

A long-exposure photograph of a city at night, likely Helsinki, showing a harbor with boats and buildings. The image is characterized by vibrant light trails from cars and boats, creating a sense of motion. The sky is a deep blue, and the city lights are reflected in the water. Several construction cranes are visible in the background.

Recharge your energy business

How to deal with the
future on the energy
market

tieto

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Executive summary

The utility industry is facing its biggest change in decades. Deregulation is putting retail companies face-to-face with more competition, which leads to new priorities: customer retention and reducing their cost-to-serve.

Distribution companies face toughening operational requirements: service reliability, shorter interruption maximums and higher penalties for non-compliance. They also need to pay closer attention to Return On Investment planning.

The only way to succeed in this environment is to adopt new digital solutions that:

- enable automation of operations and processes, thus minimizing costs and the risk of manual errors that would affect end user satisfaction or cause non-compliance situations
- are able to scale up and down without service interruption to adapt to market needs
- can take advantage of data analytics to tap into new revenue streams

Tieto Smart Utility is a solution that includes both the platforms and the tools to enable utility companies – retail as well as distribution – to place their input where it produces the maximum output.

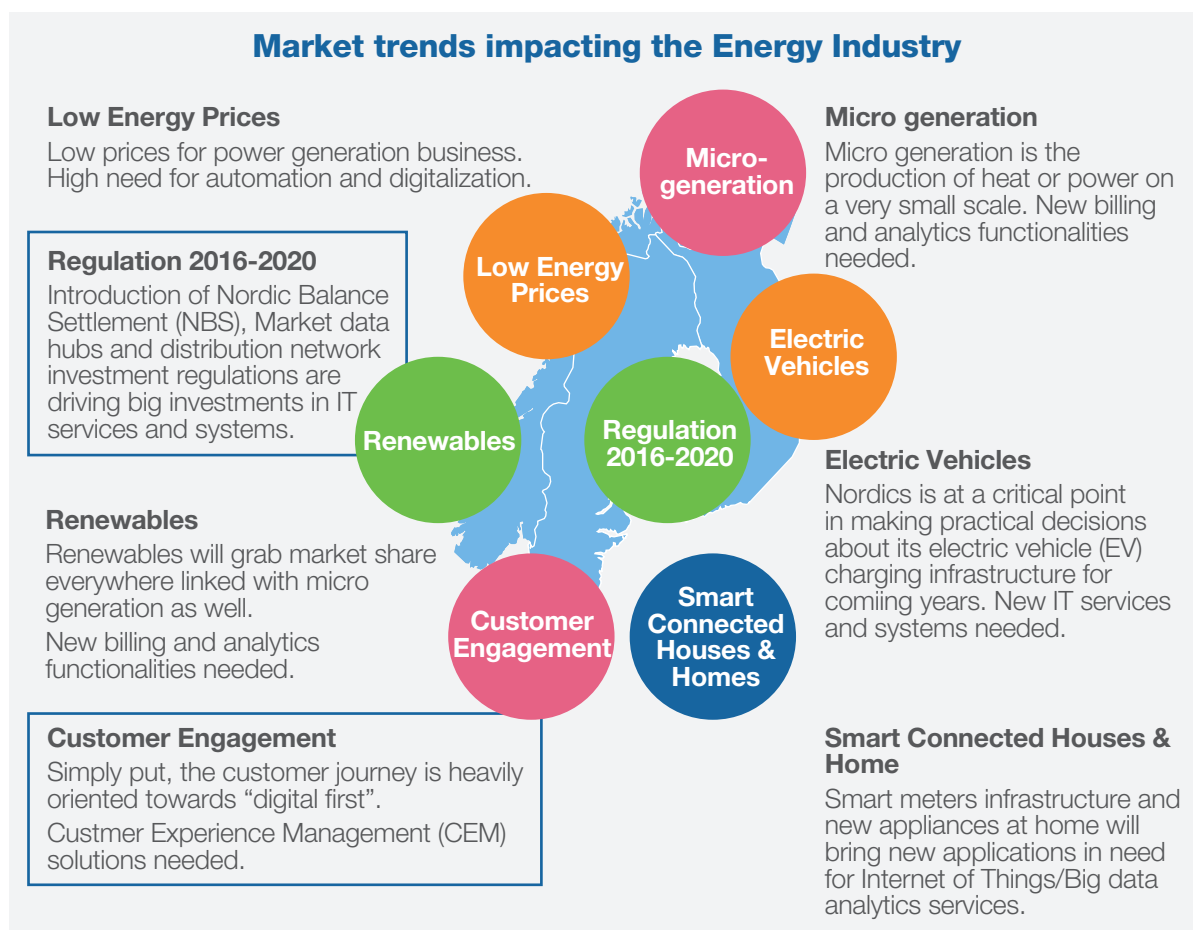
Key trends and challenges

When the Nordic and European utility markets are gradually being deregulated, the industry is facing a profound change in its operating environment.

Increasing competition in the energy **retail market** will put more emphasis in earnings per customer while the low margins in the business will necessitate tight cost controls and underscore the importance of customer retention.

New regulation, introducing stricter delivery reliability demands and higher penalties, combines with the need for **distribution companies** to change into market players. Investments must be allocated even more accurately than today to keep up.

Every business in the industry must take a number of current trends into account when planning for the future.



Low energy prices

The power generation business must prepare for constantly lower wholesale prices than in the regulated business environment. As energy is increasingly being spot-priced, energy industry actors must be ready to automate and digitalize their operations further to combat dwindling margins.

Regulation 2016–2020

The introduction of Nordic Balance Settlement, market data hubs and distribution network regulations are driving large investment in IT services and systems. The requirement for one-hour, even 15-minute metering intervals will increase the amount of data to be handled by a factor of as much as 50,000.

Renewables

Renewable energy forms will grab further market share in every country. Micro-production at individual households will play a part in this, requiring new analytics and billing functionalities.

