



Our Performance

Debt Capacity and Access to Capital

In this financial year, Greenko has committed itself to generate more value for all the stakeholders despite macro-economic headwinds. The Company ensured continuous capital generation and a robust growth by strengthening its financials through various approaches of debt capacity improvement and increased access to capital.

Greenko Group is committed to creating value for all its stakeholders and strives to uphold its credit ratings over the period. In FY 21-22, Greenko has been rated Ba1 by Moody's Investor Services and BB' by Fitch Ratings which goes

on to prove that Greenko Group has over the years focussed on wealth generation for all its stakeholders. Over the years, Greenko has worked on de-risking its bondholders through a good track record over all the existing bonds as well as the

introduction to amortising bonds. Such a rating has led to the Group having a much easier access to a varied source of funds for its capital generation.

Access to Capital KPI

KPI	FY 21-22	FY 22-23 (H1)
Green Bond Issuance	1000 million USD	750 million USD
Ratings by Moody's Investor Services	Ba1	Ba1

Organic and Inorganic Growth

Greenko, through continued efforts has increased its renewable energy generation by 16.8% in FY 21-22 from 9,745 GWh (2021) to 11,385.6 GWh (2022). This is on account of the full year operations of Orix Wind Portfolio (1,505 MUs) and the commencement of 100 MW Hydro Project in Himachal Pradesh (58 MUs).

Greenko increased its installed capacity by 190 MW in FY 21-22. To achieve this, Greenko acquired 90 MW of renewable energy assets.

Greenko had a fruitful financial year as the Company's revenue from wind energy projects increased by 32.3% as compared to FY 20-21. On account of the increase in operational capacities in the solar plants, the revenue from solar energy projects increased by 3.7%. At the same time, the Company also achieved a 25.2% increase in earnings from the hydropower projects primarily from

the EPPL acquisition leading to an increase in capacity.

After transforming from GKO 2.0 to GKO 3.0, this year as a part of GKO 4.0, Greenko looked to decentralise its operations. As a part of decentralisation, the Company took to dealing directly with the renewable energy customers. In this ever-evolving scenario Greenko has kept up with its growth, both organic and inorganic and has positioned itself as a competitor to look out for.

Intelligent Renewable Energy and Storage Platforms

Currently, four IRESP projects are under development across 4 states of India with a total capacity of 15.82 GW. IRESP 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.

ZeroC Molecules

As a part of Greenko's plans to be a Energy and Industrial decarbonisation solution provider, Greenko has entered into :

- A JV with Belgium-based John Cockerill to manufacture electrolyzers with annual capacity of 2 GW
- Establishing One 100 KTPA Green Ammonia production plant at Una in Himachal Pradesh
- Establishing 1 MTPA Green Ammonia production plant in East Coast of India
- Jointly with ONGC, establishing 1 MTPA Green Ammonia production plant in west coast of India

Organic and Inorganic Growth

KPI	End of March 2022
Capital invested in IRESP	~ USD 450 million

Financial Capital

Revenue Growth

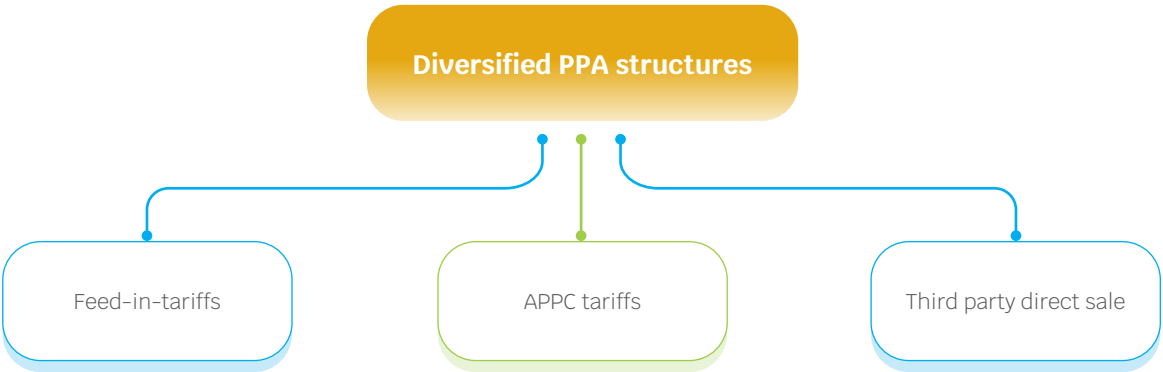
Greenko Group due to its sustainable practices and balanced financial condition has been able to place itself in the top 3 clean energy transmission companies in India. The Group has heterogenous sources of revenue – diversified renewable generation technologies and diversified PPA structures.

Diversified source and renewable technologies



Diversified PPA Structure

The Group capitalises on the different power generation sources it has tapped on and which ensures that there is secure and seamless power generation and distribution throughout the year through the various seasons. By aligning itself with solar, wind and hydro power sources of energy generation, Greenko Group has been able to mitigate the risk arising from the non-firm nature of renewable energy sources. Greenko Group understands that long-term PPAs with federal and state agencies are the leading power sale options for renewable developers in India.



Revenue Growth

KPI	FY 21-22	FY 22-23 (H1)
Revenue Collection Efficiency	76%	114%

Diversified Revenue Sources

KPI	FY 21-22	FY 22-23 (H1)
Revenue received through Generation Based Incentive	28.5 million USD	24.02 million USD
Revenue received from power trading through IEX	INR 221.4 Cr	INR 470.26 Cr

KPI (all units in MU)	FY 19-20	FY 20-21	FY 21-22	FY 22-23 (H1)
Saleable electricity (Excluding Import Energy and line losses)	9,969	8,862.67	10,725.91	10,658.19
Sale of electricity to utilities (PPA / Feed-in tariff)	7,879.18	7,873.50	9,633.83	9,263.64
Sale of electricity through Wheeling and banking (direct sale to consumers)	620.01	637.34	610.15	602.40
Sale of electricity through exchange	403.54	350.84	481.93	792.14

In 2021-22, the Company sold 5.68% of the power generated through open-access space (B2B segment).

KPI (all amounts in million USD)	FY 19-20	FY 20-21	FY 21-22	FY 22-23 (H1)
Profit before taxation	64.8	-154.96	-15.92	194.49
Profit for the year	21.5	-208.2	-75.96	152.28
Earnings before interest, taxes, depreciation and amortisation (EBITDA)	562.42	430.74	570.24	383.48
Total Revenue	660.9	594.9	723.05	461.5
Revenue from Wind energy projects	379.4	316.1	418.1	270.89
Revenue from Solar energy projects	212.3	201.6	209.08	99.69
Revenue from Hydro energy projects	67.5	76.6	95.9	90.92
Other operating income	1.6	2.5	3.75	0.6
GBI revenue	25.7	21.4	28.5	24.02
REC certificates	5.1	0.1	9.2	1.72
Employee benefits expense	28.6	61.2	33.28	15.68
Cost of material and power generation expenses	56.2	57	72	34.86
Other operating expenses	24.3	38.6	35.36	21.44

We have witnessed higher losses in FY 20-21 which is on account of abnormally low wind season across the industry which contributed to revenue loss. Further, there were some non-cash expenses in FY 20-21 which reduced the PAT. With the transition of focus from standalone renewables to pumped hydro projects, Greenko Group is set to reduce the resource risk on an overall portfolio basis in the coming year.

Seamless Fund Flow to the Targeted Objective

Greenko has effectively raised debt and equity financing for its projects. Both debt and equity financing clearly lay out the use of proceeds for these are earmarked to the projects. Thus, the flow of funds once decided towards targeted uses is seamless.

Financial Capital

Accessing Sustainable Financing through Green Bonds

Global energy infrastructure needs and the increasingly pressing

challenges and risks associated with climate change present the world with an unprecedented investment opportunity related to the transition to a low-carbon climate resilient economy. Green bond signifies

the commitment to exclusively use the funds raised to finance or “re-finance” green projects. It is a fixed-income financial instrument for raising capital from investors through the debt capital market.

Greenko Group ensures complete transparency and accountability of the proceeds of the green bonds.

In November 2017, Greenko raised

₹ 30 billion

through the sale of onshore rupee denominated bonds which will mature in 2027.

In March 2020, Greenko has raised

USD 940 million

through the green bond issue priced at **3.85%**.

In March 2022, Greenko has successfully raised

USD 750 million

through green offshore bonds priced at **5.5%** with maturity after 3 years.

In July 2019, Greenko Energy Holdings raised

USD 950 million

through green bonds. The issue was oversubscribed by over three times and was one of the largest green bond issues by a renewable energy Company.

In March 2021, Japanese financial services Company

Orix Corporation acquired a **21.8%** stake in Greenko Energy Holdings in exchange of

USD 961 million.

Sustainable Financial Partnerships

Greenko Group understands the importance of the strategic sustainable partnerships hold in the long term for wealth generation for the Company. In the last financial year Greenko Group has been committed towards the same by entering in to two partnerships to augment its hydro energy storage pipeline. ArcelorMittal and the Greenko Group entered into a strategic partnership to construct a round-the-clock 975 MW nominal solar and wind project.

The project entails an investment of USD 600 million and is expected to be commissioned by mid-2024. Greenko's hydro pumped storage project will be utilised to overcome the intermittent nature of wind and solar power generation. Greenko is also responsible for designing, constructing and operating the renewable energy facilities, which will be based in Andhra Pradesh.

The Group also signed an agreement with John Cockerill, a Belgian manufacturer of alkaline electrolyzers, in March 2022, to jointly develop

market initiatives for green hydrogen electrolyzers in India.

In March 2021, Japanese financial services Company Orix Corporation acquired a 21.8% stake in Greenko Energy Holdings in exchange of USD 961 million. As per the agreement, Orix also added 873 MW of its wind energy portfolio in India to Greenko's portfolio in exchange for the shares.

“As a major emitter of CO₂ and indispensability of its products to global energy transition; the chemicals sector is due for a move to a low-carbon, circular economy with its own commitments to decarbonisation. The sector has started to warm up to decarbonisation need largely due to investors, consumer, government, and regulatory pressure. As part of the European Green Deal, the European chemical sector has committed to carbon neutrality by 2050 to help achieve the climate resolve. Major chemical companies like Dupont, Dow Chemical and others have announced significant initiatives focussed on sustainability.

Partially, chemical industry’s long-term emission targets can theoretically be achieved by maximising energy and resource efficiency; however, remaining targets relate to Scope 2 and Scope 3 emissions that occur in the upstream and downstream value chain. Greenko, with its competitively priced firm & dispatchable carbon free energy and zero carbon molecules, is ideally positioned to decarbonise the chemical sectors at all levels of value chain. Several chemicals, with round-the-clock power as significant cost of production, can be Greenko’s primary focus to dominate the low carbon chemicals market in India and globally. Examples of such chemicals include Caustic Soda, Methanol, Ethanol, Aviation Fuel and Ammonia Sulphate.”

Vinay Rungta

Senior VP, Strategy and M&A



Financial Capital

EU Taxonomy Conformance






The EU Taxonomy Regulation provides a systematic classification system based on objective criteria for identifying environmentally sustainable economic activities. In addition to promoting sustainable investments, the EU Taxonomy Regulation also helps companies prepare for the Net Zero transition and supporting investor security and transparency.

The percentage of a Company’s revenue, operational costs, and capital expenditures that can significantly contribute to at least one of the EU’s environmental goals must be disclosed in accordance with the EU taxonomy. The EU taxonomy requires the disclosure of financial data related to the economic activities included in delegated acts on climate change adaptation and mitigation.

Greenko followed the 5-step process as below to arrive at financial metrics that demonstrate Greenko’s economic activities in climate change adaptation and mitigation:

Implementation process

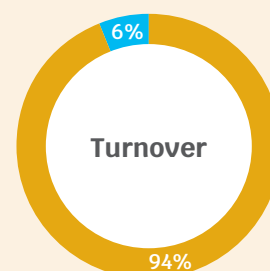


-  Identifying the eligible activity from the list defined in delegated acts mainly accounting to the European NACE nomenclature.
-  Compliance with technical criteria – analysis of criteria for substantial contribution to at least one of the environmental objectives.
-  Checking whether the identified economic activity has no significant harm to any other objectives.
-  Meet minimum social safeguards (Human rights and principles, fundamental rights at work, and labour rights).
-  Calculation of KPI’s (Turnover, Capex, and Opex).

EU Taxonomy Financial Metrics

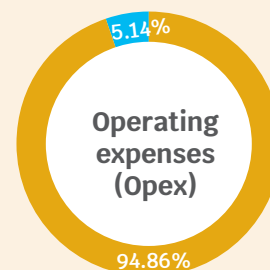
Turnover

- Eligible Turnover – 94%
- Non-eligible turnover – 6%
- Eligible turnover was mainly derived from electricity generation from hydro, wind, and solar power
- Non-eligible turnover primarily concerned with the net sale of power to end-user (Activity not covered by EU taxonomy)



Operating expenses (Opex)

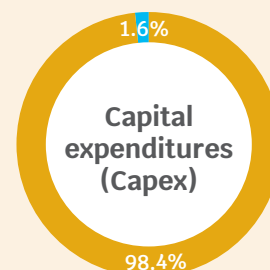
- Eligible Opex – 94.86%
- Non-eligible – 5.14%
- Opex is mainly derived from operation, maintenance of non-current assets, repair costs and any other direct expenditures relating to the day-to-day servicing of assets of hydro, wind, and solar power plants and amount spent on R & D
- Non-eligible Opex primarily concerned with other activities like logistics, information technology and telecommunication equipment, consumer electrical and electronics etc.



Capital expenditures (Capex)

- Eligible Capex – 98.4%
- Non-eligible Opex – 1.6%
- The investments reported in accordance with IAS 16 and IAS 38
- Capex mainly derived from the investments made on the generation of electricity from wind, hydro and solar power
- Non-eligible Capex primarily concerned with the investments made on other activities like logistics, information technology and telecommunication equipment, consumer electrical and electronics etc

(IAS 16: applies to the accounting of property, plant and equipment, IAS 38: Intangible assets)



● Eligible ● Non-eligible

Looking Ahead

The world requires significant patient capital to achieve the goals and ambition of Paris Climate Agreement. Greenko with an ambition to be the leading decarbonisation solution platform, desires to assemble all elements necessary for decarbonising energy and industrial sectors. The values, existing shareholder trust, diligent financial practices and the compulsive business model will be the levers for raising capital as needed.



Himachal Sorang Power Pvt Ltd,
Himachal Pradesh

Manufactured Capital

Strategic Approach

Greenko shall deliver variable electricity, storage services, dispatchable RE, green hydrogen, green ammonia, and green methanol, with plans to blend hydrogen into city gas.

On the path to becoming a true integrated decarbonisation solutions Company, Greenko's three pillars – Renewable Energy Generation (GAM), Long Duration Energy Storage (PSP) and Zero Carbon Molecules. These three pillars shall reinforce our mission towards a greener and cleaner tomorrow.

Under each pillar, Greenko has established strategic areas of focus and performance indicators. The Company analyses data and creates plans to accelerate the progress in each focussed area.

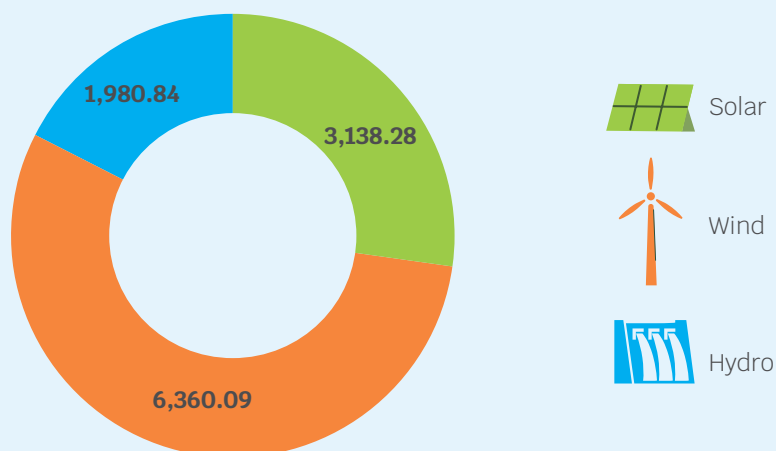
Our Performance

Excellence, Adoption and Management of Assets

In FY 21-22, the Group's assets produced 11,479.20 MU of energy in total, an increase of 16.07% from the previous year FY 20-21 (9,889.67 MU). The Group owes this improvement in performance to the significant uptick in wind energy output, which generated 1,523.95 MU more than the previous year – a 31.54% increase.

With a considerable rise of 37.25% from the previous reporting year, Greenko's total installed capacity for FY 21-22 stood at 5,936.35 MW (4,325 MW, FY 20-21).

Total Generation (in MU)



Performance Highlights

17.4%

increase in the
saleable electricity

14.4%

increase in total
energy generation

7.3 GW

of total operational
capacity

135

Total operational projects
across 15 states

A detailed breakup of the operational performance of Greenko's Assets is given below for last three financial years:

S. No.	KPI	Units	FY 19-20			FY 20-21			FY 21-22		
			Hydro	Wind	Solar	Hydro	Wind	Solar	Hydro	Wind	Solar

Operational Performance

1	Plant load factor	%	46.2	27.2	24.4	44.5	24.4	24.5	41.9	23.12	23.4
2	Plant availability factor	%	97.5	98.15	99.48	94.9	98.3	93.1	97.3	97.68	99.67
3	Grid availability	%	98.37	99.26	99.46	99.07	98.8	99.5	99.5	98.95	99.72
4	MTBF	Hours	1,860	1,564	NA	2,985	1,624.6	NA	2,487	1,607	NA
5	Total generation achieved	MU	1,633	5,118.2	2,813.25	1,909.7	4,831.55	3,148.42	1,981	6,355.5	3,154.47

Generational Losses

1	Due to equipment failure	MU	70	34.93	14.38	19.4	47.3	11.7	20.5	16	12.92
2	Due to external grid failure	MU	30	6.2	9.74	10.6	7.95	7.7	13.6	7.8	9.83
3	Due to internal grid failure	MU	6.5	19	7.6	12.9	20.84	2.3	2.67	22.58	2.74
4	Due to LDC curtailment	MU	14.5	739.76	191.2	12.5	388.4	58.5	1.2	231.7	34.4

A detailed breakup of the operational performance of Greenko's Assets is given below for CY 2022:

S. No.	KPI	Units	CY22		
			Hydro	Wind	Solar

Operational Performance

1	Plant load factor	%	43.87	22.7	23.76
2	Plant availability factor	%	94.81	97.0	99.63
3	Grid availability	%	99.40	98.8	99.81
4	MTBF	Hours	3,199	1,179	1,739
5	Total Generation achieved	MU	2,265	6,227	3,203

Generational Losses

1	Due to equipment failure	MU	25.05	32.1	18.45
2	Due to external grid failure	MU	13.51	11.6	8.06
3	Due to internal grid failure	MU	2.90	10.5	included in equipment failure
4	Due to LDC curtailment	MU	2.92	60.9	10.20

Manufactured Capital



**AMR Power Pvt. Ltd.,
Karnataka**

The reported generating losses are the result of equipment failure, internal and external grid failures, and LDC curtailment. Greenko is committed to enhance the efficiency of its assets, and all the Company's equipment is routinely updated and maintained to ensure minimal losses.

The operation and maintenance (O&M) of the Company's large-scale infrastructure are benchmarked to best practices in the industry to ensure high quality output by the Company's diverse plants.

Performance Improvement through Effective Systems

The continuous effective operation of Greenko's assets is essential to the Company's capacity to provide reliable and affordable electricity. The diversity of knowledge and experience held by Greenko forms the foundation of asset management capabilities to achieve excellence in performance.

Predicting Downtimes

- Greenko has developed strategic asset management systems and processes under PPS (People, Process, System) to increase operational efficiency and effectiveness.

GATS (Greenko Asset Tracking System) and GOMS (Greenko Operations and Maintenance System)

- The next step is to monitor and oversee the progress of the ongoing tasks after the tasks have been determined and prioritised. For accomplishing this goal, Greenko has implemented the GATS (Greenko Asset Tracking System). Additionally, Greenko has deployed GOMS (Greenko Operations and Maintenance System) to track maintenance activities and notify of any schedule or quality deviations.

Drones and Thermal Imaging

- With the aid of drones, Greenko performs routine audit inspections to inspect and maintain the asset's performance and health. Thermal imaging technology is used by Greenko for aerial mapping and to monitor the condition of the solar panels. Greenko also identifies issues, if any, with the wind turbine engines, gearboxes, or blades through their thermal imaging capabilities. To detect and address irregularities, Greenko also conducts routine thermal imaging of Power Cables and Power Cable joints. These predictive tools help the Company operate better and increase asset availability.

Value Creation

WINSOM – Wind In-Source of Operation and Maintenance

The Original Equipment Manufacturer (OEM) used to be the only party responsible for the operation and maintenance of Greenko's wind portfolio (OEM). Greenko has adopted an in-source maintenance strategy for the wind assets to maximise asset performance and reduce O&M costs. This was done after a thorough study of risks and opportunities. The overall amount of wind generation capacity included in the WINSOM programme

climbed to 560.5 MW during the current reporting period. The multiskilled employees of the Group have been encouraged to participate as a result, preventing any manpower stagnation and introducing a more independent approach to O&M.

Each WINSOM site showed a significant boost in performance and helped to seize untapped energy-harvesting prospects. The following advantages resulted from it:

- Implementation of best-in-class asset management practices
- 360-degree care of WTG assets
- Material sourcing and inventory management
- Identifying and addressing technical issues at the earliest

Health and Safety Management

According to Greenko, all incidents are preventable, everyone on-site has a responsibility to help prevent accidents at their level. Greenko provides a safe and healthy environment for everyone involved in asset management, including staff

members, vendors, contractors, and visitors. To guarantee legal compliance, reduce risks, and protect the employees and others impacted by business operations, Greenko Asset Management teams set the goals and targets for all its assets.

To safeguard the health and safety of those involved in the project, Greenko creates a project-specific health and safety plan. All consultants, visitors, and subcontractors are required to follow the guidelines of health and safety plan.

Energy Value Pools Harnessed

The Company saw 21% increase in the saleable electricity and generated 22.3% and 37.36% increase in the sale of electricity to utilities and the sale of electricity through exchanges respectively.

KPI (in MU)	FY 19-20	FY 20-21	FY 21-22	CY 2022
Saleable electricity (Excluding Import Energy and line losses)	9,969	8,861.67	10,725.91	10,658.19
Sale of electricity to utilities (PPA / Feed-in tariff)	7,879.18	7,873.50	9,633.83	9,263.64
Sale of electricity through Wheeling and banking (direct sale to consumers)	620.01	637.34	610.15	602.40
Sale of electricity through exchanges	403.54	350.84	481.93	792.14
Under Value Pool's			Budhil earned ₹ 63.94 lakhs by sharing infrastructure (transmission line) with HPSEB	

Manufactured Capital

Excellence, Adoption and Management of Projects

Greenko employs Greenko Energy Project Systems (GEPS), an analytical management system for tracking its project. It is a specialised, cutting-edge project monitoring system designed for real-time agile project management, QA/QC, engineering, logistics, material management, storage. GEPS includes a business intelligence system that enables tracking and monitoring down to the micro level with crucial areas being highlighted based on the project timeframe. Document Management System (DMS) is also a component of GEPS.

To balance the grid, Greenko will soon be able to deliver on-demand power through its IRESPs, that may be scheduled based on peak and baseload requirements. IRESPs can offer DISCOMs a supplementary storage through efficient grid balancing services which will lead to minimal storage loss. The grid receives planned and flexible power from the IRESPs, which are storage infrastructure platforms with digital connections that harness the power of various renewable resources.

Project Management and Control (PMC)

PMC is tasked with establishing standards and guidelines for the project, while upholding Company's values and the industry standards. PMC is also tasked with supervising and managing each project's entire lifecycle from conception to completion.

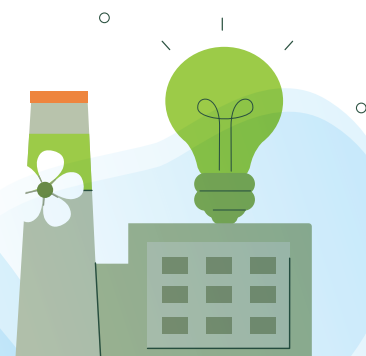
The main duties of PMC are:

- Evaluates scheduling, planning, and resource monitoring
- Approves the construction techniques for the essential elements
- Adapts the schedule based on developments
- Reviews and fixes any interface problems

“Greenko, with successful years of experience in planning and execution of Renewable Energy projects, has undertaken execution of multiple IRESPs with ambitious timelines and quality standards. We are deploying the power of technology, experience and commitment of teams, to complete the Pinnapuram Pumped Storage Project on time. The team understands the criticality of timely delivery of storage services for achieving the decarbonisation targets.”

Mahalik KC

SVP, PMC



Engineering and Design

The team goes through the entire design cycle when designing, which includes conceptualisation, design, and awarding work to vendors or contractors. This team examines the designs given by vendors during execution, checks the execution periodically for compliance with the design goals, and offers technical support among other things. As the execution is finished, the team trains the O&M team, walks them through all technical intricacies of the design as performed, and does periodic reviews of operations and asset health.

Tools used by Engineering and Design

Electrical Transient Analyser Program (ETAP) is a unified engineering and real-time platform used to model, design, visualise, analyse, predict, control, and provide insight on management and performance of electrical power systems. This tool is used by Greenko's Electrical AC Designs team to conduct power system analyses such as load flow, short circuit, coordination of the protection relays, etc.

The ETAP platform will give an active blueprint of the electrical system with automated rule-based design, model-driven predictive analysis, co-simulation platform, operator training simulation hub, combined with real-time analytics, intelligent control, and asset performance monitoring.

Digitisation and Automation in Projects

Greenko intends to reduce the amount of hard copy records by using digitalisation to automate several documentation processes to simplify the handover process, lower the maintenance requirements.

Uploading design files and drawings to DMS

Virtually scheduling all the engineering meetings with internal and external stakeholders and using GMAT to digitally record engineering meeting minutes

Recording and storing papers on an electronic server for access and thus avoiding hard copies

Standardisation of PSP technical specifications

Calculations for cable sizing and powerhouse layout sizing estimates

Digital review and approval of design documents and drawings

Digitally distributing action items using GMAT



Manufactured Capital

Quality Management

Greenko believes maintaining high standards of quality and efficiency of the existing assets is just as crucial as extending the asset portfolio and optimising returns. “Maintaining uncompromised quality standards in building and operating energy assets” is the motto of the Quality Management Department (QMD) at Greenko.

