

Iberdrola advances its digital infrastructure transformation



Client profile

i-DE, a subsidiary of Iberdrola, manages the electricity distribution network across a significant portion of Spain. The company constructs, operates and maintains distribution infrastructure, serving more than 11 million customers across 25 provinces within 10 autonomous regions.

NTT DATA implemented Building Information Modeling (BIM) methodology to support design and construction for the utility company's substations and extra-high-voltage lines.

Facing growing pressure to digitize and streamline these processes, Iberdrola, through its distributor i-DE, recognized the need to evolve its processes to become more intelligent and collaborative.

They chose a solution leveraging BIM to further their core strategy of improving operational efficiency, strengthening data traceability and facilitating asset lifecycle management.

This pioneering adoption of BIM in a technically complex sector has transformed how i-DE designs and manages its electrical infrastructure. The shift lays the foundation for more efficient, interoperable and data-driven engineering across the organization.

+50

people involved

2,800

BIM objects created

43

automations

Business need

i-DE's digital transformation challenge

In the past, i-DE's design and construction process for electrical substations and extra-high-voltage lines relied on poorly integrated tools, multiple manual processes and limited alignment between asset lifecycle phases.

To modernize its approach, the utility needed to:

- Digitize fragmented, noninteroperable processes
- Ensure a coherent, traceable and verifiable flow of information across the entire asset lifecycle
- Align electrical engineering practices with BIM methodologies widely used in other industries
- Increase efficiency by reducing project execution times and minimizing errors through automation and 3D modeling
- Strengthen collaboration between i-DE and external stakeholders such as engineering firms, contractors and manufacturers

Solution

Comprehensive BIM implementation strategy

NTT DATA, in collaboration with INGE CID — a BIM engineering and consulting firm — and ISASTUR — an engineering company — designed and delivered a comprehensive BIM-based digital transformation solution tailored to the unique needs of the electrical industry.

The phased approach supported progressive, scalable adoption aligned with i-DE's strategic objectives of integrating technology, processes and people.

Key components of the digital transformation project included:

- **AS-IS analysis and TO-BE design:** Assessing current processes in detail and defining a new BIM operating model suited to a high-voltage electrical environment
- **BIM process implementation and workflow design:** Standardizing processes across asset lifecycle phases — from design to construction — to improve consistency, traceability and efficiency
- **The creation of a common data environment (CDE):** Configuring the CDE as a collaborative platform to manage project information and coordinate work across support engineering firms, contractors and internal teams

- **The automation of technical tasks:** Implementing customized solutions that leveraged automated tools and tailored processes to increase design precision, and significantly reduce the time spent on repetitive activities
- **Customized BIM catalog:** Creating a standardized catalog of over 2,800 parametric BIM objects aligned with i-DE's standards to support intelligent, reusable design components
- **Integration with corporate systems:** Integrating BIM models with i-DE's internal platforms, ensuring digital data continuity and improving interoperability between teams and applications
- **Training and change management:** Designing a plan for technical training and support that helps teams adopt BIM and steadily build the level of BIM maturity within the organization
- **BIM maturity key performance indicators and monitoring:** Establishing metrics to measure the adoption, performance and quality of the BIM process to support decision-making and continuous improvement.

The project leveraged modeling and design applications, process automation solutions, utilities for technical data processing as well as document management platforms and collaborative environments that facilitated team coordination.





Outcomes

Digital transformation yields measurable impact

The BIM consulting and implementation project, led by NTT DATA, enabled the full digitalization of engineering and construction processes for substations and extra-high-voltage lines.

Key outcomes include:

- Supporting more than 50 people involved in the project
- Creating 2,800 BIM objects with a total of 600 parameters to enrich the project database, standardize information, improving interoperability across disciplines and optimizing the quality of deliverables
- Developing 43 automations to significantly reduce the time spent on repetitive activities and increase design precision

Next steps

As the project enters its final phase, the following actions are planned:

- Scaling BIM solutions to more projects
- Continuing staff training
- Advancing process documentation
- Maintaining and evolving automations and integrations

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