

Responsible Artificial Intelligence

Advancing Trusted AI Through Responsible Governance, Ethical
Innovation, and Sustainable Business Practices.

2025

Responsible Artificial Intelligence		Pages
• Responsible Artificial Intelligence Commitment		4
Responsible Artificial Intelligence Program		
• Limiting access to sensitive AI capabilities (e.g., facial recognition, surveillance)		6
• Distinct labeling of AI-generated content and outcomes of AI-driven decisions		7
• Mechanisms to detect and correct drift or degradation of AI models over time		8 – 9
• Regular assessments of deployed AI models for fairness/bias		10
• Initiatives (own/with suppliers) to lower the ecological footprint of AI data centers/models		11 – 12
• Appeals process for users/affected third parties to contest an AI decision or outcome		13 – 14
• Quantification of the impact of AI initiatives/tools on sustainability outcomes		15 – 19
• Training of employees on the ethical use and/or security of AI		20 – 24
Artificial Intelligence External Verification		
• External Verification of the AI Management System (ISO 42001)		25

Responsible Artificial Intelligence Commitment

Responsible Artificial Intelligence Commitment



Building Trustworthy, Ethical and Human-Centric AI

Responsible AI Principle	Commitment
Privacy & Data Protection	Protect personal data and ensure compliance with applicable privacy laws throughout the AI lifecycle.
Cybersecurity	Implement robust cybersecurity controls to safeguard AI systems and supporting infrastructure.
Human Oversight	Ensure appropriate human review, intervention, and override of AI outputs based on risk and criticality.
Fairness & Non-discrimination	Manage potential bias and promote fairness, equality, and non-discrimination throughout AI development and deployment.
Transparency & Explainability	Ensure AI-generated outputs and decisions are transparent and explainable to users and stakeholders.
Accountability	Establish clear ownership and responsibilities for AI governance, oversight, auditing, and remediation.
Safety & Risk Management	Design AI systems to prevent or minimize harm and implement appropriate controls for high-risk AI.
Environmental Responsibility	Consider environmental impacts and promote AI infrastructure with a low ecological footprint.
Intended & Prohibited Use	Define clear operating boundaries and ensure AI is used only for approved purposes.
Prohibited AI Practices	Prohibit manipulative AI, exploitation of vulnerabilities, social scoring, unauthorized biometric identification, and other prohibited practices aligned with the EU AI Act.
AI Awareness & Training	Promote responsible AI through employee awareness, training, and education programs.
Continuous Improvement	Review and update the AI Policy at least annually or whenever significant changes occur.

Responsible Artificial Intelligence Program

Responsible Artificial Intelligence Program



Limiting access to sensitive AI capabilities (e.g., facial recognition, surveillance)

Preventing the Use of High-Risk AI Applications

GULF adopts a risk-based approach to the responsible use of Artificial Intelligence (AI). The Company recognizes that certain AI applications, such as facial recognition, biometric identification, and surveillance technologies, may present significant privacy, ethical, and human rights risks. Accordingly, the Company's Artificial Intelligence Policy establishes clear boundaries on the intended use of AI and prohibits AI practices that may threaten the safety, livelihoods, privacy, or fundamental rights of individuals.

GULF does not deploy or operate AI applications involving facial recognition, biometric identification, or AI-powered surveillance technologies within its business operations. While the Company utilizes facial recognition systems for physical building access control and closed-circuit television (CCTV) for standard security monitoring, these systems operate on conventional technologies and are not integrated with AI. The captured images and sensitive data from these systems are not imported into or processed by any Artificial Intelligence or Machine Learning models.

Any high-risk AI applications considered in the future, would be subject to the Company's Artificial Intelligence Policy, including appropriate human oversight, compliance with applicable data protection requirements, and governance measures to ensure responsible and ethical AI deployment.

GULF is committed to ensuring that AI technologies are used only for legitimate and responsible business purposes. The Company will continue to evaluate AI applications through a governance framework that prioritizes human oversight, privacy protection, fairness, transparency, and accountability while preventing the misuse of sensitive AI capabilities.

Responsible Artificial Intelligence Program



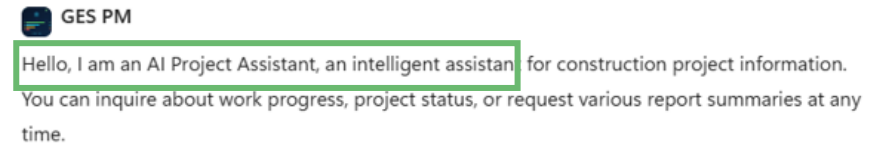
Distinct labeling of AI-generated content and outcomes of AI-driven decisions

Promoting Transparency and Accountability in AI-Generated Outputs

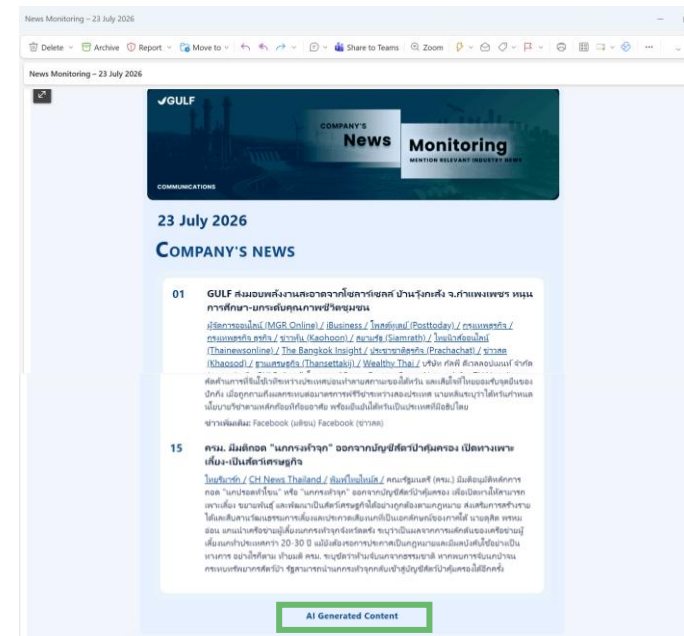
GULF is committed to ensuring that the use of Artificial Intelligence (AI) is transparent, explainable, and accountable. The Company's Artificial Intelligence Policy requires AI systems and AI-generated outputs or decisions to be communicated in a manner that can be clearly explained to users and relevant stakeholders, while maintaining clear accountability for AI-related outcomes. Where AI tools are used to support business activities, AI-generated outputs are treated as decision-support information and remain subject to appropriate human oversight based on the level of risk and criticality. Critical decisions continue to require human involvement, with authorized personnel able to review, validate, intervene in, or override AI-generated outputs where necessary.

