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CASE STUDY · MARLUC SYNOPSIS

Aramco AI in operations

IMPLEMENTED 2023 ONWARDS · ENERGY AND UTILITIES · SAUDI ARABIA · BAND C · CLAIMED ONLY

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Aramco reports hundreds of AI use cases across its operations and $2.6 billion of AI-driven value in 2025, measured by its own technology realised value metric.

ABOUT THIS SYNOPSIS

This is MarLuc's summary and grading of publicly available sources, for information only. It is not investment, legal, financial or professional advice, and should not be relied on for any decision. Readers must validate it against the original sources and, where appropriate, challenge its conclusions.

Facts and figures are as reported by the sources listed below, which may be incomplete, self-reported or out of date. Check the original source before relying on any figure.

The impact band, proof marker and SEAM view are MarLuc's opinion. The organisation is not a MarLuc client and has not reviewed or endorsed this synopsis. Names and trademarks belong to their owners.

NOTICE WORDING LAST UPDATED 16 NOVEMBER 2026

AT A GLANCE

AI used: Machine-learning and AI models across drilling, reservoir simulation, maintenance and facility monitoring.

Implemented: 2023 onwards. Grade: band C, Process change, Claimed only.

Headline result, as reported: $2.6 billion of AI-driven technology realised value in 2025, up from $1.8 billion in 2024, by Aramco's account

1 · The case

The facts, as reported by the 5 sources listed at the end. Where a source is silent, the field says "Not reported".

Organisation

Saudi Arabian Oil Company (Aramco). Integrated energy and chemicals company headquartered in Dhahran, Saudi Arabia. Adjusted net income was $104.7 billion in 2025, per its results release. Canvas block: 4. Operations and process. Also 6. Data and technology, 5. People and skills.

Business challenge

The challenge. Aramco says it uses AI to enhance efficiency, reduce production costs and help cut emissions across its core business.

How it was addressed. Aramco reports AI models that analyse drilling plans and geological data to simulate reservoirs, AI-powered autonomous drilling to help prevent failures, and AI that helps manage facility downtime and predict maintenance issues using more than 10 billion data

Who implemented it

In-house (In-house): Aramco: develops and deploys AI use cases across its operations. NVIDIA (Equipment or robot maker): Supplied the GPUs for Aramco's drilling supercomputer. Imperial College, Caltech and KAUST (University or research lab): Partners in training more than 6,000 AI developers.

Technology (SEAM pillar E)

SEAM types: T8 Predictive / ML models, T5 Custom / fine-tuned models. Deployment: Not reported. Vendors and products: NVIDIA.

Where it was built in: Models embedded in drilling, reservoir simulation, maintenance prediction and facility monitoring, drawing on more than 10 billion data points a day, with an in-house GPU supercomputer for drilling plans and well placement.

What changed

Before: Not reported. After: more than 200 AI solutions deployed across operations by late 2025, with more than 100 in development, by Aramco's account. Which processes changed, and by how much, is not reported case by case. [1] [2] [3] [4] [5]

What it cost

Not reported for the AI programme. Aramco made about $2.6 billion of cash contributions to HUMAIN in 2026 alongside a transfer of AI assets, by its account; this is an investment, not an operating cost.

What it saved

$2.6 billion of AI-driven technology realised value in 2025 and $1.8 billion in 2024, by Aramco's account. How technology realised value is calculated is not published in the sources opened. [1] [2] [3] [4] [5]

Governance and control

Not reported. Aramco says the World Economic Forum has recognised its use of AI and other technologies with five Global Lighthouse Awards.

S2 · Accountable owner · Not reported
Not reported.

A1 · Safe use · Not reported
Not reported.