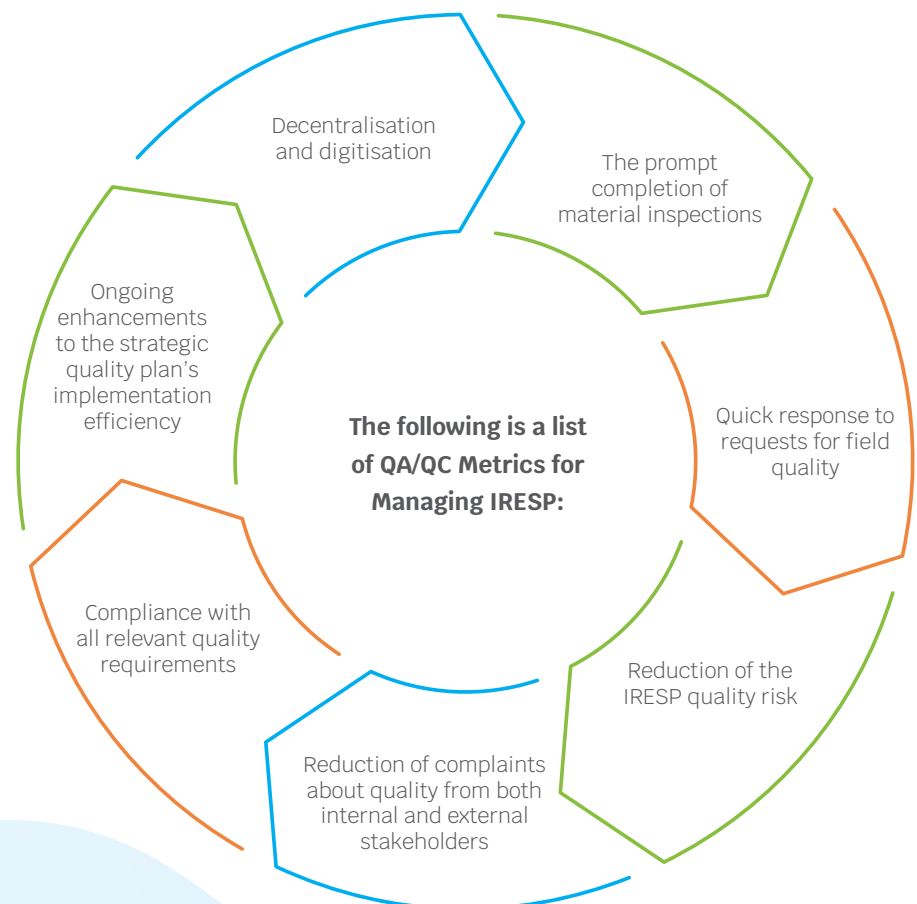
QMD is crucial in guaranteeing quality from the project's conception until its handover. The fundamental tenet is to prioritise “defect avoidance above defect discovery”. The QMD has formulated a well-defined, comprehensive Quality Management Plan covering the various aspects such as Policy & Objectives, Context Management, Project Organisation, Communication Management, Design and Engineering Management, Vendor Management, Quality Control and Assurance, Audit Management, Deviation Control, Document Management, Training, IT Management, and HSE Management.

QMD oversees implementing quality control measures across the Company's operations. A robust set of standards have been formulated to ensure that the highest level of quality is maintained for the procurement of raw materials used in the execution of the projects. With the help of strategic level policies and operations, the team can decide on its priority areas, methodologies, and processes, as well as to incorporate quality control components into key project phases.

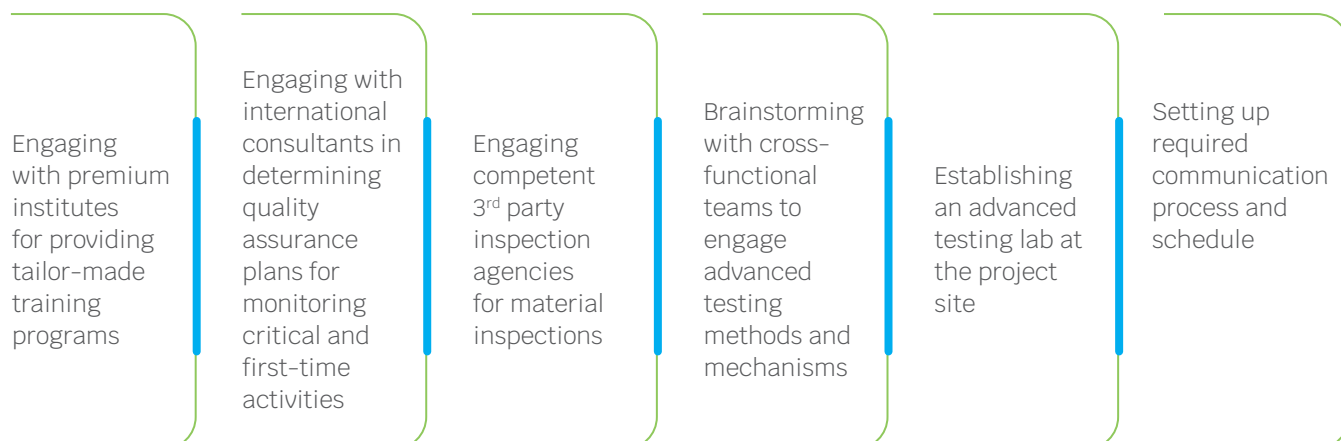
QMD process has been digitalised to uphold excellence and the highest standards of quality, allowing all forms to be completed online and records to be stored in a portal that is accessible whenever additional information is required.

For the QA of IRESP, the QMD has created and adopted a quality management plan. A “Quality Assurance Handbook” with Civil, Electrical, and Mechanical procedures has also been created. These protocols are created based on national and international norms and codes that have been implemented to comply with Greenko's requirements.

All phases of the building of the IRESP project utilise best standards in quality assurance. For IRESP stages like engineering, procurement, construction, and pre-commissioning, QMD has mapped interaction and influence zones. To assure the accuracy and completeness of the design parameters, the organisation conducts multistage reviews of the engineering and designs at each stage.



Greenko has developed some cutting-edge and novel approaches for controlling IRESP, taking the complexity scale, etc. into consideration. These practices include:



Quantity Surveying

The quantity surveying function begins at the project's commencement and extends through the preparation of the best quantities, initial project cost preparation, cost planning, and contract model recommendations. Along with managing project spending, disbursement, and payment recommendations based on the job completed, it also targets audit preparedness with precise documentation. The function's ultimate assurance is the closing of all accounts and contracts, the completion of the project, and the release of securities following successful fulfilment of all implied warranties.

Project site inspections are scheduled once a month or as necessary, and HO QMD performs internal quality assessments. The observation points are recorded and followed up on until they are

resolved. If necessary, site QMD will raise the problem as an NCR using the deviation management system.

Intelligent Energy Platform – Greenko's Dispatch Center

Greenko has extensive database within its SCADA systems. Network management solutions are being developed by Greenko in conjunction with leading industry experts like PRDC, Siemens, and OSI to support the Company's Energy Solutions with AI/ML-based energy scheduling and dispatch capabilities.

The IRESPs are anticipated to use storage technology that is digitally connected to solar and wind resources to schedule and provide flexible power to the grid. The IRESP also enables Greenko to offer various contract options to off takers to meet their demands in a timely manner.

Performance Improvement through Effective Systems

- Greenko Energy Project System

Once the tasks have been determined and prioritised, to oversee the progress of the ongoing tasks, Greenko has implemented GEPS.



“Completion of PSP without cost and time overrun is critical to decarbonisation plans of many of our partners and customers. The project teams are making best efforts and are confident that the first PSP will be operational during this year.”

Srinivas Naidu A
DPD, PSP

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Value Creation

Value Creation Initiatives across Portfolio

Solar	Hydro	Wind
Indigenisation of AP-90 Single Axis Tracker - SW & HW	Repair cycle time reduction through Establishment of Mechanical Workshop in Budhil HEP for Hydro Operations	CoE Powering WINSOM initiative
Minimising HT Bills by controlling Reactive Power	Reducing Downtime by Installing Trash Rack Cleaning Machine (TRCM) at Dikchu	Predictive Maintenance through Condition Monitoring System
Eliminating Generation loss due to Inclinometer Failure	Cutting down Turn-Around-Time (TAT) to 50% through Accelerated cleaning of De-Silting Chamber	Expanding Supply Chain through Vendor qualification of TDPS for ReGen Generator repair
Recovering Generation loss by modifying external Transmission Line	Improving the Yield of Jogini HEP - from 39MU to 70MU	Reducing time to clean Turbine Blades with Drone equipped Hydro wash
		Reducing Breakdowns deploying Proactive Partial Discharge Measurements

Value Creation Stories:

Summary:

Project	Location	Key Benefits
Cutting down on Turn-Around-Time (TAT) to 50% through Accelerated cleaning of De-Silting Chamber	Swasti Power Pvt. Ltd., Bhilangana HEP, 22.5 MW	<ul style="list-style-type: none"> Approx. 2 MU gen was saved by reducing the shutdown period. (Previous event 2.8 MU generation loss, this event only 0.8 MU generation is lost, against this de-silting chamber cleaning activity) Smooth operation of the Plant in coming peak season & prevention of the damages/abrasion caused to Turbine underwater parts Better resource planning & execution for HR
Reducing time to clean Turbine Blades with Drone equipped Hydro wash	Basavana Bagewadi Taluk, Bijapur District, Karnataka	<ul style="list-style-type: none"> Elimination of hazard of work at height Reduction of turbine down time from 4 days to 1 day Saving of generation loss of 4,500 units during low wind period
Eliminating generation loss due to Inclinometer Failure	Tamil Nadu, Karnataka, and Andhra Pradesh Solar PV Plants	<ul style="list-style-type: none"> After this modification, even during the rainy season the sensor operation is good Earlier parallel connections were used for some trackers due to sensor failure. Manpower utilisation was there to do the parallel connection and usage of cable from one tracker to another. Both manpower and cable utilisation have been nullified With the modification in the tracking system by connecting the system in parallel, the response lag in the tracker is nullified which helps in minimising the generation losses During the sensor failure, the generation loss of 4.5 MUs loss per month, that is saved with this elimination, with revenue of ₹30,60,000/- per month is saved in all three sites

Contracts and Procurement Management

Greenko strives hard to drive sustainability not only across its operations but also across its value chain. For the same, the C&P department at Greenko continuously improves its internal procedures, conducts proactive risk analysis, and collaborates with all its suppliers and contractors. The C&P team also strives to embrace circularity in its operations and supports its suppliers for the adoption of more sustainable practises by interacting closely with its suppliers and contractors.

The C&P processes ensure compliance of vendors with legal norms and regulations highest standards of ethics, social accountability practices and ensure effective risk mitigation practices.

International competitive bidding (ICB) is practised, and it enables sharing of risk and opportunity among partners and transparency. Due to this, Greenko was able to successfully secure smart contract agreements that met the IRESP requirements. During the current year, new C&P procedures exclusive to IRESP are implemented.



**Greenko Sumez Hydro Energies Pvt. Ltd.,
Himachal Pradesh**

Energy Transition Value Pools Intelligent Renewable Energy Storage Platform

The Integrated Renewable Energy Storage Project (IRESP) combines digitally interconnected storage infrastructure with cost-effective variable power from solar and wind resources to deliver planned and flexible electricity to the grid. The IRESPs from Greenko are built with an extended life cycle and the high storage capacity (high volume of energy storage), resulting in the low cost of delivered SPOD (Schedulable Power On-Demand) energy during the project lifetime. Greenko has in-depth expertise on the elements of IRESP (civil engineering, electro-mechanical engineering) and the Company has started the construction of such projects.

Pumped Storage Hydro Power Project

The PSHPP consists of a powerhouse with hydropower electrical and mechanical equipment, a transmission connection to the grid, and two reservoirs – an upper and lower reservoir – that are connected by a waterway. Water is pumped from the lower reservoir to the upper reservoir when there is excess electricity available, which is often at night or on weekends when power demand is low or when there is an excess of solar generation during the day. When there is a spike in demand, water that has been stored in the upper reservoir is subsequently released, providing more value energy to the system. With the aid of energy storage systems like pumped hydro storage, it is now increasingly viable to store and use the extra energy from renewable energy sources.

Pumped Storage solution provides the necessary scale and long duration of energy storage and life cycle, resulting in affordable SPOD

energy over the life of the projects. Developing such IRESPs 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 the nation while maintaining grid stability.

Compared to conventional carbon-emitting thermal plants, the PSHPP offers zero emissions. 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 for 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
- Optimised load profile through the 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

Manufactured Capital

Pinnapuram IRESP

Greenko has zeroed down on Pinnapuram, Kurnool District, Andhra Pradesh to be the ideal location after conducting extensive research and evaluation for potential areas for IRESPs throughout India. The Pinnapuram Integrated Renewable Energy Storage Project consists of a subsurface powerhouse complex with eight variable speed reversible TG units, waterways with seven tunnels and penstock pipes, power intake and pumping intake, upper and lower reservoirs enclosed by 9.84 km of 40 m high rockfill dams, power and pumping intake. The intelligent energy platform promises to deliver essential sustainable grid solutions.

The Pinnapuram IRESP designed as the largest Gigawatt Scale Integrated Project, combines pumped storage, wind, and solar energy. Schedulable Power on Demand (SPOD) is provided by the PSP, which serves as a green battery for storing wind and solar energy. The project offers consumers across India dispatchable and schedulable renewable energy.

The Pinnapuram IRESP is made up of the following major parts:

- Standalone Pumped Storage Project (SPSP)
- Solar and Wind Parks
- The Central Pooling Substation (CPSS) - Intelligent Energy Platform

The Standalone Pumped Storage Project consists of two reservoirs that were built in already-existing natural depressions using rockfill dam embankments. Rockfill dam waterproofing will be done with Geo-membrane, lowest water infiltration rate, great flexibility and plasticity, minimal maintenance, excellent damage resistance, etc. are all features of the Geo-membrane Faced Rockfill Dam (GFRD). Reduction in time of construction, less quality intervention and cost reduction made us to go for GFRD rather than AFRD, as explained in our previous integrated report. The project will be reusing 2.35 TMC of water for non-consumptive purposes to circulate it between the two proposed reservoirs.

The manner that CPSS is connected makes it easier to distribute energy across the country to various interstate users. An essential component of CPSS will be the Greenko Renewable Energy Management Centre, which will house the “Intelligent Energy Platform” (to forecast, monitor, balance, and offer the necessary

energy and storage services). A double circuit transmission line that will be connected to the Pinnapuram IRESP central pooling station is envisaged for the generation or pumping of power.

The IRESP is a project that has identified as having the capacity to satisfy the changing demands of DISCOMs and STUs through RTC Base Load Energy for 24 Hours Each Day, as well as, by providing:

- Base load energy for 18 hours, based on demand
- Energy for a 12-hour peak load (6 hours plus 6 hours)
- Ancillary Services, Grid Management, Frequency Management, and Energy Storage Service

“We, at Greenko, aim to set the benchmark for Green Procurement by ever-evolving processes. With the help of continuously upgraded automation system, moving towards, setting global standards in procurement, to achieve the three separate goals simultaneously:

- Cost leadership
- Growth
- Create a sustainable advantage”

Manish Agnihotri

VP – C & P

Key elements of the Pinnapuram Standalone PSP are:

- Due to the absence of silt, there is little maintenance necessary, and pumped storage plants can operate all year round and with equal efficiency regardless of the season
- Reservoirs have a small catchment area and are dispersed far away from all current natural water systems. Therefore, a CAT plan, spillways and embankments is not necessary
- Double Fed Induction Motor Generator with adjustable speed designed to operate at maximum efficiency points under all conditions
- The use of gas-insulated switchgear



Projects under construction

State	Capacity
Andhra Pradesh	1.2 GW



Projects under development

State	Capacity
Madhya Pradesh	1.44 GW
Karnataka	2.66 GW
Rajasthan (2)	4.36 GW
Gujarat	1.6 GW
Maharashtra	2 GW
Uttar Pradesh	3 GW

- The hydraulic short circuit provision-maintained flexibility between 0 and 100%
- The availability of the spinning reserve (in condenser mode) to handle unforeseen load fluctuations in the grid. The project can produce reactive electricity to help the grid in event of a fault when operating in turbine condenser mode
- Part load procedures can be carried out as many times as necessary throughout the day without affecting the machine's overall life
- No challenges with siltation, flash floods, environmental release, or the project's effects on fisheries

Saundatti IRESP

The Saundatti IRESP include solar, wind, and pumped storage components. The project is in Belagavi district of the state of Karnataka and is currently in the design phase. The project is planned to include 1,260 MW (9-hour storage capacity) of pumped storage hydro, 400 MW of wind energy, and 1,000 MW of solar energy.

The Project's Grid will be connected to the PGCIL/CTU sub-station in Dharwad for additional supply into the National Grid and across the country.

"Recently, we are noticing a big momentum in corporate Net Zero commitments being made globally. As a part of it, we have started addressing our direct emissions, indirect emissions, including 'Scope 3' emissions arising from our upstream. This is just a beginning and at Greenko, we believe that a strategic and focussed approach towards effective supply chain process could be a vibrant enabler for climate action. We are therefore working closely with our suppliers and stakeholders to explore what it would take for global supply chains to transition to Net Zero most effectively."

Ravi Shankar DVB

AVP, Contracts & Procurement

Manufactured Capital

“Intelligent Energy Cloud Storage Platform” for 24/7 Carbon Free Energy (CFE)

Greenko’s Intelligent Energy Cloud and Storage Solutions infrastructure delivers 24/7 CFE. Many in the hard-to-abate sectors are seeking carbon free energy to meet Net Zero or Science Based Targets and Greenko offers unique, dispatchable carbon free energy and decarbonisation solutions to customers in multiple sectors.

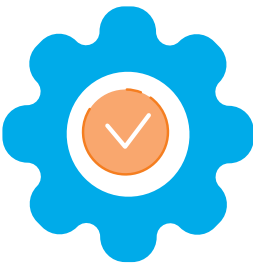
To ensure we can provide customers with 24/7 CFE, we are developing a unique, world’s largest energy cloud platform with 100 GWh of low cost, energy storage using proprietary closed loop, off-the-river pumped storage hydro technology. The platform will deliver over 100 TWh of managed energy [demand] across India, while ensuring that the renewable energy we generate is dispatchable 24/7 CFE.

This is a step change in decarbonising solution space. By being able to deliver carbon free energy to match customers’ electricity consumption anywhere and anytime and accelerate the drive towards Zero Carbon Future.

Committed to the United Nations 24/7 CFE Compact

Greenko is a signatory to the UN Carbon Free Energy Compact, along with a range of corporates, policy makers, investors, and NGOs. Together we are working to realise a carbon free energy future by making it possible to ensure that every kilowatt-hour of consumption is matched with carbon-free electricity production.

Through the 24/7 CFE Compact, Greenko is working to develop and scale technologies, support energy policies, improve procurement practices, and provide solutions to transform India’s energy system and enable rapid, cost-effective CFE every hour, every day, everywhere.



The 24/7 CFE Compact is based on five principles:

Time-matched procurement: hourly matching of electricity consumption with carbon-free electricity generation.	Local procurement: purchasing clean energy on the local grids where electricity consumption occurs, driving the electricity related emissions a consumer is responsible for to zero.	Technology inclusive: the priority is to create zero carbon electricity as fast as possible and all carbon-free energy technologies can play a role in creating this future.	Enable new generation: focus on creating new clean electricity generation in order to support the rapid decarbonisation of electricity systems.	Maximise system impact: focus attention on maximising emissions reductions and solving for the dirtiest hours of electricity consumption.
1	2	3	4	5

“We are constantly working on reducing the amount of packaging and the impact of the materials we use. We have reduced CO₂ emissions from packaging. The biggest impact has been created by changing the material used for solar module packing.”

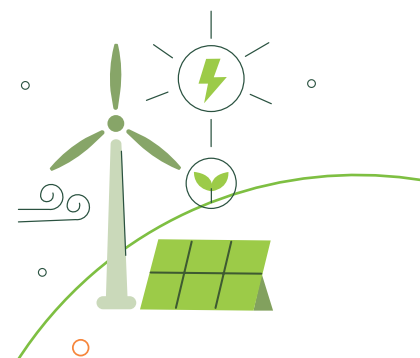
Mohiddin SK
Senior VP, Contracts & Procurement

Message from Project Director

Our Pinnapuram Integrated Renewable Energy Project has been conceived as one of its kind in the World's First & 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. It can play an immensely important role in facilitating India's energy security and transition to a low cost, low carbon electricity market that will require flexible, dispatchable, as well as peak power capacity. This project is being developed as a closed-loop system far from rivers with minimal

environmental and social impacts unlike conventional Hydro projects. It can be considered as a clean and green energy with Round the clock (RTC) power supply without battery system, IREP is more eco-friendly project better than the battery system.

We have already kickstarted the construction works for this flagship project and would like to complete the project in record time of 30 Months, targeting to Commission by 2024. By following an intense schedules of site establishment and preparation works, I am delighted to inform that our design consultants and our contractors have been



engaged in the construction works and already powerhouse, tunnels, upper reservoir, lower reservoir, CPSS and evacuation system, have achieved the substantial progress. This represents a significant milestone in the project construction timelines, which is in line with planned schedule. We look forward to working alongside the Stakeholders and keeping the progress updated as per the timelines to continue to push ahead over the course of this year.

While the focus is on achieving project execution milestones, utmost importance has been given to fulfilling the requirements of Quality, Occupational Health and Safety, Environmental Management, Social Accountability, and Social Responsibility. Our passionate team is working round the clock and putting their untiring efforts with full of energy and high motivation to complete this ultra-mega project within the stipulated timelines in line with our vision and mission. Our contractors are also putting their 100% effort to complete this prestigious project. As a Project Director, I am immensely proud to be part of this one of its kind Ultra mega project.

Ch. Srinivas Rao,

Project Director



Future Priorities

Greenko shall focus its efforts on consolidation of assets and increasing the efficiency and execution of projects through upskilling its team, enhance their technological capabilities in design and construction of projects and continue to deliver value to all of its stakeholders. Energy efficiency and cost reduction improvements will be made possible through the use of technology, value-maximising initiatives, talent development, new procedures and systems, and qualitatively different collaborations. Greenko is undertaking manufacturing of Electrolysers and production of Ammonia and during the coming quarters, these facilities will be built up.

The Company shall also look to adopting a circular approach and extend the life of projects, plan for a second life, and manage their end-of-life in the upcoming years.



Axis Wind Farms Pvt Ltd,
Andhra Pradesh

People – Respect and Progress

Human Capital

Intellectual Capital

Social and Relationship Capital



SCADA Room, Head Office,
Hyderabad

Human Capital

“Employee Experience”

Great employee experiences create ownership assuring great business outcomes. Providing superior employee experience with focussed and agile People, Process and Systems during the entire employee life cycle, ensuring regular development plan and requisite support will enhance employee performance. Also, transparency in our initiatives and results combined with frequent communication is the practice. Our aim is to build and retain the future ‘best in class talent’ with our focussed Learning & Development and OD interventions. Greenko empowers the relevant stakeholders to improve the experience. This keeps our growing and diverse business thriving in competitive markets and help us to outperform the peers through our learning and development interventions. We are aligning the organisational values to the personal values of our employees, engaging them to meet organisational goals, and rewarding them for great work that supports the Company’s vision and mission.



Greenko empowers the relevant stakeholders to improve the experience. This keeps our growing and diverse business thriving in competitive markets and help us to outperform the peers

“Technology”

We are leveraging technology in both - enterprise domain and people domain. Greenko has adopted advanced human capital technology-based solution “Darwinbox” for employee’s services and HR data analytics, with a focus on transforming HR data for business growth which helps in forecasting and helping faster with guided and informed decisions. Darwinbox provides better services to the line managers like recruitment, performance management, attendance management, periodic reviews and feedback of team members which enhance efficiency and effectiveness. Our conscious approach to go paperless has been implemented across Greenko which aligns to our mission and vision statements that aims to provide decarbonisation solutions to support the Global Commitment to reach Net Zero emission.

“Building for the Future”

It is imperative for HR to align with the emerging skills that the business will require in future. This can either be fulfilled by building internal talent pool or developing a focussed plan to hire right talent for meeting the future challenges.

Our aim is to build and retain the future ‘best in class talent’ by skilling in specific niche technical/functional/ domains with our focussed Learning & Development interventions. The approach helps the organisation to transform individuals to use newer technology, develop new skillsets & provides an opportunity to be part of multi-functional capability of the organisation and ensuring the commitment for enterprises.

Aman Attree

Head HR

Strategic Approach

At Greenko, the journey of transformation to new energy is powered by its people-oriented approach. With the collective efforts of all the varied functions of Greenko's operations, the Group is able to remain efficient and competitive. The hard work and devotion of our team members are the foundation of our organisation's success and prosperity. We are devoted to providing an enabling environment for our people, and our investments in their learning and development help us reach our business objectives and generate value for all our stakeholders.

By augmenting the core competencies required for IRESP & New Energy businesses, Greenko encourages its employees across the business domains for achieving excellence. The organisation nurtures a high-performance and innovation-oriented culture by leveraging the pool of knowledge and skills, along with periodic training sessions to drive the employees towards optimum and sustainable value creation.

The Company has in place a well-defined structure to ensure integration of ESG into its decision-making across the functions in line with the vision and goals as set by the organisation.



**Learning and Development at Head Office,
Hyderabad**

Human Capital

Our Performance

Talent Acquisition

Talent Acquisition and Retention

With a well-defined talent acquisition strategy in place, HR periodically analyses and determines the projected attrition rates and understands the deficits if any in terms of optimum required manpower. The team also estimates the horizontal and vertical movement of its personnel on account of growth and business requirements.

Manpower for any site is determined as per standardised organisation chart approved by management wherein any addition / change to organisation chart is carried out only after approval of management through requisition from Vertical Heads/HODs indicating the key selection criteria, skills and desired qualifications.

The Company meticulously works towards hiring and training its new recruits via ongoing developments in the induction mechanism and on-

boarding process. Attention is paid to establish the “best fit” between job requirements and the candidate’s qualifications.

Nurturing talent and caring for people is a principled commitment at Greenko - it involves attracting, training, rewarding, recognising and growing its human assets. Greenko’s ownership models drive people to be responsible for outcomes of their work and aid in achieving the motto “transform and be transformed”.

In the reporting cycle, Greenko has successfully hired

352

new talents with around

21.3%

of the total hires falling in the GET category.

Statistically, the Group hired a total of:

432

Engineer Trainees since 2011 to 2022, over

30%

are with an experience range of 5-9 years and

70%

are 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.

The average age of employees since 2012 has positively improved to:

38.8

years with a strong employee strength of

2,597

in the Group’s business. Greenko always ensures that the young talents undergo a 360-degree training during induction suitable for their respective cadres.