To promote transparency and build stakeholder trust, ***GULF is committed to ensuring that users are appropriately informed when AI-generated outputs are used or presented***, consistent with the principles of transparency, explainability, and responsible AI governance.

GULF will continue to strengthen its Responsible Artificial Intelligence Program by promoting transparent communication of AI-assisted outputs, maintaining human accountability for AI-driven decisions, and ensuring AI technologies are used responsibly, ethically, and in accordance with applicable laws and corporate policies.



The figure illustrates the sample of “AI Agent Chatbot label”



The figure illustrates the sample of “News Monitoring Email label (generated by AI)”

Responsible Artificial Intelligence Program



Mechanisms to detect and correct drift or degradation of AI models over time

Continuous Monitoring to Maintain AI Quality and Reliability

GULF continuously monitors the performance and reliability of AI Agents developed and managed by the Information Technology function to ensure they continue to deliver accurate, relevant, and trustworthy results throughout their operational lifecycle.

Automated AI Performance Monitoring

AI Agents are subject to an **Auto Evaluation** framework that automatically assesses AI performance using production data and actual user interactions (Production Monitoring). This continuous monitoring mechanism enables the Company to identify performance degradation and emerging quality issues at an early stage.

The evaluation framework measures AI performance across multiple quality dimensions, including:

- **Correctness** of AI-generated responses
- **Relevance** to user queries
- **Helpfulness** of the generated outputs
- **Hallucination Risk**, to identify potentially inaccurate or fabricated responses

Evaluation coverage can be configured according to the business criticality and risk level of each AI Agent, enabling a risk-based monitoring approach.

Responsible Artificial Intelligence Program



Mechanisms to detect and correct drift or degradation of AI models over time

Continuous Improvement and Model Optimization

Evaluation results are regularly analyzed to identify quality trends, detect potential model drift or performance degradation resulting from changes in data or operating conditions, and support continuous improvement activities.

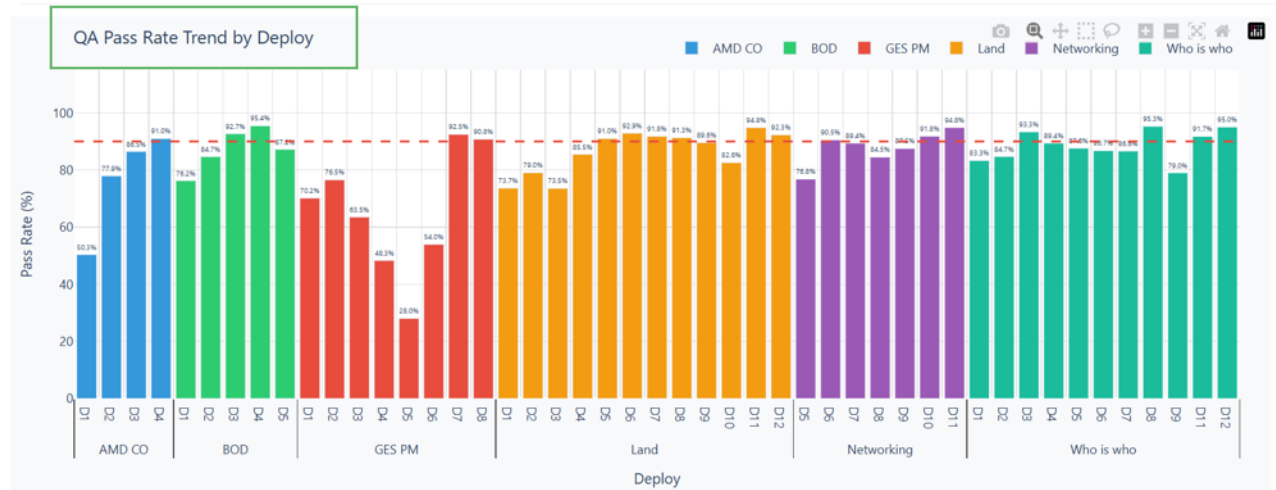
Based on monitoring outcomes, GULF continuously enhances AI performance by:

- Refining AI prompts
- Updating the Knowledge Base
- Optimizing AI system configurations

This continuous evaluation and improvement process helps maintain the accuracy, reliability, and effectiveness of AI systems while supporting responsible AI governance and high-quality user experiences.

Latest Deploy Overview

PROJECT	DEPLOY	TOTAL CASES	PASSED	FAILED	PENDING	NOT STARTED	LATENCY	PASS RATE
AMD CO	Deploy: 4 MS-Team version: 1.1.10.44-8764428	155	141	14	0	0	15.7s	91.0%
BOD	Deploy: 5 (Version: 1.2.1.108-4032d3d)	203	177	26	0	0	11.0s	87.2%
GES PM	Deploy8: (Version:1.0.1.48-0b78de4)	498	452	46	0	0	15.6s	90.8%
Land	Deploy: 12 MS-Team version: 1.0.0.10-8e8f09b	597	551	46	0	0	11.7s	92.3%
Networking	Deploy: 11 (Version: 1.6.0.71-61ca6d7)	232	220	12	0	0	18.2s	94.8%
Who is who	Deploy: 12 (Version:1.0.1.25-0dfde9a)	561	191	5	5	0	11.0s	95.0%



GULF continuously monitors the performance of deployed AI Agents through a centralized QA dashboard, tracking pass rate, latency, and test results across multiple AI applications and deployment versions. The dashboard enables continuous performance evaluation, identifies areas for improvement, and supports ongoing optimization to ensure AI systems remain accurate, reliable, and aligned with Responsible AI principles.