Customer engagement

In line with the digitalization of their private lives, consumers are increasingly demanding digital, easy-to-use self-service options in their energy-related purchases. This requires an industry response through efficient, attractive Customer Experience Management.

Micro-production

Micro-production means that heat or power are generated in minuscule production units, often as small as one household selling its surplus energy to the grid. New analytics, billing and compensation functionalities are needed as the power now travels in two directions instead of the earlier single direction.

Electric vehicles

The Nordic countries are approaching a critical point in making practical decisions on their electric vehicle charging infrastructure for the future. This requires new types of IT services and systems to control supply and demand.

Smart, connected houses and homes

The smart meter infrastructure, together with IoT-enabled appliances and devices, will require new types of solutions in the energy industry that can cope with Big Data and the demands placed by the Internet of Things.

Main challenges

To summarize, these are the foremost challenges utility industries face today:

- Comprehensive, new regulatory requirements that necessitate heavy investment in network maintenance, adaptation to hubs, Nordic Balance Settlement, etc
- Reducing development costs for new or changed functionality
- Tight competition and low electricity prices, leading to a need to increase automation, create more efficient processes and innovate new products
- Data volumes and performance needs as much as 50,000 times higher than at present
- Introducing flexibility in IT costs, corresponding to the current operation
- Evolving technologies driving the creation of new types of services
- Process digitalization as a prerequisite to exploit new data for the best business outcomes at a reasonable cost

Efficiency requires specialized services

Retail is finding itself in a highly competitive business, with the future focus on winning and keeping the right customers.

Distribution needs cost-effective and flawless operation to meet its asset development challenges while avoiding interruption related penalties.

What it means for retail

Success in the competitive Nordic energy retail market requires investing in digital end-user services while taking into account the regulatory requirements of the electricity market. Increasing competition puts pressure on margins, underscoring the importance of customer retention.

End-user needs and experiences are driving a profound change in utilities' digital services. Smart, versatile, easily usable and time, place and device independent solutions are needed to meet today's consumer requirements and achieve better customer loyalty. Processes need to be automated to improve operational efficiency, ensuring a competitive cost structure.

Tieto Smart Utility, specially customized for Nordic energy retailers, offers constantly updated, scalable, modular and flexible services that will allow you to focus on your core business and drive success in the changing energy market. The cloud-based services comply with all regulations and rules governing the industry.

