Emerging Risk

PT Kereta Api Indonesia (Persero)

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Accelerated national & global phase-down of coal that reduces coal freight volumes on KAI lines

Geopolitical–Regulatory (Energy Transition Policy Risk)

The shift in both national and global energy policies toward accelerating the energy transition is expected to reduce dependence on coal as a primary energy source. The Indonesian government is currently developing various regulations and initiatives, such as the roadmap for early retirement of coal-fired power plants, export restrictions, and the implementation of a carbon tax policy that remains under review. The uncertainty in timing and scope of these policy implementations may impact coal logistics flows across KAI's operational routes, which have long served as one of its main revenue contributors.

Beyond domestic factors, global geopolitical dynamics, such as pressure from trading partners to accelerate supply chain decarbonization—may further drive down demand for Indonesian coal. This risk is external and medium-to-long term in nature, carrying a high level of uncertainty but with potentially significant implications for KAI's revenue sustainability, asset utilization, and business diversification strategy.

Accelerated national & global phase-down of coal that reduces coal freight volumes on KAI lines

Impacts for KAI

- **Lower freight revenue and margin compression from declining tonnage and shorter contract tenors:** A structural drop in coal tonnage would pressure KAI's topline and margins through lower wagon turns, higher unit costs, and weaker pricing power on remaining volumes.

- **Imbalance in network/rolling-stock utilization and increased unit costs:** Under-utilization of coal-specific assets (wagons, loaders, yards) increases maintenance cost per ton and may trigger capex deferrals or asset impairments

- **Potential write-downs or deferral of coal-linked capex; repricing risk in long-term haulage contracts:** Contract tenors could shorten and counterparties may seek to renegotiate take-or-pay terms, raising revenue variability. Operationally, network balance deteriorates (more empty repositioning), while upstream slowdowns ripple into workshop workloads and supply contracts

- **Second-order effects on ancillary services (yard, wagon maintenance, fueling, crew allocation):** There are knock-on effects on ancillary services—station handling, fueling, and maintenance—and on human capital planning if crew rosters tied to coal routes require redeployment or reskilling.

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Mitigating Actions

- **Diversify revenue and assets:** Scale non-coal bulk (cement, clinker, steel, fertilizer, grains) and intermodal/containers, and pursue “transition” commodities (biomass/wood pellets, limestone/gypsum, nickel/bauxite concentrates for the EV supply chain, ammonia/hydrogen where feasible). Repurpose coal wagons/yards for multi-commodity use, invest in modular rolling stock, and prioritize capex with high optionality. Develop logistics parks and warehousing/cold-chain at rail hubs to anchor container flows and first/last-mile services.

- **Strengthen commercial resilience:** Expand customer base beyond miners to traders and manufacturers; embed minimum-volume commitments, index-linked tariffs, and flexibility clauses in new contracts; and seek balanced take-or-pay structures on diversified routes. Launch targeted marketing with ports and industrial estates to shift trucked cargo to rail.

- **Execute through partnerships and governance:** Form MoUs/JVs with SOEs and private players in ports, trucking, and renewable/bioenergy supply chains to build intermodal corridors. Integrate transition scenarios into RJPP/RKAP, set diversification KPIs (share of non-coal freight, intermodal TEUs, asset conversion ratio), run early-warning market dashboards, and report progress to the Board. Support the people transition via redeployment and upskilling programs for crews, planners, and maintenance staff.

Adoption of Face Recognition for Passenger Processing

Technology (Algorithmic, Privacy & Cyber Risk)

KAI is in the process of implementing facial recognition technology to streamline passenger verification, improve security, and enhance operational efficiency at stations. However, the rapid advancement of artificial intelligence (AI) and the use of biometric data introduce emerging risks that extend beyond operational considerations. These include data privacy violations, algorithmic bias, potential misuse of sensitive information, and evolving regulatory frameworks governing AI ethics and personal data protection, such as Indonesia's Personal Data Protection Law (UU PDP).

The adoption of this technology also raises concerns about accuracy and fairness. False recognition incidents or technical errors could cause passenger inconvenience, operational delays, and reputational harm. Additionally, insufficient cybersecurity measures may expose the system to hacking or unauthorized access, posing significant risks to passenger trust and safety.

Adoption of Face Recognition for Passenger Processing

Impacts for KAI

- **Service reliability & safety:** false negatives at gates trigger congestion, missed trains, crowding risks, and customer dissatisfaction. The improper management or malfunction of the face recognition system could lead to service disruptions, long passenger queues, and reduced public confidence in KAI’s digital transformation initiatives.

- **Compliance, Financial, and Reputation:** Investigations, fines, or mandated system redesigns may arise following safety or data incidents, leading to higher insurance and remediation costs. Misidentification or data breaches involving biometric information could result in public backlash, financial penalties, and erosion of trust. These issues may also attract media scrutiny, weaken social license, reduce digital adoption, and hinder future partnerships or cross-border service expansion.

- **Operational & vendor risk:** lock-in or failure of third-party providers; costly re-engineering if standards change. From an operational perspective, these incidents might reduce system reliability and undermine KAI’s broader efforts toward digitalization and smart station management.

At a strategic level, the absence of robust governance mechanisms for AI and biometric data usage could hinder regulatory compliance and damage KAI’s credibility committed to ethical innovation and passenger safety. This emerging risk carries a high potential for long-term implications as public sensitivity to privacy and digital ethics continues to grow.

Adoption of Face Recognition for Passenger Processing

Mitigating Actions

- **Establish Robust AI Governance and Risk Oversight:** KAI will strengthen its governance structure for AI and biometric systems through a formal AI and Data Governance Charter, supported by regular Data Protection Impact Assessments (DPIA) and Algorithmic Impact Assessments. Accountability will be embedded across leadership functions, including the EVP Risk Management, Chief Information Security Officer (CISO), and Data Protection Officer (DPO), to ensure responsible AI use, continuous risk evaluation, and compliance with Indonesia's Personal Data Protection Law (UU PDP) and international standards such as ISO 31000 and ISO 27701.

- **Implement Privacy, Safety, and Cybersecurity Controls:** To protect passengers and uphold data integrity, KAI adopts a privacy-by-design approach by ensuring explicit consent, data minimization, strong encryption, limited retention periods, and opt-out alternatives. Safety is maintained through redundant verification channels, real-time gate monitoring, and crowd management protocols to prevent service disruptions. Cybersecurity measures include zero-trust network segmentation, secure biometric data storage, and strict third-party governance (SLAs, incident response standards, and vendor due diligence).

- **Enhance Transparency, Fairness, and Regulatory Alignment:** KAI ensures algorithmic transparency and fairness by conducting independent bias and accuracy testing across demographics, following NIST benchmarking protocols, and performing ongoing system validation to prevent model drift. To maintain public trust, KAI will communicate openly with stakeholders through disclosure of system performance metrics (e.g., false accept/reject rates), publish user guidance and FAQs, and proactively monitor upcoming AI and data privacy regulations to align corporate practices with future legal and ethical expectations.


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