Responsible Artificial Intelligence Program



Regular assessments of deployed AI models for fairness/bias

Continuous Evaluation to Promote Fair, Reliable, and Responsible AI: GULF conducts regular assessments of AI Agents deployed in production to ensure they operate reliably, fairly, and in accordance with the Company's Responsible Artificial Intelligence principles. AI systems are evaluated through a combination of **automated performance monitoring (Auto Evaluation)** and **Human Review**, with formal assessments conducted **at least twice per year**.

Comprehensive AI Quality and Fairness Assessment: To evaluate AI performance and identify potential quality or fairness issues, GULF performs standardized assessments using **QA Test Cases** covering a broad range of business scenarios, including:

- Information and factual responses
- Recommendation and advisory responses
- Privacy and personal data protection
- Refusal of inappropriate or prohibited requests
- General user interactions and conversational responses

Continuous Improvement and Bias Mitigation: Assessment results from Auto Evaluation, Human Review, and QA Test Cases are analyzed to identify quality gaps, potential bias, or inappropriate AI behaviors. The findings are incorporated into continuous improvement activities, including:

- Prompt optimization
- Knowledge Base enhancement
- AI governance refinement
- AI Agent performance improvement

This ongoing evaluation process enables GULF to continuously improve AI quality, reduce the risk of unintended bias, and maintain trustworthy AI services throughout the AI lifecycle.

Responsible Artificial Intelligence Program



Initiatives (own/with suppliers) to lower the ecological footprint of AI data centers/models

Reducing the Environmental Footprint of AI Through Efficient AI Usage and Carbon-Aware Cloud Management: Smart Tokens, Smart Future Campaign

To promote **resource-efficient and environmentally responsible AI use**, GULF launched the **“Smart Tokens, Smart Future”** internal awareness campaign to encourage employees to use AI resources efficiently and avoid unnecessary computational demand. The campaign provides practical guidance on writing **clear and specific prompts**, providing only necessary context, selecting an **appropriate AI model based on task complexity**, limiting unnecessary output, reusing and summarizing existing information, using structured formats, and reviewing prompts before submission. The campaign is informed by evidence that AI inference has measurable environmental impacts through **energy consumption, greenhouse gas emissions, and water consumption**. Google’s 2025 measurement of Gemini Apps found that a median text prompt consumed approximately **0.24 Wh of energy**, emitted **0.03 gCO₂e**, and consumed **0.26 mL of water**, demonstrating that individual AI interactions have a measurable resource footprint. By promoting more efficient AI interactions, GULF aims to **reduce unnecessary AI processing and associated resource demand** while building employee awareness of the environmental implications of digital technologies. This complements GULF’s broader approach to responsible AI and sustainable digital operations.



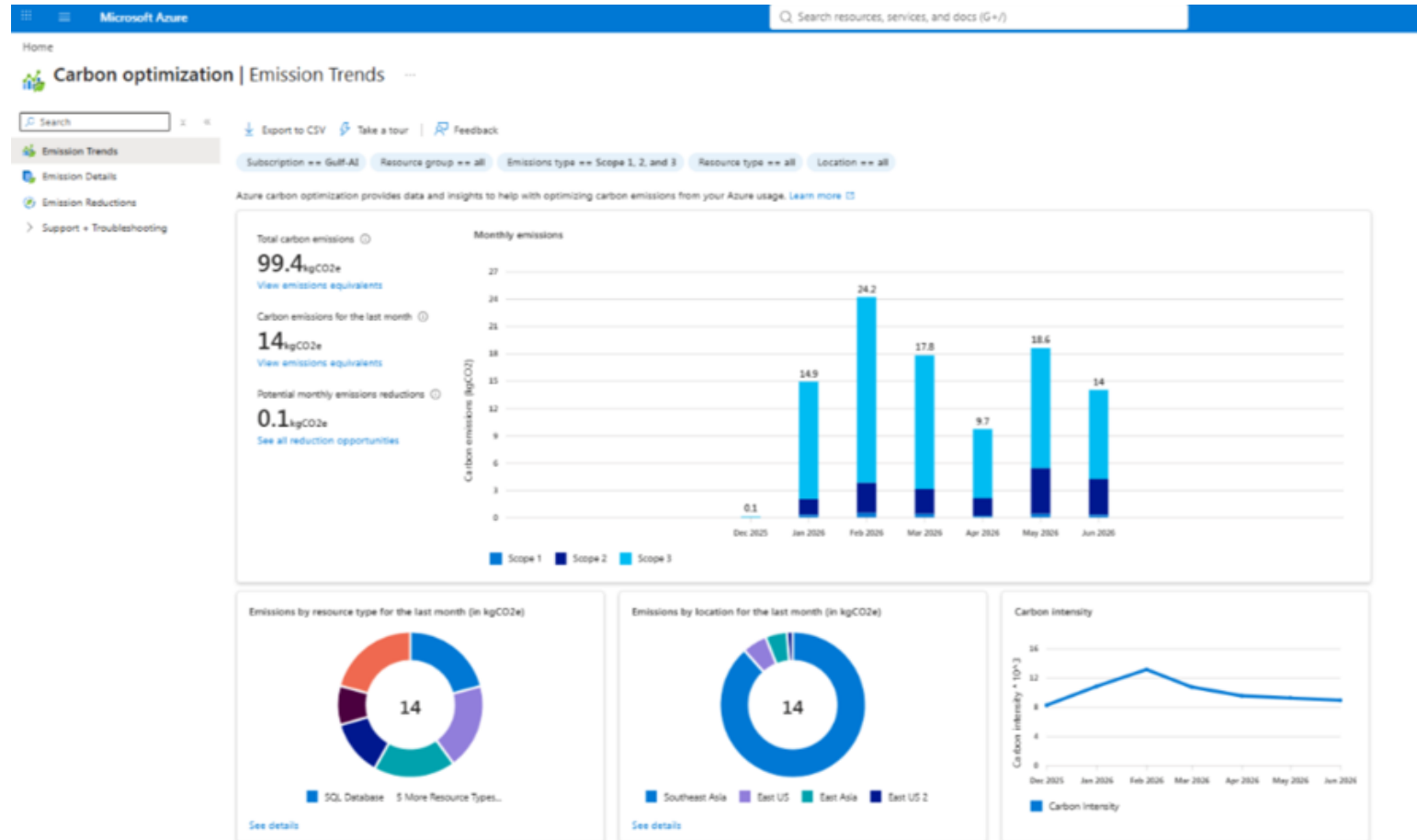
Responsible Artificial Intelligence Program



