

**The Energy
Transition Series**

P A R T 3

**PRIORITIES FOR CHANGE:
HANSEN SOLUTIONS FOR
THE ENERGY TRANSITION**

A Hansen POV Paper

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We opened these reports by defining the energy transition as a shift from a system characterised by large, centralised resources with one-way flows of energy and information, to an advanced grid market with distributed, decentralised, and decarbonised resources with two-way flows of energy and information.

The energy transition manifests itself as a combination of technological evolution, decentralisation of energy management and customer empowerment.

In the second part of our report, we examined how distributed energy resources (DER) are influencing the energy industry of today – and of tomorrow.

Energy companies are experiencing fundamental changes in business operations due to a constantly developing market environment.

Now, in Part 3 of our report on the Energy Transition we provide our view on the priorities for change and how that is realised in the Hansen Suite for Energy and Utilities.

And, we also review a range of case studies and exciting developments where Hansen is working with energy providers that are in the midst of embracing the energy transition, and see what strides they are making in operational development.

Without a doubt, business model redesign as a response to the conditions of the energy transition is accelerating with the increasing speed of technology advancement. Energy companies are busy doing their research, looking into how they need to change and adapt. Key questions will be: **How do they prioritise? What areas should they look at changing first?** During this time of realising the energy transition, important choices in business and operational systems will continue to be made.

CREATE-DELIVER-ENGAGE IN THE ENERGY TRANSITION

In the previous paper in this series, we listed five imperatives related to business and operational systems that must be addressed to prepare for the full impact of DER. These are:

- **PREPARE TO HANDLE VARIETY**
- **DEVELOP SERVICE ADAPTABILITY**
- **ENABLE MORE DYNAMISM FOR BILLING AND RECONCILIATION**
- **FOCUS ON PEOPLE**
- **GET HELP FROM EXPERIENCED PLAYERS**

Key business and operational systems of utilities should have the ability to address these imperatives to manage the impact of the change. The question is: How does Hansen support this through its software products and tailored services? Let's take a look.

1. PREPARE TO HANDLE VARIETY

Data, and the management thereof, has inevitably been at the centre of the projects Hansen has carried out with its energy provider customers. Hansen has worked to make deep data analytics more tangible and useful for energy companies grappling with the challenge of DER. In the context of DER, the variety is what makes Big Data really big [REF1](#). DER will entail data capture from a great variety of sources and types – structured, semi-structured and unstructured.

To address variety, Hansen provides capabilities to increase profitability and delivers new solutions for new market opportunities. Moving towards a real-time market and larger market areas, the requirements for automation in data management and analytics increase as a result of the additional complexity and volume of available data. Advanced data analytics is changing the relationship between energy companies and their customers.

Customer profitability analysis is one of many use cases supported by Hansen, which we believe will rise to greater importance in coming years. Truly understanding customer profitability will become a much more complex exercise, both on aggregated and individual contract levels. Hansen's experience of 50 years serving the sector enables deep insights so providers can, through configuration, perform deep analysis of key elements like contracts, tariff components and metering intervals to understand customer profitability.

By leveraging this data effectively, energy and utility services providers can gain some advantage and adequately handle the challenges posed by DER and customer empowerment. Several Hansen clients in the Nordic region derive and utilise the full potential of smart meters by mining their data for intelligence that enhances the relationship between products, services and customers.

2. DEVELOP SERVICE ADAPTABILITY

To unlock the potential of a customer-centric and data-driven business, companies are looking to business and operational platforms to give adaptability and agility. For energy and utilities providers, their solution architecture needs to deliver a high degree of flexibility and support product innovation. This, in Hansen's view, will help in reaching the overarching goal of providing an exceptional customer experience.[REF2](#).

Hansen MDM (meter data management) brings adaptability to the entire utility value chain – from smart device roll-out management to energy logistics, energy business, billing and value-added customer services. This adaptability is most clearly seen in the implementation of smart metering systems, which allows the utilisation of real-time consumer energy usage data to improve the management of grid networks.

Hansen MDM reinforces new business models and service adaptability. Provided as a ground-to-cloud solution, Hansen MDM lets companies run their operations in a way that is aligned with their preferred business model, efficiently balancing legacy and future advancements. True service adaptability is achieved by integrating smart grid infrastructures and events with the real world demands of the energy business – delivering clear, high quality and actionable smart meter data and analysis. Carefully calibrated automated processes ensure 'actionable' in this context is not just a buzzword. By pre-setting relevant parameters correctly, companies can use Hansen MDM to deliver the next customer experience instantly.

