CASE STUDY

From 13 Hours to 90 Minutes
Optimising Oracle Performance

Transforming data warehouse performance with WhereScape and Oracle for one of Europe's largest transmission system operators

88%

Time Reduction

13hrs → 90min

Per Job Runtime

Oracle + WhereScape

Platform Stack

THE CLIENT

Powering Europe's Energy Grid

TenneT is one of Europe's leading transmission system operators, managing the high-voltage electricity grid across the Netherlands and large parts of Germany. Their infrastructure keeps the lights on for over 42 million people. Behind this vast physical network lies an equally critical data infrastructure, and as data volumes surged in line with the energy transition, their Oracle-based data warehouse began buckling under the weight.

> *"Processing times had escalated to 13 hours per job. Our teams were starting every day with yesterday's data, and that was holding the entire organisation back."*
>
> TenneT Data Platform Team

INDUSTRY

Energy

LOCATION

Netherlands

FOCUS

WhereScape, Oracle, Performance Tuning

THE CHALLENGE

When every hour costs insight

Critical Processing Delays

Job processing times had escalated to 13 hours per run, delaying critical data availability until well into the working day.

Infrastructure Bottlenecks

Performance bottlenecks impacting CPU, I/O, memory, and middleware, systemic and compounding.

Data Modelling Debt

Inefficiencies in data modelling techniques and code execution had accumulated over years of organic growth.

Scalability at Risk

The European energy transition was accelerating data growth, the platform needed headroom for the future.

Knowledge Gaps

The internal team needed to understand not just what was fixed, but why, to prevent recurrence.

THE JOURNEY

A systematic path to performance

1

Discovery & Diagnosis

- Conducted in-depth workshops with Data, DBA, and Infrastructure teams
- Performed forensic analysis of code, data models, and system architecture
- Identified compounding bottlenecks across CPU, I/O, memory, and middleware
- Built trust through transparent communication of root causes and approach

2

Optimisation & Tuning

- Set clear expectations for phased performance improvements with validation
- Implemented targeted hardware adjustments, particularly improving I/O throughput
- Restructured data models and refactored code execution paths for Oracle
- Conducted rigorous performance testing after each optimisation to prove gains

3

Knowledge Transfer

- Performed peer code reviews to embed efficiency and best practice standards
- Shared Oracle and WhereScape optimisation techniques specific to TenneT
- Integrated best practices into the ongoing development workflow
- Ensured the team could sustain and build on performance gains independently

THE TRANSFORMATION

From bottlenecked to blazing fast

BEFORE

13-hour job processing, congested pipelines, stale data by mid-morning, systemic bottlenecks across all layers.

AFTER

90-minute processing, optimised I/O and data models, fresh data before the day begins, best practices embedded.

88%	~8.6	Optimised	Improved	Embedded
Time Reduction	Faster Delivery	I/O Performance	Data Modelling	Best Practices

READY TO TRANSFORM?

Let's optimise your data performance

By identifying and addressing performance bottlenecks across hardware, data modelling, and code execution, Engaging Data significantly optimised TenneT's Oracle-based data warehouse. The project not only restored operational efficiency but also positioned the client for future scalability and growth.