What it means for distribution

The power distribution market is challenged with meeting improvement targets imposed by authorities while maintaining the repurchase value of their network.

To comply with the regulatory demands for supply reliability and maximum service interruption times, distribution service operators are facing up to 50 per cent higher investment needs compared with their present situation. This calls for accurate long-term planning combined with efficient network maintenance.

At the same time, end-users are demanding flexible and efficient time and place independent digital self-services.

Tieto Smart Utility automates key processes to enhance operational efficiency and reduce costs. It digitalizes all the various information systems for reliable real-time information flows that allow better task and staff allocation, fewer errors and shorter recovery from service disruptions. Digitally stored data helps documentation and reporting, and guarantees fast and accurate reports.

Tieto Smart Utility runs on a ready-to-use cloud platform that offers scalable and flexible services with integration interfaces to other company systems, enabling you to focus on your core business. The secure solutions are specially customized for Nordic companies, and they comply with all industry regulations and rules. The very low initial investment allows you to start using the services immediately.

Tieto Smart Utility for better business

The constant development of new regulations, plus a more competitive marketplace, complicate decision-making for energy industry companies. When budgets are tight, these complications can seem unmanageable.

This is where Tieto Smart Utility steps in. It is a business process outsourcing service in which IT systems delivered from Tieto's Energy Industry Cloud, the private cloud platform geared specifically for energy companies, handle the most essential and critical business processes for electricity retail companies, electricity distribution companies and multi-utility companies with a guarantee to always comply with the current regulations. Instant scalability to respond to day-to-day needs as they expand or shrink is built in.

Tieto Smart Utility platform is a new technology platform and delivery model combining the modernization and automation of systems, fast development of new functionalities, an open architecture with Application Program Interfaces (API), automated testing and fast SaaS (Software as a Service) delivery.

All services are safely delivered from Tieto's datacentres located within the Nordic countries.

Marketing and sales automation

Personalize offers for each customer segment

To minimize churn, a major issue in energy retail, a good customer experience and personalized, attractive offers for individual customer segments are rising to the fore as loyalty elements.

The campaign module of Tieto Smart Utility offers easy administration, segmented marketing lists and high granularity. The built-in dashboard helps monitor each segment's progress and provides the data needed to fine-tune the segmentation.

The product builder and pricing functions enable easy campaign building and matching the campaigns to the right customer segments in multiple channels, with automated follow-up. The integration platform minimizes manual work in handling responses and reduces costs through automation.

Billing automation

Fully automated invoicing for a stable cash flow

The billing automation module in Tieto Smart Utility offers flexible solutions for both product creation and invoicing processes, thereby ensuring short time-to-market for products that respond to customer demands and are invoiced precisely and correctly.

Thanks to its generic data model, the solution can be used by energy companies as well as other utilities. Non-utility products, such as rents, consultancy and a variety of one-off products and services can also be modelled.

An efficient product creation process secures data quality, brings down product maintenance costs and assures minimal time-to-market. With the product modelling tool, utilities can innovate new products and pricing models by using various functions, variables and algorithms.

Invoicing is fully automated, with real-time rating and a billing process monitor. Users can define invoicing jobs and timing in advance, then focus only on deviations from the normal process. A variety of filters helps find suspicious invoices, ensuring invoice quality. An optional customer account module can be added to even out payments if actual consumption figures vary periodically.

Billing automation sends correct invoices to customers in time and secures a stable cash flow to the utility. The easily scalable system is designed for processing large volumes, satisfying high performance requirements.

Accounts receivable automation

Make sure your payments come when they are due

The correct handling of receivables to ensure timely payment income is one of the most essential processes for all utilities. Automated accounts receivable processing reduces manual work and errors while allowing your staff to focus on those receivables that need closer attention.

Tieto Smart Utility enables payment handling automatically based on the SEPA format, using any currency configured and with exception handling procedures that ensure only transactions with errors or delays need special attention. The solution's dynamic follow-up chain allows predefining a chain of steps for following up an unpaid invoice, enabling individual payment follow-up based on customer behaviour.

