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ITAMS© WORKING GROUP BENCHMARK | TRANSMISSION | DATA & AI

The State of Data and AI in TSOs

What ITAMS© reveals about the opportunity ahead

Findings from the ITAMS© Working Group Benchmark, run with Wiimer across transmission system operators on four continents.

OHROS Consulting Group B.V.
Strategic Asset Management

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ITAMS© is the peer benchmarking initiative OHROS Consulting Group runs across transmission system operators on four continents. Several operators have put real operating data on the table, asset criticality, data quality, models in production, outage and cost results. Here is what it shows, good and bad.

Most of what gets called "AI" is not AI

Across the peer group, deterministic, rule-based models, an expert's checklist turned into software, still make up 23% of every decision-aid model in use. That is the single largest category by far. Real AI and machine-learning models sit at roughly 2%. AI agents, the subject of every conference keynote this year, run in under 2% of asset-management processes across this benchmark.

> *"The industry's AI story is running well ahead of its AI reality."*
>
> **ITAMS© Working Group Benchmark, OHROS Consulting Group**

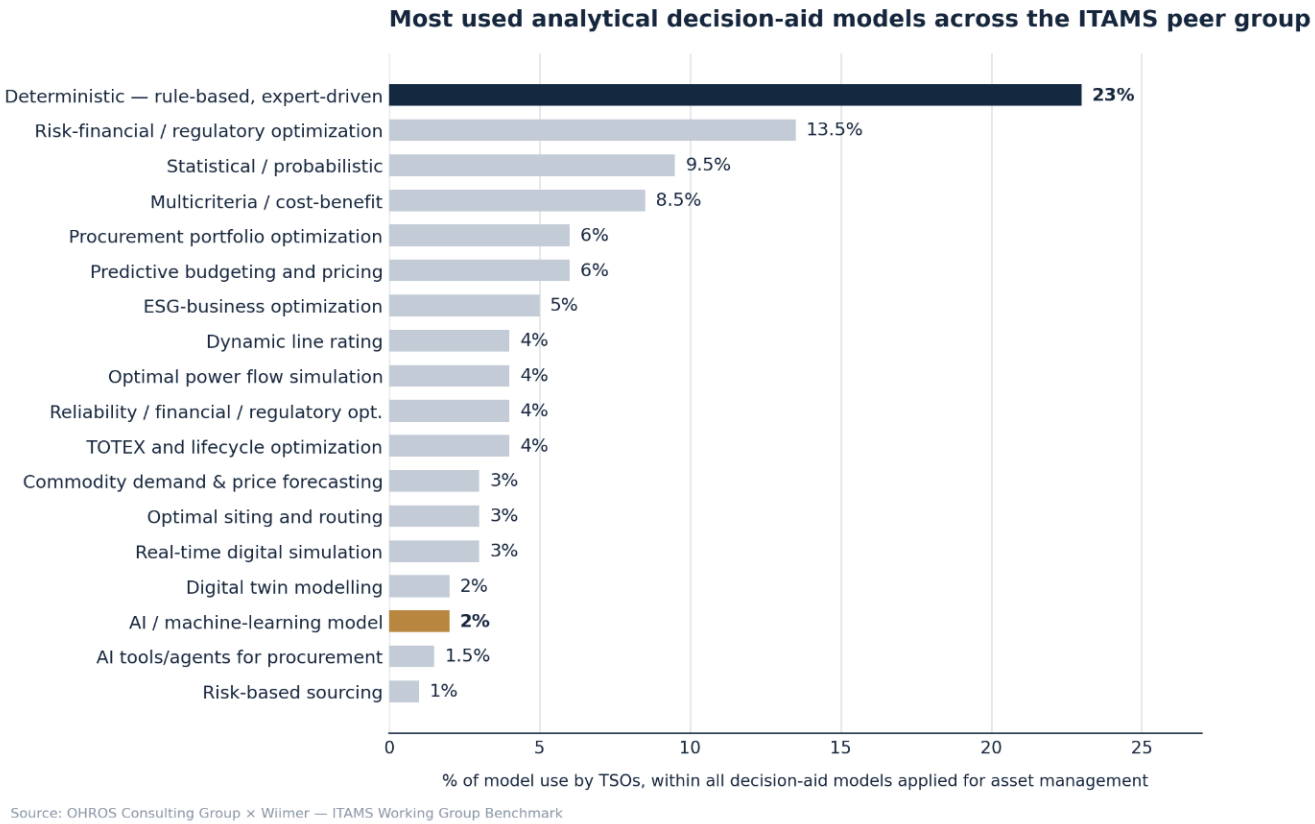

Figure 1. Deterministic, rule-based models still account for 23% of all decision-aid models in use. Real AI and machine-learning models sit at roughly 2%.

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The biggest capital decision in the business gets the least analytical support, and the data quality behind it is just as thin

Engineering and grid planning take 40% of every decision-aid model this peer group runs. Portfolio planning, the process that decides how billions in capital get sequenced across the whole network, gets 14%, the lowest of any process measured. It is not an isolated gap either. Portfolio and strategic planning also carry the widest data-quality gap of any process in the benchmark, wider than asset maintenance, wider than regulation, far wider than procurement or engineering, where the gap is close to zero.

That is the highest-leverage capital decision in the business running on the thinnest analytical support, built on the weakest data. Two structural problems compounding each other, on the one decision that moves the most money.

