

1.3.2 Material Issues Metrics for Enterprise Value Creation

1.3.3 Material Metrics for Enterprise Value Creation

EGAT has conducted a materiality assessment and identified three key material issues that drive long-term value creation across environmental, economic, and social dimensions. These issues are clearly linked to business performance and are supported by defined strategies, measurable targets, and disclosed progress.

The assessment identified a set of material sustainability issues that are critical to EGAT's role as Thailand's electricity utility and system operator. Based on the results, three material issues were prioritized as the most significant drivers of enterprise value creation: **Climate Change Management and Energy Transition, Sustainable Energy for Stability and Economic Growth, and Customer Relationship Management**. These issues demonstrate strong relevance from both inside-out and outside-in perspectives and have a direct influence on EGAT's ability to ensure reliable electricity services and sustain long-term organizational performance.

Material Issue 1: Climate Change Management and Energy Transition

Climate change is a key driver affecting EGAT's power generation system, including regulatory requirements, emission constraints, and physical risks to infrastructure. Effective management of this issue is essential to ensure long-term system reliability and sustainability of electricity generation.

Sustainability Performance Information

Business Case:

Climate change and energy transition are material to EGAT as its electricity generation activities involve greenhouse gas emissions from fossil fuel use, which are linked to climate-related impacts. These factors may affect electricity generation and delivery, including potential operational disruptions and the need for system adaptation measures.

At the same time, the transition toward low-carbon energy and improved energy efficiency provides opportunities for EGAT to strengthen its operational performance, support diversification of energy sources, and enhance system resilience. In addition, the development of low-carbon energy solutions and related initiatives may enable access to alternative financing mechanisms, such as green finance.

Overall, effective management of this issue supports EGAT's ability to maintain stable operations, enhance system reliability, and sustain long-term organizational performance.

Business Strategies:

EGAT addresses climate change and energy transition through its Triple S Strategy (Source–Sink–Support) under the EGAT Carbon Neutrality Plan:

- **Source (Sources Transformation):** Increasing the share of renewable energy (e.g. floating solar and solar projects), improving generation efficiency, and developing alternative energy technologies such as hydrogen co-firing and small modular reactor (SMR) studies.

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- **Sink (Sink Co-creation):** Studying and developing carbon management solutions, including carbon capture, utilization, and storage (CCUS), and carbon utilization aligned with circular economy approaches.
- **Support (Support Measures Mechanism):** Enhancing enabling systems to support energy transition, including grid modernization, renewable energy forecasting (REFC), demand response systems (DRCC), and deployment of energy storage systems (ESS). This also includes demand-side management and electric vehicle ecosystem development through charging infrastructure and digital platforms.

Target and Progress

	2025 Target	Progress
1	CO ₂ emissions per generation reduced by 5% from 2021 baseline	CO ₂ emissions reduced by 4.57% from baseline
2	Renewable energy capacity (COD) = 83 MW	Renewable capacity achieved 83 MW
3	Net Heat Rate aligned with guaranteed efficiency	Net Heat Rate better than target

Material Issue 2: Sustainable Energy for Stability and Economic Growth

Sustainable energy is critical to EGAT as the organization is responsible for maintaining the availability, reliability, and efficiency of electricity supply, which are essential for national economic activities and system stability. The performance of electricity generation and transmission systems directly influences EGAT's operational continuity and its ability to deliver reliable electricity services.

Sustainability Performance Information

Business Case:

This issue is material as EGAT's core operations depend on the ability to maintain stable and efficient electricity generation and transmission systems. Disruptions in system performance, such as equipment failure or transmission inefficiencies, may affect electricity supply reliability and lead to operational impacts.

At the same time, improving system performance, maintaining infrastructure, and upgrading transmission systems provide opportunities to enhance operational efficiency, reduce unplanned outages, and support stable electricity supply. Investments in infrastructure and system development also support long-term system readiness and efficiency.

Overall, effective management of this issue supports EGAT's operational performance, system reliability, and long-term sustainability of electricity supply.

Business Strategies:

EGAT addresses this issue through the development, maintenance, and enhancement of electricity generation and transmission systems, including:

- Implementation of power plant maintenance plans to ensure reliability and availability of generation units.
- Deployment of Transmission System Predictive Maintenance to monitor system performance and reduce equipment failure risk
- Execution of asset improvement and replacement programs for transmission systems and aging equipment to maintain system stability and efficiency

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- Implementation of equipment management plans to reduce failure rates and improve operational reliability
- Strengthening preventive measures and system protection mechanisms to minimize disruptions to electricity supply

Target and Progress

	2025 Target	Progress
1	AFOEE $\geq$ 5-year IPP average	AFOEE better than target
2	SAIFI $\leq$ 0.1080 times/point	SAIFI within target
3	SAIDI $\leq$ 0.9916 minutes/point	SAIDI within target
4	ENS $\leq$ 0.00077 MWh/GWh	ENS within target

Material Issue 3: Customer Relationship Management

Customer relationship management is critical to EGAT as customer needs, expectations, and feedback directly influence service delivery and operational performance. As an electricity utility, maintaining effective engagement with customers is essential to ensure that services remain responsive, reliable, and aligned with stakeholder expectations.