3. MORE DYNAMISM FOR BILLING AND RECONCILIATION

The traditional CIS is built around the principle of directional flow of energy and invoices. In the age of DER, it will be all about bi-directional flow [REF3](#), real-time management and the ability to set up advanced products and services in order to capitalise on new innovations. Robust and dynamic billing will be vitally important for parties producing DER energy, and distributing and selling power, which will want to offer dynamic tariff structures, including real-time pricing, variable peak pricing and critical peak pricing or rebates.

Hansen CIS gives companies the assurance of a proven, reliable, and secure billing solution that improves efficiency while maximising data value. The product offers convenience and ease of use to streamline and coordinate billing operations with low cost of ownership. Operational risk is greatly reduced by eliminating the need for expensive hardware purchases by using a software-as-a-service (SaaS) cloud model, supervised and/or maintained by Hansen.

The full impact of DER means companies will have to conceptualise products and services based not only on delivery, which in itself carries the uncertainties of volume and time. Providers must be able to cope with real-time handling of prices and need a dynamic billing system to stay in control. Hansen CIS offers a highly configurable billing engine that handles rate schedules, pricing structures, tax management and interval billing, including support for flat, tiered and seasonal rates, contracted minimums/maximms, time of day and day type splits and real-time pricing. Retailers/sellers need to look for flexible applications to automate campaigns, run engagement initiatives and efficiency programs, and effectively cross-sell new products, or into new market opportunities, i.e. Community Renewables. All this while maintaining a unified, up-to-the-minute vision of customers and prospects and being able to perform analytics along the customer journey.

4. FOCUS ON PEOPLE:

Reorganize, Retrain and Recruit to Build Proactive, More Automated Customer Service

For many energy retailers, the move from 'electricity-only' to 'energy-as-a-service' will necessitate a new approach to delivering service offerings that are in tune with consumer expectations. Staff will have to adapt, becoming more like consultants to the customer. Customers will expect advice on how to minimise their electricity bill as well as how to get the most out of their new energy resources and devices.

Hansen CPQ and the Hansen CIS product family enable utilities to seamlessly and efficiently sell all products, from standardised consumer offerings to complex tailored B2B enterprise services. Deployed in the cloud or on-premise, Hansen CPQ increases the speed and improves the accuracy of sales quotes and orders with an immediate effect on efficiency, agility and customer satisfaction.

In enabling a higher level of service capability through improved systems, Hansen combines systems implementation, process re-engineering and the retraining of staff resources. Hansen emphasises close collaboration and interaction with client personnel throughout implementation projects and associated processes. Understanding how each project and situation warrants unique treatment carries profound importance in securing a successful transition. All the people involved have to become part of 'the new world', aware of their new roles and responsibilities, as well as the possibilities.

Automation of customer-service processes will be necessitated by DER, but must be carefully implemented in consideration with people and processes to fulfil the intended purpose. Automation will enable staff to focus on more proactive customer service, as there will be far fewer manual tasks. The frontrunners and early adopters have grasped that automation is necessary to handle the

dawning age of the prosumer, and the increasingly environmentally conscious consumer who will shop around and switch quickly to their preferred green energy provider. As they automate, these providers understand the need to focus on the new responsibilities and potential of their people.

5. GET HELP FROM EXPERIENCED PLAYERS

As we noted in Part 2 of this report, there is a caveat. A phenomenon like the energy transition with DER as a central component can capture the attention of a wide range of enterprises in the business of providing IT services and perhaps an array of other tech and support systems. But the generic offering can fall short for energy companies – and for a number of reasons.

Simply, a broad-based IT company may not fully grasp the energy market in which it is trying to operate. And discovering that it has a weak understanding of the industry and the regulations and trends that so heavily influence the market can be a long and painful process.

Hansen has learned to make sure service and IT partners thoroughly understand the market conditions, locally and regionally. Hansen has itself developed implementation process, training and software solutions to underpin its own operations. This knowledge and experience has proven invaluable to energy and utilities providers in creating, selling and delivering new products and services.