New Hire Profile in FY 21-22

Job Level	FY 21-22					CY 2022				
	Corporate Functions	GAM	GEP	ZeroC	Total	Corporate Functions	GAM	GEP	ZeroC	Total
Advisors	0	1	8	0	9	0	2	5	0	7
Leadership Level	0	1	1	0	2	0	1	1	0	2
Core Leadership	0	0	2	0	2	0	0	1	0	1
Senior Leadership	4	0	10	1	15	3	1	8	4	16
Senior Management	6	6	15	0	27	8	9	8	2	27
Second Level Managers	4	4	3	0	11	8	6	9	0	23
First Level Managers	8	74	19	2	103	32	69	49	0	150
Supervisory Level (S3)	14	33	9	0	56	18	34	26	0	78
Supervisory Level (S2)	5	6	1	0	12	4	3	2	1	10
Supervisory Level (S1)	0	1	1	0	2	0	0	1	0	1
Trainees	3	65	6	0	74	15	22	71	0	108
Grand Total	44	191	75	3	313	88	147	181	7	423

The Company relies on both its permanent and contractual employees for project delivery and ensures that the Group recruits the right people for the right role and also believes in investing in the timely upskilling and well-being of employees.

Competency Development

Greenko has in place a well-defined talent and competency mapping strategy in order to identify the key skills necessary for an employee to achieve the target performance in their respective roles. The organisation has a pre-defined list of competencies required to perform each role and this framework serves as a right fit solution to the human resource department.

Learning and Development

Learning is an important pillar of Greenko's culture, and we continuously work to give the best in class learning experience and opportunities to meet expectations of our employees and the needs of our business verticals, leading to build contemporary and much needed competencies evolving into capability models increasing efficiency and productivity. Learning design is based on addressing skill and behavioural gaps identified during training needs interventions. We have a strong training mechanism, Senior Leadership

Training Programs, which happen in informal discussion environment on weekly basis. We have MDP programs to create readiness for to be Managers. We have Entry Level Trainee Program of a year with top notch measurement and metrics in place to all entry engineers who are hired from campus interviews. We have blended learning approach like online trainings to cover all employees across Greenko Corporate office and Sites along with specifically designed ILT Interventions. We have mentoring processes in place across business verticals in an informal setting, which creates an environment of psychological safety.

All our employees are trained on POSH Awareness, Labour Codes and HR Processes. We arrange technical trainings to promote subject understanding with practical business orientation. We also create learning programs in building futuristic skills like Green Hydrogen and Green Ammonia. Our employees are trained in behavioural and

managerial skills in Instructor Led Mode with lot of activities like role plays and scenario building.

Post Covid, we made it a priority to create awareness on Holistic Wellness among employees, and we conduct Meditation, Yoga and Naturopathy Sessions frequently online and live, and we are encouraging our employees to focus on physical and mental health more.

Learning and Development Summary

Learning and Development	FY 19-20	FY 20-21	FY 21-22	CY 2022
Training Hours*	94,574	113,690	150,262	112,360
No. of Training Programs	1,661	4,185	5,869	5,015
No. of Employees Trained	2,629	2,640	2,597	2,618
Avg. Training Hours Per Employee	35.9	43.06	57.9	42.91

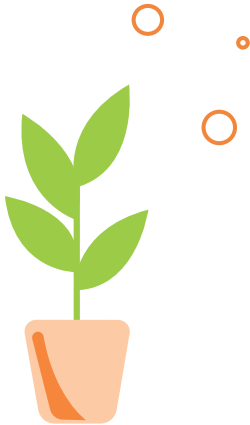
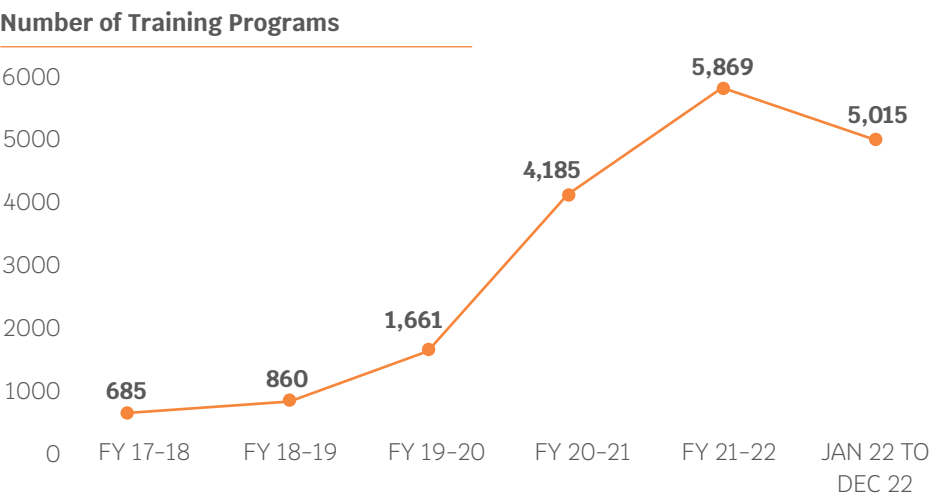
* Training Hours includes On Job Training (OJT) as well.



Human Capital

The substantial increase of 14% in training hours compared to previous year shows the Group’s commitment towards upskilling its employees. The Group has done an eye-catching progress in the area of trainings when compared with the 2017-18 baseline, registering a whopping 88% increase over the years as in 2021-22. It is a pride factor to share that our employees have underwent 48,160 hours of On Job Training (OJT) during 2021-22. FY 22-23 training numbers will be more in terms of people trained and the programs conducted going forward.

Trend in Training Programs



Comparative Analysis of Interventions across various domains

	FY 19-20	FY 20-21	FY 21-22	CY 2022
Technical & Managerial	67,651	76,913	88,307	55,522
EHS	26,923	36,777	44,114	38,654

Employee Engagement

Greenko Group considers growth to be synonymous with the inherent nature of its business. With the culture of ownership mindset, the institutionalisation of SEED IT (Stakeholder Inclusiveness, Excellence, Ethical, Discipline, Innovate, Teamwork) Value System has built a strong foundation for the workforce.

The organisation engages with its employees to continuously weave an agile and dynamic culture via various Learning, Mentoring & Coaching interventions. Employee Awareness activities ensure that employees are aware about all policies, HR Help Desk Services, Greenko Leave Management System (GLMS) and Greenko Meeting and Action Tracker

(GMAT). Greenko’s internal system of communication continues to update all employees with news updates, important announcements, knowledge repository, reports and manuals.

New joinees undergo variety of awareness sessions to understand the essence of Greenko’s Business and Code of Conduct during their induction.

The induction program is designed to ensure the overall growth and honing 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 senior leadership team takes keen interest in developing potential young talent and mid-level managers for future leadership roles, thus deliberately and ‘organically’ creating a Leadership Pipeline in the eco-system of Talent Management which will enable Greenko to sail smooth during GKO 4.0 and beyond.

Employees working on project and plant sites engage with the Project and Plant Heads, Site and Business HR and with various Business Leaders on a regular basis enabling holistic employee engagement with a variety of interactions from middle management to the leadership.

Rewards and Retention

The Company enables its workforce to showcase talent and innovation and ensures that the efforts are recognised and rewarded in a correct manner by way of incentives, ex-gratia, etc. The Group's Leadership has always encouraged and nurtured a sustainable working culture which is promoting regenerative thinking across all the levels of employees.

The Group has achieved a significant retention rate of 89.38% in FY 21-22 and 90.42% in CY 2022.



Learning and Development at Greenko,
Hyderabad Office

Human Capital

Employee Welfare

The employee welfare across all project and plant locations is a primary focus area for the HR department at Greenko ensuring benefits such as free food, accommodation and health care facilities for all the employees across all the sites. Apart from this, the Company also encourages people to pursue higher education and supports employees' children for pursuing vocational training as a part of the Company's philosophy of growing together.

During FY 21-22, a total of 294 children were extended support in the form of Tuition Fee Reimbursement which is a 21% increase from 179 children in FY 20-21. The Group has also supported higher education initiatives for selected employees YoY as a part of career development objective and enhancing the skill base across all the business domains with the calendar year, the beneficiaries amount to 5 receiving 100% Education Fee Reimbursement.

School & College Fee Reimbursement in FY 21-22

Month	School % Fee Reimbursement				College % Fee Reimbursement		
	40%	50%	100%	Grand Total	40%	50%	Grand Total
FY 21-22	249	31	14	294	0	43	43

School & College Fee Reimbursement in CY 2022

Month	School % Fee Reimbursement					College % Fee Reimbursement		
	40%	50%	60%	100%	Grand Total	50%	100%	Grand Total
CY 2022	162	13	241	16	432	46	1	47

Employee Higher Education Fee Reimbursement in FY 21-22

Employee Higher Education % Fee Reimbursement		
Month	50%	100%
FY 21-22	0	4

Employee Higher Education Fee Reimbursement in CY 2022

Employee Higher Education % Fee Reimbursement	
Month	100%
CY 2022	15

Greenko has in place a medical insurance facility including hospitalisation via Group Medclaim Policy at a cost to the Company and "at no Cost to the Employee" basis. Even a personal accident welfare coverage benefit is provided for the employees at no cost by Greenko.

Greenko has a well-defined welfare policy encompassing employees' rights such as 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).

For FY 21-22, Greenko has taken up the following initiatives to enhance employee welfare:

1. Ensure all the employees and their spouse are duly vaccinated with the prescribed dosages of Covid vaccine.

2. End-to-end medical advice, doctor's assistance, cost of hospitalisation and other required need-based support to ensure employees' wellbeing (including contractual workers).

In accordance with the State and Central Labour Laws, Greenko provides not just the statutory benefits to its contractual workers but also strives to create a supportive workplace for all the employees.

Diversity and Equal Opportunity

Greenko Group is committed to fostering an inclusive culture where diversity and varied thought processes are deep-rooted. Greenko aims to drive diversity within its workforce with a focus on individuals of varying age, gender, religion, race, ethnicity and education. The Company is well on its way to steer co-creation through leveraging upon the varied capabilities and skillsets its workforce offers.

Being an equal employment opportunity employer, women's participation is a positive gesture to augment Greenko's growth. The Group has been consciously working towards enhancing gender diversity at the workplace across all the levels and strives to maintain a fair ratio between the genders.

The initiatives at Greenko to promote gender diversity are:

- Mainstreaming gender in policy design and project implementation
- Implementing policies to attract and retain talent and ensure supportive environment in the workplace
- Supporting women to be the change agent and to challenge cultural and social norms in their environment

Employee strength and diversity w.r.t levels, age and gender in FY 21-22

Employee Strength	Age Distribution						Total
	Male			Female			
	<30	30-50	>50	<30	30-50	>50	
Senior Management	0	39	50	0	2	2	93
Middle Management	0	236	88	0	10	1	335
Junior Management	66	651	53	2	35	2	809
Executives/Staffs/Others	212	801	129	19	46	3	1,210
Trainees	135	4	0	10	0	0	149
Total	413	1,731	320	31	93	8	2,596

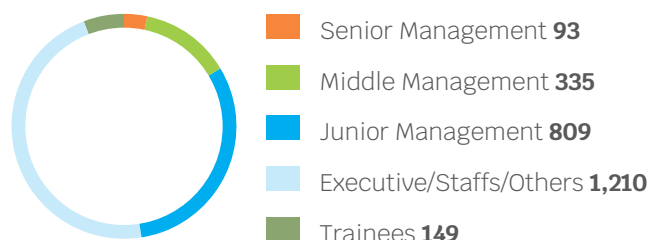
Employee strength and diversity w.r.t levels, age and gender in CY 2022

Employee Strength	Age Distribution						Total
	Male			Female			
	<30	30-50	>50	<30	30-50	>50	
Senior Management	0	33	61	0	2	2	98
Middle Management	1	283	110	0	16	2	412
Junior Management	115	653	69	4	34	3	878
Executives/Staffs/Others	139	744	112	25	49	5	1,074
Trainees	128	6	0	13	2	0	149
Total	383	1,719	352	42	103	12	2,611

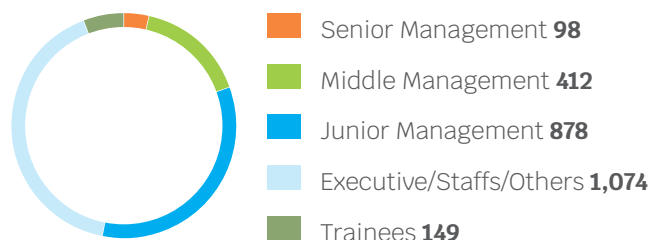
Human Capital

The employees at Greenko are spread across various designations reaching their objectives and fulfilling their responsibilities in their respective roles.

Employee Profile FY 21-22



Employee Profile CY 2022



Employee Hiring and Turnover w.r.t. levels, new hires, separation and turnover in FY 21-22

Employee Hiring & Turnover	New Hires		Separation		Turnover Rate (%)	
	Male	Female	Male	Female	Male	Female
Senior Management	137	5	85	13	21%	42%
Middle Management	164	11	153	13	8%	14%
Junior Management	33	2	19	0	6%	0%
Total	334	18	257	26	12%	19%

Employee Hiring and Turnover w.r.t. levels, new hires, separation and turnover in CY 2022

Employee Hiring & Turnover	New Hires		Separation		Turnover Rate (%)	
	Male	Female	Male	Female	Male	Female
Senior Management	7	0	8	0	0%	0%
Middle Management	48	5	33	2	10%	0%
Junior Management	94	4	120	9	13%	0%
Total	149	9	161	11	8%	0

Equal Pay

Unadjusted Median Gender Pay Gap

Greenko believes in inclusion and diversity across the business, also believes that everyone should be appropriately rewarded for their time and effort and encourage action and commitment to equal pay irrespective of gender. Greenko conducts an annual analysis on gender pay equity. The Company also reviews hiring and promotion processes to embed equal pay efforts. We create an environment that allows women to stay in the workforce, grow with us and move up in the ranks, all with parity of pay. Greenko has included the unadjusted median gender pay gap as one of its indicators to measure the transparency, inclusion and diversity and has calculated in line with UK Gender Pay Gap Methodology and is voluntarily disclosing the same.

Greenko's unadjusted median gender pay gap for FY 21-22 is 5.4%.

Succession Planning

Succession planning has become an integral part of planning for the organisation to thrive in the context of business uncertainty, changing business dynamics, ever-evolving regulations forcing the organisations to specially focus on employee selection, mentoring, role-fitting as per the business requirements.

Greenko strives to mobilise its internal resources by providing various opportunities for upskilling, fast-track vertical growth to support work dynamism and continued upward development both in terms of skillsets and revenue.

For FY 21-22, the Group had mapped over 102 critical roles across various project levels, asset management and support functions. The Group had zeroed upon 507 employees to take ahead the succession agenda.

At Greenko, there is a great balance of domain and functional skills, since for a head count of 2,596, the Group has 252 leaders at a ratio of 1:10 (i.e. one Leader/Expert for every ten employees) making it easy for the employees to stay in touch with their vertical leads reducing the turnaround times of various tasks.

Health and Safety

Greenko has an objective of 'Zero Occupational Health & Safety Related Incidents' across its operations.

In alignment with this objective, the Group has a robust risk assessment framework in place to ensure that all the risks across its operations are identified in a timely manner with a risk mitigation plan in place.

The Group has a practice of recording all the risks and issues encountered in a registry (Risk Register) which is

updated at periodic intervals allowing the organisation to assess, plan and chalk out appropriate risk mitigation plans. Greenko is committed to bringing down the risk levels to "As Low As Reasonably Practicable" (ALARP) across its operations.

Greenko extensively consults with its project heads and the EHS Team to develop unit-specific health and safety plans in compliance with ISO 45001:2018. The organisation periodically analyses its Health and Safety System practices including the process of work permits, emergency rescue and undertakes appropriate action wherever found necessary. To ensure third-party validation of its PPS system for Health and Safety Management, the organisation has tied up with external agencies to conduct audit and gap assessments to help them improve and optimise the OHS System.

OHS Audit

Indicators (numbers)	FY 19-20	FY 20-21	FY 21-22	CY 2022
No. of Audits	305	191	262	247
EHS Interventions and Celebrations	317	637	265	2629
EHS Committee Meetings conducted	922	888	1332	1154
EHS Inductions conducted	2173	1528	3376	6290
Mock Drills	420	194	395	965
First Aid Trained Persons	520	4954	966	2295
Emergency Response Trained Persons	590	4954	1186	1437
EHS Walkdown Inspections	34	1779	2437	2489

Greenko conducts periodic Health and Safety inspections to ensure strict adherence to its policies and health and safety measures.

In FY 21-22, Greenko has imparted 43,932 hours of health and safety training for its employees, out of which 29,028 number of hours were devoted to the training of contract workers amounting to 16% increase in training hours from the past financial year.

OHS Leading Indicators

Indicators	Units	FY 19-20	FY 20-21	FY 21-22	CY 2022
Employees and Contractors					
Safety Training hours Internal (For employees of Greenko & Contractor)	Hrs	36,730	36,777	43,932	52,259
Per capita safety training hours	Hrs	5.98	7.42	8.71	0
Toolbox Meetings	Nos.	83,183	90,051	125,595	130,107
Contractors					
Safety Training hours	Hrs	14,781	20,027	29,028	27,173
Safety Awareness / Campaigns	Nos.	13	13	15	379
Theme Based campaigns	Nos.	1,176	12	803	275
EHS Events. (Fire Safety Day, NSD, WED)	Nos.	294	294	234	231
Spot the Hazard Competitions	Nos.	98	271	150	36

Human Capital

“At Greenko, safety has been at the core of our values and deeply ingrained in our business operations. Our journey towards EHS Goal – ZERO HARM CULTURE by transforming the safety culture has been incredibly exciting wherein we extend our commitment to safety not only to our employees but also to our external stakeholders comprising of our business partners, contractors, and suppliers and surrounding communities where we operate.

Our Health, Safety, and Environment (HSE) initiatives have been designed across the key supports of enhancement of workplace safety and elimination of health hazards. We have positioned sustainable growth in all the dimensions inclusive of our strategy, operations etc. to contribute to the holistic well-being of people. With our progressive efforts on solarisation of all locations, energy conservation, decarbonisation of energy, and Greenhouse Gas (GHG) emissions reduction.

We are committed to delivering value to our stakeholders in a safe, secure, environmentally and socially responsible manner with utmost responsibility and transparency.”

Rajiv Jain

AVP – EHS

The organisation conducts various events, organises first aid training sessions, provides behavioural based safety training and celebrates National Safety Week across its sites to increase employee cognizance regarding health and safety and also rewards its best safety-conscious worker and staff across all business units. The organisation also proactively engages in educating the communities around their operations regarding the significance of health and safety by conducting special safety training sessions and awareness sessions about road safety and home safety. It is worthwhile to note that as always Greenko has successfully repeated its history of zero fatalities

during the reporting period. In FY 21-22, the organisation has conducted 262 Behavioural Based Safety (BBS) trainings across its sites to develop and improve employee resilience.

OHS Lagging Indicators

Indicators	Units	FY 19-20	FY 20-21	FY 21-22	CY 2022
First-Aid Cases	No.	44	49	54	72
Near-Miss Cases	No.	16	142	103	177
Unsafe Act / Unsafe Conditions	No.	890	504	731	955
Fatalities	No.	0	0	0	0
Reportable Injuries	No.	1	15	7	18
Lost time injury frequency rate	%	0.07	0.17	0.4	1.35
Recordable injuries frequency rate	%	3.24	1.24	1.49	8.80
No. of safety violations recorded	No.	25	13	19	41

Greenko Security Services

Greenko Security Services (GSS) plays a vital role in physically securing the sites and corporate offices of Greenko. GSS handles the responsibility of conducting risk assessments, assessing threats and ensuring there are remediation measures in place for the same. Greenko also has an integrated electronic surveillance mechanism at its Headquarters in Hyderabad which ensures 24/7 live monitoring, control, and review.

To align itself with the Greenko vision, GSS has undertaken the following initiatives to transform itself:

1. Adopt technologies – Analyse, digitise and automate the GSS operation.
2. Implement Integrated Security Solutions.
3. Implement Progressive Security and Vigilance Arrangement based on Security Risk Assessment and Risk Perception.

GSS proactively conducts threat assessments periodically as a part of its Threat Perception Management and has in place measures to address the following threats to the assets of Greenko:

People:	Material:	Infrastructure:	Information:
Assault, Murder, Kidnapping	Theft, Pilferage	Sabotage, Accidental Damages, Natural Calamities	Hacking of IT Systems, Stealing of Information

Security Services KPI (in Person Hours)

	FY 21-22	CY 2022
Security personnel training details	6,431	21,682
First Aid	1,492	2,934
Familiarisation of IRESP security	490	1,105
Executive protection	204	772
Basic guarding, security, and reporting	1,348	14,086
Behavioural trainings	18	2,785

“Human Resources at Greenko Asset Management (GAM) is committed to sustained Talent Building, augmentation of Competencies for sustainable practices of Employee Engagement and with a challenging environment of growth for the employees, thus making Greenko as an aspiring place to work.

Our continued pursuit is to have human capital engaged, embraced with the right attitude, trust with a sense of ownership. We are driven by strong values with a mix of talent for the dynamic and fast-paced energy industry embracing newer and digital technologies. We aim to provide the business the human capital that has strong domain and expertise from the industry with trending skill sets.

And at Greenko Security Services (GSS), our focus on Physical security to provide robust security solutions for a dependable and effective security management system.

We continue to deploy world-class technologies which enable total security coverage, swift response mechanism for efficient and effective vigilance framework for our Projects and Plants. We focus to attract digital solutions and right talent to secure our assets, for sustained surveillance and security.”

Satish Babu V

VP – HR & IR

Human Capital

New Energy – New Competencies

New Energy Solutions in the clean energy transmission space will significantly contribute for more than 50% of the energy requirement across the country. Greenko plans to exploit the new horizon of 'New Energy Solutions' and is gearing up its Human Capital to rapidly harness the business opportunities to create value for all the stakeholders. The current employee strength for New Energy sector is augmented with 200 person years.



Greenko Gangdari Hydro Power Pvt. Ltd.,
Himachal Pradesh



Safety Day Celebrations at PSP, Pinnapuram,
Andhra Pradesh



Hemavathy Power & Light Pvt. Ltd.,
Karnataka



Future Priorities

It is appreciated that good talent is the foundation of success of the organisation. We take collaborative approach compatibility among talent, job profile, expectations, and delivery. Integral to this purpose-led employment is a culture that respects individual needs and ambitions, fosters a high standard of living and encourages work-life balance. We, as a responsible brand believe that employees will remain as one of the strongest change agents for the successful and rapid transition of the Company and nation with innovative and diverse products and services aligned to Net Zero agenda. As the progress of Intelligent Technology tools make the access to information and its analysis, available at fingertips, nature of work and skills will change. Greenko sees an opportunity in this transformation.



Outbound Training Program,
Hyderabad

Intellectual Capital

Strategic Approach

Greenko realises importance of discovery and innovation in energy and industrial transformation. Greenko addresses this by continuous engagement with businesses with leadership in provision of technology solutions, collaboration with R&D labs involving sponsored research and technology transfer; interaction with leading Educational and Research institutes. The internal teams devoted for exploration of solutions which involves both discovery and innovation are established.

Greenko continues to adhere to systems and processes and the internal and external audits calibrate the practice. Digitalisation of processes are used to continuously align the organisation to design system and making the information available at right time and place for decision-making.

Our Performance

Integrated Management System and Continual Improvement

Greenko's Organisational Development Model

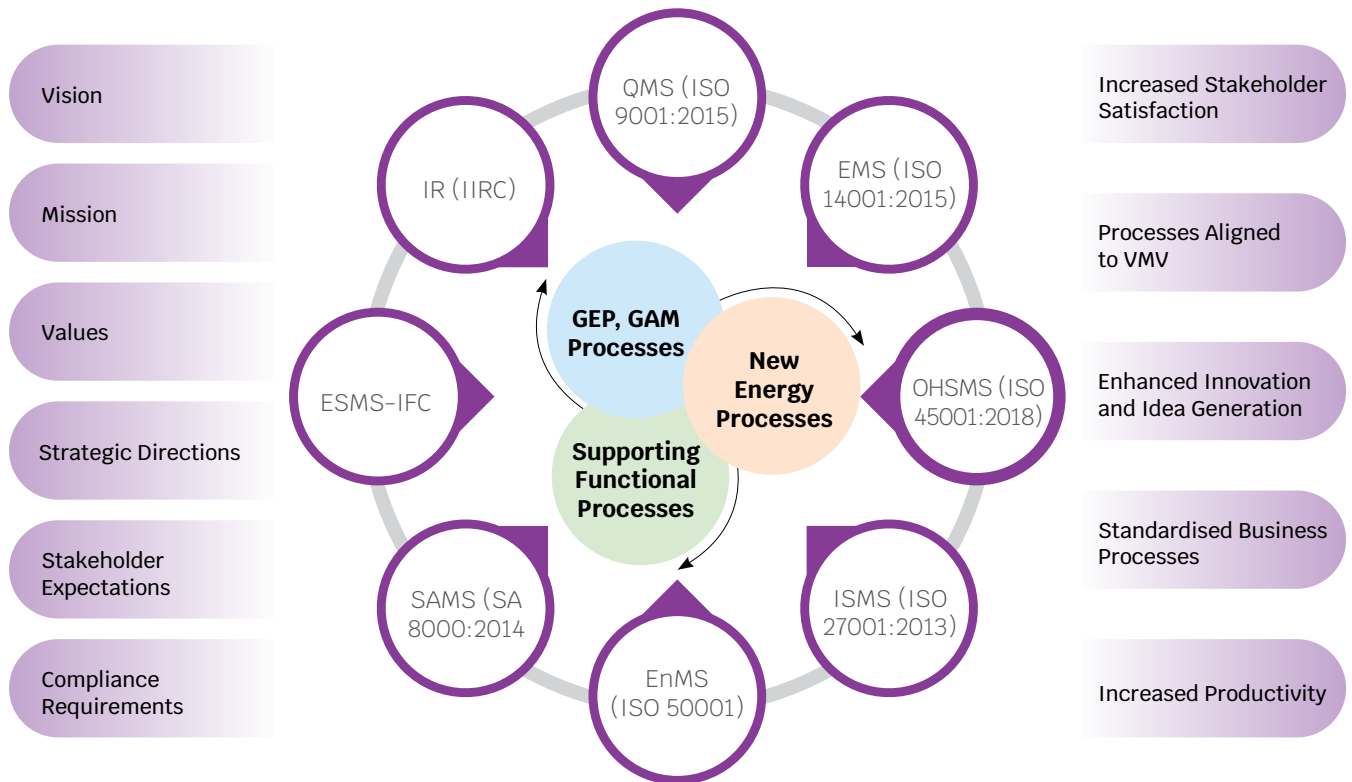
Greenko's performance of intellectual capital in building capability for meeting business necessities are guided by the following decisive elements of organisational development model. Established in FY 19-20, organisational development model with four critical business elements viz., Business excellence model, GIMS, Innovation, and Digital transformation has been pivotal in strategising the business decisions governing R&D, Innovation, IP giving the organisation a competitive edge.

