

People & POWER

ROLF BARMEN, FJORDKRAFT
**Tougher on
climate demands**

STUDENT MODEL ADOPTED
More precise forecasts



Statkraft

NO. 2 2017

| PROVIDING PURE ENERGY

FEATURE
CUSTOMER
POWER

Collaborative
solutions
for the future

Here comes the sun

Rundedal solar energy park will help the Netherlands meet its climate targets. Bart Robrechts and Andrea Boccabella kept the construction process on track.



300

Airvolution Clean Energy (ACE) is Statkraft's new partner for building land-based wind power in Scotland. The ambition is to realise project opportunities totalling 300 MW. Earlier this year Statkraft opened Andershaw wind farm; and more will soon be under way.



GROWTH. Renewable energy production is growing rapidly. Electricity capacity from renewable sources will increase by over 920 GW, or 43 per cent, towards 2022 according to the Renewables 2017 report published by the International Energy Agency in October.

SWAPPING INTERESTS

STATKRAFT AND NORFUND have reached an asset swap agreement for their ownership interests in international hydropower. As a result, SN Power and Statkraft are ending their cooperation while Statkraft strengthens its position in South America and South Asia. "Statkraft's strategy is to build stronger positions in fewer markets," says CEO Christian Rynning-Tønnesen. "At the same time, we will expand the portfolio to include wind and solar power."



New hydropower in Norway

EARLIER IN THE AUTUMN three new hydropower plants were commissioned: Ringedalen power plant, Offervann power plant, and Lille Måsevann pumping station. These will increase Statkraft's Norwegian hydropower portfolio by 74 GWh annually.

"Better utilisation of existing facilities is good asset management and makes good economic sense, and it always generates positive local spillover effects," says CEO Christian Rynning-Tønnesen, who was present during the opening of Ringedalen power plant.

The power plant in Odda Municipality in Hordaland County is the 86th power plant that Statkraft operates in Norway. With an installed capacity of 23 MW, the plant will produce around 60 GWh annually. The power plant uses a height of fall of over 500 metres. From the intake located almost 1 000 metres above sea level, the water falls in a tunnel into the brand-new power station inside the mountain. Here the energy is captured by two identical 11.5 MW Pelton turbines before the water flows into Lake Ringedalsvatnet.

The mayor of Lebesby Municipality in Finnmark County, Stine Akselsen, led the official opening of Offervann, Statkraft's northernmost power plant. "I'm pleased that Statkraft is developing new renewable energy in Lebesby," she said, "and I hope Statkraft will look for new investments in our municipality."

Offervann power plant uses a height of fall of 10 metres between the reservoirs Lake Offervann and Lake Store Måsevann within the current regulation capacity of Adamselv power plant. Average annual production is estimated at 7 GWh.

At Lille Måsevann pumping station in Lebesby, the ceremonial ribbon was cut by Raymond Robertsen, chairman of the Finnmark Estate Agency. "This is what feeds the Teslas, iPhones and our entire society," he said.

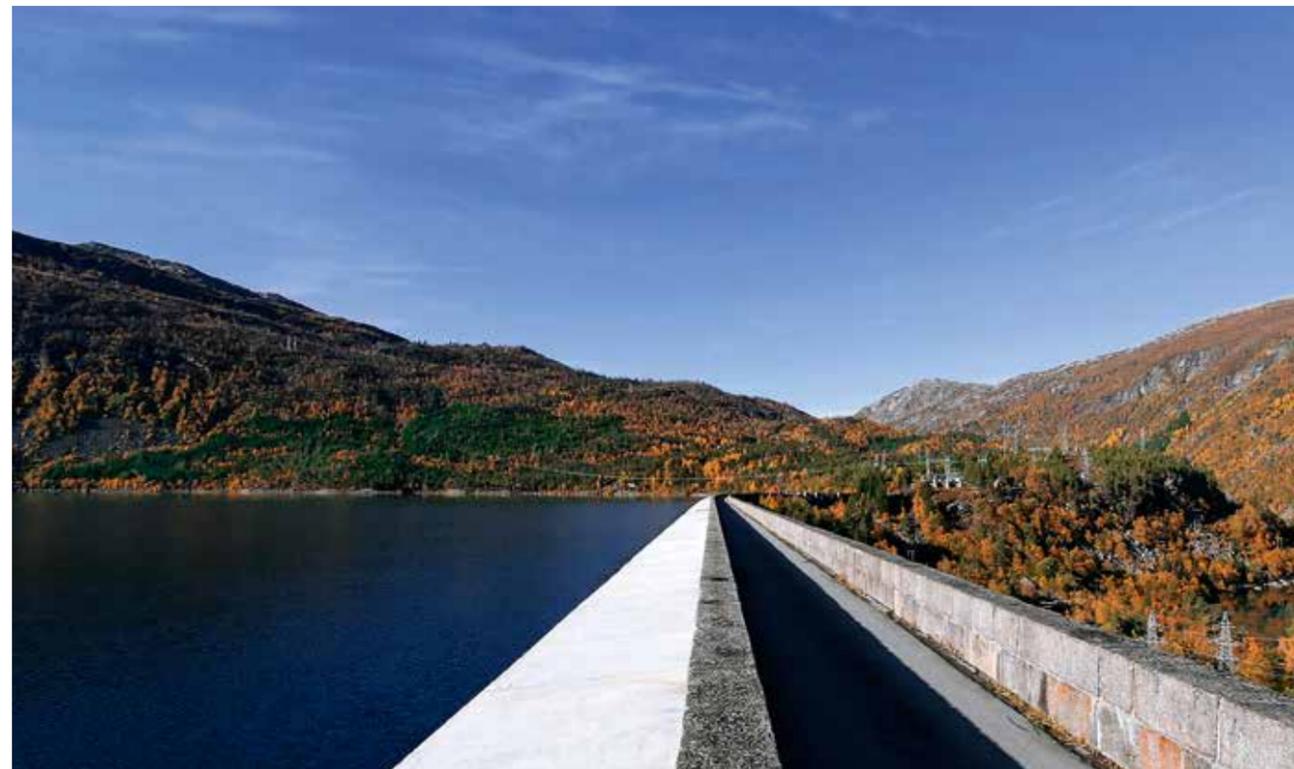
Lille Måsevann pumping station transports water from Lake Lille Måsevann to the intake reservoir for Adamselv power plant, Lake Store Måsevann, and it increases net annual production by 7 GWh.