Initiatives (own/with suppliers) to lower the ecological footprint of AI data centers/models

Carbon-Aware Cloud Operations

GULF also monitors the environmental impact of its cloud-based AI infrastructure through **Microsoft Azure Carbon Optimization**, which provides visibility into carbon emissions associated with cloud resource consumption. The platform enables the Company to track emissions trends, identify optimization opportunities, and support more sustainable management of AI and digital workloads. Through employee awareness, efficient AI utilization, and carbon-aware cloud management, GULF continues to strengthen the environmental sustainability of its AI operations while supporting responsible digital transformation.



Responsible Artificial Intelligence Program



Appeals process for users/affected third parties to contest an AI decision or outcome

User Feedback and AI Output Review Mechanism

GULF provides users with an accessible mechanism to submit feedback, report concerns, and request a review of AI-generated outputs through the AI application's built-in feedback function. This mechanism supports transparency, accountability, and the continuous improvement of AI services.

Accessible Feedback and Review Process

Users can evaluate AI-generated responses by providing **Thumbs Up** or **Thumbs Down** ratings together with comments or additional details regarding the quality, accuracy, or appropriateness of AI-generated outputs.

This feedback mechanism enables users to:

- Report inaccurate or inappropriate AI-generated responses.
- Raise concerns regarding AI-generated outputs.
- Request review of AI responses by providing contextual comments.
- Contribute to the continuous improvement of AI services.

เช่น ภาพรวมสถานะโครงการ ประเด็นสำคัญ และความเสี่ยงหลักของแต่ละโครงการ

Submit feedback to Microsoft

Do not include any private or sensitive information.

Capture screenshot

☒ Share relevant prompts, responses, and diagnostic data? [Learn more](#)

contextData.txt

Microsoft may contact you at tanishta.ti@gulf.co.th about your feedback. [Learn more](#) about how this data is used and your rights. By pressing Submit, your feedback will be used to improve Microsoft products and services. [Privacy statement](#)

Submit Cancel

+ Message GES PM

AI-generated content may be incorrect

Users can provide feedback on AI-generated responses through an integrated feedback function, including satisfaction ratings (Thumbs Up / Thumbs Down) and detailed comments. Feedback is reviewed by the responsible AI Agent owner and incorporated into continuous improvements of prompts, knowledge bases, AI performance, and governance controls.

Responsible Artificial Intelligence Program

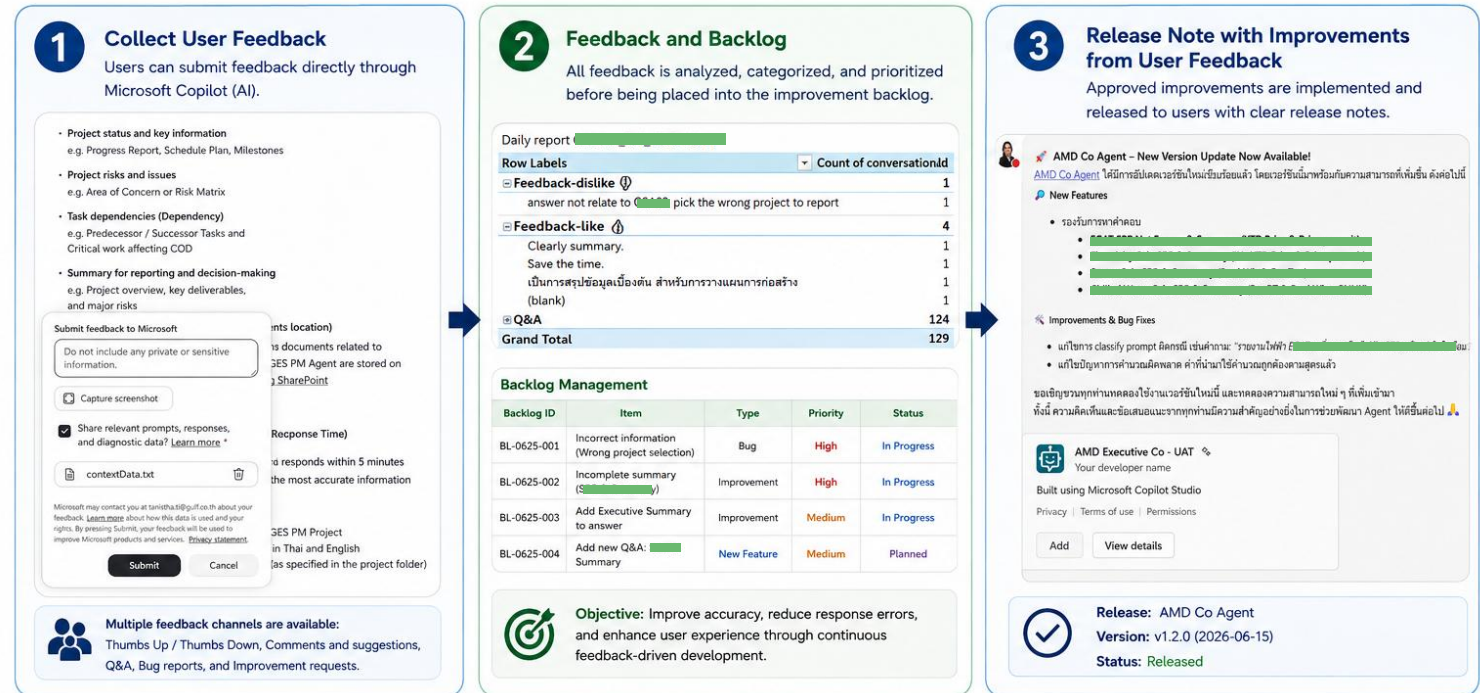


Appeals process for users/affected third parties to contest an AI decision or outcome