Organisation Development



Greenko's Integrated Management System (GIMS)

Greenko's Integrated Management System (GIMS) is designed in line with global best standards for facilitating the analysis and mitigation of potential risks related to market, regulations, operations, technology etc. GIMS architecture drives the Group in complying with legal requirements, global standards, and other obligations in systemic fashion through standardisation of process, procedures and internal systems. GIMS covers wide range of aspects responsive to changing external and internal environment reflecting the leadership thoughts. In total, 13 project sites and corporate functions were certified for IMS in FY 21-22 achieving 100% statutory compliance across the Group.



QMS Lead Auditor Training at Corporate Office, Hyderabad

Intellectual Capital

GIMS Audits

The Group conducts periodic audits to analyse the effectiveness of implemented systems and identify new ameliorations for ensuring continual improvement in accordance with international standards and frameworks. The audits are conducted by internal and external stakeholders for detailed assessment of gaps pertaining to compliance, automation, policy and system improvements overarching the requirements of various standards covered in GIMS architecture. The audit results were instrumental in identifying the scope for improvement thereby intensifying accountability and responsibility in the Company.

S No	KPIs	FY 21-22	CY 2022
01	Number of external audits conducted	20	23
02	Number of GAP analysis audits conducted	73 (72 Plants + 1 Project Site)	3
03	Number of IMS Auditors Certified	59	100
04	Number of new policies & procedures introduced & implemented (Operational Procedures)	404	1723
05	Number of policies & procedures revised (Operational Procedures)	245	1299
06	Number of sites covered under Green Company rating system	0	11

Greenko Audit Management Application

An online application has been launched, to empower the GIMS team to schedule and manage the audit process to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

S No	KPIs	FY 21-22	CY 2022
01	Number of sites on-boarded on GAMA Platform	12	113

GIMS Training

The internal and external stakeholders are acquainted with GIMS through meetings, training, audits and GIMS rating system. The Company has enabled GIMS Rating System for driving the sense of responsibility among the stakeholders. GIMS employees are given best-in-class trainings to well accommodate with IMS system through internal and third-party agencies. In FY 21-22, all GIMS employees were given training on innovative systems, policies and procedures.

GIMS Training to Employees in FY 21-22

S No	KPIs	FY 21-22	CY 2022
01	Number of GIMS trainings (Awareness and Internal auditor)	7	18
02	Total number of GIMS training man hours	1806	5868

Information Security Management Systems

Information Security Management Systems (ISMS) is a framework guiding the protection of information and ensuring invulnerable systems by minimising the exposure to serious threats resulting in the loss of sensitive data. ISMS is a framework of policies and procedures for systematically managing the organisation's sensitive data framed in line with strict rules and regulations for data protection across the world facilitating business continuity and risk mitigation.



SCADA Room, H.O.,
Hyderabad

Intellectual Capital

Business Excellence through Automation

Technology at Greenko aims to streamline the processes and systems for increasing the efficiency and incubating the business goals of the Company. Being a Company offering decarbonised solutions to the customers, Greenko is optimally leveraging state-of-the-art technologies for innovating the solutions for the global climate needs and enabling the low-carbon transition in the country.

The Company is pioneer in deploying digital solutions in creating new energy value pools and increasing

energy efficiency in operations with smart data analytics, forecasting and scheduling of energy models, cloud computing, IoT-based SCADA systems and real-time monitoring of assets by drones.

As Greenko is progressing to new energy value pools with more focus on decentralised systems and storage systems, the Company is bound to handle large real-time datasets. It becomes imperative for the Company to implement Internet of Things (IoT) such as SAP processes, Robotic Process Automation (RPA), Business Process Automation (BPA) and AI-powered automation.

- AI – Robotic Process Automation (RPA) for automating master data management in SAP processes
- SAP Modules for Plant Maintenance, Plant Safety, Material Management, Human Resource Management and etc.
- Business Process Automation (BPA) for audit management (GAMA) for effective control of the process and easy data traceability

Business Process Automation KPI

KPIs (in %)	FY 21-22	CY 2022
Reduction in unplanned downtime due to Remote asset monitoring	5	
Plants covered under GOMs	83	142
Plants covered under Forecasting and Scheduling	67	67
Plants covered under Telemetry	92.5	92.5
Plants covered under IOT	92.5	92.5
Plants covered under SCADA	92.5	92.5
Plants covered under SAP	100	100
Plants covered under drone usage	82	Solar- 100%
		Wind- 100%
		Pinnapuram PSP- 100%

Improving business diversification through innovation

Greenko's unique storage architecture of hydrogen and electricity enables viable transition comparatively.

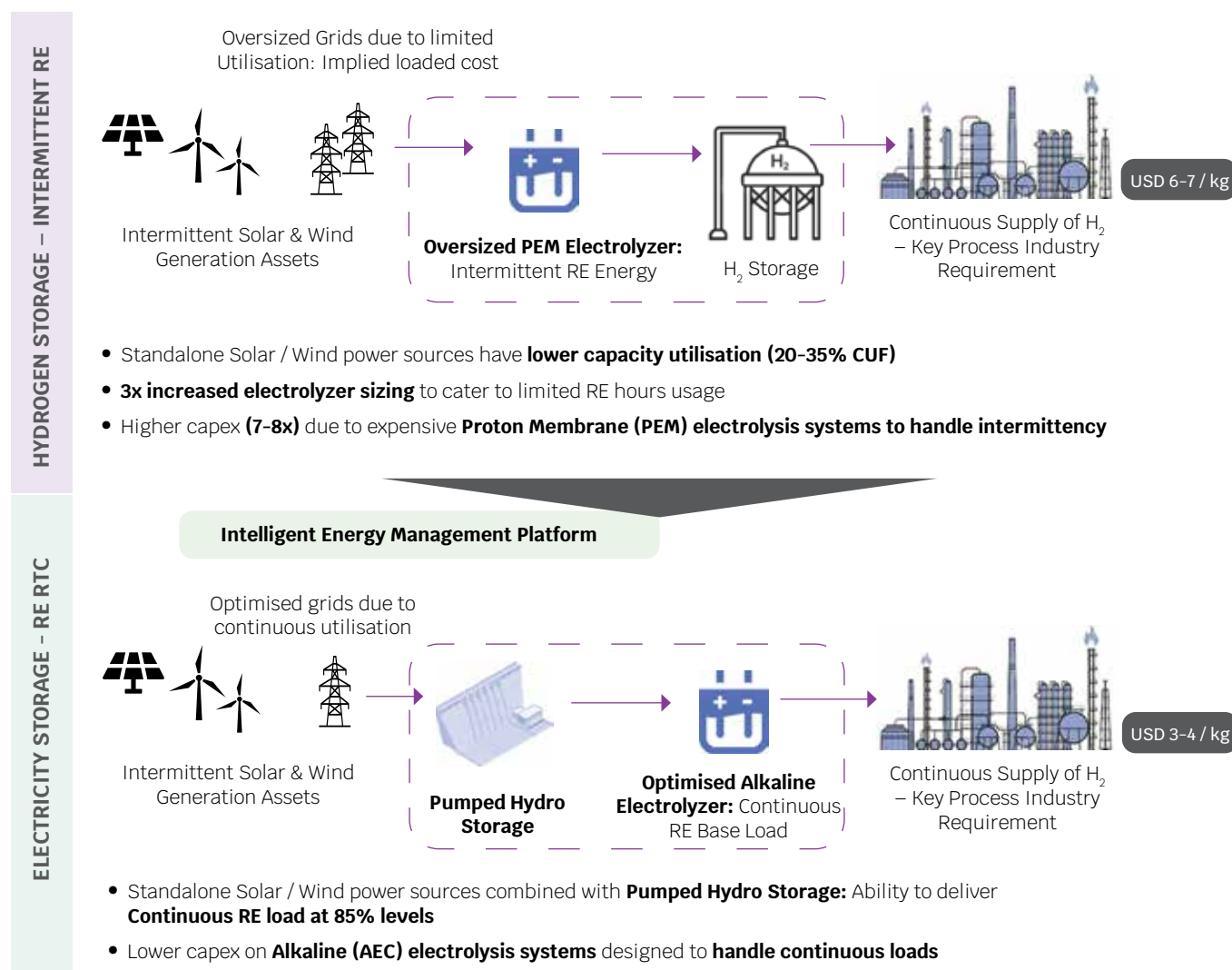
- Architecture of low cost pumped storage

Greenko's architecture includes standalone Solar / Wind power sources combined with Pumped Hydro Storage which enables it to deliver continuous RE load at 85% levels. In addition, optimised alkaline electrolyser designed to handle continuous RE Base Load.

- Architecture of making hydrogen

Unique architecture enabling lowest LCOH globally

Intermittent Renewables Vs Dispatchable RE RTC Architecture



Innovative Partnership

Greenko believes in serving the purpose of stimulating the stakeholders viz. employees and value chain partners in identifying the innovative approaches for advancing the service lines and delivering quality products while curating solutions through collaborative approach.

Greenko believes that education, research, technology and entrepreneur development is vital for circular economy, net zero technologies and sustainable transition. In this direction, it has begun engaging with research and development institutions such as C-MET, NEERI, CECRI, BARC and IIT-H.

With an aim to accelerate science, technology, and policy linkages to catalyse effective and just global sustainable energy transition and industrial transformation, both the education institution and the industry with its matching aspirations and strong belief that the partnership must extend to education, research, and entrepreneurship beyond technology development, has come together to set up an independent “Greenko School for Sustainability and Climate Change” at IIT-Hyderabad campus.

Intellectual Capital

Harnessing the power of Research & Education

Greenko is collaborating with various agencies, governmental authorities, and other leading sustainable solution providers to accelerate the transition to a new energy for a sustainable planet.

MoU with C-MET

Greenko and C-MET have entered into a Joint Venture (JV) where Greenko is taking an active part in the operations of the Centre of Excellence (CoE) as an industrial partner, taking part in the Management bodies of CoE. This is a remarkable project initiated by MeitY (Ministry of Electronics and Information Technology) and GoT (Government of Telangana) to establish a CoE on E Waste Recycling. The CoE will focus on the scaling up

of recycling of End-of-Life Silicon Solar Cells, Permanent Magnets, End of Life Li-ion batteries and PCBs, and Greenko is excited to be a part of it. Greenko is funding 20% of the total project cost and will have the first right of refusal to the developed technologies and share the revenue derived out of technology transfers developed by C-MET, when created in the CoE.



MoU between C-MET and Greenko

MoU with IIT-H to launch School for Sustainability and Climate Change

With a vision of accelerating science, technology, and policy linkages to catalyse effective and just global sustainable energy transition and industrial transformation, IIT Hyderabad and Greenko Foundation have come together to create the Greenko School of Sustainability and Climate Change (GSS&CC). This vibrant, sustainable, and energy

efficient centre will focus on research and development, education programs, and the development and deployment of model curriculum for colleges and universities. The GSS&CC will also feature an open lab for Energy Transition and Industrial Transformation, which will house RE, Storage, ZeroC molecules, Carbon Capture and Utilisation Technologies.



Intellectual Capital

Unlike the greenwashing strategies that worked in the past, today's businesses (and their investors) specifically require data-backed solutions and proof of progress toward energy transition goals. To enable this, the grid and market participants must undergo a profound modernisation to bring renewable energy sources online and unlock their full potential while proving environmental impact.

Renewable energy generated from solar or wind must be available even if the sun isn't shining and the wind isn't blowing. Greenko with its storage and zero carbon molecule technologies is a leader in Intelligent clean energy solutions and services to simplify the deployment and maximise the value of renewables and storage to enable large scale decarbonisation.

Coupled with advanced optimisation and AI-driven software to properly manage renewable assets, Greenko is transforming the grid from an ageing supplier of electricity to an intelligent system of systems that produces optimised energy and environmental products and services.



Renewable energy generated from solar or wind must be available even if the sun isn't shining and the wind isn't blowing

Greenko's fully integrated, intelligent cloud energy storage & services platform uses historical and real-time data, advanced data analytics, artificial intelligence (AI), and reinforced learning and predictive capability driven applications - to offer more accurate project modelling, to optimally size projects, to maximise asset performance and ROI, and to help reduce risk for all project stakeholders.

The platform with an open, extensible technology stack grows smarter and continuously processes data and learns from distributed assets of over 40 gigawatts of solar, wind, energy storage and EV assets. The platform processes terabytes of data each day and continuously streams from thousands of field devices every second. Greenko partners with cloud infrastructure providers such as Amazon Web Services (AWS) and Google Cloud Platform (GCP) to build a scalable platform with elastic big data storage and elastic compute infrastructure to continually support our growing infrastructure needs.

Latest AI and machine learning (ML) algorithms generate forecasts for weather, solar and wind generation, prices, energy demand, and other factors - and analyse how energy assets can capture value at different times. Additionally, this intelligence provides unparalleled visibility into grid conditions and helps the platform with various asset management activities: servicing various customer power purchase agreements (PPAs), optimally schedule renewable energy, or store for later by optimally charging and discharging energy storage, integrating scheduling operations with grid operators, extracting value from exchange and bilateral markets. Moreover, because the platform constantly monitors and learns from system performance, it also optimally and autonomously adjusts to deviations in real-time based on customer's priorities as well as market conditions.

Srinivas Jampani

Senior Vice President, SPG



Teesta Urja Limited,
Himachal Pradesh

Value Creation Story

Strategic Objective

Improve efficiency in operations by optimising performance and monitoring of assets with less human interventions.

Target Area

Wind and Solar Assets of Greenko across the operations.

Material Topic Addressed

Excellence, Adoption, and Management of Assets

Key Risk

Human errors and unsafe conditions for working

Alignment with SDGs

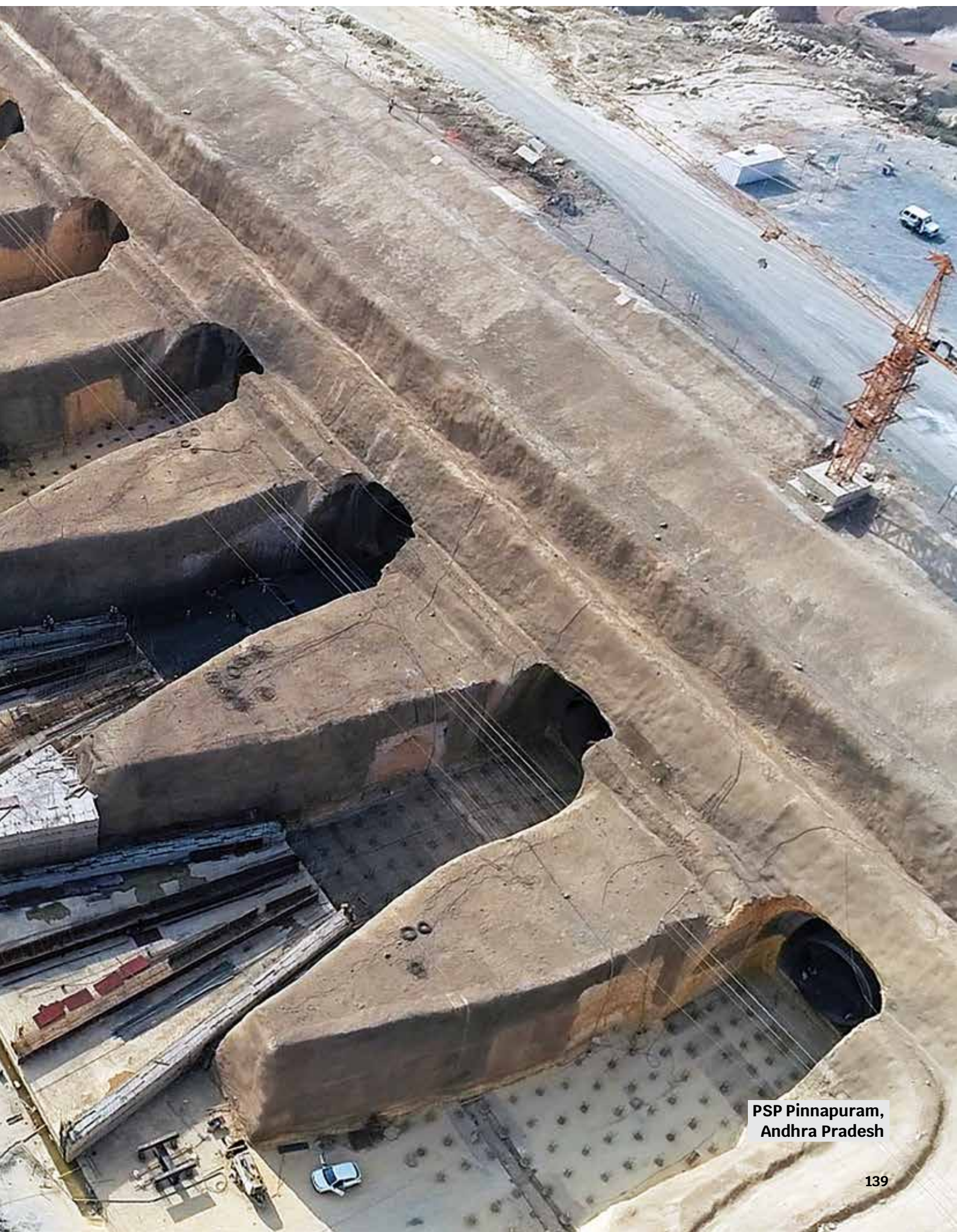


Summary

Greenko has deployed Artificial Intelligence (AI) powered drones for asset management with comprehensive coverage, enhanced visibility, site safety, scalability, and improved operational excellence. The drones assist in understanding the real-time information helpful in strategising predictive and adaptive operations and maintenance.

Future Priorities

Greenko continues to be the frontrunner in adapting new technologies for promoting sustainable development of nations and communities. The Company will continue to strategise new business models for stimulating the transition to low-carbon economy. Digitisation will continue to remain the crux of developing new energy value pools for delivering quality services to customers and increasing reliability of new energy sources and security of systems thereby augmenting the proliferation of Net Zero solutions leading to deeper decarbonisation of the economy. The Company's model of engagement with Businesses leading Technology Developers and R&D and Educational Institutions, supplementing internal efforts will continue in developing fit-for-purpose solutions for decarbonisation of energy and materials.



**PSP Pinnapuram,
Andhra Pradesh**

Social and Relationship Capital

Strategic Approach

Greenko regards Social and Relationship Capital as a binder to preserve strong and healthy relationship with all its stakeholders. Greenko Group has undertaken a lot of activities focussing on rural development, better infrastructure and promoting sports for the rural youth and skill development programs for the holistic development of the community by paving a way to generate sustainable livelihoods. In spite of different macro-economic headwinds, Greenko Group has always prioritised investment for community development.

Greenko Group as a part of its transformation from 3.0 to 4.0 has placed utmost importance on public policy advocacy as a part of its strategy to bring together business, community and regulatory bodies for an all-inclusive development. The Group's operations are spread across demographics and has executed various community development projects across them. Greenko Group along with communities, also engages constantly with its suppliers and customers.

“At our Corporate Social Responsibility (CSR) Department, we believe that by reaching out to communities and providing them with the assistance and resources they need, we are not only building strong connections, but also a brighter future. We understand that sustaining and developing relationships with all stakeholders is essential for the success of any organisation, which is why we focus on creating meaningful connections and fostering community engagement and development. We are deeply aware that the lives and livelihoods of people are inextricably linked to our operations, so we take it upon ourselves to invest in the future of these communities and create value for both business and society.”

Sharat Chandra Rao G

GM, Greenko Foundation



Our Performance

Stakeholder Trust

Greenko is committed for building lasting partnerships with strategic stakeholders across the value chain, customers and community with trust as a major force for ensuring business continuity in a smooth and transparent manner.

Greenko works towards aligning its mission of enhancing technological interventions, developing new alliances, cocreation with value chain partners for elevating their performance to fulfil the sustainability agenda and also to support the national agenda and achieving Net Zero.

Greenko Group has laid down a code of conduct for its suppliers and ensures complete adherence to the pre-requisites mentioned in the same. Greenko evaluates its vendors periodically to ensure that the suppliers adhere to the Group's code of conduct and provide feedback wherever applicable.

The Group understands the importance of following due diligence in the start-to-end selection process of its value chain partners. Greenko believes that its supply chain partners play a vital role in intensifying the sustainability journey of the Company and hence the Group ensures a continuous

environment of trust and cocreation. The Company has laid down several screening and performance evaluation criterion with more emphasis on social parameters like statutory compliance, health and safety with no compromise on quality and timely delivery with a high emphasis on Human Rights as well. Greenko strives to achieve its aim to expand the clean energy market which will also help them improve livelihood opportunities and push forward wealth and value creation for its stakeholders and business.



Provision of CC Pathway by Greenko at Greenko AT Hydro Pvt. Ltd., Himachal Pradesh

Social and Relationship Capital

Responsible Partnerships

Contracts and Partnerships

Project Management at Greenko has its own attributes. In major projects like IRESP, the Company employs packaging philosophy through competitive bidding process, both international and domestic (ICB, DCB) for selection of supply chain partners. The start of any project at Greenko follows bidding process (International, Domestic or Open Competitive) based on a pre-determined qualification criteria with respect to the technical and design aspect which assists global

competent players to put their bid and helps Greenko to find a suitable partner for its major projects. Greenko, for the IRESP projects clearly highlights its terms and conditions in the tendering (ICB/DCB/Open) which ensures that the vendors are well-aware of the possible risks and mitigation strategies before entering the contract.

Greenko essentially follows all the appropriate guidelines for the tendering process and conducts a technical discussion with all the candidates before successfully passing the tender since Greenko

has major projects in its portfolio. Only when the bid qualifies on all the above aspects, it moves ahead for consideration of contract awarding.

Greenko adopts industry prudent practices in order to ensure that the processes of tendering (ICB/DCB/Open) maintain complete transparency in competitive bidding. Greenko mitigates all the risks (technical, statutory, information security and commercial) associated with all major contracts during tendering process.

Contracts & Procurement (C&P) KPIs

S. No.	KPIs	FY 21-22				CY 2022			
		GAM	Central C&P	GEP	ZeroC	GAM	Central C&P	GEP	ZeroC
1	% Spent for responsible compliance with Greenko CoC suppliers	10	10	During the execution of projects, we ensure that we follow globally accepted ethical practices across the entire C&P function	NA	100	94	During the execution of projects, we ensure that we follow globally accepted ethical practices across the entire C&P function	NA
2	% Increase in contractors	25	10	10	NA	15	10	-	NA
3	% of supplier payments made within the time period, in case of strategic contracts	90	90	90	NA	90	92	-	NA
4	% of orders delivered on time	NA	95	95	NA	NA	95	95	NA
5	Purchase/ contracts order cycle time	NA	1-21 days for supply orders, 15 to 45 days for all contracts based upon criticality/ nature of the work	18 days for Supply Orders and for all Letter of Awards for major packages are within 3 days from management approval	NA	45	1-21 days for supply orders, 15 to 45 days for all contracts based upon criticality/ nature of the work	17	NA
6	Amount spent on capex	INR 6.5 Cr	37.30 Cr	2350 Cr	NA	20 Cr		5969.41 Cr	NA
7	Amount spent on opex	INR 115 Cr	6.22 Cr	NA	NA	60 Cr		26.26 Cr	NA

S. No.	KPIs	FY 21-22			CY 2022		
		GAM	GEP	ZeroC	GAM	GEP	ZeroC
1	% of contractors/supplier are being awarded repeat orders and the same is executed by contractors as they are satisfied with Greenko	33	50	NA	60	42	NA
2	% of suppliers/contractors retained beyond 3 years	82	90	NA	85	-	NA
3	% of contracts awarded through an open & competitive process	99	100	NA	99	-	NA
4	% of long-term agreements entered with suppliers/manufacturers (Value-based)	30	95	NA	53	2	NA
5	% of contractors & suppliers evaluated against Health & Safety practices	100	100	NA	100	100	NA
6	% of major and critical contractors & suppliers based on Social Accountability Practices	100	100	NA	100	100	NA
7	% of contractors/suppliers evaluated against Statutory & Regulatory Compliance achieved	100	100	NA	100	100	NA

S. No.	KPIs	Central C & P	
		FY 21-22	CY 2022
1	% of contractors/supplier are being awarded repeat orders and the same is executed by contractors as they are satisfied with Greenko	17	17
2	% of suppliers/contractors retained beyond 3 years	92	92
3	% of contracts awarded through an open & competitive process	99	99
4	Long-term agreements entered with suppliers/manufacturers (number-based)	10	10
5	% of contractors & suppliers evaluated Health & Safety practices	100	100
6	% of major and critical contractors & suppliers based on Social Accountability Practices	100	100
7	% of contractors/suppliers evaluated, Statutory & Regulatory Compliance achieved	100	100

Social and Relationship Capital

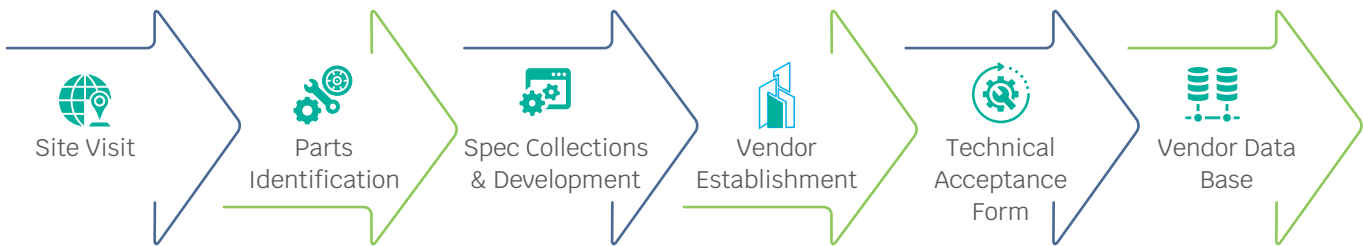
Responsible Procurement

Greenko has implemented a Responsible Procurement initiative to ensure a self-reliant sourcing of spare parts without compromising the 5Rs of Right Source, Right Price, Right Material, Right Quantity, and Right Time. The different steps being followed for Responsible Procurement are depicted in the infographic. Greenko Group has formed a separate committee for the execution of Responsible Procurement and each of them have been assigned tasks

to visit different sites to ensure smooth implementation of the processes. Each team is assigned a task to identify the part codes of the components and the technical data sheets of identified components were collected from relevant stakeholders.