Both Offervann and Lille Måsevann are examples of further utilisation of watercourses that are already regulated. ●



Better utilisation of existing facilities is good asset management and makes good economic sense, and it always generates positive local spillover effects.

CEO CHRISTIAN RYNNING-TØNNESEN



Celebration. The opening of Ringedalen power plant (above) was officiated by CEO Christian Rynning-Tønnesen, shown here in the new power station inside the mountain (left). Offervann (centre) is Statkraft's northernmost power station and was opened by Mayor Stine Akselsen earlier this fall. The opening of Lille Måsevann pumping station also marked the end of a research project (see New Knowledge to the right). Student Stian Løbø Aaker (from left), Professor Leif Lia, student Nina Johnsen, Construction Manager Øyvind Pedersen, and the Norwegian Water Resources and Energy Directorate's (NVE) Terje Grindhaug, showed that polyurethane foam works well as backfill around penstocks.

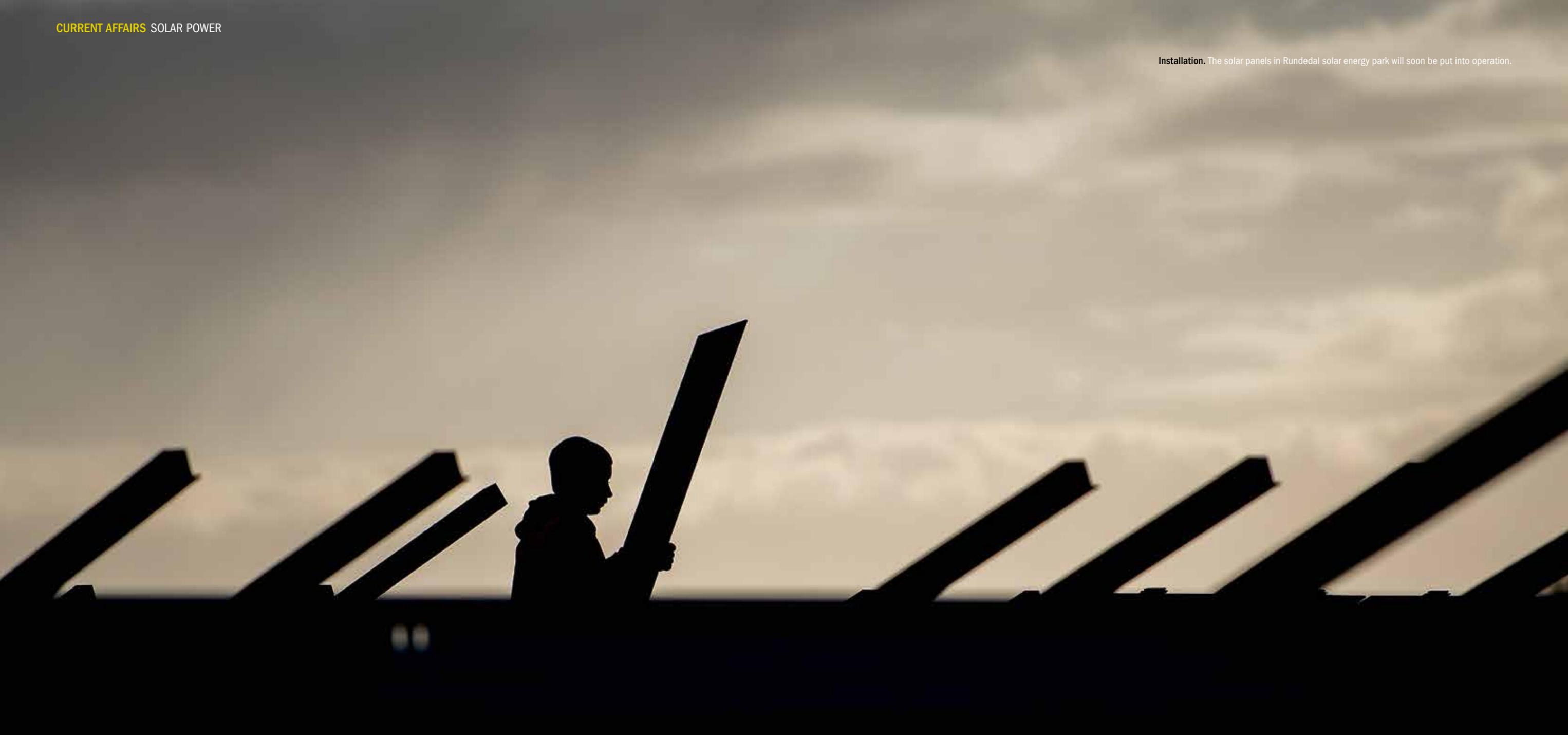


NEW KNOWLEDGE

Reduces impact on nature

USING POLYURETHANE (PU) FOAM as backfill around buried penstocks for hydropower and pumping stations increases profitability and reduces alterations to the natural environment. This is the conclusion of a study completed by two master's students at the Norwegian University of Science and Technology (NTNU) during the construction of Lille Måsevann pumping station in Finnmark. "When foam replaces concrete and crushed stone when laying pipes and anchoring bends, the impact on nature is reduced due to significantly reduced volume of material transported to the building site," says Tor Oxhøvd Svalesen, Statkraft's project manager for Lille Måsevann.

NTNU professor Leif Lia was responsible for the academic follow-up of the research project, which was supported by the public energy conservation agency Enova. "This was the first time PU foam was used for anchoring and backfilling penstocks in full scale," he says. "The project provided many answers for further development of the method and confirmed that anchoring of pipes with PU foam is possible."



The sun always shines on PV

In the darkest month of the year Rundedal, Statkraft's new solar energy park in the Netherlands, goes into operation. Advanced thin-film technology will ensure that the solar panels maintain efficiency all year round, even in cloudy weather.

On a piece of agricultural land measuring 188 000 square metres in Emmen in the Netherlands, Rundedal solar energy park is nearing completion, just half a year after construction began. For the next 30 years, this energy park will help the Netherlands reach its climate targets.

"We'd been searching for the right market for a while when we realised that what we were looking for was right on our doorstep," says Niels van der Linden, who heads Statkraft's solar installation and sales activities. Van der Linden and his team are based at Statkraft's office in Amsterdam.

SOLAR ENERGY BOOM The Netherlands is one of the countries producing the least renewable energy in Europe. In 2015, only six per cent of the country's energy production came from renewable sources. The country has no access to hydropower resources, and development of wind power has been slow, despite ambitious intentions. In recent years, however, the number of wind turbines being installed is picking up, and application of solar power is also growing.

"The Netherlands is lagging behind in its efforts to reach the EU's 14 per cent renewable energy target by 2020," says van der Linden.