CUSTOMER CASES: MEETING ENERGY TRANSITION CHALLENGE IN PRACTICE

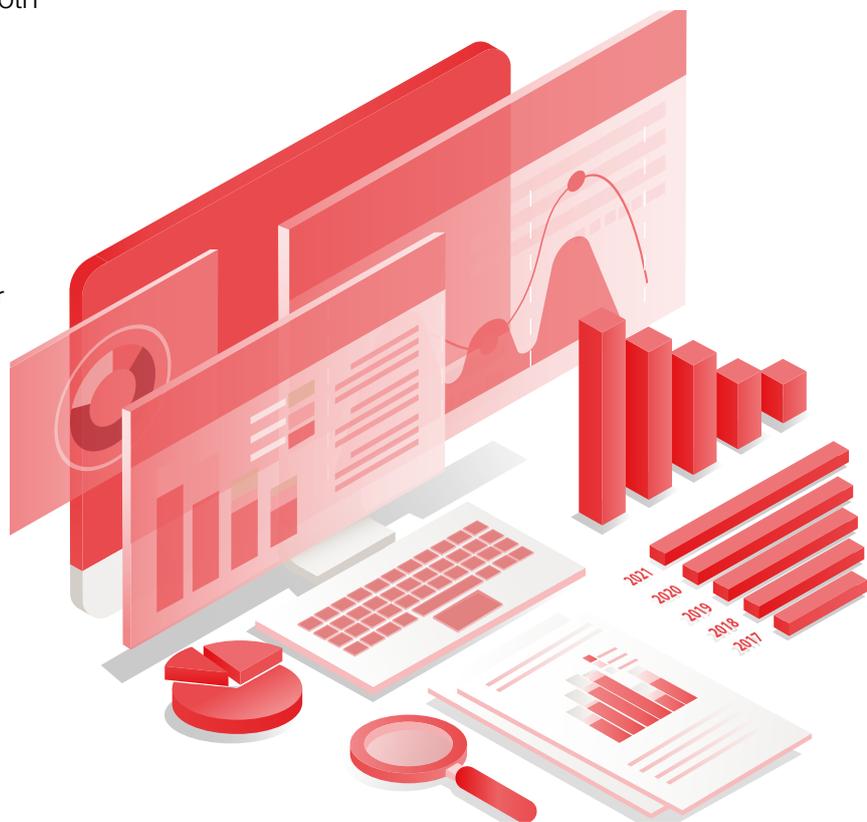
With more than 600 customers worldwide, Hansen is helping utilities and energy service providers meet the challenges of the energy transition right now. The approach and philosophy at play differ from region to region and company to company but time and again it proves to be the case that innovation in the introduction of new processes and enabling agility are critical for success in the face of changing conditions.

CUSTOMER CASE 1: MORE DYNAMISM FOR BILLING AND CUSTOMER CARE

In this, the third part of our report on the Energy Transition, we've been focusing on Priorities for Change and Hansen Solutions. Of the list of imperatives we've been examining, this company neatly illustrates both dynamism for billing and reconciliation and help from experienced players.

The customer in question, a vertically integrated Finnish energy company, decided that, with over 200,000 energy customers and multiple distribution networks, finding a long-term partner on the vendor-side was its highest priority. Rather than going for the 'pick-n-mix' approach, looking for system solutions from multiple vendors, it decided the new situation would be best served by establishing a close relationship with a single, specialised systems vendor. The complexity of the challenges ahead mandated limiting the number of contact points, thus ensuring an overall coherence for the delivery process, implementation projects and operational support.

The company was also looking to enhance its billing and reconciliation routines to become dynamic and efficient across the organisation. It's particularly timely, given the successful introduction of the Finnish datahub, Finhub [REF4](#), which went live in February 2022, making great strides towards creating a faster-moving, more flexible and even more open energy market.



The new centralized information exchange system for the retail electricity market can help provide a foundation for innovation and new services ranging from smart grids and EV-charging to demand side management. The hub is set to improve the operations of consumers, suppliers, and transmission parties, since all data and transactions associated with electricity consumption are now located in a single system, up-to-date and equally available for all.

As we have addressed over this series of reports, the influence of the end-consumer will continue to increase, and as will their expectations of the products and service levels offered – now heightened by concerns around sustainability and energy costs.