Greenko's inhouse team was able to decode and comprehend the specifications of spares and was able to identify other alternative solutions in the market which matched the Company's specifications.

This initiative helps Greenko to enrich the technical expertise about the spares and services, while reducing its dependency on few vendor partners, reducing the lead time for spares and giving an overall competitive advantage with impressive savings on the cost as well.



Sustainable Supply Chain

Greenko aims to bring in regenerative and circular economic models in its supply chain for which it has adopted positive changes in the C&P mechanism. The Group ensures that the techno commercial values which makes sure that a viable and high-quality product is delivered are balanced and all design and price related specifications and targets are met. Alignment of sourcing activities with the Group's goals and objectives ensures that Greenko achieves higher efficiency leading to a better performance and reduction in supply chain risks while improving circularity in production. The Group conducts a preliminary screening of suppliers on social parameters as a part of onboarding process and restrict any engagements violating the pre-communicated ESG parameters.

Greenko strives to reduce its impact in the supply chain and looks to working in tandem with its suppliers to enhance their capacities wherever possible.

Greenko is committed to promote responsible and sustainable supply chain management in all aspects across the life cycle by changing, rethinking, reinventing, and repositioning the C&P role in the supply chain management matrix.

Corporate Alliances

As a part of the project 'Disentangling Sea Turtles', Greenko Group has partnered up with WWF India to work towards the conservation of the Olive Ridley Sea Turtles. The project aims to mitigate the threats to the sea turtles through advocacy at the regulatory level. Greenko Group is working closely with the fishing industry and the Indian fishermen community for the same.

Greenko Group has undertaken various engagement activities by means of workshops, awareness sessions, etc. to enable the adaptation of sustainable fishing practices. Furthermore, the awareness programs also intend to educate the fishermen by abstaining on unethical ways and use of ghost fishing gears which may have potential negative impacts on sea turtles and other threatened species.

Key Alliances in FY 21-22, CY 2022

- Philanthropic Partnership between WWF India and Greenko Group
- Focus on Conservation of Oceans
- Collaboration with Govt. of Sikkim to conserve Red Pandas

Partnership with Vendors

At Greenko, since the cost of turbines form a major part of the hydropower and wind energy project costs, the Group has strived to set up a procurement strategy for the turbines. As a part of the strategy, Greenko has in place framework agreements and looks to developing an enduring relationship with its suppliers as the vendors are limited and there is an ever-growing demand for the turbines which form an integral part of Greenko's operations.

The Company purchases wind turbines, hydro turbines and solar modules and other equipments related to power projects from the original equipment manufacturers. For the rest of the components, suppliers are selected on the basis on cost, reliability, warranty, coverage and ease of installation along with any other ancillary costs.

Transmission and Interconnection

A strong relationship and continuous engagement with the transmission utility authorities ensures that

there is uninterrupted access to transmission infrastructure as the same along with access to power grid is of utmost importance to a project's feasibility. Greenko ensures that timely discussions are conducted with the relevant state utilities regarding the availability of the grid and files the relevant application with the authorities to interconnect with the network.

Power which is generated via wind and solar farms is transmitted to the dedicated pooling stations only via high voltage transmission lines so that there is no fluctuation in the energy transmission, and this also leads to keeping the grids stable and ruling out any fluctuation issues.

Customer Relationship Management

Greenko strives to meet the expectations of its customers and the Group has streamlined its customer-centric processes to build long-term relationships with its customers. The customer profiles of Greenko range from state and privately-owned distribution companies to industrial and commercial users of energy. Due to issues of inconsistency and geographical limitations, utility customers of Greenko often face challenges of regular supply of renewable energy. Greenko strives to resolve these challenges by providing electricity on demand by forecasting the schedule to the extent feasible which is proven by the low penal charges paid by the Group. Greenko works in conjunction with regulators in order to provide uninterrupted and reliable power supply to its commercial and industrial users. The Group also generates wealth through selling power on the energy exchanges in India periodically.

Social and Relationship Capital

Human Rights

Respecting Human Rights

At Greenko, commitment to human rights is cornerstone of its corporate policies.

The Company has policies on human rights (code of conduct, freedom of association, Prohibition of child labour, Policy on diversity, Equality and inclusion) which are applicable to its employees, suppliers and service providers. These policies are developed based on International Labour Organisation (ILO) and related national laws. Greenko continues to strengthen and introduce systems to ensure sound implementation of its policies on human rights and decent workplace for complete adherence.

Code of Conduct

There is a well laid procedure on Code of Conduct for employees of Greenko.

For the suppliers and contractors, a code of conduct consisting of Health and Safety, Environmental protection, Social accountability, Labour compliance requirements.

Prohibition of Child Labour and Forced Labour

At Greenko, at all its sites and contractors / suppliers, it is ensured that no child labour is employed and forced or compulsory labour is strictly prohibited.

Freedom of Association

Greenko recognises and respects the right of its employees to refrain from the exercise of the freedom of association and collective bargaining.

Greenko Security Services

The security personnel are effectively trained to uphold the human rights. All the security services deployed by Greenko are strictly governed in accordance with National and International laws. Continuous human rights trainings are being provided to Security personnel to perform their duties to promote respect for human rights as set forth in the Universal Declaration of Human Rights and international humanitarian law.

At Greenko, there are ZERO human rights breaches during 2021-22.



Provision of Study Material of Competitive Examinations at Gattu, Andhra Pradesh

Community Welfare Programmes

Greenko strives to contribute towards the social and economic growth of the communities in which they operate. The Group's focus is on sustainable upliftment of the communities as they are pivotal to responsible business growth. Greenko values its relationships with its stakeholders and aligns its programmes with the UNSDGs. Programmes are aimed at metrics with a bottom-line impact such as increase in literacy rate, employment generation and sustainable living.

CSR Programmes Implemented

Greenko Group pays special focus on its community programmes. As a part of its community outreach program in the education sphere, the Group has taken up efforts to provide need-based infrastructure to government schools across locations wherein the organisation has constructed compound walls to safeguard the property, constructed washrooms specially for female students to ensure hygiene, made provisions for drinking water facility, etc. Keeping in mind the move towards digitalisation in owing to the Covid-19 pandemic, a majority of Greenko's contributions is seen in promoting digital education among the Govt. schools through setting up of Computers labs, and Digital classrooms.

Furthermore, the Group's focus on rural development initiatives augmented the improvement of basic existing amenities and creation of new amenities for the rural communities across locations in the various areas of street lighting facility, solid waste management, availability of potable drinking water, development of cremation places, internal approach roads etc. Greenko Group in association with

local community institutions and associations further strengthened the livelihood of the locals.

Our major CSR activities which we conduct in close partnership with the local NGO's, Expert Institutions and Government agencies include:

1. Industry Customised Skill Development and Training in Solar Energy with Andhra Pradesh State Skill Development Corporation (APSSDC), Govt. of Andhra Pradesh
2. Program for Sustainable Livelihood Improvement through Integrated Watershed Programs with Nation Bank for Agriculture and Rural Development (NABARD) in Maharashtra
3. Habitat Conservation and Species Recovery of Great Indian Bustard (GIB) in 30 Km radius, at Rollapadu Wildlife Sanctuary along with Forest Department, Govt. of Andhra Pradesh
4. Conservation of Olive Ridley Turtles in Andhra Coast (With WWF) is achieved by reducing the impact of

ghost gear on threatened species as well as reduction of sea turtle bycatch in trawl fisheries.




5. Demonstration of Natural Farming at Gani Solar Park (with collaboration of Sri Sri Institute of Agriculture and Technology, Bangalore)
6. We have initiated plans to conserve Red Panda in coordination with the Government of Sikkim and in process of firming up with detailed program of support for conservation. The Program will include support to Panda Breeding Program in Himalayan Zoological Park covering Fencing, Surveillance and Enrichment Activity.
7. Few other activities taken up such as Construction of Boundary fencing for the Wildlife Sanctuary, Translocation of unwanted trees in the wildlife sanctuary.



Hand Sanitiser Distribution by Greenko Foundation

Social and Relationship Capital

CSR Case Study 1: Swachh Himachal Abhiyaan - Malana River Cleaning and Garbage Bins Distribution

Strategic Objective	Target Area	Material Topic Addressed	Key Risk	Alignment with SDGs
The objective is to motivate rural communities to adopt safe disposal practices and reduce the traditional open dumping of garbage as part of the Swachhta Abhiyaan Program adopted by Greenko for the reclamation of Malana River at its Malana Hydel Plant. To achieve this, Greenko provided household dustbins to the neighbourhood villages in and around its operational presence in Himachal Pradesh.	Rural communities in the 2 Districts in Himachal Pradesh namely Chamba and Kangra.	Community Development	Water Pollution and Water-Borne Diseases	  

Description

The programme was implemented in collaboration with the local State Pollution Control Board (HPPCB) after consulting the local community. Appropriate stakeholders such as local regulatory officials also actively participated in this awareness campaign. Some of the highlights of the campaign included the display

of a banner on Swachh Himachal at prominent locations, collection of garbage and plastic waste along the riverside by volunteers and local community members, sensitisation of the local community on environmental protection and water conservation, and the distribution of cloth bags to replace single use plastic. This programme adopted an inclusive approach by engaging local

community members for the effective disposal of garbage in designated bins. The main activities of the awareness programme included the distribution of household dustbins to the local people and creating awareness for proper disposal of garbage in the bins only, and awareness on cleanliness, health, hygiene, sanitation and environment protection.

S. No.	Cluster Name	No. of Plants Covered	Villages Covered	No. of Household Benefited	No. of Schools Covered	No. of PHC/Civil Hospitals Covered
1	Chamba	5	8	185	14	1
2	Palampur	5	6	200	0	2



CSR Case Study 2: CONSTRUCTION OF CC DRAINAGE

Strategic Objective

Improving the health & living standards of rural people equitably and sustainably through the creation of social and economic infrastructure and basic community services and facilities.

Target Area

Sagwali Village in Daloda Tehsil of Mandsaur District in Madhya Pradesh State.

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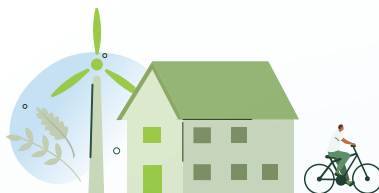
No. of Households

170

No. of Total Families

674

Total Population



● Name of the village (s) covered: Sagwali

Material Topic Addressed

Community Development

Key Risk

Challenges in implementation of project due to the lengthy review and approval processes.

Alignment with SDGs



Summary

The construction work started in the month of April 2022. The following impacts are observed from the above activity:

- Directly benefited the entire 170 families of the village having a population of 674
- Empowered the health status of 150 students of the school

- Uplifted the health standard and empowered the socio-economic status of the villagers
- Witnessed Clean India Green India campaign
- Built an otherwise dilapidated compound wall for safeguarding to make sure the education kept continuing even during monsoon



Social and Relationship Capital

Public Policy Advocacy

At Greenko, 550+ professional hours were productively invested by top leadership alongside regulators and policymakers for fruitful discussions around the tariff policies, regulations amendments, if any. Since the inception, Greenko has been constructively engaged with regulators/government bodies in giving suggestions and proposing the timely need to focus on niche areas such as storage of renewable energy and value-addition in the hydro power policy.

The efforts of transformation by Greenko from 1.0 to 4.0 has been manifested in various stages wherein the Group started with the aim of energising by way of commercialising renewable energy through various partnerships with Equipment OEMs and procuring Offtake contracts/ Sale of Power to Grid. Furthermore, after achieving its first goal, Greenko had set to increase the scale of operations to increase the consumption of renewable energy and decrease the dependence on fossil fuels through adopting various complex technologies in solar, wind and hydro electricity generation during the evolution stage GKO 2.0 – decarbonisation. In order to move in tandem with the global growth in the field of RE, Greenko Group had set to digitalise the entire process while providing Energy Management Solutions through optimising asset performance. Today, as Greenko is in the evolution stage 4.0 which is decentralisation, it is aiming to transition to green molecules as a part of its strategy via investing in new business models along the energy value chain and is putting continuous efforts in bringing awareness and importance of Schedulable power (RE on demand) to push RE into replacing conventional fossil power.

The journey to reach the decentralisation stage, has evolved Greenko as a Group from a mere

facilitator to an innovator by the time it evolved to GKO 4.0. The journey involved fruitful interactions with supply chain partners by forging co-creation and strategic alliances to share a common vision of continuous supply of clean and affordable power. Greenko has been driving the change in energy landscape through policy advocacy and has also contributed significantly on the matters of policy formulation/ regulations by aligning with CERC.

Steps taken towards Policy Implementation and enabling Favourable Policy shift:

- For Connectivity Regulations:

Consideration of Renewable generation asset + Storage and Standalone Energy Storage System as an eligible entity for applying for connectivity to the ISTS network

No pre-requisite for soliciting connectivity for Pumped Storage Projects as opposed to specific milestones to be fulfilled for obtaining RE Connectivity

- For Tariff Determination

Inclusion of 'Renewable hybrid energy project' and 'Renewable energy with storage project' as eligible Renewable generation asset.

Inclusion of definition of 'Storage including pumped storage project for integration with RE generation asset to be considered as RE project

- For Sharing of Inter-State Transmission Charges and Losses Regulations

Waiver of ISTS Charges for Pumped Hydro Storage Projects for 25 years, if project commissioned till 30.06.2025 and reduction in waiver (%) of 25% in subsequent each year.

- 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 with the increase in Renewable generation proportion

- Clarification regarding usage of Energy Storage System (ESS) in various applications across the entire value chain
- PSP accorded status based on its application area i.e. generation, transmission and distribution
- Union Cabinet has accorded approval to declare PSPs as renewable sources
- Renewable energy with storage (only stored component) has been finalised to be considered for trading of carbon credits under Article 6.2 mechanism
- Hydro Purchase Obligation introduced and already adopted by 13+ states
- Storage Purchase obligation – 4% of total energy by 2030
- Third-party storage contracting allowed in RE + Storage tenders
- Statutory clarification regarding Energy Storage usage issued by ministry
- Technology agnostic energy storage tenders issued by NTPC under which PSP was L1 bidder
- Standard storage bidding guidelines to come out shortly
- ISTS waiver of 25 years for supply from PSP storage project enabled
- Anticipated Pumped Storage policy – States to open sites under the bidding route
- ISTS charges waiver for Green Hydrogen/Ammonia using Green power Open Access
- No cross-subsidy surcharge & additional surcharge on availing green power for green hydrogen/ ammonia production

Public Policy Advocacy at the States

In the age of competitive federalism, States in Union of India, attract investments into industrial activities by offering various benefits & incentives to the investing companies. These benefits would mostly be notified in the respective states' Industrial Policy. Some states offer benefits & incentives over and above those included in their Industrial Policies and would be specific to a project proposal. These would be termed as "Customised Package", investment proposals go through several discussions / consultations and various layers of approvals before they are approved and notified by the state government.

The key to extracting the best package for a project is to understand the needs for the project juxtaposed with the ability of the state to extend those benefits for the project. For the proposed 1440 MW Standalone Closed Loop Pumped Storage Project in Madhya Pradesh (which would be eventually enhanced to 1920 MW), Greenko prepared a list of benefits & incentives offered by various states, including Madhya Pradesh. A list of benefits that would be critical for the Company are carved out and negotiated with the state. The state offered "Reimbursement of 75% of SGST payable in the purchase of plant and machinery required for setting up the project" which was critical for the Company in managing capital costs. This benefit is unique in

the sense that the Company would be able to recover 75% of State GST paid on the purchase of equipment as well as on the construction material for setting up the Plant.

The proposal / demand from the Company was placed with the concerned dept., New & Renewable Energy (NRED), who along with the Dept. of Industry Policy and Investment Promotion (DIPIP), with recommendation from Chief Secretary, placed the proposal before Cabinet Committee for Investment Promotion (CCIP) chaired by Hon'ble Chief Minister of Madhya Pradesh. The committee then deliberated and recommended the benefits to be extended to the Company.

"The key to extract the best possible benefit package for the Company rests on mutual understanding of what is good for the Company and its potential impact on the state which is extending the benefits. While the state puts its best efforts in attracting the investors to its territory by framing industry-friendly policies, the Company would also need to see what is good for them in terms of the overall package and how the benefits / incentives could be leveraged and operationalised for implementing the project in a time-bound manner and also making an excellent case for further investments in the state. We have seen that the successful operationalisation of the incentive package stimulates other states to adopt the same in their respective policies and that in itself would be a big win for the Company if it is planning to set up projects in these other investor-friendly states."

Naveen Kumar
VP Commercial



Future Priorities

At Greenko, CSR has moved from just few community benefit initiatives to specific focus areas covering all the business domains and ever-expanding business portfolio. As we move from decentralisation ahead and use technology and innovation to our business benefit, we also visualise our CSR activities through a new lens, CSR as an inherent element of our culture for the benefit of all stakeholders. Our focus for the next two years would be around:

- Engaging our community and stakeholders on platforms that evolve as per the need of changing times for maximising the benefits
- To develop Micro sectors under the broad focus areas that best align with Company's business activity, processes, value chain, people skills etc.
- Shifting the focus on meaningful interventions which provide long-term benefits and at the same time meet the relevant needs evolving with the dynamic social changes - win-win proposition for both Greenko and its stakeholders for visible sustainable economic, environmental and socio-cultural results
- We wish to co-create with our community partners viz., community organisations, Non-Government Organisations (NGOs), Government agencies both local and central etc., by means of sustainable collaborations to contribute on the grassroot level
- To focus on integrating the ESG framework and circular economy into the CSR practice



Chamba Village Festival,
Himachal Pradesh



Planet – Protect and Enrich Natural Capital





Ratnagiri Wind Power Projects Pvt Ltd,
Maharashtra

Natural Capital

Strategic Approach

At Greenko, we're driven to reach our Net Zero future by 2040, in line with the Paris Agreement 1.5-degree scenario. Our carbon-negative roadmap is a set of achievable, measurable targets to meet the Paris Climate Agreement and Sustainable Development Goals. We're focussed on growth, sustainability, and decarbonisation to achieve these objectives.

Leadership at Greenko is unwavering in their commitment to preserving and conserving natural resources. We're responsible for the consumption of resources such as energy and water, and take

measures to reduce pollution, waste, and ecosystem degeneration. We're also striving to increase the longevity of our assets, and improve circularity in projects and assets for a circular economy.



SEI Arushi Pvt. Ltd.

Thimmamma Marrimanu – World's largest Canopy Banyan Tree in Kadiri, Andhra Pradesh

Our Performance

Mitigating Impacts on Nature

Environmental Management System

Greenko takes early action for preventing actions leading to environmental degradation. To ensure this, the Company conducts Environmental and Social Impact Assessment (ESIA) study before project development following 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 through its robust ESMS methodology.

Environment Management System KPIs

Particulars	Since Inception	FY 21-22	CY 2022
ESIA Studies	45	1 ESIA completed	1 New ESIA initiated
ESMS Implemented	85 sites	Initiated in 20 new sites	Initiated in 20 new sites
ESMS Trainings Provided	250 participants so far	150 participants, 1,200 person hours of training	112 participants, 900 person hours of training
ISO 14001 Certified	12 Plants and Corporate Office	12 Plants and Corporate Office	112 sites under implementation cycle for certification
Green Company Rating	11	3	8

GHG Emissions

The Company employs robust climate strategy for operationalising its emission reduction goals in line with the global climate agenda of limiting temperature rise below 1.5 degree Celsius and mitigating the irreversible environmental impacts resulting from climate change. Grid Electricity remains the major energy source for the Group which is augmented with DG sets in case of power emergency or power failure.

Energy consumption within the organisation

Sources	UoM	FY 21-22			CY 2022		
		Total Consumption*	Energy consumption (GJ)	Emissions Generated (tCO ₂ e)	Total Consumption*	Energy consumption (GJ)	Emissions Generated (tCO ₂ e)
Diesel (DG sets + Company owned vehicles)	Litres	236,335	3,596.24	632.55	391,780	5,961.6	1,048.59
Petrol (Company owned vehicles)	Litres	9,256	303.43	21.03	22,704	744.28	51.58
LPG	Kgs	87,753	4,150.72	261.91	101,063	4,780.28	301.63
Grid electricity consumed	kWh	19,508,000	70,228.8	15,801.48	39,796,000	143,265.6	32,234.76

* Includes Head Office, Assets and Project Sites.

Natural Capital

GHG Emissions Generated (in tCO₂)

Emission Category	FY 19-20	FY 20-21	FY 21-22	CY 2022
Scope 1	1,286.98	2,541	3,067.78	2,575.24
Scope 2	22,967.38	20,972	15,801.48	32,234.76
Scope 3	1,746	1,455	39,645.02	39,533.32

*All scope emissions include CO₂ emissions only

**Scope 1 emissions also include Fugitive emissions

***Scope 3 categories include Purchased Goods and Services, Capital Goods, Fuel & Energy related – T & D Losses, Waste Generated in operations, Upstream transportation and Distribution, Business Travel and Employee commuting

****Greenko follows operation and control approach for computing emissions

*****Scope 3 emissions are incomparable between the years owing to addition of new categories

Scope -4: GHG Emissions (Direct and Indirect) Avoided (in million Tonnes of CO₂)

GHG Emissions Avoided	FY 19-20	FY 20-21	FY 21-22	CY 2022
Emissions Avoided	8.2	12.47	8.69	9.47

Air Emissions Avoided from Renewable Energy Generation (in Tonnes)

Particulars	FY 19-20	FY 20-21	FY 21-22	CY 2022
Nitrogen Oxides (NOx)	47,851.2	75,787.2	51,484.4	56,136
Sulphur Oxides (SOx)	71,776.8	113,680.8	77,226.6	84,204
PM10	9,769.62	15,473.22	10,511.4	11,461.1

Projects under Carbon Market Mechanisms

Since its inception, Greenko has actively participated in several government initiatives and carbon market systems. Greenko filed 26 projects under the Clean Development Mechanism (CDM) projects with the UNFCCC during the current reporting period, producing 26,43,069 Certified Emission Reduction (CER) credits.

Additionally, 10 plants and 2 plant participants are registered via the REC mechanism and IREC mechanism respectively, and additional registration of 10 plant participants is also in progress with Global Carbon Council (GCC).

Projects Registered under CMM Categories	FY 21-22	CY 2022
Projects under CDM	26	0
Projects registered under VCS	12	0
Projects registered under Gold Standard (VCS&CDM)	13	5
Plants registered via REC mechanism and IREC mechanism	12	0

Revenue Generated through CDM	FY 21-22	CY 22
Sale of carbon credits (VER, GS VER, IREC's)	₹ 69.75 Cr	₹ 30.02 Cr

New Energy Engine

"Through ZeroC, the new energy business vertical, Greenko Group has forayed into an exciting and pioneering journey of green molecules. The immediate mission of ZeroC is to establish Greenko as the world's pre-eminent leader in green molecules business by being able to achieve the lowest levelised cost of green hydrogen and green ammonia. We aim to do that through a series of strategic decisions and partnerships that will help us create the most cost-effective, reliable, and efficient green hydrogen ecosystem.

In a JV with John Cockerill of Belgium, Greenko is setting up one of the largest electrolyser plants globally – a 2 GW electrolyser facility that will not only ensconce Greenko's name firmly as a frontline electrolyser manufacturer but will also enable manufacturing of the most cost optimal electrolysers in India thereby securing equipment for its green molecule production plans as well as providing great fillip to India's green hydrogen ambitions by indigenising an important technology. Green ammonia is fast emerging as the best vector of green hydrogen for wide scale use as fuel and industrial feedstock, and ZeroC plans on being at the forefront of this business by setting up several "firsts": India's 1st commercial scale green ammonia facility (100 KTPA plant at Una, Himachal Pradesh to be commissioned by 1st half of 2024), India's 1st million tonne green ammonia plant (1-MMTPA plant in the east coast by 2025) and by being the partner of choice with ONGC in setting up another 1-MMTPA green ammonia plant in the west coast to be commissioned by 2026. Powered by Greenko's pathbreaking IRESP projects enabling lowest cost RE RTC, and through collaboration with some of the most reputed ammonia licensors and EPC players, Greenko ZeroC is well poised to achieve the distinction of being world's leading green ammonia producer. The excitement created by Greenko ZeroC's green ammonia projects can be gauged from the fact that Greenko has already signed defining MoUs with POSCO and Keppel and discussing green ammonia offtake agreements with several European heavyweights.

As a flag bearer of India's green hydrogen ecosystem, Greenko ZeroC has been regularly engaging with government and non-government organisations such as ETAC, MNRE, MoPNG, MoP, Niti Aayog, and RMI and suggested necessary policy changes to expedite India's transition into a green hydrogen economy. Greenko ZeroC was one of the few Indian organisations to have engaged with the EU in framing of the RED II/III norms.

In just over a year since its inception, Greenko ZeroC has already carved a niche for itself as the leading name in India's green hydrogen landscape. The journey has well and truly started, and the future certainly looks bright!"

Arnav Kishore Sinha

Vice President, Sales & Commercial, ZeroC

Natural Capital

Ecological Restoration Water Management

The nature of Greenko's business involves less water-intensive operations unlike conventional thermal power plants. At Greenko, water is mainly used for domestic purposes and cleaning the solar panels. Greenko strives to constantly monitor its freshwater consumption and discharge wastewater in

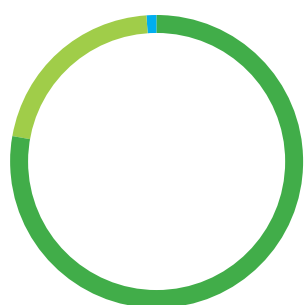
line with statutory requirements. Greenko ensures to consider water use efficiency as a significant factor while evaluating the feasibility of new projects.

To minimise or offset any impacts on the surrounding environment, Greenko not only takes mitigation measures like development of watersheds, rainwater harvesting, drip or sprinkler irrigation, and water-

efficient cleaning technologies but also proactively takes efforts to not cause the negative effects.

However, it has been noticed that the usage of water has increased comparatively. In view of this, Greenko plans to conduct a thorough water management assessment in CY 2023 across all the assets and develop a strategic water reduction road map to optimise freshwater use.

Water Withdrawn in kL (By Source)



Water Recharge - Kurnool, A.P.