"This gap has led to more subsidies being available for solar power, at the same time

as the technology has become far more affordable over the past few years. That's why we're experiencing a boom in solar energy in the Netherlands right now. We were still in time to be part of this boom."

NEW COMMITMENT Statkraft cancelled its first foray into solar energy in 2010, but since then both the technology and the market have matured. In 2013, van der Linden and his colleagues at the office in Amsterdam took the initiative to test out solar business models on a small scale.

"We gained a lot of knowledge from the test projects about business models for producing and selling solar energy," says van der Linden. "In 2015, we presented our business plan to Statkraft's management and board, and were granted an investment framework that has made it possible for us to continue our work on a far larger scale."

Two business models form the basis of the investment programme. One is a leasing system whereby companies lease out rooftops or unused areas to Statkraft. Statkraft installs the solar systems, and the rooftop owner has the option to consume the generated power for a fee. Further work on this and similar models is under way in Germany and India. The other model is based on Statkraft building its own solar parks at ground level and selling solar power directly into the grid, like the



Rundedal

- > Solar energy park in Emmen in the Netherlands
- > Covers an area measuring 188 000 square metres
- > Statkraft took over the rights to build the park in 2016
- > Due for completion by the end of 2017 and for commissioning in Q1 of 2018
- > Has 118 200 First Solar series 4 panels, each with a capacity of 120 watts
- > Installed capacity: approximately 14 MWp
- > Annual production: 14 GWh



Golden era. Utilisation of solar energy will increase sharply over the next five years, according to the International Energy Agency. Rundedal in Emmen will be Statkraft's largest solar energy park to date.

Autumn sun. HSE manager Andrea Boccabella is at Emmen several days a week to ensure that work is completed properly.



For the next 30 years, this solar park will help the Netherlands reach its climate targets.

Amsterdam office is doing now. "Before we found the project here in Emmen, we considered options in the UK and Turkey, but market conditions changed and made it less lucrative to pursue them," says van der Linden. "More projects are likely to come in the Netherlands, and we're also exploring other markets next year."

A NEW WORKING DAY The construction of Rundedal solar energy park has changed the working day for the Amsterdam team. "We come from energy and certificate trading, and are used to dealing with non-physical products and services," says van

der Linden. "It's a big transition for us to work on a physical installation and all that entails of tender rounds, preparing contracts with business partners and subcontractors and – not least – health, safety and environment."

"We've hired a project manager with experience in solar energy projects to strengthen our team, which currently has five members, and we will be growing," he says. "With good support from experts in Statkraft, we have the expertise we need to realise our own solar energy parks; of course, project development is in our company's DNA."



Niels van der Linden is responsible for Statkraft's solar installations and sales.



This is, and will remain agricultural land, primarily grazing pasture for sheep. The space between the rows of panels ensures good growing conditions for grass.