GULF provides an integrated AI Feedback Mechanism that enables users to report issues, submit suggestions, and request review of AI-generated outputs through Thumbs Up/Thumbs Down ratings and comments. All user feedback is reviewed by the responsible AI Agent owner and incorporated into the AI improvement process. Feedback and review results are analyzed to identify recurring issues and improvement opportunities, supporting continuous enhancement of:

- AI prompts
- Knowledge Base content
- AI Agent performance
- AI governance and quality controls

This process helps ensure AI systems remain transparent, accountable, and responsive to user concerns while continuously improving the quality and reliability of AI-generated outcomes.



Responsible Artificial Intelligence Program



Quantification of the impact of AI initiatives/tools on sustainability outcomes

Measuring the Business Value and Operational Benefits of AI

GULF systematically measures the quantitative impact of Artificial Intelligence (AI) initiatives to evaluate their contribution to business performance and sustainable digital transformation. The Company conducts **quarterly AI usage assessments** to monitor the effectiveness and value created by AI tools across business operations.

Quantitative Performance Measurement

To assess AI-driven outcomes, GULF collects and analyzes quantitative performance indicators, including:

- **Time Saved** through AI-assisted work processes
- **Productivity Improvement** achieved from AI adoption
- **Loss Prevention** through AI-powered predictive monitoring and early anomaly detection
- **Operational Reliability** by increasing the number of Machine Learning models deployed across power plants and continuously improving model accuracy
- **User adoption and operational effectiveness** of AI solutions

These measurable indicators provide objective evidence of how AI enhances operational efficiency and supports data-driven decision-making across the organization.

Responsible Artificial Intelligence Program



Quantification of the impact of AI initiatives/tools on sustainability outcomes

AI Adoption & Impact Dashboard

AI Tools/Agents Adoption & Feedback ☆ ⓘ											
Created By	Created ↓	AI tool/agent	Accuracy Rating	Speed Rating	Usage Frequency	Saved Hours/w...	Efficiency (Out...	Efficiency (Qual...	Satisfaction Rat...	Recommendati...	What tasks do ...
	July 14	Agent - AMD...			Not yet / ยัง...	10	26–50% incre...	11–25% quali...	Dissatisfied / ...		
	July 13	Agent - GES ...			A few times a...	0.5	11–25% incre...	26–50% quali...	Very satisfied ...		
	June 24	MS Copilot 365	4 - Accurate / ...	4 - Fast / เร็ว	Daily / ทุกวัน	5	51–75% incre...	51–75% quali...	Satisfied / พัง...		
	May 28	Agent - AMD...	5 - Very accu...	5 - Very fast / ...	Weekly / สัปดาห์	15	51–75% incre...	More than 75...	Very satisfied ...	10	สอบถามข้อมูล
	May 28	Agent - AMD...	5 - Very accu...	5 - Very fast / ...	A few times a...	20	More than 75...	More than 75...	Very satisfied ...	10	- query ข้อมูลจาก database

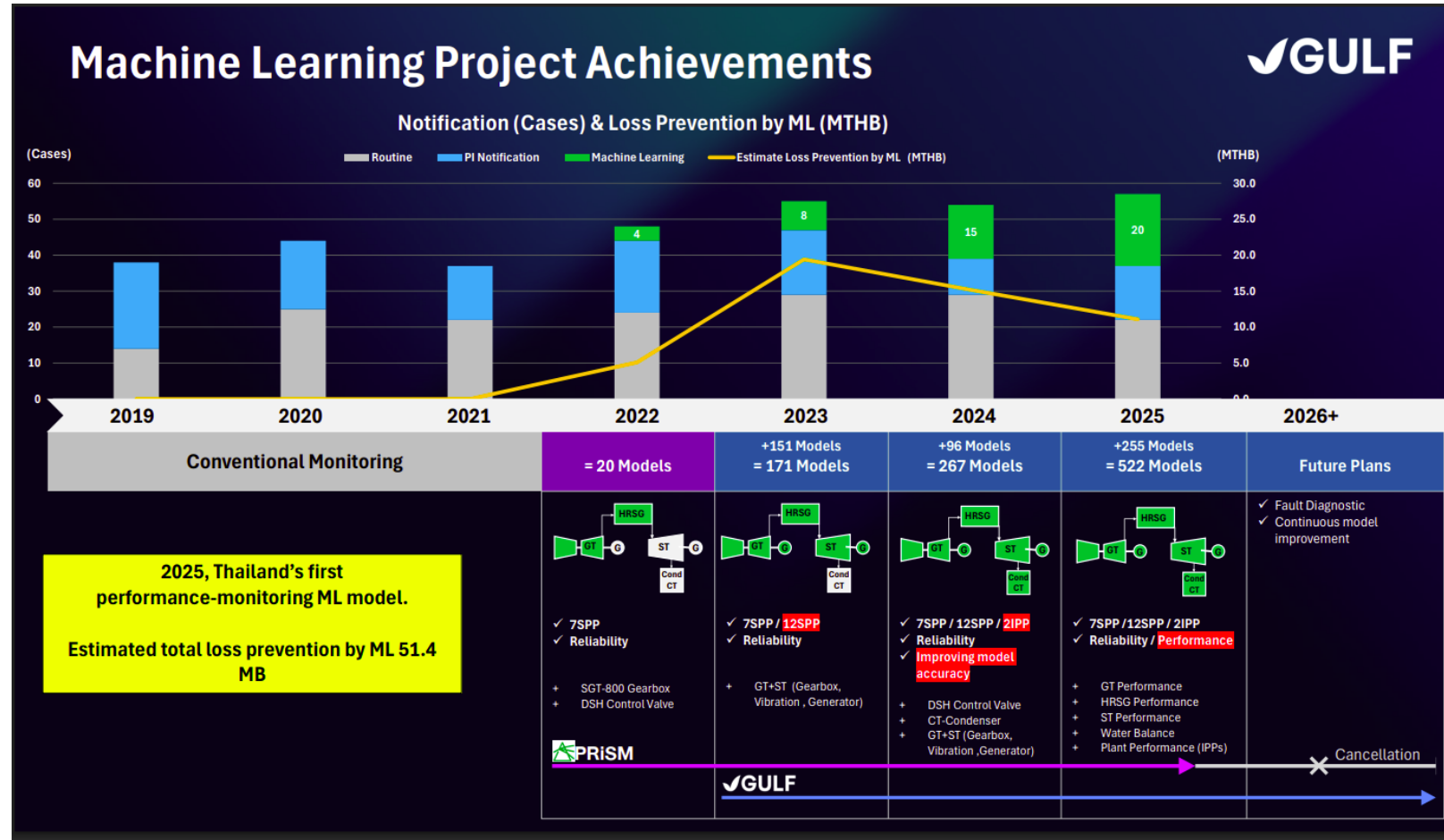
GULF monitors key performance indicators (KPIs) for AI solutions—including time saved, productivity improvement, accuracy, usage frequency, and user satisfaction—to quantify business value and continuously improve AI performance through data-driven evaluation.