Today, the company uses the full Hansen solutions portfolio for Energy and Utilities – to streamline its operations. In close collaboration, we've enabled it to deliver on its promise “More than energy”, offering customers the full engagement experience. By utilising the full potential derived from combining Hansen MDM, Hansen Insight, Hansen CIS and Hansen Trade, the business is able to reap the rewards of cost-efficiency and improved customer focus.

New cloud-native Meter Data Management solution

Hansen's preparation with customers for the Finhub [REF4](#) go-live date culminated in the launch of the first SaaS Meter Data Management solution, Meter & Energy.

Leading Finnish operator Elenia went live with the next-generation system in December 2021. It has implemented production use of Hansen MDM to unlock the value within the great volumes of data, in order to simplify management and optimise processes. The solution brings benefits to the entire utility value chain – from smart device roll-out management to energy logistics, energy business, billing and value-added customer related services.

Hansen MDM is the first cloud-based MDM solution in production use in the Nordic markets. While this customer case, like the main story, celebrates advances in the Nordic region, the same challenges are arising globally. It demonstrates how Hansen is providing next-generation solutions around the world for the transitioning energy network in response to infrastructure and market updates, modernisation and harmonization to deal with the explosion of data from more and more metering points.



CUSTOMER CASE 2: SCALING COMMUNITY RENEWABLE PROJECTS

As we saw in Part 1 of this report, Democratization – one of the 5Ds – is about putting the power in the people's hands, making the clean energy transition more equitable. It embraces cooperative renewable projects such as community solar, biomass, and wind projects.

Some of the most fertile and fruitful developments in community solar projects are to be found in the US, for example Hansen's partnership with Hampshire Power, which illustrates particularly well why these projects are a critical path to net zero and embracing decentralised DER is how we democratise access to clean electric power.

Hampshire Power is a Massachusetts-based company whose mission is to help people, property owners, and organizations maximize and monetize renewable energy systems. In order for Hampshire to operationalize their community solar installations, they need a foundation of systems, people and processes to ensure the business maintains control of data, the customer experience and the brand.

This is where Hansen comes in. Hansen for Community Solar is a software platform and service that takes away the operational worry and equips Hampshire to handle the solar farm customer acquisition and management.

One key challenge is building a system to scale. The scalability is critical, Hampshire Power's Director of Community Energy explains. You can't manage tens of thousands, hundreds of thousands, and ultimately millions of customers with a cobbled-together platform that's managed through spreadsheets and not connected to the utility. These systems need to be operating cohesively together.

Also, of the utmost importance these days is system security. So, another risk that comes from not having a cohesive platform is security. If your data isn't sitting in the right place, with the right security protocols, that can be awfully problematic for businesses.

Expanding Community Solar Footprint

Community Solar presents the prospect of significant benefits for consumers and developers, making it a hotspot for investment and activity, and enabling a wide range of customers to access the economic and environmental benefits of solar energy generation.

Nautilus Solar Energy, a leading owner-operator of distributed generation solar projects in the US, selected Hansen as a software and operational solution partner, as it rapidly expands its community solar footprint. Initially covering operations in Maine and New York, it can grow to cover other markets which will drive further economies of scale and revenue expansion.

