

Digitalisation: Empowering the Energy Transition

Position Paper Alliander

alliander

Co-creation through collaborations and partnerships

Opportunities for collaboration and partnerships to realize the digital energy system, the digital energy market, and a digitally enabled grid operator.

Digitalisation is essential to further increase the sustainability of the energy system

By 2050, the Netherlands must be climate neutral. The energy transition will require a huge effort to replace and expand the existing electricity grid. Over the coming years this will once again double the amount of work we have to do. We have realised that simply working harder will not be enough to achieve our goals. That means we are entering a new phase. This phase requires us to concentrate wholly on execution. We are therefore fully committed to digitalisation.

Digitalisation is crucial to the success of the energy transition. A digital energy system is more adaptable and more manageable. A digital energy market can resolve grid issues more quickly and boost economic activity in the Netherlands. A digitally enabled grid operator is more productive and collaborates more effectively with its stakeholders.

A key focus of Alliander's digitalisation strategy for 2024-2030 is co-creation through collaborations and partnerships.



Digital priority: Co-creation through collaborations and partnerships

Alliander is actively working with grid operators, research institutions, the business community, startups and knowledge coalitions in order to accelerate together and deploy its own resources more efficiently.

Co-creation as a digital force

Alliander works with a variety of stakeholders to accelerate the digital transformation, including grid operators, the business community, consumers, municipalities and academia. This way we can fully use all knowledge, resources and digital solutions. In addition, we reinforce each other's innovative strengths and reduce duplication of effort. Moreover, we can develop digital solutions together that are

Examples of digital collaboration



Future-proof foundation

Together with Enexis and Stedin, we are developing a smart meter head-end for reading and managing the new generation of smart meters.



Better use of the grid

Within LF Energy, we are working on the Power Grid Model to identify and prevent capacity problems.



Excellent management

We are working with Delft University of Technology, HAN University of Applied Sciences, Radboud University and the University of Twente on AI technologies for risk-based investments and management.



not only good for Alliander but also benefit the wider ecosystem. After all, we have overlapping challenges and goals.

Collaboration and partnerships are already yielding results

Alliander is actively involved in various digital collaborations. For example, we are one of EDSN's partners for the creation of central data exchange services, we entered into a cooperation agreement (SOK) with Stedin, Enexis and TenneT to realize joint ICT and digitalisation initiatives, and we are an LF Energy member, a Linux Foundation initiative that promotes open-source collaboration and innovation in the energy sector. Within these collaborations, we are working on digital solutions for Alliander's strategic pillars, such as pillar 1. Excellent management: Optimizing maintenance and improving customer service, pillar 3. Better use of the grid and pillar 7. Future-proof foundation. Our collaborations also extend beyond national borders. Internationally, Alliander works within LF Energy with organisations such as RTE and Sigholm on the development of open-source solutions that can be used worldwide. On the next page, we will highlight some collaborations in more detail.

More opportunities through collaboration and partnerships

We already work with various parties nationally and internationally. We will expand this further in the future.

Central data exchange via EDSN

Since 2007, Alliander has worked with EDSN on central data exchange between suppliers, distribution system operators, the transmission system operator, and other stakeholders. The central data exchange includes the IT infrastructure, data registers and applications for regulated information exchange. Examples include:

- Connection register: registers all administrative data of electricity and gas connections.
- CTS Application Portal: facilitates efficient data exchange between energy suppliers and grid operators.
- GOPACS Application: enables trading of flexible capacity from the market to reduce capacity shortages in the electricity grid.

Cooperation agreement with Enexis, Stedin and TenneT

In 2024, the grid operators Alliander, Enexis, Stedin and TenneT signed a cooperation agreement (SOK) to accelerate ICT and digitalisation initiatives. This enables the joint development and maintenance of innovative digital solutions.

Examples of current SOK initiatives are a joint station registration system and a smart meter head-end for reading and maintaining the new generation of smart meters.

Research labs met academic institutions

We also work closely with research institutions such as Delft University of Technology, Radboud University, the University of Twente, and Eindhoven University of Technology. Through research labs like the AI for Energy Grids Lab, we are developing technologies and fostering new talent in the field of artificial intelligence for the energy system.

We're also exploring the possibility of setting up a robotics lab.

International cooperation with LF Energy

At the international level, we collaborate within LF Energy to tackle shared challenges in the energy transition. We share knowledge and develop open-source solutions that are applicable worldwide, such as:

- Power Grid Model: Helps identify and prevent congestion problems through in-depth analyses and simulations of the electricity grid.
- OpenSTEF (Open Short Term Energy Forecasting): Provides accurate predictions of energy consumption and generation, essential for effective grid management.
- Shapeshifter: provides a coordination mechanism for the exchange of flexibility between aggregators and grid operators.

With the rise of AI, we are preparing new open source collaborations in the field of open-source AI.

Accelerating on multiple fronts

To respond to the challenges posed by the energy transition, Alliander is accelerating on multiple fronts by collaborating intensively with stakeholders, including partners. Our ambition is to work together with stakeholders, including existing and new partners, to develop a digital ecosystem that is centred around co-creation and in which shared opportunities result in joint digitalisation initiatives.

Our approach over the coming years will include the following:

Joint digitalisation portfolio

In collaboration with Enexis, Stedin and TenneT we will create a joint digitalisation portfolio. This initiative will generate synergy between network operators, ensuring that resources are used optimally and cooperation leads to economies of scale and innovative solutions.

Sourcing strategy for digital capabilities

A clear strategy will ensure that we develop and purchase digital solutions that are aligned with our core competencies.

Digital ecosystem

We will develop a flexible digital ecosystem in which we work in a task-driven way with various internal and external stakeholders. Together with network companies, businesses, knowledge institutions and other relevant parties, we will stimulate co-creation, knowledge sharing and innovation. This ecosystem will deliver the agility needed to respond quickly to new challenges and opportunities.

New collaborations and partnerships

We will enter into new collaborations and partnerships with network companies, the business community and knowledge institutions to develop innovative solutions and respond more quickly to changes. By promoting co-creation, both within the energy sector and with relevant external partners, we will stimulate joint initiatives that will accelerate the transition.

Government participation to accelerate innovation and collaboration

To promote collaboration and innovation, we will engage in active dialogue with the government on legal and policy frameworks. This will help us identify obstacles and work together to develop an environment that stimulates collaboration and innovation.

The Road to 2030

Digitalisation is the key to a successful energy transition. Through collaboration and partnerships, we leverage each other's innovative power in the field of digitalisation and increase our ability to respond quickly and effectively. This not only helps us save costs by using digitisation resources more efficiently, but also to co-create more groundbreaking digital innovations. By 2030, we want to save 20% of new investments in digitization by making clear choices in sourcing and focusing more on the joint development and management of digital products.

Alliander Digitalisation Strategy 2024-2030

Want to learn more about the Alliander Digitalisation Strategy 2024-2030? Scan the QR code

