

INTELLECTUAL CAPITAL

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INTELLECTUAL CAPITAL

Reading time: 12 minutes

MATERIAL TOPICS

- Digital Transformation
- Data Security
- Risk Management



Information, when harnessed correctly, acts as a compass. It ensures every decision is guided by clarity, precision, and strategic foresight. Keeping up with technological advancements is crucial for leveraging them to the organisation’s benefit. At Apraava Energy, we deeply value the intellectual infrastructure and expertise we have cultivated over the years. We consistently encourage our people to embrace exploration and innovation, ensuring to stay relevant in today’s fast-evolving digital landscape. We have spent the last year integrating systems, refining processes, and building a digital infrastructure that primes us for our journey into the integrated energy space.

Strengthening Our Systems to Make Smarter Decisions

Technology should simplify processes and enhance efficiency. This year, we focused on creating a synchronised, intuitive, and secure digital environment that enables sharper, faster decision-making.



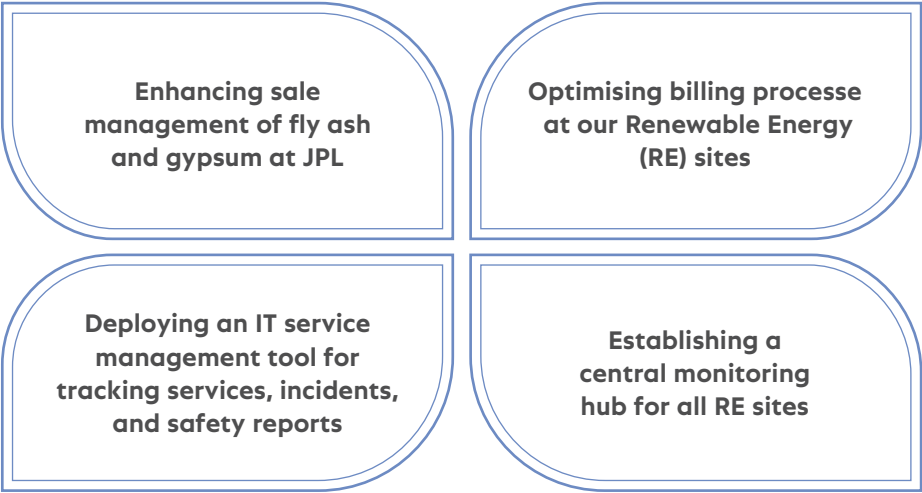
Key initiatives include:

- **Enterprise Application Systems to cut inefficiencies**, automate processes, and support sustainability goals
- **Transitioning from fragmented systems to a unified ONE operating platform**, integrating AI, and enhancing real-time decision-making
- **Optimising end-to-end travel & expense management** to drive efficiency, transparency, and compliance
- **Enabling data-driven decisions** through integrated dashboards
- **Staying ahead of cybersecurity threats** by strengthening resilience through advanced defences and awareness initiatives
- **Strengthening project security** through precise data management while driving India’s smart metering transformation
- Embedding risk management and structured **Project Management Governance Systems (PMGS)** to ensure seamless execution of large-scale renewable projects.

Sustainable, Efficient, and Technology-Driven Initiatives

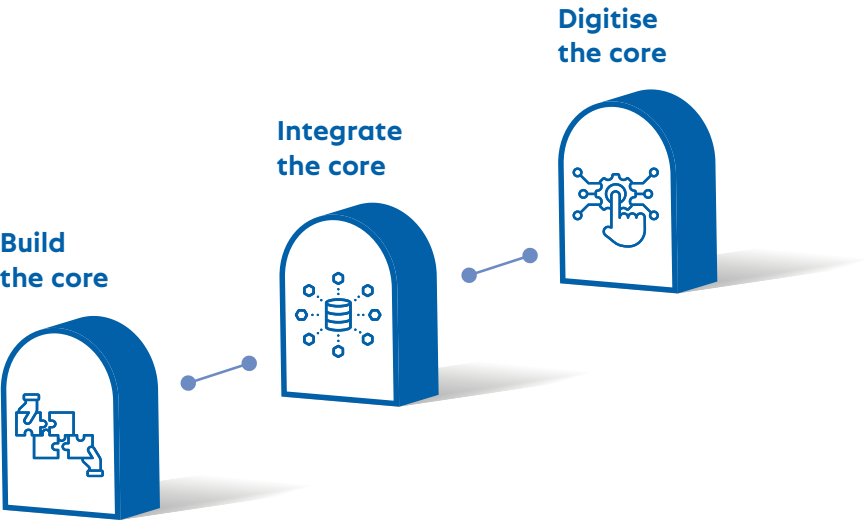
We are continuously strengthening our sustainability initiatives by leveraging IT and ERP systems to boost productivity, minimise paper usage, and streamline automated business processes.