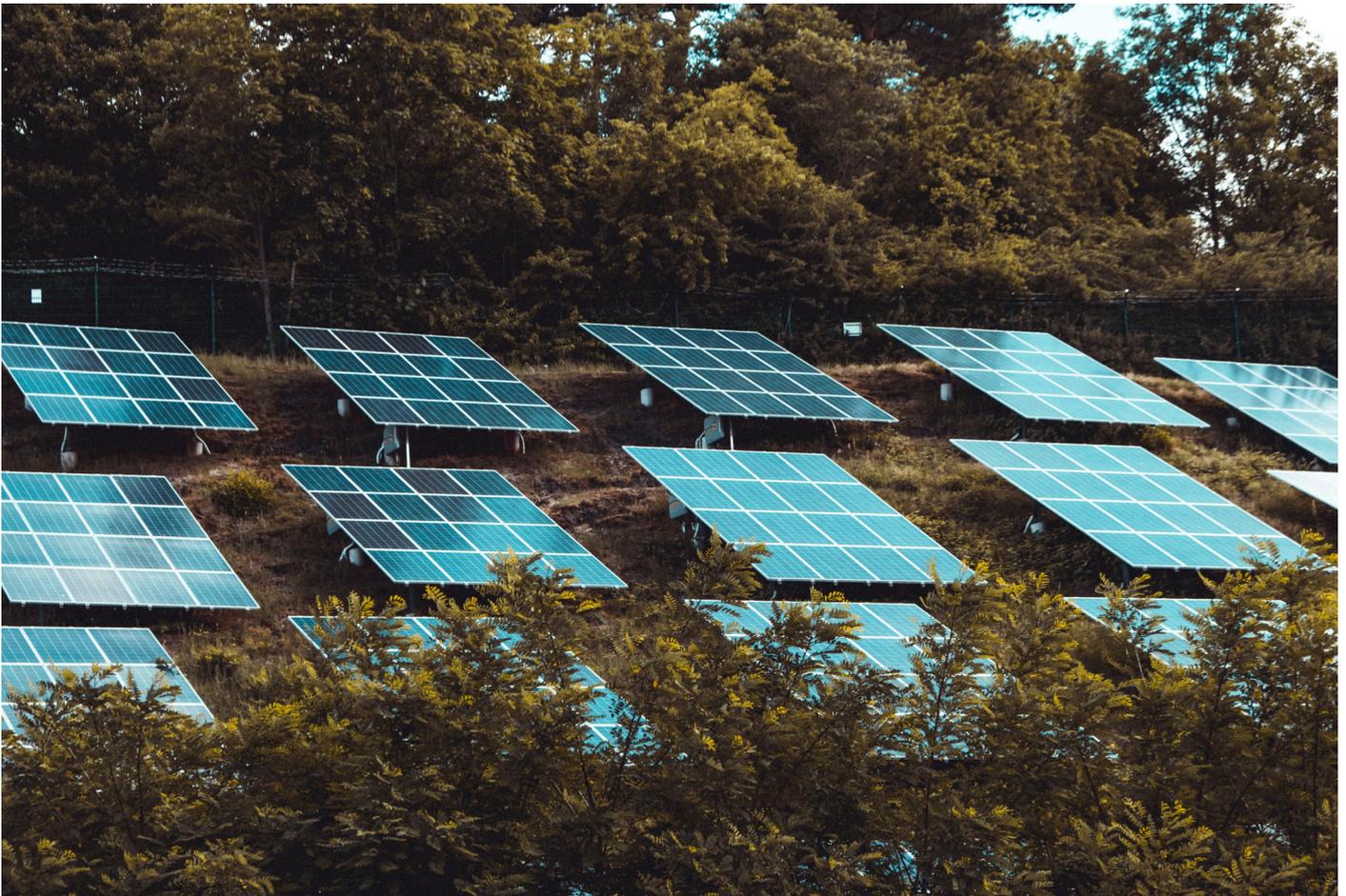
Business process outsourcing, including back-office operations and customer care, enables Nautilus to ramp up its activities quickly. In addition to core customer acquisition and customer experience capabilities, Hansen delivered several other features critical to success such as enrolment, order capture, and customer eligibility check tasks. Solar project management capabilities are also provided to assign customers to the relevant solar farms and manage allocations and waitlists.

These are particularly significant as such projects are managed on an individual basis, with their own financing and operational requirements, and provide the performance visibility needed for both operational and commercial purposes.

In Hampshire Power's experience, businesses often ask them how many transactions they can handle over a week or month because they want to see how quickly they can grow – the answer with Hansen is it can be hundreds of thousands of transactions. And they also make that transaction experience very simple for the customer.

As we've been discovering throughout this report, we're clearly at a pivotal point now in the shift towards renewable energy: some of the biggest clean energy investment deals in history are being made now, the costs of building and operating renewable energy assets are decreasing, and social and political pressure has never been higher. And these areas of renewable and democratic energy projects are really set to soar.

But as Hampshire Power's demonstrates, growth requires scale – and scalability is critical, as is developing a flexible and secure platform, as well as being able to simplify the experience for customers.



CUSTOMER CASE 3: ACCELERATING GROWTH IN AUTOMATED TRADING

The Nordic region has long been prominent both in the move away from fossil fuel reliance to renewables and in its uptake of automated trading. And Hansen has been proud to be a valued partner for automated energy trading for Nordic energy leaders.

Automated trading on European power markets is booming, driven in part by a surge in liquidity. And a market with a large number of trades – a liquid market – could have a considerable advantage using automation and algorithms by making trading processes more quickly, consistently and reliably. (See panel.)