The debt collection chain automatically forwards assignments to an external collection agency. Invoices can also be postponed with or without interest and an installment plan for the invoices can be created.

Tieto Smart Utility is an intelligent pre-system to the external full financial system. Comprehensive intercompany accounting enables each vendor's part included in the invoice to be traced to its specific invoice line and payment level, enabling a full audit trail.

Easy-to-use automated data handling minimizes manual work phases and shortens the invoice-to-payment cycle, while the solution's functionalities cover all areas required for payment monitoring. This helps avoid the risk of bad customer debt and allows efficient focus on unpaid invoices.

Digital channels automation

Top customer satisfaction regardless of channel

Today's consumers expect high-quality, usable and fast services regardless of what channel they use: web, mobile or social media. Utilities that meet this expectation in an innovative and efficient way have a great business success opportunity. Satisfied customers will not easily change suppliers even if they find a cheaper offer somewhere else.

From the utility company's perspective, self-service channels enable operational efficiency by letting the customers do much of the work. Automated processes allow transactions to be completed totally without manual work by customer service.

On the other hand, the services that consumers find useful and beneficial will improve customer experience and customer satisfaction. For example, smart energy consumption tracking and simple ways of handling contract-related issues are services that can sway the consumers' preferences.

Tieto's offering covers all service channels that are important and relevant today: web self-services, mobile apps as well as communication/notification services.

For consumers, the self-services fulfil their needs throughout their relation with the utility:

- Find right products and sign contracts
- Take control of their energy efficiency using consumption monitoring tools
- See all their own information including contracts and invoices
- Handle contract renewals and address changes

Because the service is available 24/7 from any location and with any device, customers can interact with your services when it best suits them. This translates into a better customer experience and tighter commitment. Less manual work means fewer errors and realizes cost savings to your utility.

Customers, contracts and customer services

Most large B2B sales agreements include a large number of sites with precisely tailored pricing and services to meet the exact demands of the customers. Large B2Bs need a highly unique offering and a special mix of products and services, which will possibly affect a large number of customer sites. Tieto Smart Utility has powerful tools to match this challenge for retail companies.

Tieto offers cost-efficient transition from large B2B agreements to contracts for billing purposes with built-in data quality checking. You can flexibly tailor the products, pricing models and services included in the customer contracts.

The process has seamless integration into Electronic Data Interchange (EDI/EL) message handling, with the various delivery sites established in the invoicing system when the distribution company confirms that the supply can start. The responses from distribution companies are automatically handled. In the event of contract changes, it is easy to reuse existing data in the system without market communication.

Market data exchange automation

Digital data for a smooth supply chain

As the electricity market is expanding, the number of actors between whom information has to be exchanged will increase, as will the number of information exchange incidents. To ensure a fault-free supply chain, automated, digitalized data exchange between consumers, distributors and suppliers is becoming a necessity.

Tieto's market data exchange provides reliable, effective and intuitive tools with which suppliers and distributors can see process deviations and intervene in time. The solution gives an overview of all the process phases, statistics on messages and detailed information about each deviation on an easy-to-use, individually configurable dashboard instead of needing to access several systems.

Automated deviation handling and advanced follow-up reduce deviation management time and support daily communication with customers and other market actors.

Consulting

Helping you keep pace with business and regulatory development

With the far-reaching changes taking place on the utility market, utilities need a digital vision aligned with their customer strategy. Even more changes

are ahead and by partnering with Tieto Business Consulting, utilities will be well positioned to be in the forefront of the energy industry. We offer consulting services for both retail and distribution companies.

Tieto Smart Utility provides ongoing cost-efficiency, flexibility, security, and compliance with rules and regulations. You can scale quickly, innovate faster, reduce time-to-market, and perform more secure transactions. The cloud enables the entire service and network to move at a higher speed.

With in-depth industry knowledge and as a forerunner in the market, Tieto closely follows upcoming changes and foresees future needs and possibilities. This experience and knowledge, combined with skills in project management, IT architecture and process development, help you minimize inconsistency and maximize performance throughout your business. Tieto's consultancy services help predict future demand while adopting new technologies to implement efficient processes. Digitalization, cloud services and in-depth industry knowledge are in a key role in future-proofing the business of all types of utilities.