Key initiatives include:



We continue to utilise end-user protection services and software suites—BLISS and Diligent—to facilitate paperless board meetings. All our secretarial and compliance activities are now digital as well. Across JPL and RE operations, AI-powered tools help analyse and optimise plant performance, driving greater efficiency. These efforts align with our commitment to transitioning towards paperless offices and reinforcing our sustainability goals.

Apraava Energy’s Roadmap to Digitisation



In FY 2024-25, we continued moving from disconnected systems to a single, unified digital lens, giving project managers and business leaders real-time visibility into operations. Data now moves seamlessly, providing deeper insights and improving efficiency. With the transition from SAP to Oracle, the expansion of AI-driven analytics, and the implementation of advanced cybersecurity defences, our foundation is stronger than ever.

Through our DIGIVARTAN initiative (launched in 2022, our biggest digital project to date), we’re accelerating integration and expanding digital capabilities. The goal is clear: to build ONE unified business platform, making operations smarter, more connected, and future-ready.

Objectives

Working on ONE unified business platform



Outcomes

Enhanced clarity and openness

Streamlining business operations through the usage of ONE comprehensive system



Augmented adaptability

Achieving transparency and eliminating confusion with ONE master dataset



Elevated employee involvement

Establishing communication through ONE language with ONE set of definitions



Expanded opportunities

Expedite and enhance decision-making with ONE reliable data source



Greater flexibility and responsiveness

Facilitating synchronisation of actions across different business units and functions



Superior operational framework

Collaboration Without Friction: From Data to Decision

Data flows best when systems talk to each other. This year, we focused on breaking down barriers so that every decision-maker operates with one source of truth.

At the heart of this transformation is a structured, tech-driven workflow. The new Power BI-based dashboard consolidates project milestones, progress updates, and key activities, reducing reliance on multiple reports and manual tracking. A standardised MS Excel-based reporting system feeds directly into the dashboard, keeping information updated and accessible.

The flow of data and decision-making follows a structured process:



Standardised Reporting

- Captures data in predefined MS Excel formats for all project types to ensure consistency
- Updates the Project Progress Status sheet regularly to minimise discrepancies



Power BI Dashboard as a Single Source of Truth

- Automatically pulls data from the reporting sheets
- Provides real-time project insights with clear visualisation
- Reduces dependency on manual tracking and multiple reports



Analytical Insights

- Identifies trends, potential risks, and bottlenecks before they escalate
- Enables proactive course correction based on live data analysis
- Additional analytical features will be added in the next phase



Governance & Collaboration

- Enhances cross-functional coordination, ensuring alignment at all levels
- Uses PMGS to ensure higher degree of governance for all new projects



Continuous Updates & Course Correction

- Ensures all teams work with the most updated, accurate information
- Eliminates blind spots, making project execution faster and more precise

Staying Ahead of Cybersecurity Threats

At Apraava Energy, we are fortifying our digital defences with a proactive, inside-out approach to cybersecurity. In a world where cyber threats evolve faster than technology itself, staying ahead means anticipating risks before they escalate. Our strategy is built on strong policies, cutting-edge security practices, and rigorous internal and external audits, ensuring every employee plays a vital role in securing our systems.

Watch Out for a New Type of Phishing Attack Using CAPTCHAS!

Learn how you can protect yourself.

CAPTCHAs are security measures and verification mechanisms which verify that a user is human. They are often displayed as distorted text or image selections.

How do Cyber Criminals Use CAPTCHAS to Phish You?
Recent cyber attacks have weaponised CAPTCHAS, leading users to click on malicious links which are disguised as verification prompts. This can lead to the compromise of personal data.

How can you spot a Rogue CAPTCHA and Protect Yourself?
Malicious CAPTCHAS continue to get harder to spot. But for now, the biggest giveaway is **when something is out of the ordinary** e.g. being asked to press shortcut keys to execute commands, having to copy and paste, or needing to press the 'Enter' button to complete the verification.

I am not a robot

Robot or human?
Check the box to confirm that you're human. Thank You!

Verification Steps
1. Press Windows Button + R
2. Press CTRL+V
3. Press Enter

Avoid Unsolicited Links

Always be Alert & Verify

Update Security Software

Enhance your Defence

Never click on unexpected CAPTCHA prompts

Never click suspicious links or share any personal information

Keep antivirus tools updated for added protection against threats

Enable Multi-Factor Authentication (MFA)

Apraava will never contact you and ask you to provide your credentials, passwords or make you type or click on a malicious link.