Water Management KPIs

KPI	Units	Hydro		Wind		Solar		Head Office		Pinnapuram PSP		FY 21-22	CY 2022
		FY 21-22	CY 2022	FY 21-22*	CY 2022	FY 21-22	CY 2022	FY 21-22	CY 2022	FY 21-22	CY 2022		
Total quantity of water used for plant operations	kL	0	1,000	4,420	5,067.16	81,571	269,441.06	0	0	0	0	85,991	275,508.22
Total quantity of water used for office and domestic purposes	kL	16,399	118,994	15,132	157,341.74	21,265.92	10,811.76	26,856	21,480	15,512.5	21,717.5	97,515.42	330,345
Total number of rainwater harvesting systems available	No.	2	2	10	10	50	96	-	-	-	2	62	110
Total quantity of rainwater collected	kL	20	120	380	21,138	15,216	300	-	-	6,577.3	5,666.76	159,103.3	27,224.76

* Data represented for WINSOM Sites only.

Waste Management

The Group has aligned its waste management practices to the Company's Environment and Social Management System (ESMS). The Company strives to reduce its waste by improving the circularity in the operational ecosystem via reusing or recycling. In accordance with the

ESMS, Greenko has streamlined its operations to identify and monitor the waste generating streams across its sites. Greenko has also initiated Plastic Protocol to delineate the usage of single-use plastics in operation and is exploring the feasibility of replacing them with a sustainable alternative. The Company

also conducts periodic internal audits of its sites for ensuring strict compliance to outlined management systems including waste management. Across the project sites, Greenko has aligned with authorised third parties for handling hazardous wastes and E-Wastes and disposing off sustainably.

Food Composting - Towards the Goal of Zero Food Waste

In an innovative approach to reduce GHG emissions, Greenko has initiated a Compost plant in its Head Office. Implementing food composting technology, the Composter House comprises a machine that has the capacity to convert 100 kg food waste into 25 kg bio compost between 24 - 48 hours.

This compost is later used for planting and greening the campus as well as is available for employees at no cost to encourage plantations at their residences. This initiative also helps us to move towards our goal of zero food waste.

The Organic Waste Converter can compost around 3.5 tonnes of food waste annually. This serves to eliminate 2,380 kg of CO₂ emissions which is equivalent to the amount that 110 trees can absorb annually.

Waste Generation by type for FY 21-22 (in kg)

Waste Types	GAM			Head Office	Projects	FY 21-22	End of Life treatment
	Hydro	Wind	Solar				
Hazardous Waste							
Used batteries	3,000.8	5,100	10,500	NA	NA	18,600.8	EPR
Used oil	9,600	47,900	6,021	NA	3,418	63,521	Disposed to authorised vendors
Chemical waste	0	500	0	NA	NA	500	Disposed to authorised vendors
Used air filter scrap	0	142	450	NA	NA	592	Disposed to authorised vendors
Oil-soaked cotton/cloth	0	12,400	0	NA	150	12,400	Disposed to authorised vendors
Non-Hazardous Waste							
Packaging waste	265	829.2	1,823	482,072	400	2,917.2	Reused
Paper waste	173	484.5	385		-	1,042.5	Recycled
Metal scrap	19,479	19,420	18,770		-	57,669	Reused & Sold to Scrap Dealer
Wood	554	1,910	2,275		-	4,739	Reuse
Plastic and rubber waste	945.5	1,483	1,728		-	4,156.5	Disposed to authorised vendors
Kitchen waste	9,540	631	7,948	NA	29,200	47,319	Composting

Natural Capital

Waste Types	GAM			Head Office	Projects	FY 21-22	End of Life treatment
	Hydro	Wind	Solar				
E-Waste							
Information technology and telecommunication equipment	0	100	100	-	-	200	Disposed to authorised vendors/MoU with CMET
Consumer electrical and electronics	0	10	20	-	12	30	Disposed to authorised vendors/MoU with CMET
Significant Spills							
Oil Spills	4	245	104	NA	-	353	Contained, Collected, Treated and Disposed
Chemical Spills	3	30	1	NA	-	34	Contained, Collected, Treated and Disposed

Waste Generation by type for CY 2022 (in kg)

Waste Types	GAM			Head Office	Projects	CY 2022	End of Life treatment
	Hydro	Wind	Solar				
Hazardous Waste							
Used batteries	6,158	35,589	21,756	NA	58	63,561	EPR
Used Oil	7,028.8	83,014.85	3,801	NA	8,478.9	102,323.55	Disposed to authorised vendors
Chemical waste	5	144.2	110	NA	-	259.2	Disposed to authorised vendors
Used air filter scrap	0	0	0	NA	-	0	Disposed to authorised vendors
Oil-soaked cotton/cloth	792.2	26,132	350	NA	-	27,274.2	Disposed to authorised vendors
Non-Hazardous Waste							
Packaging waste	4,413	1,577	797	15,000	0	6,787	Reused
Paper waste	80.3	1,038	170.5		0	16,288.8	Recycled
Metal scrap	66,363	15,118	8,951		277,470	367,902	Reused & Sold to Scrap Dealer
Wood	185	990	8,602		0	9,777	Reuse
Plastic and rubber waste	294.6	1,683	407		1,561	3,945.6	Disposed to authorised vendors
Kitchen waste	8,718	5,007	4,824	2,491	21,900	42,940	Composting
E-Waste in Nos.							
Information technology and telecommunication equipment	-	-	-	2,242	-	2,242	Disposed to authorised vendors/MoU with CMET
Significant Spills							
Oil Spills	16	300	67.09	NA	0	383.09	Contained, Collected, Treated and Disposed
Chemical Spills	0	5	10	NA	0	15	Contained, Collected, Treated and Disposed

Materials Management

Greenko being an energy transition and industrial decarbonisation solutions Company deriving the energy from natural resources, eliminates the need for input raw materials except for plant set-up and O&M purposes. The major raw material consumption is summarised below:

Raw Material Consumption (in kgs)

Particulars	FY 21-22*	CY 2022*
Lubrication Oil (Engine oil, gear oil etc.) consumed	28,217.24	45,857.70
Turbine Oil	193.5	4,851.00
Transformer Oil	636.35	44,605.91
Grease	6,109.75	10,996
SF6 Gas	69	37
Gear Oil	3,931.2	4,231.80
Oxygen Cylinders (no.)	216	190

*The above data includes material consumption from Greenko Assets

Biodiversity Management

It is imperative for a renewable energy business to consider biodiversity as a highly material issue through a renewed lens of environmental, economic and social risks. The projects are set-up with a clear analysis of comprehensive Environmental Impact Assessment (EIA) intending to identify and measure the impacts of the projects on the surrounding environment. Greenko Group has also taken strides towards increasing the green cover across its operational sites through extensive plantation programs, which will help the Company develop natural CO₂ sinks in the communities in which it operates.

Greenko also commits to preserve the diversity of flora and fauna through its ecological restoration programmes such as habitat conservation, natural or sustainable farming, protecting sea-based wildlife systems, fish seeding initiatives to restore, protect, and enhance biodiversity.

Greenko has started promoting Organic farming with sustainable agricultural practices and motivate to shift towards organic farming at Rollapadu & Jalakanur villages as part of environment protection and Habitat Conservation of the Great Indian Bustard (GIB) at Rollapadu Wildlife Sanctuary.

Greenko has surpassed its performance indicators from FY 20-21 in tree plantation by 45%, no. of biodiversity conservation programmes conducted has also raised by 7,920, 720 new bird nests have been provided and fish seeding initiatives to restore has also been increased by 51,000.



Axis Wind Farms Pvt Ltd,
Andhra Pradesh

Natural Capital

Biodiversity Management KPIs

KPI	Units	Hydro		Wind		Solar		FY 21-22	CY 2022
		FY 21-22	CY 2022	FY 21-22	CY 2022	FY 21-22	CY 2022		
Number of trees planted	No.	1,065		127,378		106,413		234,856	234,856
% plant survival over last 3 years	%	63		55		68		62	62
Total greenery area developed	m2	12,400	38,445.14	278,880	141,235.3	336,992.11	126,666.61	628,272.14	306,347.05
Number of biodiversity conservation programmes	No.	9	7	51	11	8,001	4	8,061	22
New bird nests provided	No.	0	0	143	245	1,019	14	1,162	259
Fish seedlings	No.	150,000	200,000	0	0	1,000	0	151,000	200,000
Number of noise mitigation measures taken	No.	3	2	17	8	15	10	35	20



Sapling Plantation, Bijapur Cluster, Karnataka

Land Management

Spreading across 15 states all over the country, Greenko's nature of operations require huge land especially for wind and solar plants. The Company has great deliberations on the various factors like availability of land, displacement or relocation of communities and effects on the biodiversity and ecosystem surrounding the land.

During the project construction phase, the impact on land is anticipated due to various activities such as site levelling, filling and development. These activities may lead to soil erosion as well as silting of nearby water bodies. To overcome this, the Group carries out the following measures:

- Muck dumping and restoration is carried out for preventing and controlling soil erosion
- Natural drainage system is followed to protect contours

- Compensatory afforestation as well as biodiversity management plan is implemented to conserve plant species and faunal habitat

During the operational phase, the Group also ensures minimal environmental impact on the ecosystem. The land used for construction activities is restored and green-belt around the project sites are created, which provides habitat for the wildlife in the area. These measures are done in compliance with the legal and social regulations.

Greenko ensures implementation of Performance Standards no. 5 on Land Acquisition and Involuntary Resettlement at all the sites. The Group ensures to avoid or minimise involuntary resettlement wherever feasible by:

- Exploring alternative project designs

- Mitigate adverse social and economic impacts from land acquisition or restrictions on affected persons use of land by providing compensation for loss of assets at replacement cost

- Ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation and the informed participation of those affected

The Group also makes sure that to improve or at least restore livelihoods and standards of living of displaced persons and improve living conditions among displaced persons.

Greenko while conducting ESIA or implementing ESMS, ensures that land related environmental and social risks are identified, evaluated and necessary controls in the form of management programs are implemented.

Case Study 1

Continuous Attention to Environment

During project execution and asset management, the following environmental stewardship measures are taken:

- Establishing advanced internal testing labs on project locations. As a result, fewer test samples will need to be sent to outside laboratories, lowering carbon emissions
- Conducting video calls for remote inspections, which will cut down on transportation-related carbon emissions
- To cut down on paper use, the deviation process is done online. The GQAP's (Greenko Quality Assurance Portal) deployment would result in paper conservation in the future. Inspections, tests, and all the reports they produce will be filed online and made accessible through this portal in real time

- Reusing scrap from testing specimens and samples in the project site for a variety of uses will cut down on waste and land utilisation

Additionally, it is expected from the vendors to utilise environmentally friendly materials whenever possible.

Greenko incorporates environmental factors as much as feasible into the designs. The organisation is putting the following few procedures into practice:

- Creating safe earthing procedures for the protection of people and wildlife
- Recommending gas-insulated switchgear to lessen the impact on flora and fauna, EMF, and the need for additional land
- Recommending powerhouse designs that use the greatest technological and financial strategies

- Recommending CFL and LED lighting for power plants
- Recommending energy-saving air conditioners in plants
- Aiming to eliminate as much plastic, asbestos, and other hazardous materials through innovative design
- Generating all the electric power in the IRESP from raw materials that are 100% pollution-free (sunlight, wind, and water).

Natural Capital

Climate Proofing the Business

Climate Risk Management

Primarily, the core business strategy of Greenko is to stick to renewables, storage and green fuels which shall significantly reduce the impact on the climate. Further, to safeguard the Greenko's assets from physical climate changes, the Group places significant focus on Climate Risk Assessment and strategising solution for adaptation and mitigation. The Company aims to align its plant teams to understand the site vulnerability and readiness for responding to climate change related impacts. The Company's risk management framework has a well-defined methodology for proactive identification and analysis of climate-related issues and risks. Greenko conducts climate risk assessment for all its sites as a part of its risk management process. As part of the analysis, the Company has studied the projections of the issues arising due to climate change across all sites using IPCC's RCP 4.5 scenario and the results are summarised in the table below:

Key Climate Change Risks and Opportunities

Physical risks resulting from climate change can be event driven (acute) or longer-term shifts (chronic) in climate patterns.	Chronic & Acute Impacts <ul style="list-style-type: none"> • Extreme change in winds with respect to speed and distribution will impact generating capability of WTGs • Change in rainfall patterns impacting the river flow pattern, affect the moisture levels of soil, which provides storage and regulates runoff and excess flooding • Changes in solar radiation cloudiness and mean temperature • Increased probability and severity of heatwaves • Increased number of warmer days • Higher air temperature would increase surface evaporation, reducing water storage and power output • Ice melting can alter the seasonal inflow of water to plants that rely on glaciers and pose safety risks • Increase in water stress near some wind and solar farms 	Mitigation Strategies <ul style="list-style-type: none"> • Deploying advanced technologies with accurate forecasting and real-time monitoring of weather events. Various adaptation measures such as scouring, flood protection walls, turbine protection will be taken up. Developing site-specific emergency preparedness plans for handling climate-related events.
Transitioning to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change.	Transition Risks and Opportunities <ul style="list-style-type: none"> • Transitioning to low-carbon economy shall induce a change in policy ecosystem for addressing climate change, is an opportunity for Greenko • Change in consumer preferences with increasing demand for renewable energy will be an opportunity for Greenko • Changes in regulations might result in impacts like risk of constraints on electricity pricing, markets etc. • Technology-related risks include financial constraints for adopting new and diverse technologies and rigorous research around the decarbonisation technologies 	Mitigation Strategies <p>Greenko will adopt diverse technologies for catering to new climate normal ecosystem with increased demand for RTC renewable power. The Company will work with regulators and policy makers for ensuring smoother and timely transition</p>

Net Zero Roadmap

Greenko understands that the challenges of climate change and global warming are deteriorating at an alarming rate and requires action to be taken on immediate basis. The Company understands that as a global leader in clean energy transmission, it has to take stringent action to achieve the objective of a sustainable future.

Greenko has put tremendous focus on analysing the physical and transitional impacts of climate change across its project sites, which has put the Company on track towards developing climate-resilient assets. In addition, Greenko has also

put a spotlight on building resilient systems and strategising business models adapting to climate change impacts.

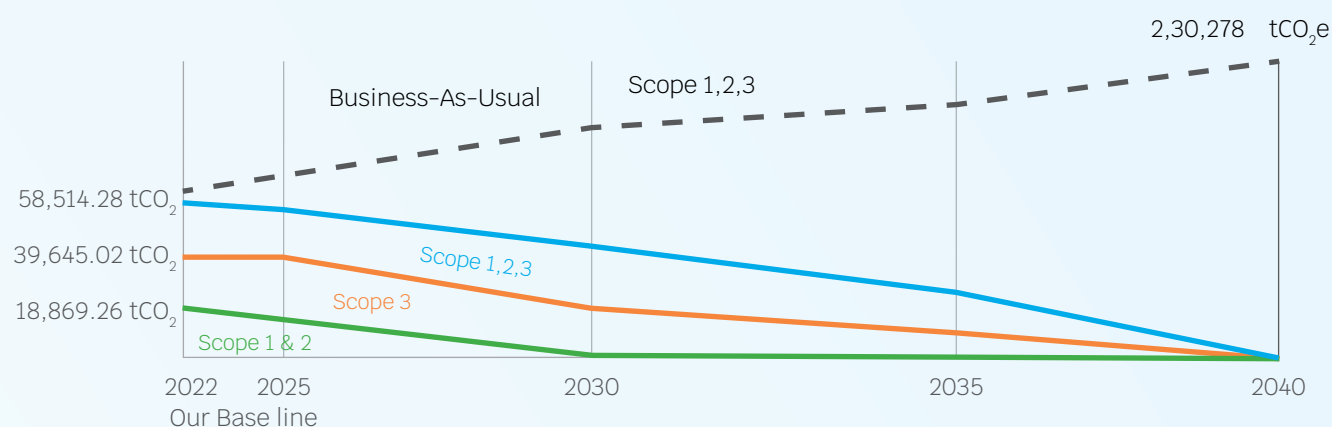
Greenko has committed to the Climate Pledge as a part of its initiative towards becoming carbon neutral in line with global climate agenda. The Climate Pledge was co-founded by Amazon with the Global Optimism in 2019. As a part of its pledge and UNFCCC's "Race To Zero", Greenko Group has committed to becoming Net Zero Carbon by 2040 which is a decade early than the global Net Zero 2050 commitment.

Greenko is in the process of developing a Net Zero Roadmap for the Company with targets and actions laid out for substantially reducing greenhouse gases, improve the overall impact on the environment and positively respond to the Climate Emergency taking into consideration both the risks and opportunities it poses. Greenko is well on its way to define its organisational and operational boundaries for this roadmap and chalk out the action plan for the next 2 decades.

Greenko shall look to mobilise all its stakeholders including value chain partners to achieve its Net Zero Commitment by 2040.

Greenko's Net Zero Roadmap

- Our baseline is FY 21-22 for our ambition of Net Zero
- We adopt Scope > Measure > Analyse > Target > Act > Report model
- We measure our progress annually and report
- We implement mitigation plans and achieve Net Zero



By 2025, we will achieve:

13% overall emission reductions.
60% reduction in Scope 1.
90% reduction in Scope 2.
10% reduction in Scope 3.

By 2030, we will achieve:

25% overall emission reductions.
100% reduction in Scope 1
100% reduction in Scope 2.
20% reduction in Scope 3.

By 2035, we will achieve:

50% overall emission reductions.
100% reduction in Scope 1
100% reduction in Scope 2.
50% reduction in Scope 3.

By 2040, we will be NET ZERO

100% overall emission reductions.
Decreased all possible emissions across our value chain and balanced remaining emissions to reach Net Zero.

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Scope 1 emission reduction objectives <ul style="list-style-type: none"> To increase fleet fuel efficiency To use fully electric fleet by 2030 To enhance Energy Efficiency & Process Improvement initiatives To source natural refrigerant solutions by 2030 To source alternatives for SF6 for circuit breakers 	Scope 2 emission reduction objectives <ul style="list-style-type: none"> To import 100% renewable electricity across our operations by 2030 To use 100% renewable energy for all our office operations To enhance Energy Efficiency & Process Improvement initiatives in our offices and site operations 	Scope 3 emission reduction objectives <ul style="list-style-type: none"> To forge deep supplier engagement to galvanise action To adopt life cycle approach To commit to zero waste to landfill before 2030 To optimise of material and equipment logistics To include circularity in procurement To use technology to limit the frequent business travels To increase third party fleet fuel efficiency 	Common objectives <ul style="list-style-type: none"> CDP disclosure in 2022 EnMS certification of all sites by 2025 To enhance employees awareness on our environmental footprint and reduction methodologies To adopt and promote circular economy approach throughout Greenko
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Promoting Climate Change Conscious Motorsport

Greenko along with Ace Nxt Gen has brought the FIA Formula E World Championship race to India for the very first time as Greenko Hyderabad E-Prix on 11th February, 2023. Formula E is the only all-electric world championship certified by Fédération Internationale de l'Automobile (FIA) and the fastest growing motorsport in the world.

Referred to as the planet's favourite sport, the Formula E's founding purpose is to counteract the devastating effects of Climate Change. This is in line with the vision of our promoters. The championship in India is centred around three core values: Energy, Environment & Entertainment, showcasing the very latest in sustainable mobility technology where all the race cars are charged with solar power. Formula E has completed 8 seasons of racing across iconic cities like London, Paris, Berlin and was now organised in Hyderabad for season 9.



Formula E Electric Car Race, Greenko Hyderabad E-Prix, Hyderabad

Circular Economy

For Greenko, circular economy is the key element and represents an opportunity as a driver for its Climate Action, Energy Transition and Net Zero Commitment. Greenko has defined its circular economy model by including the entire value chain from suppliers to customers. From the beginning, emphasis is given on Sustainable Procurement and life-cycle approach is adopted through the value chain with a focus on resource optimisation repair, reuse, recycle and re-purpose.

In addition, Greenko is also in the process of developing circularity road-map in the near future. At the design stage itself, Greenko would like to include circularity approach by engaging and orienting its suppliers and OEMs towards circularity. Across GAM, Greenko expands its efforts to repair, reuse & refurbish the components of wind, hydro and solar plants and extend life of equipments.

Greenko is committed to become a zero waste to landfill Company. All its non-hazardous waste is diverted away from landfill by putting into circular economy approach and through sale to authorised recyclers.

Through Greenko's Assets

Greenko has chosen to manage its organisational assets using a circular business approach to bring the costs down while protecting and strengthening the natural capital. By implementing a life cycle perspective to its assets, Greenko has investigated circular value pools throughout its operations.

Three levels of circularity at Greenko are:

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

Initiatives being taken:

A constant effort is being put in to encourage and bring in as many machinery parts as possible into the circular economy through repair, refurbish, reuse and recycle. A consolidated tabular data is given below across the three Business Units:

Business Units	No. of materials brought into circularity	UOM	FY 21-22				CY 2022			
			Repair	Refurbish	Reuse	Recycle	Repair	Refurbish	Reuse	Recycle
Wind	23	No.	224	107	-	-	218	100	-	-
Hydro	39	No.	126	31	70	30	56	38	48	16
		Kg	-	-	1,389	12,410	-	-	1,761	41,577.5
		Litres	-	-	30,465	3,663	-	-	58,725	15,315
Solar	16	No.	813	2,678	2,811	54	572	1,642	937	73

In Wind Assets, 23 types of materials are being refurbished and repaired consciously. Some of these materials are IGBT SKiiP4, battery charger NG5, converter control unit, AC2 inverter etc.

In Hydro Assets, there are 39 types of materials such as turbines, deflectors, pumps, oils, scraps (metal, plastic, wood, rubber), batteries etc. that are brought into circularity. In CY 2022, 2 materials used in hydro sites have been brought into circularity through refurbishing and 3 materials through recycling.

In Solar Assets, 16 types of materials such as modules, invertors, panels, UPS etc., are brought into circularity. In CY 2022, 4 materials used in solar sites have been brought into circularity through repair, 2 materials through refurbishing, HT Panels and parts of Auxiliary Transformer through reuse and 2 materials through recycling.

Material-wise details are appended in Annexure - V

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R&D Initiatives

Greenko in collaboration with C-MET has established a Centre of Excellence (CoE) on E waste recycling. Greenko would be actively looking into the operations as an industrial partner.

The established CoE would be engaged in scaling up the recycling of End of Life Silicon Solar cells, Permanent Magnets, End of Life Li-ion batteries and PCB's.

This partnership fosters a platform for Greenko to have the first right of refusal to the developed technologies.

Through Greenko's Projects

The Company's IRESP projects are significant platforms for sharing storage and other services related to the energy system. The Group has been developing and putting into practice a concept for sharing generation assets and resources of the power system.

Circular choices are the next important circularity strategy at Greenko. The Group has been extremely cautious while constructing and selecting equipment, since the longevity of the assets is the major focus of Greenko. The Group believes that managing the end of life of assets and "Everything Else" at Greenko is the third and last component of circularity at the Company. The waste management department of the Company has been tasked to take care of "everything else".

When an asset reaches the end of its life, the waste department carefully disposes the materials that are no longer needed. The team is currently evaluating each asset of the organisation to map the elements which can be reused or remanufactured and thus bringing in circularity in the operations.

Throughout the course of the project, the Group in accordance with the global standards gathers and assesses all the environmental and social impacts of its activities and projects. Numerous samples, including concrete cubes, aggregates (fine and coarse), steel plates, broken modules, etc., are utilised again after testing for an extended period. Thus, contributing to the circular strategy of the Group.

Initiatives on Biodiversity Conservation

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, Great Indian Bustard and Red Panda, this year it is focussing on Lesser Florican.

Conservation of Great Indian Bustard (2017 – On Going)

In pursuance of commitment towards Biodiversity Conservation and Sustainable Management of Living Natural Resources within our projects vicinity, Greenko is supporting the “Habitat Conservation and Species Recovery of Great Indian Bustard (GIB) at Rollapadu Wildlife Sanctuary (RWS)” located at our Kurnool Solar Park. Greenko is working with the Govt. of Andhra Pradesh and the

forest department to develop and maintain a favourable conservation status at Rollapadu Wildlife Sanctuary, Kurnool for conservation of Great Indian Bustards. For the reporting period, the focus was more on the infrastructure development for habitat and species conservation. Some of the activities initiated include construction of 6.5 km of chain link fencing for the wildlife sanctuary that helps reduce the man-animal interactions, removal of unwanted woody growth in more than 50 ha in the sanctuary area

for development of grassland and translocation of unwanted trees in the Wildlife Sanctuary etc. To identify nearby satellite habitats, a detailed habitat survey of the GIB in 30 Kms radius around the Wildlife Sanctuary is also undertaken. Further, to improve the local habitat encouraging local farmers to grow crops using natural farming/organic farming methods within the notified Eco-Sensitive Zone by the way of providing inputs to the farmers.



Natural Capital

Conservation of Olive Ridley Turtles (2019 – On Going)

The project 'Disentangling Sea Turtles' has been designed in partnership with WWF and is working towards securing populations of key threatened marine species along the Indian coastline. The project is working towards mitigating threats to Olive Ridley Sea turtles from both, unsustainable fishing and

fishing related activities. Aiming to work closely with the fishermen communities in India, the project aims to mitigate the threats to marine turtles through advocacy at government level. This project helped in raising awareness among 400 fishers and 20 fishnet makers, state forest & fisheries department officials. This also involved the capacity building of 3 field teams from Srikakulam district, for conducting offshore turtle surveys.



Conservation Red Panda (2020 – On Going)

As pledged, Greenko in 2020 has committed to ensuring the long-term survival of the endangered species Red Panda in Sikkim state of the eastern Himalayas. We have initiated plans to conserve Red Panda in coordination with the Forest and Environment Department, Government of Sikkim and in process of firming up with detailed program of support for conservation. The Program will include support to Panda Breeding Program in Himalayan Zoological Park, Bulbulay, Gangtok covering specific activity on fencing, surveillance and enrichment activity in the first phase.



Committing to Conserve Lesser Florican

The Lesser Florican (*Sypheotides indicus*), also known as the likh or kharmore, is the smallest in the bustard family and the only member of the genus *Sypheotides*. It is endemic to the Indian Subcontinent where it is found in tall grasslands and is best known for the leaping breeding displays made by the males during the monsoon season.

There are two wildlife sanctuaries in Western Madhya Pradesh is dedicated to Lesser Florican conservation. With the increasing biotic pressure, the birds find it difficult to breed in certain parts of the sanctuaries. The global population of Lesser Florican has come down to alarming levels hence it becomes important to initiate the conservation breeding program of Lesser Florican in collaboration with credible research organisations in

Western Madhya Pradesh. The Lesser Florican is extremely important to maintain the functionality of the grass land eco systems.

Greenko has identified this species for conservation efforts during the year 2023 and we will work with the Forest Department of the State of Madhya Pradesh to supplement their efforts in conservation of this endangered species.