BART ROBRECHTS, PROJECT MANAGER FOR RUNDEDAL

> Statkraft's project management office (PMO) has assisted in developing procedures tailored to solar activities. "It's been a comprehensive and instructive process for us in the team," says van der Linden.

SUN CATCHERS Things have happened quickly in Emmen since the first turn of the shovel in July 2017. The construction phase for solar energy parks is short compared to hydropower and wind power projects.

"It's fascinating to see how the park is taking shape from one day to the next," says Bart Robrechts, project manager for Rundedal. Together with HSE manager Andrea Boccabella, he is in Emmen several days a week to follow up contractors and subcontractors. Up to 60 construction workers have been in full swing drilling, cabling, laying foundations, erecting structures and installing solar panels.

"We make use of thin-film technology and solar cells made from cadmium telluride (CdTe)," Robrechts explains. "The panels from First Solar are sensitive, and absorb sunlight we can't see. They are highly efficient, even without much sunshine."

CHALLENGES Installing the panels is more challenging than installing conventional

crystalline panels. They are as thin as glass plates and have to be held in place using special clamps. "The panels have a voltage of 1 500 volts before the energy is converted," says Robrechts. "That makes them efficient, but also challenging. Our turnkey contractor Belectric, makes sure that the components we use can tolerate the voltage." Another challenge has been the ground conditions in Emmen. The area is one of the highest elevation points in the Netherlands, yet lies only 20 metres above sea level.

"The groundwater lies only 70 centimetres below ground level, which creates a need for sound drainage systems and presents challenges for pouring the foundations for the framework that holds the solar panels in place," says the project manager.

PASTURE Once the solar park is completed, sheep from local farms will be brought in.

"This is and will remain agricultural land, primarily grazing pasture for sheep," says Robrechts. "The space between the rows of panels ensures good growing conditions for grass, and the cables are specially protected to shield them from being chewed by the animals."

The local environment will also be taken care of in the construction process. Some

neighbours have had concerns about the noise level generated by the central transformers.

An independent survey shows that the noise level will not pose any problems.

"A large storage container is visible from the cycle path that runs through the site, and it's not exactly a pretty sight," says Robrechts. "A local artist held a drawing workshop at the neighbourhood school, and the drawings have formed the basis for a colourful decoration on the container."

"Good communication with the local community makes the job easier, in this project and in potential projects in the future," he says. "We don't rule out the possibility of developing another park in the same area."

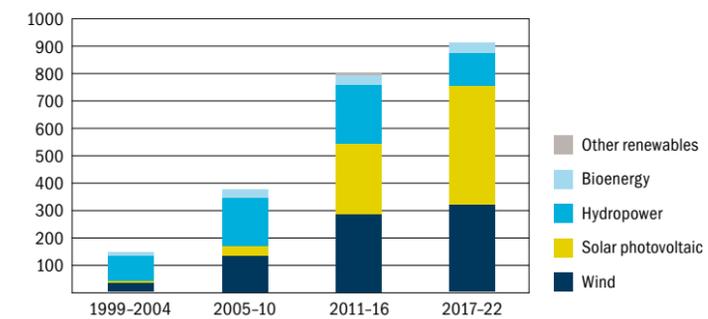
THE STATKRAFT WAY Robrechts, van der Linden and the rest of the solar team have learned a lot of useful lessons in the course of realising Rundedal solar park.

"We've endeavoured to carry out the project 'The Statkraft Way', but because we've never built a solar energy park on this scale before, we have no precedent to go by," says Robrechts, who is clear about the high value of the expertise that has been accumulated during the project period.

"Next time it will be easier!" ●

1 | Sensitive. The panels from First Solar are sensitive, and absorb sunlight we can't see.
2 | Fascinating. Building a solar energy park takes only a few months. Project manager Bart Robrechts has followed the development all the way.
3 | Pasture. Once the solar energy park is completed, sheep from local farms will be brought in.

GLOBAL NET RENEWABLE CAPACITY GROWTH, HISTORICAL AND FORECAST



SOURCE: IEA, RENEWABLES INFORMATION 2017

NEW ERA FOR SOLAR ENERGY

Falling prices and strong investment in large markets like China are ushering solar energy into a new era, according to the International Energy Agency (IEA). 2016 was a record year for utilisation of solar energy, and in total, more solar energy was installed than coal and gas combined. And for the next five years, the IEA estimates that solar power will increase by 438 GW, the most of all energy types, thanks to cost reductions and policy incentives.

Digital infusion



To be continued.
This year's summer project was about digitalisation in energy markets and was completed by students Oskar Kugelberg, Ørjan Frantzen, Ada Elisabet Strand, Herman Myrbråten Karlsen, Matthieu Wittig and Andrea Gasparella. The results are now being further developed.

A new forecasting model for Statkraft was not the only result from this year's summer project. The students' way of working has also inspired to more innovation.

In June, six students from four countries moved into the offices of Market Operations in Oslo. Their assignment was to work as a startup business and develop a model that could automate power consumption forecasts for the customer, Fjordkraft. Eight weeks later, the students presented their work to group management and the model is now being tested for further rollout in the organisation.

FUTURE-ORIENTED Arne Jørund Haugland, head of Physical, Fuels & Development in Market operations and IT, reports significant time savings from using the new model, as well as more accurate forecasts.