Report any actual or suspected security incidents to Group Security at cybersecurity@apraava.com or raise ticket with it servicedesk@apraava.com.

Stay Smart: Spot Phishing, Protect Your Privacy!

Remember. Security Awareness is a Shared Responsibility!

We combine robust security policies, continuous awareness initiatives, and advanced protective technologies to stay ahead of evolving threats. From educating employees about the risks of browser-stored passwords and phishing disguised as verification prompts, to encouraging password managers and multi-factor authentication, we ensure cyber hygiene is part of our everyday culture.

This work is reinforced through regular internal and external audits, along with targeted communication campaigns that highlight emerging risks in simple, visual formats. Across the organisation, every employee plays an essential role in safeguarding our systems, data, and collective digital resilience.

Leveraging User and Entity Behaviour Analytics (UEBA)

With UEBA, we detect anomalies, mitigate insider threats, and strengthen our overall security posture. Our Cybersecurity Awareness Training—including the True Risk Score Model—ensures employees stay vigilant and informed. By refining our phishing simulations based on user behaviour, we identify the hidden insider risks that traditional tests miss, and hence, reinforce our resilience.



To safeguard our critical infrastructure, we have strengthened Operational Technology (OT) security, enhancing Digital Personal Data Protection (DPDP) and OT protocols. We also adhere to global security standards, having achieved ISO 27001 certification, with ongoing compliance efforts across Renewables, JPL, and Transmission OT. By fostering a "Human Firewall" culture, we empower employees as the first line of defense, ensuring the confidentiality, integrity, and availability of critical information assets and maintaining the trust of our stakeholders.

Strengthening Data-Driven Intelligence and Security in AMI Projects

As Apraava Energy drives India's smart metering revolution, our role as an Advanced Metering Infrastructure Service Provider (AMISP) puts us at the helm of a data-powered transformation. With every smart meter deployed and every watt of energy measured, we're unlocking real-time insights, optimising efficiency, and reshaping consumer engagement. Data is power, and we ensure it remains secure, precise, and protected—all while upholding the highest standards of cybersecurity and responsible management.

Harnessing Smart Meter Data for a Smarter Grid

With Apraava Energy as an AMISP, we are now managing a vast pool of smart meter-generated data including:



Consumer Indexing (CI) Data

Collected during the installation phase, including old meter details, consumer number, geo-location, and images



Meter Installation (MI) Data

New meter details, old and new meter readings, and real-time geo-tagging



Smart Meter Data

Live energy consumption trends, load profiles, billing data, and system event alarms—a data-rich ecosystem for intelligent decision-making

Note: Apraava Energy ensures that no sensitive personal data such as financial details, biometric records, or Aadhaar information is collected. We abide by our commitment to consumer privacy and responsible data use.



Building a Fortified Cybersecurity Framework

With increasing digitalisation comes the need for robust cybersecurity measures. Our AMI systems operate on a multi-layered security architecture and ensure data confidentiality, integrity, and accessibility through the following safeguards:



India-Based Cloud Infrastructure: All AMISP-managed applications and data are hosted on MeitY-empanelled cloud service providers within India-based data centres. With both a primary Data Centre and a Disaster Recovery Centre, operations remain seamless while complying with national data residency norms.



Geographically Restricted Access: To maintain security, access to Head End System (HES), Meter Data Management System (MDMS), Consumer Portal, and Workforce Management (WFM) applications is strictly limited to users within India’s geographical boundaries. This restriction prevents any unauthorised foreign access.



Layered Access Controls: Security begins at the entry point. AMISP applications require username-password authentication, further strengthened by multi-factor authentication (MFA) to block unauthorised attempts.



Secure Data Integration: The AMI Applications (HES, MDMS & WFM) are seamlessly connected via SSL-secured APIs, ensuring encrypted data exchange. Additionally, only authorised utility applications and the National Feeder Management System (NFMS) are permitted to integrate with AMI platforms—no external applications are allowed.



Advanced Security Measures: Cyber resilience is built into our framework. Our Cloud Service Provider (CSP) deploys Web Application Firewall (WAF) protection, while Apraava conducts annual vulnerability assessments and penetration testing (VAPT) to detect and mitigate risks proactively.



