

Customer Story

E.DIS Netz GmbH

Digitizing & Automating Grid Interconnections with the envelio Intelligent Grid Platform (IGP)



Customer Profile

E.DIS Netz GmbH, one of Germany's largest distribution grid operators, manages over 13,900 square miles of power grid and 3,773 miles of gas pipeline.

Each year, E.DIS Netz GmbH processes thousands of interconnection requests—growing by ~25% annually—primarily driven by new renewable energy installations like solar and wind.

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Challenge

E.DIS Netz GmbH faced increasing complexity in handling DER interconnection requests due to:

- High volume of renewable interconnection requests
- Manual, fragmented processes for grid connection evaluations
- Disparate IT systems (SAP, GIS, Power Factory) with no automated data flows
- Long response times, often taking weeks to process a single application
- Legal obligation: Respond to requests with technical & economic analysis within 8 weeks
- Growing backlog and delayed feedback led to customer frustration and missed deadlines

Solution

The project goal needed to address the volume of inquiries, accelerate processing of binding interconnection requests, reduce internal team resources needed for data preparation and technical simulation, improve data quality for short-term and long-term planning, and increase end-customer satisfaction.

Part 1 Internal Process Automation

- Automated evaluation of interconnection applications
- Integration with SAP PM, GIS, DigSilent, and PowerFactory
- Automatic grid model creation, validation, and updates
- Reservation management for approved projects
- Legal archiving of evaluations

Part 2 Self-Service Customer Portal

- Launched self-service grid connection feasibility check
- Instant distance & capacity analysis for proposed DER sites
- Thousands of uses in the first months alone



Intelligent Grid Platform

The envelio Intelligent Grid Platform (IGP) enables utilities to stay ahead by driving digital transformation, optimization of grid management and planning, and ensuring cost-effective and scalable operations. Trusted by over 70 utilities worldwide, the envelio IGP, streamlines Network Model Management, Interconnection, and Grid Planning to support smarter, more efficient energy systems.

The envelio IGP is modular and flexible platform. For project three key applications were identified to address the specific challenges faced by E.DIS Netz GmbH: Grid Transparency, Connection Request, and Online Connection Check.

Grid Transparency	Providing computable and validated grid models by linking previously isolated data systems and using machine learning algorithms to identify and correct data errors automatically.
Connection Request	Automatic creation and evaluation of connection requests for new generators (e.g. wind turbines, solar panels, CHP) and loads (e.g. heat pumps, EV charging points).
Online Connection Check	Customizable customer portal integrated into the utility website for fully automated customer feedback on non-binding connection requests.

Implementation Journey

E.DIS Netz GmbH and envelio worked to create an integrated implementation roadmap. A customer success manager was assigned and the team adopted an agile SCRUM methodology. The solution was successfully implemented in June 2019, with ongoing enhancements driven by structured feedback and regular release cycles.

Phase 1: Design and Interfaces

Phase 2: Test phase

Phase 3: Go-Live and Production

The project was divided into three phases with the initial phase focused on building a customized interfaces linking data and systems such as SAP, GIS, and PowerFactory to the envelio IPG.

During the test phase, comprehensive user training was conducted, and benchmarking confirmed over 90% accuracy compared to the legacy process.

P1: Design and Interfaces

Agile SCRUM-based development

Tailored connectors to internal data systems

Weekly updates & real-time synchronization

P2: Test Phase

Benchmarking with historical requests

Extensive team training

Achieved >90% accuracy match vs. previous evaluations

Validation of 20,000+ medium voltage stations

P3 Go-Live and Production

Portal integrated on within own website

Continuous feedback loop with regular release cycles

Data quality enhancements benefiting all internal systems





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Results and Benefits

With the envelio IGP, E.DIS Netz GmbH was able to automate isolated and error-prone manual processes, such as the creation of the grid model, the identification of grid connection points, and creation of final reports. The result was a significant reduction in labor hours spent on these tasks and measurably faster response times for their end customers.



Area of Impact

DURATION: DAYS

Internal Effort	Reduction of application to be handled by grid planners by 20%
Time Savings	Evaluations reduced from days to minutes
Non-binding inquiries	Significant decrease in pre-evaluation submissions
Technical Quality	High-quality, up-to-date grid model enabled reliable simulations
Customer Impact	Fast, transparent connection guidance online – improved satisfaction

Conclusion

Since implementing the Intelligent Grid Platform, E.DIS Netz GmbH has significantly improved the accuracy and efficiency of processing interconnection applications. This digital transformation enables renewable energy plants to connect to the grid faster than ever, accelerating the energy transition.

E.DIS Netz GmbH now manages a growing number of DER connections with greater ease actively supporting Germany's Energiewende by streamlining renewable energy integration. Expansion into low-voltage grids and additional automation efforts are already in progress.