Responsible Artificial Intelligence Program



Quantification of the impact of AI initiatives/tools on sustainability outcomes

Predictive Machine Learning for Power Plant Operations



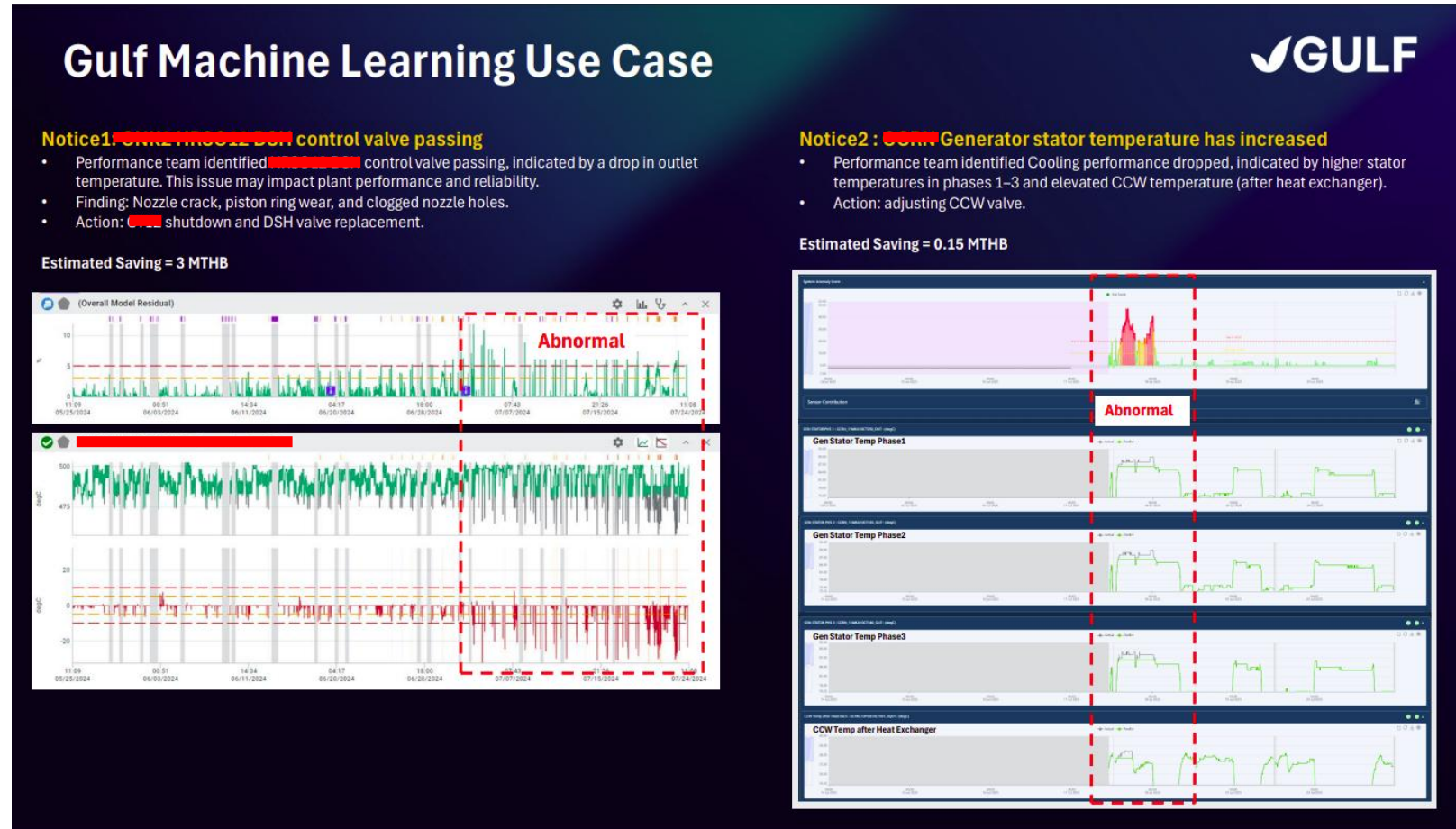
- AI continuously monitors equipment performance and detects anomalies before failures occur, enabling proactive maintenance and reducing operational downtime.
- Since deployment, GULF has expanded Machine Learning coverage from conventional monitoring to **522 deployed models**, while achieving an **estimated cumulative loss prevention of THB 51.4 million** through AI-enabled predictive analytics.