"Through machine learning and artificial intelligence, the students have developed a model that learns along the way and forecasts consumption in an increasingly accurate way," he explains. "In addition, it automates work that was previously done manually. What our traders spent one to two hours on each day can now be done with two clicks. This leaves our analysts more time to use their expertise. More accurate forecasts from us mean lower imbalance costs for the customer."

Near the end of the year the model will be tested and further developed. One of the students, Herman Myrbråten Karlsen, is employed part-time to assist in



Led the project. Arne Jørund Haugland (top), head of Physical, Fuels & Development, and Laxman Pararasasingam, who works on quantitative analyses in Market Operations and IT.

the work. The plan is to abandon the old approach from the beginning of 2018. "Once we're sure that everything works 100 per cent, we'll be ready to implement the model in several parts of the organisation," says Haugland. "The tool is scalable and it's easy to add more countries and new customers."

EYE OPENER Haugland is very pleased with the implementation of the project, also because it has been an eye opener in Statkraft.

"Three of our youngest employees followed the students, and we managed to integrate them into the unit," says Haugland. "Their performance has received a lot of attention and inspired others. In short, it's made it easier for others who want to test ideas and new ways to work, and has widened the scope of opportunity to do so."

CEO Christian Rynning-Tønnesen was also impressed during the students' presentation in August.

"It's amazing what these six have achieved in eight weeks," he says. "There are many tasks in Statkraft which can be automated, in areas where we can benefit from new technology and advanced models that can make us more efficient, productive and simply more profitable." ●

200

THIS FALL STATKRAFT ORGANISED CUSTOMER DAYS IN SEVERAL COUNTRIES. IN RIO DE JANEIRO IN BRASIL, 200 REPRESENTATIVES FROM CUSTOMER AND PARTNER ORGANISATIONS MET.



FEATURE
POWERING CUSTOMERS



From few and large customers to many and diverse. How does cooperation with customers improve Statkraft?



The era of the customer

Significant changes are under way in the power industry. The customer is now in the driver's seat and closer cooperation is crucial to success in the market of the future.

Sissel Fantoft  *Shutterstock, Hans Fredrik Asbjørnsen*

New technology, digitalisation and new business models are making major changes in the power industry. The rate of change varies from market to market, but there is no doubt that changes are happening says Steinar Bysveen, Executive Vice President of Wind Power, District Heating and Projects.

"Some trends are global, others are local for the time being. We don't yet see many signs of all the changes in Norway, but that doesn't mean they aren't happening or that they aren't big," he says.

There are several factors driving these changes. "Technology, like solar energy and batteries, enables customers to create their own energy solutions," says Bysveen. "The power to determine what these solutions will look like lies with the customers, and these local solutions will have an impact on the overall integrated system."

Digitalisation makes it easier for customers to make choices. "Examples include common measurement databases that

anyone can access, and simpler routines for choosing a new supplier," he points out.

THINKING IN NEW WAYS New business models will arise from customer demands.

"The move towards more local solutions will lead to customers needing other types of services and products," says Bysveen. "Those intending to serve this market must think in new ways. This includes equipment, but also energy management and advisory services," says Bysveen. With more wind and solar power in the system, there will be a need for, for example, backup capacity when there is little wind and sun, though in such a way as to avoid overinvesting in the grid. "Consumption and production must work together to exploit the flexibility that lies in the overall integrated system," says Bysveen.

NEW OPPORTUNITIES In Norway, the investment in the power system is equal to the investment in all other land-based industries. The efficiency of the energy sys-

tem plays an important role. "The changes impact us in several ways. One of the things we are working on is how to combine solar systems with for example green power supply contracts as part of a comprehensive customer solution strategy for commercial customers. New technology also provides new opportunities for power trading, and it's necessary to have a debate on whether the design of today's power market is appropriate to meet the needs of the future," says Bysveen.

Within the district heating area there will also be increasing demand for new products, such as ones for cooling and managing the customers' heating plants.

"In general, cost efficiency and energy management will be even more important in the coming years," he says.

NEW MARKETS Bjørn Holsen is Director of New Business Development in Norway, a unit that develops new business areas for Statkraft.



New business models will arise from customer demands.

STEINAR BYSVEEN, EXECUTIVE VICE PRESIDENT OF WIND POWER, DISTRICT HEATING AND PROJECTS



Energy revolution. There are major upheavals in the power industry, and consumers are the driving force of good solutions. How does this affect Statkraft's future? We asked Steinar Bysveen, Executive Vice President of Wind Power, District Heating and Projects (left), Bjørn Holsen, Director of New Business Development in Norway (right) and Torsten Amelung, Head of New Markets (next page).

"Most of what we work on is within established partnerships or in collaboration with others," he says. "Already there we have a customer dimension that is very prominent compared to other parts of Statkraft's business," he says.

One example is Silva Green Fuel, which was established in 2015 together with the Swedish forest industry company Södra. "The company was established to produce biofuel from wood, but the technology has the long-term potential to use other renewable products," says Holsen.

Plans are under way to build a demo facility on a significantly large scale. "In this phase we are most concerned about making the technology work," says Holsen. "The goal is to eventually build a plant in full scale. If we get there, the customer dimension will become extremely important because a completely new market will be developed. We are already in discussions with fuel distributors and large logistics companies."

MORE PROACTIVE Along with Agder Energi, Statkraft is also the dominant owner of Grønn Kontakt, the electric vehicle charging station operator.