Compliance with International Security Standards: Our CSP facilities align with globally recognised security certifications, reinforcing data protection and operational resilience:

- **ISO 27001** – Information security management certification
- **ISO/IEC 27017** – Cloud-specific security controls
- **ISO 27018** – Protection of personally identifiable information (PII)
- **ISO 20000-1** – IT service management system compliance
- **Tier III Certification** – Ensuring high availability and redundancy, preferably certified under TIA 942 or Uptime Institute standards
- **PCI DSS Compliance** – Securing cloud infrastructure for payment-related data storage and transmission

By safeguarding data at every level, we’re strengthening the grid and creating a resilient, future-ready energy ecosystem for India.

Project Management Governance System (PMGS)

Large-scale infrastructure projects do not simply rely on capital investments or technical expertise. It's a lot more about the application of expertise, the deployment of knowledge, and just as much about decision-making and risk management. We are strengthening our project outcomes by ensuring operational efficiency and financial prudence, and this is made possible by integrating institutional knowledge, best practices, and a data-backed risk assessment approach.

To do this, our newly updated Project Management Governance System (PMGS) plays a pivotal role. Designed to anticipate challenges, streamline execution, and enhance risk mitigation, PMGS provides a clear framework of controls, due diligence mechanisms, and structured oversight.

Proactive Risk Management with PMGS

At Apraava Energy, risk management is embedded into every stage of a project's lifecycle. The PMGS is designed to identify, assess, and mitigate risks before they become roadblocks, leading to smooth execution across large-scale renewable and transmission projects. From the moment a project is considered to the day it's commissioned, our structured approach ensures that we identify, assess, and mitigate risks before they disrupt progress.

Early Risk Identification at the Bid Stage

- **Comprehensive due diligence:** Every project undergoes a rigorous assessment of land availability, Right of Way (ROW) risks, regulatory challenges, and grid connectivity feasibility before commitment.
- **Strategic options analysis:** Potential risks are mitigated through alternative site evaluations, technology choices, and financial viability assessments, ensuring informed decision-making from the outset.

Structured Risk Management Framework

- **Risk register and categorisation:** Risks are systematically captured, classified, and prioritised based on impact and probability, allowing for proactive mitigation.
- **Stage-Gate Reviews:** Key checkpoints at Predevelopment, Bidding, Development, Execution, and Commissioning ensure continuous risk reassessment and realignment of strategies.

Governance & Compliance Mechanisms

- **Regulatory and permitting compliance:** Projects are aligned with evolving policy frameworks, environmental standards, and grid code requirements to prevent compliance-related delays.
- **Stakeholder engagement strategy:** Risks related to land acquisition, community relations, and environmental approvals are addressed through structured outreach and collaboration.
- **Contracting and procurement strategy:** Robust EPC and O&M contracts are structured to mitigate supply chain risks, ensuring execution efficiency.

Execution Phase Risk Control

- **Three-tiered project monitoring and reporting:** A structured review mechanism—PWG, PSC, and MD-Level Reviews—provides continuous oversight, ensuring risks are flagged and mitigated in a timely manner.
- **Board-level oversight and strategic guidance:** The Risk Management Committee and the Board review the progress of all projects under implementation at their quarterly meeting and provide guidance on matters of concern.
- **Contingency planning and risk response:** Predefined action plans address weather disruptions, regulatory delays, and supply chain issues, maintaining project momentum.

Continuous Improvement & Knowledge Sharing

- **Post-project reviews:** Lessons from completed projects are documented, analysed, and integrated into future risk strategies, enhancing execution resilience.
- **Portfolio-wide risk insights:** Knowledge-sharing across renewable and transmission portfolios ensures risk mitigation approaches are continuously refined and applied at scale.

Hierarchical Review & Risk Escalation Mechanism

- **Structured risk discussions:** Risks are systematically brought to the right review panels, ensuring each challenge is addressed at the appropriate level.
- **Transparent escalation process:** The status of key risks is consistently highlighted during structured reviews, ensuring visibility and proactive resolution across all governance layers.

By embedding PMGS into every stage of project execution, we are setting industry benchmarks in execution and efficiency by combining foresight, adaptability, and structured governance.

The Next Leap: Innovation as a Standard

The groundwork has been laid. Now, we scale, refine, and push boundaries. As Apraava Energy continues to expand its footprint in India's energy transition, our approach to digitalisation, data security, and operational intelligence will evolve to meet new challenges and opportunities.

The next phase of our digital transformation will focus on deepening AI and analytics capabilities, further streamlining project governance, and enhancing real-time decision-making tools for greater agility. Cybersecurity will remain a top priority, ensuring that as our data landscape expands, so does our resilience against emerging threats.

By continuing to innovate, integrate, and secure our digital ecosystem, we are ensuring that intelligence remains at the heart of every decision, powering Apraava's journey toward a more efficient, connected, and sustainable future.