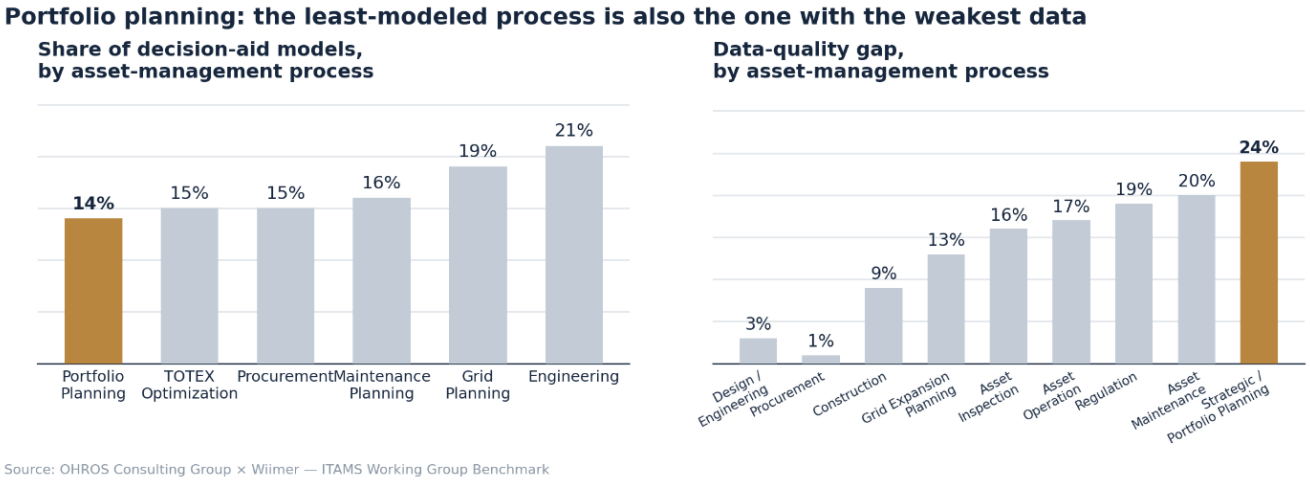

Figure 2. Portfolio and strategic planning get the lowest share of decision-aid models of any process, and carry the widest data-quality gap of any process.

More decision-aid models help, but only when someone acts on them

Model count varies threefold across the group, from 7 to 23 per operator, and on average, more models means lower outage rates and lower cost per kilometre of line. But one operator running the fewest models in the whole benchmark, just 7, also posts the highest TOTEX per kilometre of any operator in the group. That is paying a premium to avoid the exact investment that would bring the bill down.

At the other end, the operator running the most models of anyone, 23 in total, still runs close to zero condition-based maintenance and posts the worst energy-not-supplied score in the peer group. Building the largest model catalogue in the benchmark did not buy that operator the best outcome.

Model count is not a scoreboard. On its own, it tells you almost nothing about whether an organisation is making better decisions.

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Data quality is not a compliance checkbox. It is the difference between best performer and worst

Process data quality and outage rate move together across this peer group. The operator with the strongest data quality also posts the lowest outage rate in the benchmark, and the operators with the weakest outage records sit near the bottom on data quality too. Better data in the process is showing up directly as fewer failures on the asset.

It cuts the other way too, and this is the part worth sitting with. One operator has above-average data quality and still posts one of the worst outage rates in the group. Good data sitting in a system nobody trusts, or a process nobody follows, buys you almost nothing. Data quality is necessary. It is not sufficient.

Where it is used, the payoff shows up in cost as well as reliability. The operators with the lowest cost per kilometer or per MVA are not the ones with the biggest model catalogues. They are the ones feeding richer condition data, asset age, corrosion, oil condition, thermographic readings, into the models they already have.

The single clearest result in the whole benchmark needs no new technology at all

Operators running close to 100% condition-based maintenance, instead of fixed time-based schedules, post some of the lowest energy-not-supplied scores in the group, on comparatively low spend. The operator running almost no condition-based maintenance posts the worst result in the group.

Decision-aid models are becoming a real differentiator between transmission operators. But a gap is opening up between operators whose models change decisions and operators whose models simply accumulate. The fix is not buying more AI. It is connecting what you already have, asset health, failure probability, consequence, criticality, cost trade-offs, into one decision system instead of a pile of disconnected tools.

This benchmark argues for a different first move. Work out where the value can actually be captured before you commit to it, and check whether your data, governance and processes are mature enough to capture it once you have found it. Start by assessing the AI opportunity for your company, not by selecting a model. That means mapping where value sits across your asset base and processes, testing whether the data and decision rights behind each opportunity can carry it, and quantifying the return on every pilot and project end to end, before you fund it and after it runs.

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APPENDIX

About this benchmark

The findings above are drawn from the following source.

SOURCE

OHROS Consulting Group × Wiimer. ITAMS© Working Group Benchmark. Amstelveen, 2026. Peer benchmarking of transmission system operators across four continents, covering asset criticality, data quality, decision-aid models in production, outage performance and cost results.

About ITAMS©

ITAMS©, the International Transmission Asset Management Study, is the peer benchmarking initiative OHROS Consulting Group has run for transmission system operators since 2010. IDAMS©, its sister study, covers the distribution sector. Both give operators a like-for-like view of where their asset management performance sits against a global peer group, and where the practical improvement opportunities are.

About OHROS Consulting Group

OHROS Consulting Group is an established international boutique consulting firm specialised in the energy sector. We are recognised leaders in forward-thinking approaches to asset management and strategic planning for the energy transition. Our core strength lies in maximising asset value, implementing global best practices and refining world-class strategies and processes. This empowers our clients to lower costs and manage risks effectively.

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