Looking Ahead

Being a decarbonisation solutions provider, Greenko facilitates energy independence with reliable and RTC renewable power and continues to offer diverse solutions for complex climate change related problems. The Company will continue to carefully evaluate the significant impacts of the operations and projects even during the planning stage with robust environmental management systems and ESMS audits. The Group, in its mission to achieve Net Zero by 2040, will be deploying various strategies and business models and clean technologies in its operations and assets.



Greenko Rayala Wind Power Pvt Ltd,
Andhra Pradesh

Epilogue from the Founder, Group President and JMD



Dear Stakeholders,

In this integrated report, we have delineated advances made against our strategic objectives. As you are aware, our business is crafted to address energy transition and industrial decarbonisation to meet the climate ambition and sustainability goals 7 & 13. The solutions for energy transition and sustainable production-consumption system transformation, are available and are being developed. However, the challenge is in choosing the right ones and crafting them into sustainable ones – cost-effective, in consonance with context and delivering value to stakeholders. During the last few years, our teams have been continuously exploring solutions in partnership with industry, business technology developers, engineering companies, R&D laboratories to explore “Fit for Net Zero” solutions that can sustain – Making Green Sustainable. In keeping with the challenge of achieving the ambition of Paris Climate Agreement of limiting global warming to 1.5 degrees centigrade, we are committed to achieve Net Zero in our direct operations and value chain – 10 years earlier, by 2040. To mitigate the physical, regulatory, technological risk to business due to climate change induced by global warming, we are extending the climate risk



Businesses, cities, and governments are looking forward to deep decarbonisation solutions to meet their commitments in the short and medium term and “Race-to Zero”. In this context, the firm, schedulable and dispatchable power; and zero carbon molecules of Greenko are increasingly being sought after

assessment to all the sites and have identified mitigation actions for implementation. In keeping with the recent investor interest, we have restructured our ESG processes and metrics, which can be found in the performance section of the report 'our performance on ESG aspects'.

In pursuit towards, making green sustainable, we have intensified our efforts to combine multiple RE resources (Solar & Wind) with Long-Duration, Stand-Alone, Off-Stream, Closed Loop Pumped Storage, and Energy Storage Cloud to deliver 'Firm, Schedulable & Dispatchable RE power'. These projects are designed to:

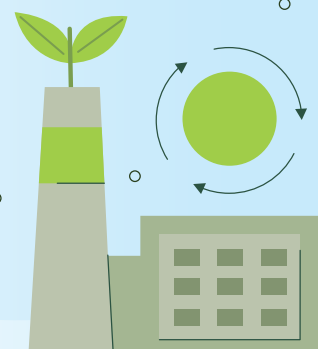
- Augment and substitute the carbon-intensive firm power in the grid
- Improve flexibility of the electricity system
- Create space for multiplication of non-fossil-based energy resources
- Enable improved operation at fossil and non-fossil plants
- To enable provision of 100% green energy for growth markets
- RE-Industrialisation for Low-carbon economy
- New-age energy transition fuels to provide solutions for hard-to-abate decarbonisation needs and
- Meet the long-term energy & climate goals of India and the globe

Greenko's key impact is in enabling the big industrial decarbonisation, which was largely untouched by the renewables because of its inflexibility. Our ability to deliver cost-effective, dispatchable and decarbonised electricity has become attractive to large metal-making establishments and these are adopting our solutions for achieving their decarbonisation goals. Businesses, cities and governments are looking forward to deep decarbonisation solutions to meet their commitments in the short and medium term and "Race-to-Zero". In this context, the firm, schedulable and dispatchable power; and zero carbon molecules of Greenko are increasingly being sought after.

While Green Hydrogen and ZeroC fuels are essential for industrial decarbonisation, the manufacturing cost of Green Hydrogen has been the barrier. This barrier can be overcome through different means in various geographies. Greenko's Green Hydrogen architecture is unique and it overcomes the barriers in the context of India and some more geographies. Deploying locally manufactured alkaline electrolyzers and 24x7 RE, it is possible to produce green hydrogen and ZeroC molecules at a competitive price point. Industrialising the proven and well-crafted solutions - Making Green Sustainable, is the only means to accelerating the transition and achieving the 2030 goals.

Our deep decarbonisation solutions in 'hard-to-abate' sectors like metals, petrochemicals, bulk transportation

The present electricity architecture in India, about 407.79 GW installed capacity and 210 GW peak demand, is characterised by low flexibility and high cost, due to the dominant share of coal and infirm renewables



is a pathway towards achieving India's Hydrogen Mission and energy Independence. Further, the ZeroC fuels and chemicals could be deployed for decarbonising other countries of the globe.

Firm Renewables – An Opportunity for India

Our solutions are crafted for the context of India, its resources - water, wind and sun that can be harnessed to power its growth within the carbon budgets. India set a target of 500 GW of Non-Fossil fuel-based energy by 2030. India's Solar and Wind generation capacity and its cost effectiveness is amongst the best in the world. However, the present electricity architecture in India, about 407.79 GW installed capacity and 210 GW peak demand, is characterised by low flexibility and high cost, due to the dominant share of coal and infirm renewables. To improve the electricity generation-supply flexibility and to generate the power at a lower cost, it is imperative that the country installs Stand-Alone, Make-in-India, Long duration storage capacity and morph the Renewable Power to Round-The-Clock. Further, to attain the target of 500 GW of Renewables by 2030 and to deliver lower cost of power, it is imminent to establish long duration, Make-in-India pumped storage capacity of 30-50 GW, well before 2030. The storage capacity enables time-shift of power and can be designed to deliver flexible time shift to deliver demand following or 24x7 or dispatchable power. Generation of more firm RE supported by long-duration pumped storage creates space for additional RE capacity and its effective operation. It also sets a benchmark of achieving less than USD 50 per kWh carbon free energy against the global markets.

McKinsey, the knowledge partner of Global Long Duration Energy Council, concludes that the deployment of long duration energy storage is essential for balancing the grid through its decarbonisation and it minimises social and environmental cost. Further, their analysis places

Epilogue from the Founder, Group President and JMD

Pumped Hydro Storage as an attractive and viable option in the context of India.

The new flexible electricity architecture augmented with low-cost, long-duration and Make-in-India Storage in sync with RE, decarbonises India's power sector and will drive the cost of power down by 20% in the next few years. Intermediate or lynchpin solutions of providing firm hybrid power with a component of RE, is not in sync with long-term goals of the country and the business. Such solutions, in the short and medium term, create barrier for decarbonised flexible electricity architecture. Further, such intermediate solutions are not desired when the firm RE solutions are cost optimal. Reliable and affordable Round-The-Clock RE, could be used by industries to substitute 70-80 GW of captive power plants in the next few years. The industries in India with access to effective means of decarbonisation, would be the supplier of Green Commodities (Green Metals, Chemicals etc.) and hence a preferred supply chain partner for the global business.

Further, for India becoming the destination for Global supply chains, it is important that SMEs and Commercial Enterprises should have access to Carbon Free Energy. The state utilities may take initiatives and make necessary regulatory moves to make their state/city an attractive destination for global businesses racing-to-zero.

As the cross-border adjustment mechanism are adopted by more nations, the trend of global supply chains concentrating in geographies with cost-effective decarbonisation infrastructure will accelerate. The Global Supply Chains with 'Net Zero' goals will prefer 'Make-In-India' due to low cost and low carbon electricity amongst other factors.

Decarbonising Industry

The RE-Electrification viz., electrifying energy and all electricity being renewable, is the first option in industrial decarbonisation. However, this has a limitation and much of industrial processes are hard-to-abate as significant part of the GHG emissions are not of energy origin. Net Zero molecules can address such components of GHG emissions. Firm Renewables could be deployed for the manufacture of cost-effective Zero carbon molecules in India (hydrogen, ammonia etc.) for variety of use cases in industry and transportation. Greenko is building a manufacturing facility with two-gigawatt capacity of alkaline electrolyzers. In addition, Greenko is setting up manufacturing facilities for making green hydrogen

and derivatives like Green Ammonia and other Green fuels/chemicals. By 2026, we will have 3.1 MT capacity of annual Ammonia manufacturing. The cost-effective Zero carbon molecules will not only substitute imports to support 'Aatmanirbhar Bharat' but could power the decarbonisation of many OECD countries who have declared Net Zero ambition.

Circular Economy Approaches

We need to reimagine the ways we generate and deliver goods and services. The circular economy that closes the production consumption cycle has significant potential of GHG emission reductions to reach the Net Zero and to achieve ambition of Paris Climate Agreement. And we, at Greenko, as this report unravels, have made significant advances in circular business models, extending the life and managing the end-of-life of our assets. We have begun our engagement with solar panel and other equipment suppliers on end-of-life management. We continued our new initiative of modernising and reengineering wind turbines to extend life. More importantly, our new projects in pumped storage and Energy Storage Cloud are 'sharing models of circular economy' delivering firm and flexible electricity and 'electricity plus' services to various stakeholders of the electrical system. We have joined with C-MET - a research laboratory of Ministry of Electronics and Information Technology, to establish Centre of Excellence in Electronic Waste Recycling. Recycling and Repurposing PCB, Li-ion battery, Permanent Magnet and Solar Panel are the areas targeted for technology development by 2025.

Co-Creating Solutions for Decarbonisation

Partnering amongst actors in the industrial ecosystems is critical for accelerated decarbonisation. Also, the investment and resources required and to address the ambition of Paris Climate Agreement, can only be ensured through partnerships. Greenko partnered with manufacturers of metals in different models - fit to the context and purpose - to provide them with carbon free energy. The partnerships with RE generators included providing them with "storage" and "energy cloud" services while they fulfil the power supply contracts with their customers. We are joining hands with an oil & gas major to harness expertise, infrastructure and market access to manufacture and supply green molecules. Commodity traders with access to capital and markets are joining with Greenko to take advantage of unique green hydrogen architecture of Greenko.

Greenko, from its inception, has been contributing to sustainable development and its scale and extent have changed as it progressed. Presently, the Company's 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 to achieve energy security and financial stability

As value chains decarbonise, actors along the chain must realign or restructure. This presents opportunities for new partnerships and co-creation.

Contributing to UNSDGs

Greenko, from its inception, has been contributing to sustainable development and its scale and extent have changed as it progressed. Presently, the Company's 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 to achieve energy security and financial stability. Our business model is designed to contribute to 5% of India's decarbonisation goal. It directly contributes to UNSDG 13-Climate Action, UNSDG 7-Affordable and Clean Energy, UNSDG – 11 Sustainable Cities and Communities and UNSDG 12-Responsible Consumption and Production Goals. We are strengthening our contribution to SDG 9 which has a mission- "Build resilient infrastructure, promote inclusive and sustainable industrialisation, and foster innovation". In this reporting period, we have taken multiple initiatives to support R&D and Engineering/Technology Education that supports sustainable industrialisation. We are proud of our initiative to establish the "Greenko School of Sustainability and Climate Change" at IIT Hyderabad which heralded doctoral and post graduate programs in Sustainable Engineering/Science and Technology. Encouraged by Ministry of Education, Government of India, this school will be an instrument in making India a S&T knowledge and skill base for pursuit of Global Net Zero Goals. We recognise that the planet is at the brink, as argued in the 'Living Planet Report 2020', and we must 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. Further, decentralised decarbonisation solutions using cost-effective green hydrogen and zero carbon molecules would disrupt the legacy production systems but create wealth for many countries, including India. The investor conviction and trust in the purpose and strategic direction of our business, is evidenced by the infusion of 980 million USD equity into our Company and the successful issuance of green bonds of 750 million USD. As always, Greenko will address investor expectations to the letter and spirit. The policymakers and regulators have recognised the opportunity in this new energy transition for India and are architecting a new energy policy ecosystem to incentivise #AtmanirbharBharat and #MakeinIndia.

Through the report, you may have already noticed the convergence of multiple initiatives towards organisational development, which is critical for successful Greenko 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 organisation's financial and extra-financial goals; b) Innovation Hub architecting pathways for doing things in different ways; c) Digitalisation helping the seamless flow of information and analytics; d) Assurance of systems and processes to ensure that the organisation adheres to standards and quality, and finally e) Customer and partner relationship focus as these groups change both in quantity and quality. Further, we are cognisant that the work and life are transforming. We are exploring organisational transformation that synchronises professional and life pursuits in a connected world supported by intelligent information networks.

Supporting the Living Planet

Greenko is committed to conserve 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 in the coast of Andhra Pradesh and Odisha, Great Indian Bustard in Andhra Pradesh and Red Panda in Sikkim, this year it is focussing on conservation of Lesser Florican in the Madhya Pradesh by preserving and rejuvenating its habitat.

Greenko will continue to curate its business efforts to contribute towards sustainable development, being cognisant of the context in India 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

Founder, Group President and JMD

List of Acronyms

Acronyms	Meaning
ADIA	Abu Dhabi Investment Authority
AI	Artificial Intelligence
ALARP	As Low As Reasonably Practicable
APGENCO	Andhra Pradesh Power Generation Corporation
APPC	Average Power Purchase Cost
APSSDC	Andhra Pradesh State Skill Development Corporation
AWS	Amazon Web Services
BARC	Bhabha Atomic Research Centre
BBS	Behavioural Based Safety
BESS	Battery Energy Storage System
BPA	Business Process Automation
C & P	Contracts and Procurement
CAGR	Compound Annual Growth Rate
CAPA	Corrective and Preventive Actions
CAPEX	Capital Expenditures
CCUS	Carbon Capture, Usage and Storage
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CECRI	Central Electrochemical Research Institute
CER	Certified Emission Reduction
CERC	Central Electricity Regulatory Commission
CFE	Carbon Free Energy
CFL	Compact Fluorescent Lamps
C-MET	Centre for Materials for Electronics Technology
CMS	Content Management System
CNG	Compressed Natural Gas
CoE	Center of Excellence
COP	Conference of the Parties
COSO	Committee of Sponsoring Organisations of the Treadway Commission
CPSS	Central Pooling Substation
CSR	Corporate Social Responsibility
DG Sets	Diesel Generator Sets
DISCOM	Distribution Company
DMS	Document Management System
EBITDA	Earnings Before Interest, Taxes, Depreciation, and Amortisation
EHS	Environment, Health and Safety
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement and Construction
EPPL	Everest Power Private Limited
ERM	Enterprise Risk Management
ESG	Environmental, Social and Governance
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMS	Environmental and Social Management System
ESOPs	Employee Stock Ownership Plans
ETAC	Engineering Technology Accreditation Commission

Acronyms	Meaning
ETAP	Electrical Transient Analyser Program
EU	European Union
EVs	Electric Vehicles
EWS	Early Warning System
FCEVs	Fuel Cell Electric Vehicles
GAM	Greenko Asset Management
GAMA	Greenko Audit Management Application
GATS	Greenko Asset Tracking System
GBI	Global Business Initiative
GCC	Global Carbon Council
GCP	Google Cloud Platform
GEP	Greenko Energy Projects
GEPS	Greenko Energy Project Systems
GETs	Graduate Engineer Trainees
GFRD	Geomembrane Faced Rockfill Dam
GHG	Green House Gases
GIB	Great Indian Bustard
GIMS	Greenko Integrated Management System
GOMs	Greenko Operations and Maintenance System
GQAP	Greenko Quality Assurance Portal
GRI	Global Reporting Initiative
GRMF	Greenko Risk Management Framework
GS VER	Gold Standard Verified Emissions Reductions
GSS	Greenko Security Services
GW	Giga watts
HPO	Hydro Power Obligations
HPSEB	Himachal Pradesh State Electricity Board
HR	Human Resources
HSE	Health, Safety, and Environment
IBEF	India Brand Equity Foundation
ICB	International Competitive Bidding
ICT	Information and Communication Technology
IEX	Indian Energy Exchange Ltd
IFC	International Finance Corporation
IIRC	International Integrated Reporting Council
IIT-H	IIT Hyderabad
ILO	International Labour Organisation
ILT	Instructor-Led Training
IMS	Integrated Management System
IoT	Internet of Things
IPCC	Intergovernmental Panel on Climate Change
IPPAI	Independent Power Producers Association of India
IREC	International Renewable Energy Certificates
IRESP	Intelligent Renewable Energy Storage Platform
ISMS	Information Security Management Systems
ISO	International Organisation for Standardisation
ISTS	Inter-State Transmission System
KPIs	Key Performance Indicators
KTPA	Kilo Tonnes Per Annum
KWh	Kilo Watt Hours
L&D	Learning and Development
LCA	Life Cycle Assessment

List of Acronyms

Acronyms	Meaning
LCOE	Levelised Cost of Electricity
LDC	Load Dispatch Centre
LED	Light-Emitting Diode
LEP	Leading Edge Protection
LHP	Large Hydro Projects
LNG	Liquefied Natural Gas
MDP	Management Development Programme
MEIL	Megha Engineering and Infrastructure Limited
ML	Machine Learning
MNRE	Ministry of New and Renewable Energy
MoEF	Ministry of Environment and Forests
MoP	Ministry of Power
MoPNG	Minister of Petroleum and Natural Gas
MoST	Ministry of Science and Technology
MT	Metric Tonnes
MTBF	Mean Time Between Failures
MTPA	Metric Tonnes Per Annum
MUs	Million Units
MW	Mega Watts
MWh	Mega Watt Hours
NABARD	Nation Bank for Agriculture and Rural Development
NbS	Nature Based Solutions
NDCs	Nationally Determined Contributions
NEERI	National Environmental Engineering Research Institute
NGOs	Non-Government Organisations
NHPC	National Hydroelectric Power Corporation
NSD	National Safety Day
NTPC	National Thermal Power Corporation Limited
O & M	Operation and Maintenance
OCTAVE	Operationally Critical Threat, Asset, and Vulnerability Evaluation
ODS	Ozone-Depleting Substances
OECD	Organisation for Economic Co-operation and Development
OEM	Original Equipment Manufacturer
OHS	Occupation Health and Safety
OJT	On Job Training
ONGC	Oil and Natural Gas Corporation
ORIX	Orient Leasing Co. Ltd.
PAT	Profit After Tax
PERC	Passivated Emitter and Rear Contact
PGCIL	Power Grid Corporation of India Limited
PMC	Project Management and Control
PMS	Performance Management System
POSH	Prevention of Sexual Harassment at Work
PPA	Power Purchase Agreement
PPPPs	Public-Private-People Partnership
PPS	People, Process, System
PRDC	Power Research & Development Consultants Pvt. Ltd.

Acronyms	Meaning
PSHPP	Pumped Storage Hydro Power Project
PSP	Pumped Hydro Storage Projects
PV	Photo Voltaic
QA/QC	Quality Assurance/Quality Control
QMD	Quality Management Department
R & D	Research and Development
RAMP	Risk Assessment & Mitigation Panel
RCP	Representative Concentration Pathway
RE	Renewable Energy
REC	Renewable Energy Certificate
RPA	Robotic Process Automation
RPO	Renewable Purchase Obligations
RTC	Round-The-Clock
SA	Social Accountability
SCADA	Supervisory Control and Data Acquisition
SDGs	Sustainable Development Goals
SECI	Solar Energy Corporation of India Limited
SEED IT	Stakeholder Inclusiveness, Excellence, Ethical, Discipline, Innovate, Teamwork
SMEs	Small and Medium Enterprises
SPOD	Schedulable Power On-Demand
SPSP	Standalone Pumped Storage Project
STUs	State Transmission Utilities
TCFD	Task Force on Climate-related Financial Disclosures
TMC	Thousand Million Cubic Feet
TNI	Training Need Identification
TRCM	Trash Rack Cleaning Machine
TWh	Tera Watt Hours
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNSDGs	United Nations Sustainable Development Goals
US GAAP	Generally Accepted Accounting Principles
VCS	Voluntary Carbon Standards
VER	Verified Emissions Reductions
VRE	Variable Renewable Energy
WED	World Environment Day
WEF	World Economic Forum
WINSOM	Wind In-Source of Operation and Maintenance
WT Blades	Wind Turbine Blades
WTG	Wind Turbine Generator
WWF	World Wildlife Fund

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Greenko's Leadership Team Portfolios



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 Mahesh Kolli in 2004 and incorporated it in early-2006 to raise funds for financing early operations. He also worked out the effective implementation of the strategic business roadmap for the Company. He is a graduate in Computer Science and holds a master's from Northwest 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 focussed 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 across the world and is a graduate.



Mr. Vasudev Rao
CFO

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 organised 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 organise its IPO and NEST Ltd. Vasu also served as an Executive Director at Goldstone Technologies Ltd. apart from working for Kirloskar Electric, in several key finance roles.



Mr. Venugopala Rao Naredla
Senior Advisor & Chief Internal Audit Officer

Is a power-sector professional. He has more than 36 years of experience in senior positions as CEO, CFO of Reliance Power, Lanco Group, and NTPC. At Greenko, he heads project management and asset management.



Mr. Srinivas Jampani

SVP / Chief Digitalisation Officer

He is responsible for the strategic direction of Greenko's digital strategy including resources and technology innovation and for ensuring effective and secure delivery and support of renewable generation, energy storage and energy management systems.

Jampani has over 15 years of experience in building, scaling and managing technology platforms for asset management and trading businesses in the power and natural gas markets in United States and Europe. His responsibilities included market expansion and improving revenues and profits through automation, digital transformation, artificial intelligence, cloud and big data management. He held multiple managerial and commercial roles and previously worked with Vistra Corp, EDF Energy and Roscommon Analytics.

Jampani received a master's degree in Computational Mechanics and Mechanical Engineering from Stanford University, a master's degree in Information Systems and a bachelor's degree in Mechanical Engineering from Birla Institute of Technology & Science (BITS), Pilani, India.



Mr. K.R. Sivakumar

Chief Risk & Compliance Officer

Is an experienced Governance, Risk & Compliance (GRC) and Techno-Legal professional and has over 27 years of post-qualification experience in corporate risk & compliance management field in oil & gas and energy sectors, regulatory / statutory compliance & management consulting across various sectors of the economy in India & abroad and due diligence activities for M & A transactions. He held senior management / CXO level positions with Nayara Energy Limited (formerly Essar Oil Limited), Chess Management Services (P) Limited, etc.

At Greenko, he leads Group's Risk and Compliance function and is responsible for enterprise risk management (ERM), code of conduct (COC) and development & compliance of internal corporate governance policies such as ABC, conflict of interests, AML & sanctions, whistleblower mechanism & fraud investigations, third-party risk management, etc., and regulatory/statutory compliance monitoring & internal compliance controls. He holds a bachelor's degree in Mechanical Engineering from Bharathiar University and PGD in Industrial Engineering from Dr. Ambedkar Institute of Productivity. In addition, he also holds Law degree (LLB) from University of Mumbai.



Mr. Aman Attree

Chief Human Resources Officer

Has 35 years of industry experience wherein, he has worked with various organisations like DLF Industries Ltd., ACE Lab Ltd., Gillette, FHL and Reliance Group. Aman has managed diversified HR function with manpower ranging from 800 to 15,000 in multi-locations and projects as Corporate Head HR. Over the years, he has driven organic growth, creating customer-centric organisation through enhancing employee engagement, and transforming culture. His key functional areas include OD, industrial relations, talent management, and large-scale talent acquisition. Sound business acumen in renewable energy space, power distribution and core infrastructure business.

Mr. Aman Attree is associated with Greenko Group as Senior Vice P and Head of Corporate HR. Aman has also been coaching CEOs, business heads and HR on employee and customer engagement and cultural transformation as enablers for executing business strategy. He leverages Analytics and Behavioral Economics to ensure focussed effort in organisational development and HR Strategy, M&A, Process Improvement and organisational restructuring, to derive linkages between strategic implementation and Human Capital initiative. Aman holds BA (Hons) PGDBM, DU, and Post Graduate diploma in T&D from ISTD.



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 organisations 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.

Annexures



Dr. Rambabu Paravastu

CSO, Sustainability

Has been a thought leader in the Asian Sustainability and Climate Change movement and his previous roles include Managing Director at CantorCO₂e Asia and Head of Sustainability and Climate Change practice in Asia at PricewaterhouseCoopers. He has advised ITC, various companies of Tata Sons and several multinational businesses in preparing sustainability reports and sustainability performance improvement and has been actively involved in development of BRR related standards/formats/practices.

Dr. Rambabu has over 30 years of experience in consulting, research and teaching in governance, sustainability, and climate change. He has led over 200 sustainability assignments sponsored by the Ministry of Environment and Forests (MoEF), Ministry of Science and Technology (MoST), World Bank, UNDP and various national and international business organisations.



Mr. Nagendra Dandamudi

COO, Organisational Development

Has over 25 years of experience in leadership positions at various organisations including AT&T, Cable & Wireless, and Motorola. At Greenko, he leads Greenko's transformation Initiatives, HR Strategy, and Technology Initiatives.



Mr. Gautam Reddy

COO, ZeroC

Leveraging Greenko's strength in RE power generation, he is leading the Group's foray into the green molecule business, including green Hydrogen, green Ammonia and others.

Before his current role, Gautam was the Managing Director for Schlumberger-South Asia. He spent over 20 years in the upstream O&G sector with Schlumberger through various roles in the Company including in technology centres in UK, sales & marketing in India, line management in UAE & Oman, strategy execution for West Africa and heading global service delivery in the Drilling product line based in Houston.

His extensive leadership roles and management experience across different geographies and cultures has imbibed in him a willingness to seek and solve the most challenging problems for our customers, thereby creating opportunities and bringing value to Greenko.

Gautam studied Civil engineering in India from IIT, Bombay and did his MSc in Oil & Gas management from Heriot Watt University, Edinburgh. His passions outside work are reading, fitness and travel.



Mr. Adishesu Gopalam

Advisor - 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) while also serving as a CEO of APSPCL. At Greenko, he heads the Integrated Renewable Energy Storage Projects.



Mr. Krishna Tungaturthi

COO – Projects

He is leading the Groups foray into 30 GWH Energy storage platform through various projects across India.

Before joining the current roles, he was Business Unit Head for Hydel & Tunnel Business Unit of L&T. He comes with rich experience in Infrastructure and with 28 years of experience. He also comes with an experience of doing mega projects in India and Gulf region.

His extensive leadership roles combined with handling the huge set of resources, different geographies and cultures has imbibed to get into resolving challenging problems and thereby pushing the projects for timely completion and thereby creating value to Greenko Group.

Krishna did Bachelor of Civil Engineering from Osmania University and did his Master's in Construction Management from NICMAR Pune. He has also undergone training from Big Business schools like Michigan Ross School of Business, INSEAD Singapore and Harvard Business Management. His hobbies include Travel & Cricket.



Mr. Haridas Menon

COO – Asset Management

Has over 30 years of industry experience and has held several senior leadership positions with GE India & Europe. As COO, he is responsible for delivery ownership of the entire Asset Management domain of the Group. He brings the desired stimulus, essentially in strategising the business and to supplement our envisaged growth plan. He has significant business leadership experience and insight into the Indian market, having led the turnaround of GE's Specialty Materials (Silicones) business; grown the GE Power Generation Services business and captained the Business Development initiatives for GE Energy business.