Tieto Smart Utility for better functionality

Distribution service operators (DSOs), in particular, need to overcome a number of challenges to comply with the biggest changes in the business in decades.

Metering automation

Regardless of whether smart meters are operated by the DSO or external providers, all activities in a Smart Meter Operation Centre are covered and automated in Tieto Smart Utility metering automation solution.

It increases efficiency and reduces cost by automating online interfaces for all field activities and provides automatic work orders by thresholds and analytics. A dashboard-based overall view with prioritized activities keeps the meter operator up to date at all times.

Online integrations secure quality in all delivery site changes and deliver correct real-time meter values, allowing timely notifications to end-users and booking field activities at the right times.

Meter deployment

One of the largest one-time operations DSOs must undertake is smart meter deployment. Instead of investing money in this operation that needs to be executed just once, it makes sense to use a cloudified solution. In Tieto Smart Utility, all activities related to meter deployment can be run from maps and dashboards. Rollout planning, customer communication, project status and optimized resource planning are all possible with one tool.

Meter operation

As the Smart Meter Operation Centre is in a key position in delivering meter values at the right time and with the right quality, Tieto Smart Utility monitors meter statuses and handles all problem-solving through customized dashboards. Operators have a full overview of actual meter and communication status and the system follows up missing measurements. Field work orders can be initiated and monitored, and balances and settlements handled through the same system.

Analytics and machine learning enable the automation of work orders and give valuable information about future investments, optimized maintenance and inspections.

Fault handling

The fault handling solution provides full control and flexibility in solving prioritized communication and meter problems in an automated way. Field work orders can be initiated and monitored, and the mobile solution platform updates all field activities to asset data management in real time.

Inventory and logistics

In meter deployment projects, there are big volumes and value streams in the meter assets. Even when the operation is underway, it is important to know the warehouse status and the individual meter statuses and locations. Tieto Smart Utility provides full control of all meters and components in the whole value chain in one inventory and logistics solution.

Inspection and revision

Regulatory requirements stipulate different intervals of inspections and revisions in the multi-utility that need to be handled automatically. Meter status monitoring and problem-solving are done by customized dashboards, such as the registration of meter assets, inspection and revision intervals in the asset management database, the creation of maintenance plans and export of work orders.

Customer services

Since deregulation, the role of DSOs as market facilitators has become important and will be even more important in the future. The customer service solution handles all customer and delivery site interactions together with all the regulatory requirements.

Tieto Smart Utility includes automated online interfaces for full control of all customer interactions to reduce internal waste and shorten lead times. It allows customized information to different customers and makes it easy to follow key performance indicators and the fulfilment of service level agreements on a user-friendly dashboard.

Customer contact

Distribution operators are responsible for many customer contacts. These include power failure concerns, billing questions, the cost of changing a fuse or a new connection etc. There are many stakeholders internally in the company, which is why full control and measurement of lead times is crucial to reduce cost and to make customers happy. Tieto Smart Utility integrates all customer channels seamlessly, with SMS and email notifications of issues.

Connection services

Connection services have complex value chains. They include tasks such as new connections and delivery site changes, as well as disconnection or reconnection. In Tieto Smart Utility, no manual work is needed in many cases when a customer is connected or disconnected. The solution's dedicated module takes care of the complex process with many interested parties seamlessly and automatically.

Network automation

The new regulatory framework increases complexity in the network planning and it has never been more important to invest in the right places to gain revenue and avoid penalties. There are also requirements to increase quality and reduce running cost in the DSO operations.

Tieto Smart Utility efficiently automates the network investment process into a transaction-based one. This approach gives the DSO a constant overview, based on up-to-date information about time, value and material, of all ongoing investments, plus rolling forecasts. The transactional process also provides a "backview mirror" on previous investments, making it possible to change investment patterns based on learnings.

Long-term planning

Network planners will find themselves in an extremely complex environment for making correct investment decisions in the future. The long-term planning tool of Tieto Smart Utility supports the network planner in analysing the network from the electrical, reliability and regulatory perspectives. After charting possible solutions, an iterative simulation will fine-tune the optimal solution.