Hansen has seen a wave of new business and upgrades among companies in Finland and Sweden. In the period spanning October to December 2021 alone, Hansen signed new agreements with Fortum, Power-Deriva, Tampereen Sähkölaitos, Kemijoki Oy, Jämskrafkraft and Vantaa Energy, leveraging various modules within Hansen Trade. These will variously enhance the ability of these companies' efforts in mFRR, aFRR, day-ahead and intraday trading operations.

These build on agreements throughout 2021 for the deployment of several new modules within Hansen Trade, with Gasum, EPV Energia Oy, Malarenergi and Power-Deriva – underscoring the value of the solution in the modern energy transition, across marketplaces, and at a time when energy and utilities companies are reassessing their long-term digital transformation goals.

Run as a modular, cloud-based SaaS solution and optimised for real-time calculation, Hansen Trade fully meets the flexibility and scalability demands of the evolving energy trading market. It enables energy companies to optimise the usage of their flexible production assets, minimise their balance error and reduce the costs of running a 24/7 trading desk.

The markets Hansen serves are constantly subject to a great degree of change and what our customers need is the automation of critical business operations,

with a modern and robust trading solution. This solution allows organisations to free up valuable resources to focus on more impactful tasks – positioning them to navigate the complexity of an industry in flux.

The trend for auto-trading

The trend for automation seems unstoppable. One prerequisite is liquidity. Algorithms that drive auto-trading are redundant for single trades, there isn't much gain, and a single trade can have a large impact on prices. But the liberalisation of power markets has created a sufficient volume of trades/liquidity for automated trade products to come to the fore.

As lead times for real-time/ intraday trading get shorter and shorter, as generation location gets closer to consumption of power [DER] the four Vs of data – velocity, veracity, volume and variety – need digitalization of processes to react and manage the volume of physical power being traded.

In the intraday markets where contracts are continuously traded in the period between clearance in the day-ahead market and close to the time of operation, production planning, asset optimisation, and trades must occur increasingly quickly.

Transitioning to ever shorter and faster intervals in the balancing period is another step in delivering more dynamic market mechanisms to maximise profits, while simultaneously, there are massive changes taking place in terms of power production.

Power producers are increasing power production to meet the demands for electricity; with the increased volumes coming into the market of more Distributed Energy Resources (DER) to satisfy renewable energy targets and net zero ambitions trading solutions need to meet these increasingly complex developments with speed and accuracy.

The increasing amount of intermittent energy, from renewable energy sources such as solar and wind, makes auto-trading so important as an enabler of the Energy Transition.

CUSTOMER CASE 4: ACHIEVING A NEW LEVEL OF SERVICE ADAPTABILITY

As we explored in the Trends section of the first part of this report, advances in electric vehicles (EVs) and charging solutions raise exciting prospects for integrating charging infrastructure to enable smart charging and possible vehicle-to-grid (V2G) applications.

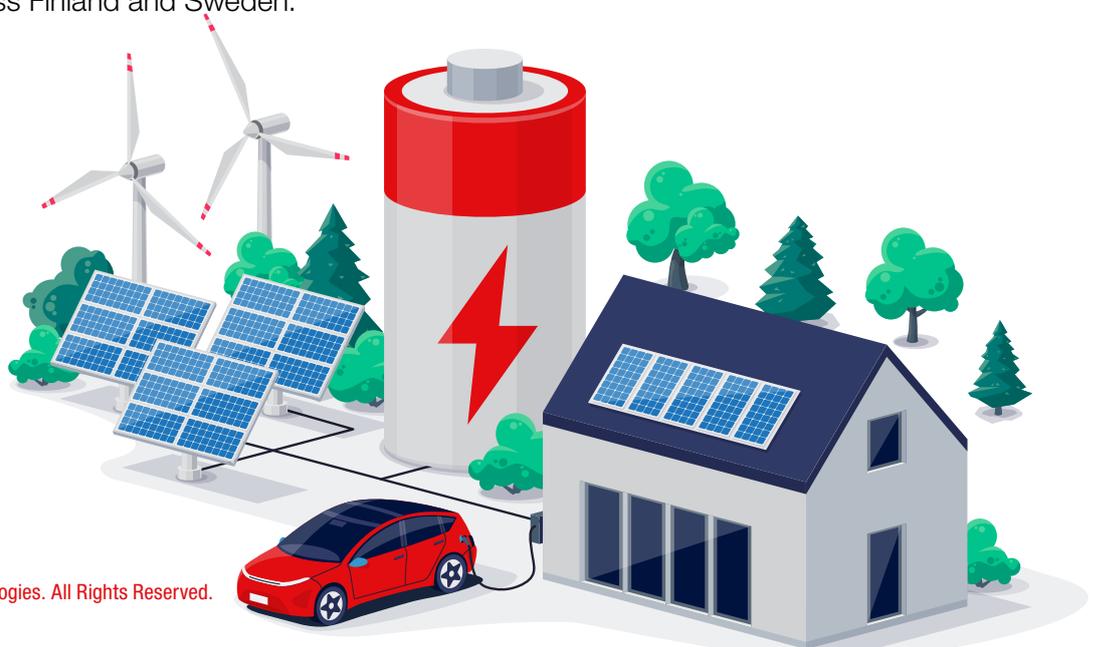
These are potentially a key driver for infrastructure evolution and the progression of interconnectivity to smart grids, development of smart cities and towns around the world, and the smart electrification of our everyday connected lives. Indeed, they are a leading use case in modernising power systems as two-way networks and forerunner for hosting more distributed energy resources (DER).