"Here, too, the customer dimension is very important. The focus is not so much on selling kilowatt-hours, but on delivering a service," says Holsen. "Grønn Kontakt aims to make it easy for customers to drive green, and it is the customers who decide if we succeed."

Another new business area is to develop sites for establishing large data centres.

"In Statkraft, we've have been accustomed to customers contacting us, but now we have to adapt to a new reality and be more proactive," he says. "We have to put ourselves in the customers' shoes to develop products they are really looking for, not what we think they are looking for."

By using partners with specialist expertise, the processes go much faster than if Statkraft had to develop its own expertise in the new business areas.

"We're moving increasingly from selling commodity products to offering more specialised products where customer preferences already exist," says Holsen. "We have to focus on the customer in a completely different way than we have been used to."

CUSTOMER JOURNEY This is exactly what Torsten Amelung has experienced. He leads the unit New Markets in the Market Operations & IT business area, located in Dusseldorf, Germany.

"In 2011, we began to think about how Statkraft could establish itself in a market where more and more small businesses and households produce their own power via rooftop solar cells," he says. "We developed two different models, but the big mistake we made was to assume that it was only the financial factor that played a role for the customers."

After a year and conversations with 70 potential customers, only a couple of them had actually installed solar cells.

Customer insight. Torsten Amelung believes that the customer journey is about identifying what problems Statkraft can solve for its customers and not about presenting ready-made solutions.



> "Then the alarm bells began to ring and we realised that our potential customers wanted something different than us. The customer's decision does not begin with the financial factor, there are many other factors that play a role: sustainability, climate and renewable energy," says Amelung.

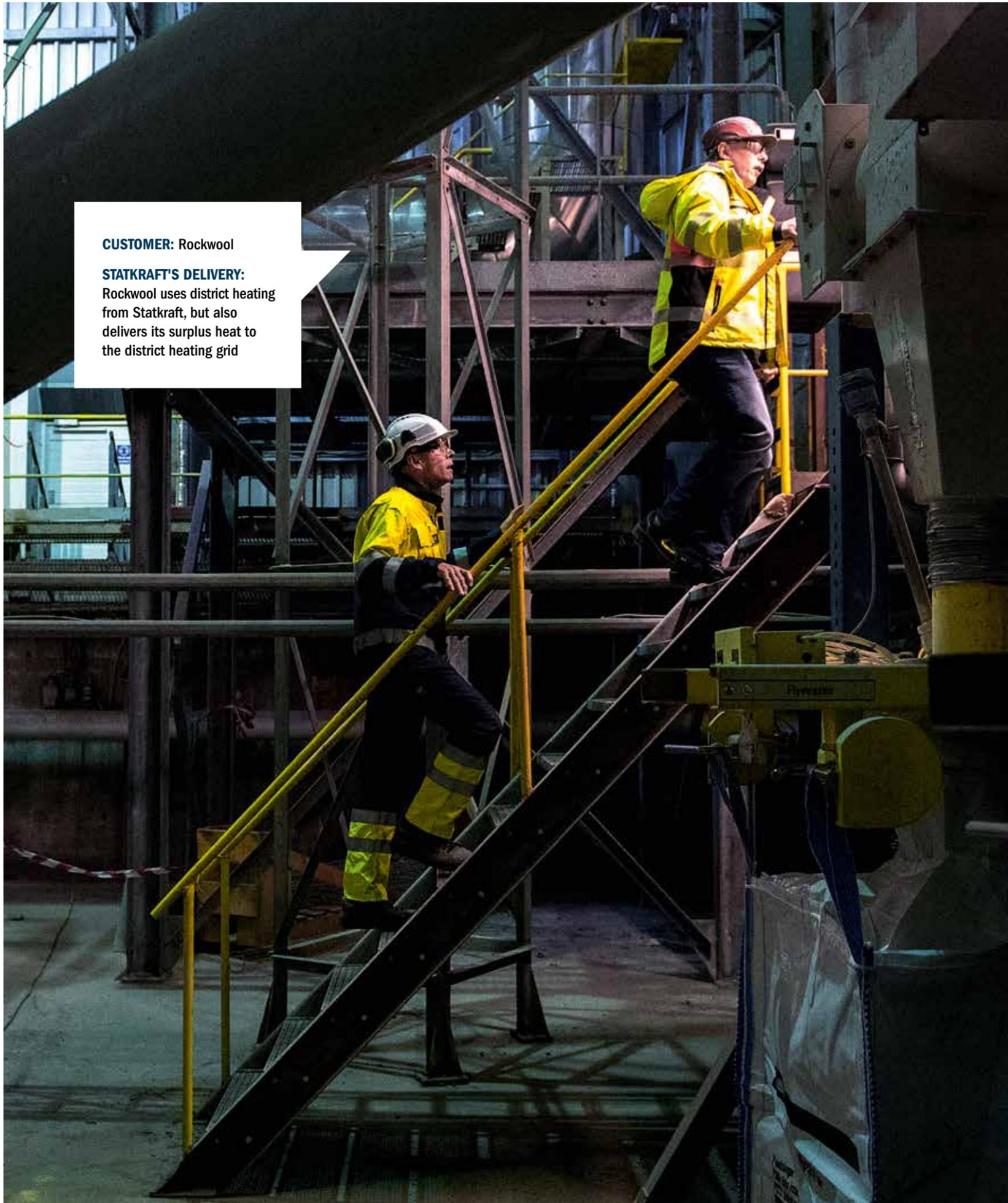
ASSERTIVE CUSTOMERS

An interesting customer group is the RE100, a world-wide initiative uniting more than 100 companies that have committed themselves to 100 per cent renewable electricity by 2025.