A2 · Human in the loop · Claimed
Aramco says its AI models help engineers make better-informed decisions on drilling and reservoirs. [2]

A3 · Monitoring and assurance · Claimed
Aramco tracks AI-driven technology realised value each year; the method and any assurance are not reported. [1] [2]

A4 · Vendor AI · Not reported
Aramco names NVIDIA GPUs for its supercomputer; controls over vendor AI are not reported. [3]

A5 · Agent controls · Not reported
No agents described.

A6 · Standards and regulation · Not reported
Not reported.

What worked, what did not, what is unproven

WORKED

- Scale of adoption: more than 200 AI solutions deployed by late 2025, by Aramco's account.
- Reported value rising from $1.8 billion in 2024 to $2.6 billion in 2025, by Aramco's account.

DID NOT

- Not reported

UNPROVEN

- How technology realised value is defined and whether it is audited.
- Which use cases produce the value and what each changed.
- How many AI use cases are identified versus deployed, as Aramco's own documents differ.

Timeline

2024 Aramco records $1.8 billion of AI-driven technology realised value [3]

Nov 2025 Aramco reports 442 AI use cases identified and more than 200 solutions deployed [3]

Mar 2026 Full-year results report $5.3 billion of technology realised value from AI, digital and other solutions in 2025 [1]

2026 Aramco reports $2.6 billion of AI-driven value for 2025 and a 49% stake in the AI company HUMAIN [2]

2 · Grade and SEAM assessment

MarLuc's opinion, made on the evidence above. How cases are graded: marluc.co.uk/case-studies/how-we-rate

Level of change and impact

Claimed: Not applicable. Grade: C, Process change. Proof: Claimed only. Level of change: Process change.

Process change (Level 2, band C). AI is embedded in operating processes across the company, by Aramco's account; no change to structure or roles is reported.

Many AI applications now sit inside operating processes such as drilling, maintenance and facility monitoring, by Aramco's account. The value figures come from Aramco's own metric, whose method is not published.

The SEAM view and lessons learnt

Aramco reports AI as a portfolio managed against a single value metric, which keeps attention on results. The weakness for an outside reader is that the metric is the company's own and its method is not published. Larger organisations copying the portfolio approach should define and audit the value measure before reporting it.

1. Define the value measure before counting AI benefits.

3. Have value figures checked by someone outside the programme.

Evidence

Score 1 of 4. Self-reported: all figures come from Aramco's own results, annual report, sustainability report and website.

Evaluation method. Self-reported company figures: annual technology realised value and use-case counts; no independent evaluation found.

Sources disagree. Aramco's website and November 2025 news item give 442 AI use cases identified with more than 200 deployed; the 2025 annual report CEO message says approximately 500 use cases identified; the 2025 sustainability report CEO statement says almost 500 AI use cases deployed.

Status. Ongoing: Aramco reported its third-quarter 2026 results in November 2026; no updated AI value figure was found in the sources opened.

3 · Original sources

Read these in full. To challenge a fact or a grade, use the contact form at marluc.co.uk or the link on https://marluc.co.uk/case-studies/aramco-ai-operations-value

[1] Aramco: Aramco announces fourth quarter and full-year 2025 results (March 2026)
https://www.aramco.com/en/news-media/news/2026/fourth-quarter-and-full-year-press-release

[2] Aramco: Building the AI future
https://aramco.com/en/AI

[3] Aramco Europe: Aramco deploys AI and supercomputing to drive digital transformation (November 2025)
https://europe.aramco.com/en/news-media/news/2025/aramco-deploys-ai-and-supercomputing-to-drive-digital-transformation

[4] Aramco: Annual Report 2025, CEO message
https://www.aramco.com/-/media/publications/corporate-reports/reports-and-presentations/2025/fy/sections/ceo-message-2025-en.pdf

[5] Aramco: Sustainability Report 2025, CEO statement
https://www.aramco.com/-/media/publications/corporate-reports/sustainability-reports/report-2025/english/2025-ceo-statement-en.pdf

Saudi Arabian Oil Company (Aramco) website: https://www.aramco.com

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