Fact-based investment business cases improve the internal decision-making process. The DSO's income model and outage costs can be pitched against each other for improving indicators such as SAIFI and SAIDI, among others, in the long term, thereby reducing cost. Regulatory solutions can be varied to arrive at the optimal capital base increase in the income model.

Operation and maintenance

Regulation requires reducing the annual running cost of a network. Operation and maintenance are the main cost drivers. Outages that exceed the regulator's stipulated maximum allowable times will be painful for the DSO as it needs to pay compensation to customers, meaning a financial loss.

Maintenance processes in most cases have manual steps that can be automated, such as inspection and repair activities, resource planning, material supply and calculations. Tieto DSO Automation Suite, part of Tieto Smart Utility, supports the automation of maintenance activities and reduces the risk and cost in operation processes.

Outage planning and fault handling

The capability to plan for outages and repair the grid during an outage is one of a DSO's core competencies. SCADA and DMS systems have functionalities for monitoring the network connectivity status in real time. Tieto Smart Utility's outage planning and fault handling module automates interaction with field crews and shares this information to multiple stakeholders.

Online customer information and interaction increases customer satisfaction while efficient resource planning for field work reduces cost. As the data for the customer, the DSO's customer service and the operation centre is based on a single source of truth, the possibility of mistakes and misunderstandings is reduced.

Because the same automated workflow engine is used for all DSO processes, cost-efficiency and scalable functionalities can be achieved simultaneously.

Fault prioritizing

Political decision-makers and the media pay increasing attention to important functions of society, grid reliability being one of them. On the other hand, the new tightening regulations involve increasing costs. That is why it is important to prioritize activities correctly in situations where pressure is high. Tieto Smart Utility's Prioritizing Module supports the DSO in reducing risk and cost through its automated prioritization functions. Moreover, the DSO's personnel work satisfaction will be positively influenced when their work is made easier in a stressful situation.

Inspection, repair and follow-up

Network inspection and predictive repairs are handled as a transactional process (like network investments). Activities are planned, ordered and then reported back after execution. The automated process includes field worker interaction, allowing the DSO to follow all ongoing works in real time (time, value and materials) and making forecasts about upcoming works. All activities can be followed up on a dashboard.

Outage compensation

When an outage lasts longer than the stipulated allowed maximum, a compensation should automatically be sent to end-users. It is important to inform them early about the compensation to avoid the cost of calls to the customer service centre. Tieto Smart Utility provides the connection between SCADA/DMS and the billing system for increased efficiency with no manual work.



Tieto Smart Utility – business benefits

Retail companies can easily create new, attractive products and campaigns based on efficient customer segmentation. Winning, retaining and winning back customers becomes easier through the capability to provide excellent customer experiences in all communication channels irrespective of time and location. An efficient billing process ensures a steady cash flow and low credit risk. Self-service options save valuable personnel time as support calls are kept to a minimum.

Distribution companies benefit from automation, efficient analytics of huge data volumes and the predictive capabilities of Tieto Smart Utility to optimize their network operation and maintenance, combined with smart investment planning based on simulations. End-to-end workflow planning enables connectivity to external contractors' systems for optimizing field work while ensuring that investment, maintenance, construction and logistics are correctly timed for the optimal total outcome.

Summary and conclusions

Tieto Smart Utility is a set of services delivered from Tieto's Energy Industry Cloud, specially customized for Nordic energy retailers. It offers constantly updated, scalable, modular and flexible services that will give you new opportunities for success in the changing energy market.

Tieto's Energy Industry Cloud is a ready-to-use platform optimized for the utility industry with integration interfaces to other company systems,

enabling you to focus on your core business while providing tools for the future.

The cloud-based services comply with all regulations and rules governing the industry at all times. They are available at a very low initial investment and with pay-as-you-use invoicing model that allow you to start benefiting immediately.

What next

Improve your efficiency, starting today. If you're interested in how to succeed on the future energy market, get in touch!

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Tieto aims to capture the significant opportunities of the data-driven world and turn them into lifelong value for people, business and society. We aim to be customers' first choice for business renewal by combining our software and services capabilities with a strong drive for co-innovation and ecosystems.

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