"We must understand their strategy and develop solutions that are tailored to them," says Amelung. "They want to buy renewable energy from plants in geographic proximity to their locations. They expect partners to be willing to join them when they establish themselves in new places. They are interested in companies that share their values and that enjoy a high level of market confidence. I think Statkraft can really make a difference in this field."

In the next four months, his team will interview 100 representatives from RE100 companies, those committed to going 100 per cent renewable. "We will find out what problems we can solve for them, instead of presenting ready-made solutions," says Amelung. ●

CUSTOMER: Rockwool
STATKRAFT'S DELIVERY: Rockwool uses district heating from Statkraft, but also delivers its surplus heat to the district heating grid



Helping customers succeed

Initially a heating supplier, Statkraft Varme has now become a full-service supplier of environmentally friendly heating solutions. A new customer focus has generated new services and products, and has opened the door to an exciting partnership with Rockwool.

✍️ Sissel Fantoft 📹 Ole Martin Wold

Smart solutions. Bjørn Hølaas in Statkraft Varme and Frode Humbernes in Rockwool have both benefited from their partnership.

One of Rockwool's two factories in Norway is located in the industrial area of Leangen in Trondheim, where stone wool is made for the world-leading producer of insulation. Previously, surplus heat from the factory went up in smoke, whereas now it is sent directly to Statkraft Varme's grid.

"We're delighted to have achieved this," says factory manager Frode Humbernes. "The fact that surplus heat wasn't previously used for anything has been our Achilles' heel for many years, so this marks a milestone." The factory's annual heat output is estimated at 3.5 GWh. An estimate shows that this is equivalent to the heating energy needs of around 300 houses.

A WIN-WIN SITUATION By connecting to the district heating grid, Rockwool has also become a customer. "As well as selling our surplus heat, we buy heat from Statkraft in periods when we need it," says Humbernes. "Today, we use some oil for heating, and the



As well as selling our surplus heat, we buy heat from Statkraft in periods when we need it.

FRODE HUMBERNES,
FACTORY MANAGER IN ROCKWOOL TRONDHEIM



300

ANNUAL HEAT OUTPUT FROM THE FACTORY IN TRONDHEIM IS ESTIMATED AT 3.5 GWH. AN ESTIMATE SHOWS THAT THIS IS EQUIVALENT TO THE HEATING ENERGY NEEDS OF ABOUT 300 HOUSES.



FEATURE
POWERING
CUSTOMERS

Recycled heat. Rockwool is the world's leading supplier of stone wool products. The Trondheim factory sends its surplus heat to Statkraft's grid, and a similar contract has been signed with Rockwool's factory in Moss.

Sustainable. Plant Manager Frode Humbernes and Head of District Heating in Statkraft Bjørn Hølaas visit the Rockwool plant in Trondheim (below). This partnership creates increased resource utilisation.

> goal is to phase that out. Statkraft's delivery of surplus heat is a better alternative, both financially and environmentally."

The district heating pipes already ran right past the factory site, and Statkraft Varme covered the investment costs of connecting the Rockwool factory to the grid. "That made it much easier for us to get started. Cooperating with Statkraft, a major actor with existing infrastructure, has made it a very positive experience," the factory manager adds. A similar contract has also been signed with Rockwool's factory in Moss.

"Our cooperation with Rockwool on reusing resources which otherwise would have been wasted is a great example of resource efficiency and shows in practice how district heating makes an important contribution to an environmentally friendly energy system," says Bjørn Hølaas, head of district heating in Statkraft.

CUSTOMER FOCUS District heating used to be a matter of standard agreements. The product was hot water, delivered to the end user's home. This has changed in recent years because of the changing demands of end users and the new framework conditions emerging in the industry. Today's customers consist of more than end users who buy environmentally friendly heating; Statkraft Varme's customers now also include developers and building contractors who are deciding which energy solutions to use for new builds, and companies who need assistance in operating their own buildings.

"Our goal is to make district heating the customer's preferred energy solution, so

it's important for us to enter the construction process at an early stage and establish a good dialogue on the choice of energy solutions," says Hølaas.

Statkraft Varme has conducted several customer surveys and held meetings with customers to find out more about their needs. "This customer dialogue has provided us with valuable information for

developing new concepts and knowledge about what our customers expect of us as an energy supplier in the future," says Hølaas.

GOOD NEWS Several new products and services have been introduced in a short space of time, and they have been well received in the market. "Our goal is to create greater value for both our customers and us," he adds. "Standard district heating contracts are of course an important part of our product portfolio, but we also offer district heating products related to cooling systems for buildings, street heating and building heating. Service delivery, such as assistance with operational staff to ensure optimal operation of companies' own buildings and ongoing service agreements, have also become good business."

INNOVATIVE SOLUTIONS Increased digitalisation is a natural result of a strong customer focus. Digital tools make life easier for customers and ensure good customer dialogue.

