



INTELLECTUAL CAPITAL

Intellectual Capital is the value of our intangible and knowledge-based assets. We term our cutting-edge innovation as one of our key pillars in minimising environmental impact and complying with the future of energy sector. Our investments in intellectual capital lend us a competitive edge in becoming a Net Zero company.





Description

This capital is the basis for our innovation capability and sustained competitiveness. It represents our organisational, knowledge-based intangibles, including intellectual property. It also includes our organisational capital such as tacit knowledge, systems and procedures, and helps take a holistic view of all the aspects of our business.

Management Approach

Through strategic investment and rigorous IP management practices, we endeavour to safeguard our innovations and creations from unauthorized use or infringement. By fostering an environment of collaboration and knowledge-sharing, we enhance our competitive position and expand our digital capabilities.

Significant Aspect

We create intangible, knowledge-based assets, which includes disruptive technologies and business models that enable the Company to transition towards becoming a modern and innovative renewable power company.

Key Performance Indicators	Material Topics	Strategy Linkage
<ul style="list-style-type: none">R&D spendStrength of IT TeamRevenue from emerging businesses	<ul style="list-style-type: none">Data security, privacy, cyber securityBusiness ethicsBrand managementTalent managementProject deliveryGovernance	S01 S02 S05 S06

SDGs impacted



ISO 27001:2013

certified company in Information Technology and Operational Technology

₹ 48 crore

Investment in IT & Digital systems

Intellectual capital consists of how we adapt to newer technologies, explore digitalisation to promote energy efficiency and work towards developing new products and services. Our disruptive technologies facilitate us in becoming a tech-enabled company and in contributing towards electrification of the economy. In the current financial year, we have invested ₹ 48+ crore in IT & Digital platform system, and we expect this journey to continue for process automation.

We understand the critical importance of protecting our intellectual property assets in the digital realm. The portfolio of intellectual property assets forms the foundation of our digital and IT investments, enabling us to deliver value-added solutions and services to organisational growth. We actively engage in strategic partnerships and collaborations to leverage complementary intellectual property assets and drive innovation in the digital ecosystem.

Our IP Assets

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|--|------------------------------|-----------------------|
| Proprietary software algorithms | Digital platforms | Patented technologies |
| Critical information infrastructure assets | Trademarked brand identities | |

Technology is also our key enabler in achieving our strategic goals of industry and cost leadership. It helps the Company in implementing innovative enhancements by way of process improvements, system updating and IT system and infrastructure upgradation, with deployment of eighteen digitalisation projects.

In collaboration with our technology and research partners, we strive to innovate and adapt to continuous change and cater to changing customer needs. We shall continue working

on enhancing our production processes, cost competitiveness and environmental performance with the highest safety standards.

Risk Management and Compliance

We remain vigilant in managing the risks associated with intellectual property infringement and compliance. Through regular internal and external audits, monitoring and enforcement measures, we mitigate the risk of unauthorized use or misappropriation of our intellectual property assets, safeguarding

our competitive advantage and market position.

We have collaborated with the CERT-IN empanelled external audit team in conducting the regular audits at the respective plant locations to augment the processes at all levels.

During the year, we were awarded as an ISO 27001:2013 certified company in the field of Information Technology and Operational Technology, which has been widely accepted as the universal standard practices to safeguard our IP at all levels.

Ongoing IT projects of FY 2024

Project	Features	Benefits
Integrated Digital Command Centre (IDCC) for Renewable Assets	Real-time data analytics, KPI monitoring and operational metrics	Improved operational efficiency, reduced downtime, and enhanced asset management
IoT for Predictive Maintenance and Equipment Health Monitoring	Real-time sensor data, machine learning for predictive maintenance	Reduced unplanned outages, extended equipment lifespan
Coal Inventory Optimisation Application	Integration with Indian Railway FOIS API, predictive algorithms	Improved operational efficiency and inventory management
Coal Value in Use VIU Application	Real-time tracking, data-driven procurement decisions, inventory level transparency, and loss analysis across the value chain	Improving operational performance and cost efficiency
Heat Rate Optimisation using Advanced Process Control (APC)	Real-time optimisation, machine learning-based predictive control, and seamless integration with existing control systems	Reducing environmental impact and enhancing operational efficiency
Thermal Power Plant Real-Time Visualisation and Operation Analytics using Aveva-PI	Real-time data integration, powerful visualisation tools, custom reports, anomaly detection	Enhanced data-driven decision-making, improved operational efficiency, robust data storage and security
Integrated Supply Chain Management (iSCM) System for Wind Projects	Component tracking, vendor management, logistics management	Improved supply chain efficiency, traceability, and stakeholder collaboration
Historical Data Processing and P-90 Generation Values Assessment	Data quality validation, machine learning for energy production assessment	Accurate energy generation forecasting, reduced dependency on external vendors
Generation Monitoring Center (GMC) Sustenance for Renewable Assets	Debugging, database schema validation, backup and disaster recovery	Risk mitigation, improved system reliability
Power Curve Automation for Wind Assets	Data collection, automated parameter calculation, site-specific reports	Significant time savings, improved accuracy and efficiency
Wind Daily Generation Report (DGR) Automation and Loss Analytics	Data collection and cleaning, event mapping for loss categorisation	Increased accuracy, expedited DGR activities, improved performance benchmarking
Optimisation Model for Green Hydrogen Generation	Data preprocessing, MILP technique for optimisation, financial feasibility assessment	Cost savings, improved decision-making, streamlined operations



Project	Features	Benefits
Best Practices for Cloud Management	Cloud IaaS and PaaS models, robust data security, disaster recovery	Cost efficiency, scalability, enhanced performance and collaboration, business continuity
Strengthening IT Cybersecurity System	Access control, advanced threat detection, vulnerability assessment	Reduced vulnerability, improved risk management, ISO 27001 certification
Revamping Network Infrastructure	Upgrading obsolete IT network assets, enhancing infrastructure with improvised uptime availability	Enhanced performance, future-proofing operations, reducing downtime
OT & IT Convergence for renewable assets	Upgraded the OT Network for all renewable assets for seamless integration with the IT Infra	For virtual isolation, protection of data from external threat by enabling additional layer from the IT facing assets
Centralisation of OSI PI Platform for the thermal vertical	Bringing the entire thermal data on the central server with single instance for all locations	Enhance the application availability with more secured there by it allows single server for entire thermal for ease of maintenance with reduction in SRP / AMC
Revamping of Surveillance system	Upgradation of old obsolete system with the latest technology products with much advanced inbuilt cyber security compliance system	It helps business to monitor the critical assets deployed at various places in the premises and helps concerned team to monitor the activities happening from the central locations

Future Outlook

As we navigate the evolving digital landscape, we remain committed to investing in innovation and protecting our intellectual property assets. By staying abreast of emerging trends, technologies, and regulatory developments,

we seek to capitalise on new opportunities and maintain our leadership position in the digital and IT domain.

IP is a cornerstone of our digital and IT investment strategy, underpinning our commitment

to innovation, competitiveness, and value creation. By prioritising IP protection and management, we safeguard our investments, foster growth, and deliver sustainable long-term value to our stakeholders.