Wanting to get ahead of the game by moving early on services for the EV market was a key initiative for one of the largest Nordic retailers. The company was eager to streamline business processes to increase operational efficiencies, accelerate the digital transformation process and reduce time-to-market for new products and services. The overarching aim was to engage both customers and society to join the change for a cleaner world. Hansen was consulted to provide expanded coverage on this particular front. In close collaboration, we started by putting in place a CIS system for the Norwegian market before gradually expanding the partnership to encompass Finland and Sweden.

The customer then set up a dedicated program for easy-access electric-vehicle charging, using Hansen CIS and MDM solutions as the backbone for its operation. With one standard CIS and billing system in the engine room, this innovative initiative had the foundation needed to grow and establish itself as an enticing offering in a rapidly evolving market.

Clearly, this can only represent a selection of the companies and sectors that Hansen has been engaged with – but these case studies do touch on many of the key trends, issues and imperatives that make up this series of reports. And it helps demonstrate how Hansen has partnered with its customers to enable the transformation to increasingly digitally-enabled experience companies.

Companies which are working worldwide to accelerate digital transformation – from Australia to Jamaica, the United States to the Nordics. That are focused on how they can better serve their customers and the environment. From production asset optimisation to complex billing and customer care; managing regulations; supporting digitalisation to lower costs and increase operational efficiencies; and delivering a great experience to energy consumers.



DRIVING CHANGES IN OPERATIONS

The energy transition is accelerating for energy and utility companies. The elements of decarbonisation, decentralization, democratization of Energy resources, and DER are driven forward by advances in digitalization – **together creating momentum that offers tremendous opportunities.**

Energy markets are changing from a system characterised by large, centralised resources to an advanced infrastructure with distributed and decarbonised resources. Turning personalised energy experience into new business opportunities is imperative for next-generation energy and utility providers.

The Hansen Suite for Energy and Utilities is **designed to deliver the next experience** while enabling energy and utilities to grow from new business models. In order to truly “Power the Next”, Hansen’s combined offering amounts to more than the sum of its parts.

Today’s energy companies now need to **act quickly to stay competitive** and claim an advantage in a rapidly evolving DER market landscape.

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	HansenCIS™	Commercial off the shelf customer care and billing lifecycle management
	HansenTrade™	Automated trading analytics and risk management
	HansenCatalog™	Commercial product and technical service catalog and lifecycle management
	HansenInsight™	Business and operational data analytics and decisioning
	HansenMDM™	Metered AMI, calculations and disseminating event management
	HansenMarket-Message™	Market messaging and EDI capabilities to manage transactional data communications
	HansenCPQ™	Cross-market omni-channel quote and order capture

ABOUT HANSEN

Hansen Technologies (ASX: HSN) is a leading global provider of software and services to the energy, water and communications industries. With its award-winning software portfolio, Hansen helps over 620 clients from over 30 offices worldwide to create, deliver and engage with their customers, to manage and analyze customer data, and control critical revenue management and customer support processes.

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