Responsible Artificial Intelligence Program



Quantification of the impact of AI initiatives/tools on sustainability outcomes

Predictive Machine Learning for Power Plant Operations

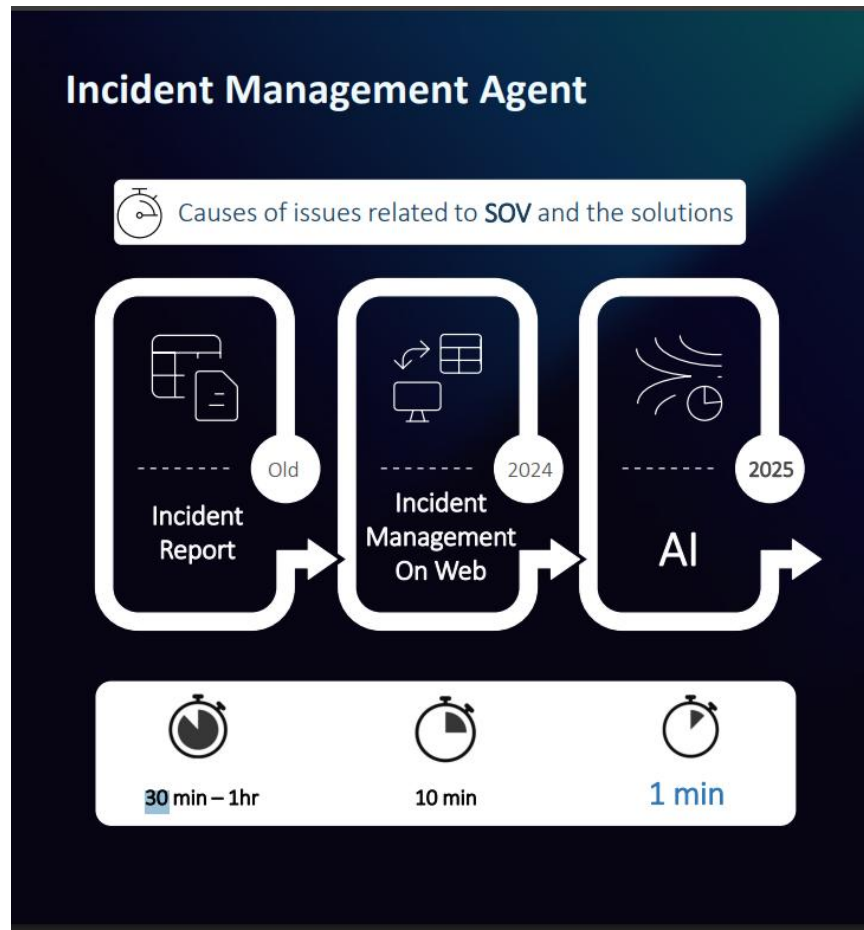


- GULF utilizes Predictive Machine Learning to analyze real-time operational data and detect equipment anomalies before they become critical failures. Early detection enables proactive maintenance, improves plant reliability, reduces unplanned downtime, and enhances operational efficiency. AI-generated alerts are validated by engineering specialists, resulting in measurable benefits, including estimated loss prevention of THB 3.0 million and operational savings of THB 0.15 million through timely corrective actions.

Responsible Artificial Intelligence Program



Quantification of the impact of AI initiatives/tools on sustainability outcomes



Predictive Machine Learning for Power Plant Operations

GULF's AI-powered Incident Management Agent transforms incident investigation by **analyzing historical incident records** and **recommending proven solutions in real time**. By **reducing investigation and knowledge retrieval time from 30–60 minutes to approximately 1 minute**, the solution significantly improves operational efficiency, accelerates troubleshooting, and strengthens knowledge sharing across power plant operations.

Continuous Value Tracking and Improvement

Assessment results are regularly reviewed to evaluate the business value generated by AI initiatives and identify opportunities for further optimization. The findings support continuous improvement of AI applications, guide future AI development priorities, and enable the Company to monitor the long-term benefits of AI adoption.

By quantifying operational improvements through standardized performance metrics, GULF ensures that AI investments deliver measurable value while supporting responsible, efficient, and sustainable business operations.

Responsible Artificial Intelligence Program



Training of employees on the ethical use and/or security of AI

Building Responsible AI Competencies Across the Organization

GULF has established a structured **AI Skill Development & Training Roadmap** to build AI capabilities across all organizational levels while promoting the responsible, ethical, and secure use of artificial intelligence. The roadmap combines executive awareness, practical user training, and technical capability development to ensure employees understand both the opportunities and responsibilities associated with AI adoption.

The training curriculum incorporates Responsible AI principles, including:

- Ethical and responsible use of AI;
- Human oversight for AI-assisted decision-making;
- Hallucination awareness and validation of AI outputs using trusted data sources;
- Data privacy, information security, and the appropriate use of enterprise AI applications.

Employees are trained that AI-generated outputs must support, not replace, human judgment, particularly for safety-critical and business-critical decisions. Guidance is reinforced through practical use cases, internal AI guidelines, and enterprise AI training programs to ensure AI is deployed safely, responsibly, and in compliance with corporate governance requirements.

Responsible Artificial Intelligence Program



Training of employees on the ethical use and/or security of AI

Building Responsible AI Competencies Across the Organization



- GULF has established a structured **AI Skill Development & Training Roadmap** to build **AI capabilities across all organizational levels**. The program includes executive awareness, enterprise AI applications, generative AI, and technical training, equipping employees with the knowledge and skills to adopt AI responsibly, securely, and effectively while supporting the Company's digital transformation.

Responsible Artificial Intelligence Program

Training of employees on the ethical use and/or security of AI



Building Responsible AI Competencies Across the Organization



AI Guidelines

Establishing clear guidelines and best practices is crucial for successful and ethical AI integration across the Company.