Business Case:

This issue is material as customer expectations and service requirements directly affect EGAT's service delivery and operational processes. Customer feedback and engagement provide important inputs for improving service performance, product and service design, and operational planning.

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Effective customer relationship management enables EGAT to enhance service quality, improve alignment between service delivery and customer needs, and support continuous operational improvement. Conversely, insufficient understanding of customer expectations may affect service effectiveness and stakeholder trust.

Overall, managing this issue supports improved service performance and strengthens EGAT's ability to deliver reliable and responsive services over the long term.

Business Strategy

EGAT addresses customer relationship management through structured customer management systems and plans, including:

- Implementation of a Customer Relationship Management Plan (CRM Plan) to systematically manage customer engagement and relationships
- Development and execution of a Customer and Market Master Plan to guide service development and customer strategy
- Deployment of customer management systems and processes to collect, analyze, and integrate customer feedback into operations
- Use of customer feedback mechanisms (e.g. EGAT Voice of Customer: VOC) to capture customer expectations and improve service delivery
- Integration of customer insights into product and service development, operational improvement, and planning processes

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Target and Progress

	2025 Target	Progress
1	Customer Engagement (related business) ≥ 84%	Engagement (related business): 92.39%
2	Customer Satisfaction (related business) ≥ 84%	Satisfaction (related business): 96.77%
3	Customer Engagement (electricity customers) ≥ 84%	Engagement (electricity): 93.32%
4	Customer Satisfaction (electricity customers) ≥ 84%	Satisfaction (electricity): 98.52%

1.3.4 Material Issues for External Stakeholders

1.3.5 Material Metrics for External Stakeholders

Impact 1 – Climate Change Management and Energy Transition

- **Cause of the impact from OR's Business:** Operations, Products/Services/Supply chain with >50% of business activity
- **External stakeholder(s)/ Impact area(s) evaluated:** Environment
- **Topic relevance on external stakeholders:**

Electricity generation contributes to greenhouse gas emissions, which affect environmental quality and climate resilience. These impacts are material due to their scale and long-term implications for the environment. While power generation generates emissions that lead to negative environmental impacts, EGAT also implements energy efficiency, demand-side management, and energy transition initiatives, which contribute to reducing emissions intensity and mitigating climate-related impacts.

External Impacts:

Type of Impact	Both combined ● Negative: Absolute GHG emissions from electricity generation ● Positive: Reduction in emissions intensity from efficiency and transition measures
Output Metric	Total CO ₂ emissions (tCO ₂ e)
Impact Valuation	Environmental value lost and gained from greenhouse gas emissions, reflecting the environmental pressure associated with

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	fossil-fuel-based electricity generation and the mitigation effect achieved through emission reduction and energy efficiency measures.
Impact Metric	CO ₂ emissions intensity reduced by 4.57% compared with the 2021 baseline

Impact 2 – Sustainable Energy for Stability and Economic Growth

- **Cause of the impact from OR's Business:** Operations, Products/Services/Supply chain with >50% of business activity
- **External stakeholder(s)/ Impact area(s) evaluated:** Consumers/end-users, Society
- **Topic relevance on external stakeholders:**

Electricity system reliability directly affects consumers' access to essential services and supports industrial and economic activities. Frequent or prolonged power interruptions may negatively affect households, businesses, and national competitiveness. According to EGAT's materiality assessment, maintaining electricity availability and reliability is a material issue for external stakeholders, as it contributes to social well-being and economic stability.

External Impacts:

Type of Impact	Positive: Improved continuity and reliability of electricity supply for consumers and society
Output Metric	● System Average Interruption Frequency Index (SAIFI) ● System Average Interruption Duration Index (SAIDI)
Impact Valuation	Reliable electricity supply provides positive external impacts by ensuring continuous access to essential services, supporting economic activities, and enhancing societal well-being. Reduced frequency and

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	duration of power interruptions improve the continuity and quality of electricity access for consumers and society.
Impact Metric	● SAIFI maintained at or below 0.108 interruptions per delivery point ● SAIDI maintained at or below 0.9916 minutes per delivery point These results reflect a low frequency and short duration of power interruptions, indicating improved continuity of electricity access for external stakeholders.