Prior to his roles in GE, Mr. Menon worked with Larsen & Toubro Limited, Mumbai, in the Captive Power and Cogen, Oil & Gas Special Projects business groups and was recognised for significant contributions and major ground-breaking wins.

Mr. Menon earned his bachelor's degree in Mechanical Engineering and Post Graduate Diploma in Business Management from Bombay University.

Annexures

ESG Risk Framework

Environment

Factors	Position	Mitigation Strategy/Goal	Capital Impacted
Net Negative Carbon Footprint	The only way to achieve the target of Net Zero 2040 is through deep decarbonisation of the electricity sector and by making renewable energy flexible and dispatchable.	To achieve carbon neutrality in the operations by 2025 and successively in the entire value chain by 2040.	Natural Capital Financial Capital
Adapt to and Harness Climate Change	Prepare an action plan to deal with the physical climate change factors that disrupt business continuity.	Be transparent and manage financial implications due to climate change with the help of disclosure frameworks such as TCFD and CDP.	Natural Capital Financial Capital
Protect Biodiversity	Conduct Environmental and Social Impact Assessment (ESIA) to determine how a project may affect biodiversity. Restore and enhance biodiversity in project-affected areas and other critical places by taking the appropriate action.	In alliance with partners and public-private-people initiative, restore biodiversity at each project site.	Natural Capital
Adopt Circular Approaches	Follow circular approaches to refurbish, reengineer, recycle and reuse in project design, operation, and decommissioning.	Integrate plan for refurbishing, reengineering, recycle and reuse at the project design phase.	Natural Capital Manufactured Capital
Diligent Environmental and Social Behaviour	Anticipating and mitigating environmental and social impacts is critical in protecting and restoring the environment.	The Greenko projects' team will conduct ESIA before initiating any project and prepare and follow ESMS in operations.	Natural Capital Social and Relationship Capital
Disclose Environment and Social Performance	Transparently communicate environmental and social implications to stakeholders.	Greenko would include Environmental and Social Disclosures in its Annual Integrated Report.	Natural Capital Social and Relationship Capital

Social

Factors	Position	Mitigation Strategy/Goal	Capital Impacted
Empowered Workforce	Engage the human resource proactively and frequently, as employees and vendors are the most critical business links.	Establish robust mechanism to track human right violations, sexual harassment, and employee grievance redressal mechanism. To be a leader in the diversity practices sector.	Human Capital
Safety and Health First	Strictly follow International Standards on Health and Safety	All sites and operations will adhere to Occupational Safety and Health Management Systems in GIMS/EMS.	Human Capital
Focus on knowledge, experience, and retention	Emphasise knowledge management, cross-functional skills, upskilling, reskilling, and employee retention.	Establish and operate structured knowledge management practices and reduce employee turnover at all level and age groups.	Human Capital
Investment in training and innovation	At all business levels, emphasise innovation and training	Skill upgradation at all levels through multiple modes while also establishing structured innovation systems and processes effectively.	Human Capital Financial Capital Intellectual Capital
Customer Relationship Management	Engagement with different segments of customers to understand, anticipate, and address their concerns.	Establish and operate structured customer relationship management including Annual Customer Satisfaction survey.	Social and Relationship Capital
Responsible Supply Chain Management	By performing regular audits, handholding exercises, and evaluating suppliers based on ESG, the risk of non-compliance with social and environmental criteria gets reduced.	Greenko will develop a responsible supply chain management program including processes for due diligence and audits.	Social and Relationship Capital
Public-Private-People Partnership (PPPPs)	PPPPs are essential for inclusive and participatory socio-economic development.	Establish and operate community engagement and grievance redressal systems to measure community participation and satisfaction in PPPPs.	Social and Relationship Capital
Employment and Wealth Generation	Prepare an action plan and execute it to boost the local economy and generate employment.	Measure and improve direct/indirect employment generation and economic value addition. Disclose financial investment contribution as per IAS 7 & US GAAP 230	Human Capital Financial Capital

Annexures

Governance

Factors	Position	Mitigation Strategy/Goal	Capital Impacted
Code of Conduct	An all-inclusive Code of Conduct is a benchmark for individual and organisational performance.	All employees, including the Board and the executive leadership sign the Code of Conduct and adhere to it. To conduct independent third-party audit once in three years.	Human Capital
Whistle Blower Policy	A policy for both internal and external stakeholders to bring in more transparency.	Establish a third-party whistle blower mechanism and adhere to it at all operations.	Human Capital Social and Relationship Capital
ESG Commitment	ESG Risk Framework to be part of Enterprise Risk Management based on COSO principles.	ESG performance to be linked to KRAs and remuneration of executive leadership. ESG issues are covered in Internal Controls Framework.	Intellectual Capital Human Capital Social and Relationship Capital Manufactured Capital Natural Capital
Independent and Diverse Board	To encourage independent decision-making and mitigate any conflicts of interest.	To have an independent majority Board with independent Chairman.	Human Capital
Remuneration Policies	To design remuneration policies to attract and retain the best talents	Practice structured and transparent appraisal process to determine variable pay. Make provision for ESOPs and clawbacks for remuneration to the leadership.	Human Capital
Risk Management	A key component of a sustainable business and the maintaining of stakeholder trust is an integrated enterprise-wide perspective of risk management procedures and the board's and management's accountability for the Company's risk management.	Integrate ESG into Enterprise Risk Management. Deploy Enterprise Risk Management with Board and Management accountability Establish independent Risk Management function reporting to the Board or its committee	Intellectual Capital Financial Capital Manufactured Capital
Information and Cyber Security	Prioritise and address information and cyber security	Dovetail Information and Cyber Security into Enterprise Risk Management Implementation of ISO 27000 based Information Security Management systems	Intellectual Capital Manufactured Capital
Materials and Fair Disclosure	Ensure that key information is transparently accessible to all stakeholders.	Deploy the institutional mechanism for determination of materiality and fairness of the disclosures Make the review of the framework and its implementation a part of Internal Audit.	Social and Relationship Capital
Related Party Transactions	According to Greenko, the relationship's actual content, not only its formal legal definition, must be considered when deciding whether a related party transaction is present.	Greenko would follow the guidance of International Accounting Standards Board on Related Party Transactions across all entities of the Greenko Group.	Financial Capital
Tax Transparency	The Company understands the level of economic contribution the business makes to society through taxes.	Greenko would disclose tax information as per GRI 207.	Financial Capital Social and Relationship Capital

Strategic Approach

The study of external and internal environment further guided Greenko to identify its strategic directions, focussed areas, approaches and KPIs to steer Greenko further.

The key strategic directions derived for Greenko are:

- Financial Capital: Preserve and enhance value for shareholders.
- Manufactured Capital: Ensure sustainable operations.
- Intellectual Capital: Preserve and enhance innovation and systems.
- Human Capital: Attract, retain and nurture the best talent.
- Social and Relationship Capital: Reinforce stakeholder trust and develop co-creative partnership.
- Natural Capital: Preserve and enhance nature.

Greenko's detailed strategic approach is given in Annexure-III

Financial Capital

STRATEGIC FOCUS AREA	APPROACH	KEY PERFORMANCE INDICATOR
Debt Capacity	■ Improve credit rating	■ Credit rating ■ Fund flow statements
Access to Capital	■ Harness diverse avenues of funds Pursue appropriate M&A opportunity	■ Leverage or diversity of fund sources
Organic and inorganic growth	■ Pursue high growth through healthy CAPEX deployment in new projects delivering flexible and firm power	■ Share of funds deployed for organic to inorganic growth
Revenue Growth (to be amongst top 3 power utilities in India)	■ Maintain CAGR above 40% till 2023	■ CAPEX to revenue ratios ■ Ratio of firm power delivered to CAGR ■ Monthly variance in revenue
Seamless fund flow to the targeted objective	■ Diversify across decarbonisation, digitalisation, and decentralisation technologies to generate firm, RTC electricity	■ Top-line ranking amongst power utilities in India

Annexures

Manufactured Capital

STRATEGIC FOCUS AREA	APPROACH	KEY PERFORMANCE INDICATOR
Excellence, Adoption and Management of Assets	<ul style="list-style-type: none"> Deploy digitalisation for real-time information and predictive/adaptive O&M 	<ul style="list-style-type: none"> Wind In-Source of Operation and Maintenance Reduction in losses due to External Grid Failure
Excellence, Adoption and Management of Projects		<ul style="list-style-type: none"> Capacity addition Quality Assurance and Control in IRESP
Value Creation and Maximisation	<ul style="list-style-type: none"> In house capability and infrastructure for O&M 	<ul style="list-style-type: none"> Energy Efficiency Initiatives and Value Maximisation Programs improving productivity and cost optimisation
Contracts and Procurements Management	<ul style="list-style-type: none"> Execute projects with the best technology-enabled systems 	<ul style="list-style-type: none"> International Competitive Bidding (ICB) for IRESP New specific processes of C&P developed for IRESP Contract signed between Greenko and Andritz, India for 'Electro-Mechanical' Package at IRESP, Pinnapuram
Energy Storage Value Pools	<ul style="list-style-type: none"> Design and deploy utility-scale round-the-clock RE generation with the flexibility to harness all value pools in the electricity system Sharing models of storage and Intelligent Energy Platforms 	<ul style="list-style-type: none"> 100 GWh IRESP Projects Under Development 2 IRESP projects with a total capacity of 2.46 GW are under construction. IRESPs are planned to have digitally interconnected storage infrastructure
Transition towards Circular Economy	<ul style="list-style-type: none"> Reengineering and refurbishing of assets 	<ul style="list-style-type: none"> Sharing business model harnessed through IRESP sharing platform Circular design and equipment choices to enhance asset lifecycle End of Life asset management strategy

Human Capital

STRATEGIC FOCUS AREA	APPROACH	KEY PERFORMANCE INDICATOR
Talent Acquisition	<ul style="list-style-type: none"> ■ Attract talent early and nurture them for succession planning 	<ul style="list-style-type: none"> ■ Encouraging a culture of onboarding fresh talents as GETs and training extensively across all the niche domains
Competency Development	<ul style="list-style-type: none"> ■ Conducive & cross-functional environment for high performance 	<ul style="list-style-type: none"> ■ Mentoring the young achievers via PPS systems for required skillsets to fill the gaps & climb the ladder at the right moment ■ Employee engagement initiatives are given prime importance ■ Impetus on managing diversified asset portfolio, with efforts in building strong technical skills- progression of the learning curve for employees
Reward and Retention	<ul style="list-style-type: none"> ■ Recognition of efforts and rewarding performance. Instilling a sense of ownership for the outcomes 	<ul style="list-style-type: none"> ■ Talent Management for retention has sustained over the years
Diverse Workforce	<ul style="list-style-type: none"> ■ Aiming for improved diversity across the business 	<ul style="list-style-type: none"> ■ Mainstreaming Gender in policy design & implementation of projects
Succession Planning	<ul style="list-style-type: none"> ■ Succession planning for mapping the skills of employees with future leadership role requirements and training them accordingly 	<ul style="list-style-type: none"> ■ Critical roles across various project levels, asset management and support functions are mapped
Health & Safety across Value Chains	<ul style="list-style-type: none"> ■ Health & Safety to remain prime concern across all the business activities extended to the entire value chain- including contractors/ vendors & communities under operations 	<ul style="list-style-type: none"> ■ Extensive training on health & safety aspects provided to contractors
Digital Transformation in HR	<ul style="list-style-type: none"> ■ Cultural alignment of digital transformation across HR function. 	<ul style="list-style-type: none"> ■ Digitalisation of majority of activities for HR transformation including employee onboarding, attendance, helpdesk, payroll, workforce planning
New Energy – New Competencies	<ul style="list-style-type: none"> ■ Exploring New energy-solutions & nurturing human talent to acquire the core competencies for the desired futuristic growth in this area 	

Annexures

Intellectual Capital

STRATEGIC FOCUS AREA	APPROACH	KEY PERFORMANCE INDICATOR
Integrated Management System and Continual Improvement	<ul style="list-style-type: none"> Improving business process efficiency Sustainable certification for operational assets 	<ul style="list-style-type: none"> Continual improvement programs Real-time monitoring of assets Certified IMS auditors added New policies and procedures introduced
Achieving energy efficiency through technology	<ul style="list-style-type: none"> Enabling robotic process automation (RPA) 	<ul style="list-style-type: none"> Live energy forecasting In-house technology innovation
Improving Business diversification through innovation	<ul style="list-style-type: none"> Innovation in in-house technologies 	<ul style="list-style-type: none"> Reduction in delay of documentation process Minimal human intervention 24*7 availability of the system
Technology adoption and integration in Business Automation	<ul style="list-style-type: none"> Partnering with R&D institutions 	<ul style="list-style-type: none"> Reduction in Human Errors and proactive approach to employee related requests Digitalisation of work processes Identify issues that might present a security risk and propose effective counter measures on site Comprehensive review and validation of documented information Elimination of audit management formats

Social and Relationship Capital

STRATEGIC FOCUS AREA	APPROACH	KEY PERFORMANCE INDICATOR
Stakeholder Trust	<ul style="list-style-type: none"> Contribute strategically in the communities to effect measurable outcomes 	<ul style="list-style-type: none"> Covid-19 mitigation measures Skill Development program in Solar Energy
Branding	<ul style="list-style-type: none"> Awards and Recognition 	<ul style="list-style-type: none"> Strategic C&P team members have IIMM membership Senior leaders of C&P team have fellow memberships with the Institution of Engineers (India)
Human Rights	<ul style="list-style-type: none"> Preserve human rights of every individual and community 	<ul style="list-style-type: none"> No reported human rights incidents
CSR / local community initiatives	<ul style="list-style-type: none"> Contribute towards socio-economic growth & sustainable upliftment of surrounding communities 	<ul style="list-style-type: none"> Investment in community development Community development programs People benefited from Community Social Investment
Public Policy Participation	<ul style="list-style-type: none"> Participate actively and ethically to contribute in shaping public policy 	<ul style="list-style-type: none"> Professional hours spent by senior management with respect to policy advocacy

Annexures

Natural Capital

STRATEGIC FOCUS AREA	APPROACH	KEY PERFORMANCE INDICATOR
Mitigating impacts on nature	<ul style="list-style-type: none"> Conduct ESIA and adhere to ESMP in letter and spirit Monitor and measure social and environmental benefits of each project intervention 	<ul style="list-style-type: none"> Direct & indirect emissions avoided Air pollutions avoided
Ecological Restoration	<ul style="list-style-type: none"> Preserve proactively land and water resources in the regions of operation 	<ul style="list-style-type: none"> Contribution to biodiversity conservation Water used for operations Wastewater treated and reused for gardening & plantation etc. Wastes / effluents generated Rainwater harvested
Climate proofing the business	<ul style="list-style-type: none"> Use of IPCC's RCP 4.5 scenario for all site 	<ul style="list-style-type: none"> All Assets covered by the climate proofing plan
Extending life and Managing end of life	<ul style="list-style-type: none"> Identify and manage life cycle impacts of projects Map second life and end of life for every asset post its half-life 	<ul style="list-style-type: none"> % of assets covered under LCA and Life Cycle Management Plan % of assets - second life or end of life is identified













Materiality Mapping Impact Assessment








Impact Assessment – Approach, Alignment with UNSDGs and Stakeholder Capitalism

Material Topic	Approach	Alignment with UNSDG	Linkage to Pillar	Linkage to Capital
High Priority Issues				
1. Economic Performance	Inclusive Economic growth leading to a sustainable business benefiting all the stakeholders including the communities		Principles of Governance	Financial Capital
2. Energy Storage Value Pools	Round the clock flexible & schedulable power via Intelligent Energy Platforms	  	Planet	Manufactured Capital
3. Excellence, Adoption, and Management of Assets and Projects	Continuous performance improvement of GAM functions for acceleration of the transition of energy systems for integration of RE into grid & enhancing reliability by providing energy storage solutions		Prosperity	Manufactured Capital
4. Health and Safety	Skill Enhancement Trainings with health & safety as the prime concern extended to value chain partners as well ensuring zero hazard scenario		People	Human Capital Social & Relationship Capital
5. Community Development Initiatives	Inclusive development of the communities, encouraging communities to appreciate preservation of natural resources, appreciate clean energy & secure employment in power sector	 	People	Social & Relationship Capital
6. Innovation and Technology Adoption	Conceptualisation of an innovation engine to build world's largest energy storage cloud platform to aid in transitioning to low carbon economy		Principles of Governance	Intellectual Capital
7. Public Policy Advocacy	Public policy advocacy to bring visible changes to the ecosystem and act as a change agent to drive ahead special targets pertaining to build and operate multiple IRESPs with storage capacity up to 48.98 GWh		People	Social and Relationship Capital
8. Climate Proofing	Climate risk assessment & management, systematic analysis of climate trends/events to identify, minimise and manage the climate impacts on projects / assets		Planet	Natural Capital
9. Regenerative and Circular Value Pursuit	To harness overall organic and inorganic growth by embracing circular and regenerative thinking as a way of business	 	Planet	Natural Capital

Annexures

Material Topic	Approach	Alignment with UNSDG	Linkage to Pillar	Linkage to Capital
Medium Priority Issues				
10. Stakeholder Engagement	The establishment of effective two-way communication with the stakeholders to create and maintain enduring relationships with stakeholders for meeting their expectations, & effectively responding to stakeholder concerns		People	Social & Relationship Capital
11. Regulatory Compliances	Compliance on regulatory, environmental & risk management issue to drive business sustainably		Principles of Governance	Financial Capital
12. Risk Management	An integrated enterprise-wide perspective of risk management practices and the board and management accountability for the Company's risk management - an essential ingredient of sustainable business and continuance of stakeholder trust		Principles of Governance	Financial Capital
13. Diversity	Diversity and inclusion amongst the workforce are core to Greenko's business. Diversity at the workplace is a virtue that can generate more visible benefits in the long run, since a diverse workforce displays a better decision-making ability and strong work culture	 	People	Human Capital
14. Waste Management	Circular economic practices are the key element for driving sustainable development. The Company's waste management practices adhere to the principles of Environmental and Social Management System which requires conformance to legal requirements along with the reduction in waste generation through reuse or recycle, whenever possible via the ESMS mandate		Planet	Natural Capital
15. Talent Acquisition and Retention	Talent acquisition that is not limited to Campus hiring but complemented by grooming the employees to rise to the next level by acquiring the desired competencies keeping in view succession planning	  	People	Human Capital
16. Skill Enhancement	Identification of topics for training through the training need identification process (TNI) of HR and planning training programs to boost the team to work effectively and efficiently at various locations. Seeking continuous feedback from the teams for any additional topics for training on a continuous basis		People	Human Capital
17. Employee Welfare	Employee welfare across all projects and plant locations are taken care of by the HR function. Children of employees pursuing vocational training are given a fixed remuneration by the Company and the workforce is encouraged to pursue higher education. The Company also lays emphasis on the education of employee children and contributes to the education of selected children.	 	People	Human Capital

Material Topic	Approach	Alignment with UNSDG	Linkage to Pillar	Linkage to Capital
18. Employee Engagement	Employee engagement in a structured manner has a significant improvement in employee productivity, keeping them motivated reducing attrition rates as well		People	Human Capital
19. Transparency	Transparency & accountability, both in financial and non-financial matters to continue enjoying the trust of all stakeholders and achieve business goals responsibly		Prosperity, Principles of Governance	Social & Relationship Capital
20. Anticorruption	Sound compliance mechanisms via good governance to ensure a productive work culture	 	Principles of Governance	Financial Capital
21. Sustainable Supply Chain Management	Reduce risk of non-compliance with social and environmental requirements by conducting regular audits, handholding exercises and evaluation of suppliers based on ESG	 	People	Social & Relationship Capital
22. Human Rights	Establish robust mechanism to track human right violations, sexual harassment, and employee grievance redressal mechanism for an empowered workforce	 	People	Social and Relationship Capital
23. Life Cycle Management	Greenko has explored circular value pools across its business by deploying a life cycle approach to business. The circularity at Greenko is harnessed at three levels, shared business models, managing end of life & circular choices	 	Planet	Natural Capital
24. Biodiversity	Conduct Environmental and Social Impact Assessment (ESIA) to understand project impacts on biodiversity. Take steps to restore and improve biodiversity in project affected areas and other critical regions in alliance with partners public-private-people initiative	 	Planet	Natural Capital

Material Topic	Approach	Alignment with UNSDG	Linkage to Pillar	Linkage to Capital
Low Priority Issues				
25. Energy Management	Greenko is committed to circular economic approaches, the 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.		Planet	Natural Capital
26. Succession Planning	Greenko has a firm and robust succession planning system, wherein potential successors earmarked for critical roles are identified and groomed. The Leadership Team at Greenko is equipped with multi-faceted domain and functional expertise and extensively works to develop vertical as well as functional teams to aid in effective succession planning, as per business requirements		People	Human Capital
27. Grievance Mechanism	Establish a robust whistle blower mechanism to address the grievances of all stakeholders for a safe work culture	 	People	Human Capital
28. Land Management	Proactively preserve the land resources in the regions of operations	 	Planet	Natural Capital
29. Sustainable Partnerships	Sustainable partnerships to gain sustainable returns (financial and socio-environmental)		People	Social & Relationship Capital

Annexures

Material Wise – Circular Economy Initiatives at GAM Sites

Hydro

Materials	UOM	FY 21-22				CY 2022			
		Repair	Refurbish	Reuse	Recycle	Repair	Refurbish	Reuse	Recycle
Gates	No	8	0	0	0	2	0	0	0
Deflector and Deflector shaft	No	1	0	0	0	2	0	0	0
SFT Valve	No	3	0	0	0	2	0	0	0
Main inlet valves	No	3	0	0	0	1	2	0	0
Rotalian Seal Unit 4	No	2	1	0	0	1	1	0	0
Turbines	No	7	13	0	0	5	12	0	0
Deflector U#2 Servo cylinder oil seals replacement	No	1	0	0	0	0	0	0	0
Deflector servomotors	No	0	0	0	0	0	3	0	0
Break Jet Pipe	No	1	0	0	0	0	0	0	0
Gearboxes	No	2	3	0	0	2	3	0	0
Pumps	No	28	6	0	0	23	4	0	0
VT Pumps	No	0	0	0	0	1	0	0	0
OPU suction Pump U#4	No	1	0	0	0	0	0	0	0
Generators	No	2	2	0	0	1	2	0	0
Governor	No	0	0	0	0	0	0	0	0
Governor PLC of U#4	No	1	0	0	0	0	0	0	0
Nozzles Solenoid	No	1	0	0	0	0	0	0	0
Nozzles Manifold valve #3	No	1	0	0	0	0	0	0	0
Power Transformers	No	0	0	0	0	1	0	0	0
SF6 Circuit Breaker U#1 On/off Mechanism repairing work	No	1	0	0	0	0	0	0	0
Auxiliary Transformers	No	3	0	0	0	0	0	0	0
Electrical panels	No	13	0	0	0	0	0	0	0
Motors	No	10	6	0	0	11	11	0	0
Electronic cards	No	32	0	0	0	1	0	0	0
MS empty barrels	No	0	0	56	0	0	0	35	16
PVC empty barrels	No	0	0	14	30	0	0	13	0
MS Metal scrap	Kg	0	0	1,315	11,850	0	0	1,749	40,220
Aluminium scrap	Kg	0	0	0	0	0	0	0	0
Brass scrap	Kg	0	0	0	0	0	0	0	0
Oils	Ltr	0	0	30,465	3,663	0	0	58,725	15,315
Oil-soaked cotton waste	Kg	0	0	0	73	0	0	0	89
Batteries	Kg	0	0	0	327	0	0	0	640
E-Waste	Kg	0	0	0	85	0	0	0	73.5
Rubber scrap	Kg	0	0	0	75	0	0	0	93
Plastic scrap	Kg	0	0	0	0	0	0	0	20
Wood scrap	Kg	0	0	70	0	0	0	10	92
Waste grease	Kg	0	0	4	0	0	0	2	350
Generator Bearing	No	2	0	0	0	0	0	0	0
Turbine Bearing	No	3	0	0	0	3	0	0	0

Wind

Materials	UOM	FY 21-22		CY 2022	
		Refurbish	Repair	Refurbish	Repair
Blades	No	0	10	0	8
Generator	No	1	0	1	0
SF6 Circuit Breaker	No	1	0	1	0
AC2 inverter	No	10	0	8	0
Converter Control unit	No	34	0	30	0
Diode Rectifier	No	0	15	0	15
G Overspeed PCB	No	0	0	0	0
G pulse PCB	No	0	0	0	0
G speed PCB	No	0	0	0	0
HVIO	No	3	0	3	0
IGBT SKiiP3	No	0	10	0	11
IGBT SKiiP4	No	0	100	0	100
Inductor cooling fan	No	11	0	10	0
Battery charger NG5	No	40	0	40	0
F.A. UPS Elements UPS002 No	No	0	0	0	0
F.A. UPS Elements UPS004	No	0	0	0	0
Cooling fan for CCU	No	0	16	0	14
Contactors 3P50A Capacity 1SBL351024R80	No	0	11	0	11
Fan-Fan Generic 80W	No	0	8	0	8
Power Pack 110/24V	No	0	7	0	7
Slipring PCB	No	0	6	0	6
Generic Motor 1,5-0,30KW	No	0	5	0	5
Grid Filter Contactor (KC001-002)	No	0	5	0	5

Solar

Materials	UOM	FY 21-22				CY 2022			
		Repair	Refurbish	Reuse	Recycle	Repair	Refurbish	Reuse	Recycle
Module (Junction box or Diode)	No	674	1254	1402	23	247	746	169	50
Inverter (IGBT cards or communication cards)	No	16	88	85	0	72	53	25	0
SCB (communication and Internal components)	No	39	1316	1314	1	112	762	705	1
IDT (any part)	No	31	1	1	10	31	27	14	6
HT Panel (any part)	No	8	0	0	0	9	11	9	1
Auxiliary Transformer (any part)	No	5	0	0	0	2	4	5	0
PSS/ Current Transformer	No	0	0	0	3	3	0	0	0
PSS/ Potential Transformer	No	0	0	0	3	0	0	0	1
PSS/ Circuit Breaker	No	3	0	0	0	3	0	0	0
PSS - Isolator	No	0	0	0	1	16	0	0	1
PSS - Lightning Arrester	No	0	2	0	0	4	1	0	0
PSS - Power Transformer	No	0	0	0	0	1	0	0	0
RTU Panel	No	18	5	5	0	13	1	0	2
Float Cum Boost Charger	No	3	1	2	0	4	28	9	1
UPS	No	13	6	2	13	28	6	1	10
Relays	No	3	5	0	0	27	3	0	0



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