Responsible AI

- Develop and use AI ethically.
- Ensure human oversight.

Example: AI recommending maintenance schedules for critical turbines must be reviewed by engineers.



Hallucination Management

- Prevent AI hallucinations.
- Ground responses in verified facts, source of data.

Always verify AI outputs, especially for critical decisions.

Cross-reference with other sources and apply human judgment and experience."



Data Privacy & Security

- Protect sensitive data.
- Ensure compliance & security
- Use AI on enterprise applications.

- GULF reinforces AI capabilities through organization-wide **AI Guidelines** that establish responsible AI practices for all employees. The guidelines **emphasize ethical AI use, human oversight, hallucination management, and data privacy and security**, ensuring employees understand how to validate AI-generated outputs, **protect sensitive information, and apply human judgment when using AI in business-critical decisions**. Together with the AI Skill Development & Training Roadmap, these guidelines strengthen responsible AI competencies and support secure, ethical, and trustworthy AI adoption across the Company.

Responsible Artificial Intelligence Program



Training of employees on the ethical use and/or security of AI

Generative AI for Business Productivity

The "Generative AI for Business Productivity" training program is strategically designed to upskill the workforce by integrating Generative AI as a "smart assistant" to drive operational efficiency. The comprehensive curriculum equips employees with foundational AI knowledge, structured prompting frameworks, and practical applications across core business tasks such as content generation, data analysis, and workflow automation. Crucially, the program embeds robust risk management and **ethical practices, educating personnel on strict data privacy protocols**, the mitigation of AI hallucinations, and adherence to established governance standards. By balancing advanced technical proficiency with essential security guardrails, the Company ensures its workforce is empowered to safely leverage AI technologies to generate tangible business value.

Generative AI for Business Productivity

ก้าวทัน GenAI เพื่อเพิ่มประสิทธิภาพให้การทำงานของคุณ

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"Kana" Pongpisuth Jongudomsuk



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Responsible Artificial Intelligence Program



Training of employees on the ethical use and/or security of AI

Generative AI for Business Productivity

Key Training Elements Supporting AI Ethics and Security

- **Data Privacy and Information Security:** The training explicitly instructs employees on data security risks, emphasizing that they must **not input confidential internal data**—such as passwords, contracts, or personal data—into AI systems.
- **Mitigating Bias and Ensuring Accuracy:** Employees are taught that AI can generate convincing but factually incorrect information (hallucinations). To counter this, the training mandates that employees must **always review and verify AI-generated content** before use to reduce bias and ensure data accuracy.
- **Human Oversight and Accountability:** The program outlines clear boundaries for what AI should not do, warning employees against letting AI make critical decisions without human intervention. It reinforces that AI is a tool to assist, not to replace, human judgment and accountability.
- **Respecting Intellectual Property:** The ethical use of AI is further reinforced by training employees to **respect copyrights, trademarks, and other intellectual property** when generating content.
- **Organizational Compliance:** Employees are guided to use AI in strict compliance with the organization's announced guidelines (referencing the ETDA Governance Guidelines). Furthermore, they are instructed to clearly inform their supervisors regarding the purpose and scope of their AI usage.

Responsible Artificial Intelligence Program



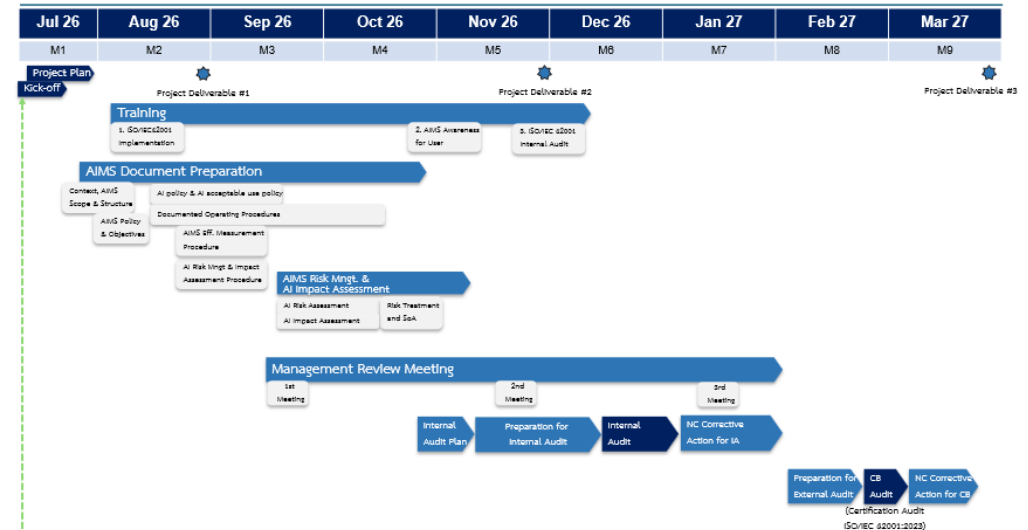
External Verification of the AI Management System (ISO 42001)

Preparing for Independent Certification of the AI Management System

GULF has initiated the implementation of an **Artificial Intelligence Management System** aligned with **ISO 42001**, the international standard for AI management systems. The initial scope covers **one internally developed AI Agent** as a pilot project to establish a structured AI governance framework and prepare for broader implementation across the organization.

The implementation program is designed to strengthen AI governance through the development of AI policies and procedures, AI risk and impact assessments, employee awareness and training, internal audits, management reviews, and corrective actions. These activities are intended to ensure the AI management system is aligned with international best practices prior to independent certification.

The Company is currently in the **project implementation phase** and is preparing for **third-party certification**, with an estimated project duration of **approximately nine months**. The project roadmap includes documentation development, governance implementation, internal audits, and certification readiness activities before the external certification audit.



GULF has launched a structured implementation program to establish an AI Management System aligned with ISO 42001. The roadmap covers AI governance documentation, risk and impact assessments, employee training, internal audits, management reviews, and preparation for third-party certification over an estimated nine-month implementation period.

Thank You