"We were one of the first district heating suppliers in Norway to launch a customer app in 2016 that provides access to information about their own consumption, meter readings, and invoices," says Hølaas. "Right now, we're implementing our own energy calculator, which will enable customers to make their own assessment of which energy solution is most appropriate for their building." Hølaas is aware that his company's position as a supplier of innovative, climate-friendly and future-oriented energy solutions must be reinforced continually if it is to capture the customers of the future. ●

FACTS

THE BUSINESS PARTNERSHIP BETWEEN ROCKWOOL AND STATKRAFT

- > The surplus heat delivered by Rockwool to the district heating grid is equivalent to the heating energy needs of approximately 600 houses.
- > The annual output of heat in Trondheim is estimated at 3.5 GWh.
- > The annual output of heat in Moss is estimated at 4 GWh.
- > AS ROCKWOOL uses district heating from Statkraft to heat its factories in Trondheim and Moss.
- > This partnership results in increased resource utilisation.



Power to the people

1.2 million Norwegians either live or work in buildings whose power is supplied by Fjordkraft. The reason for the company's fantastic journey since its formation in 2001 is "the golden triangle", or, what's good for the customers is good for the owners and employees.

✍️ Sissel Fantoft 📺 Rebekka U. Davidsen and Knut Fjordingstad

Fjordkraft, an electric power supplier partly owned by Statkraft, emphasizes the relationship among customers, owners and employees. CEO Rolf Barmen calls it the "golden triangle": "We have to balance this triangle sensibly, and really believe that what is good for our customers is also good for the owners and employees in the long term," says Rolf Barmen, Fjordkraft CEO. Fjordkraft has nurtured growth ambitions ever since it was founded. "We want to have more customers when we go to bed at night than when we woke up that morning," says Barmen. "Living on small margins, making the right decisions every single day, and adapting quickly to change are all part of our corporate culture."

AN INDUSTRIAL OWNER Statkraft played a key role in establishing Fjordkraft. The aim was to build a large, nationwide company that would supply electricity to end users. The company is the result of a merger between the energy trading division in BKK and Skagerak Energi that occurred after Statkraft bought shares in both companies.

"Initially we expected the market to consolidate and leave fewer and larger actors," says Kristin Steinfeldt-Foss, Senior Vice President Industrial Ownership in Statkraft. "The goal was to be one step ahead by building an efficient company that was equipped to deal with increasing competition, but the pace of development in the market is slower than we envisaged," she adds.

As owner, Statkraft supports the sound industrial development of Fjordkraft. "A good move in this regard was to release Fjordkraft from service provision agreements with its owners, so that the company could gradually build what Rolf Barmen calls 'the Fjordkraft

factory', with an efficient process for serving customers that is tailored to the type of business we operate," says Steinfeldt-Foss. "That's crucial for continued growth."

PROUD OWNER Its ownership stake in Fjordkraft has been a good investment for Statkraft. "The company has delivered sound growth and profitability in recent years," says Steinfeldt-Foss. "For us owners, Fjordkraft has meant increased dividends and good value growth. We're proud of Fjordkraft and the strong, customer-focused culture it has developed. The company enjoys a strong profile in the market and scores high on customer satisfaction barometers."

As owner, Statkraft is concerned about ensuring continued growth and value growth for Fjordkraft. "Together with the other owners we wish to lay the foundation for further growth and development of the company by listing it on the stock exchange," says Steinfeldt-Foss. Harald Brattaule in Bergen is one of many

who became a Fjordkraft customer last year. Brattaule and his family consume almost 24 000 kWh annually. "In Norway electricity prices have remained relatively low for a long time, so I've not been that bothered about who my electricity supplier is," says Brattaule. But like many others customers, he takes a closer look at all his agreements once in a while to check whether it might pay to switch suppliers.

"I discovered that Fjordkraft offered some customer benefits that made good sense, so we decided to switch to them," he says.

Earlier this year Fjordkraft also began offering mobile phone subscriptions to its electricity customers. "I had to do a double take when I saw the price," he says. "I quickly realised that we could save a couple of thousand krone a year if we switched mobile phone service providers, so we jumped at the offer immediately."

Today all the members of the Brattaule family are mobile phone customers of Fjordkraft. ●

FACTS

- > Fjordkraft's business consists of the buying, selling and portfolio management of electricity.
- > Fjordkraft was founded on 1 April 2001 following the merger of BKK Kraftsalg AS and the trading division in Skagerak Energi AS.
- > Fjordkraft is owned 48.85% by BKK, 48% by Skagerak Energi and 3.15% by Statkraft. Statkraft owns 49.9% of BKK and 66.62% of Skagerak Energi.
- > The owners are laying the foundation for further growth through a stock exchange listing. It is expected that the process will be concluded in 2018.



A good investment. Kristin Steinfeldt-Foss, senior vice president Industrial Ownership in Statkraft, is satisfied with Fjordkraft's strong customer focus and growth rate.

CUSTOMER: Harald Brattaule

STATKRAFT'S DELIVERY:
Electricity supply from Fjordkraft,
where Statkraft is part-owner



Satisfied customers. Fjordkraft provides the Brattaule family from Bergen with both electricity and mobile phone services. Harald and Pernille with their sons Håvard and Thomas.

CUSTOMER: Elkem

DELIVERY: Power Purchase Agreement (PPA) covering around 2 TWh a year, as well as additional services

Close ties

Elkem's Norwegian smelting plant is one of Statkraft's largest customers, and the two companies are in frequent contact to manage existing contracts and develop new opportunities.

 Sissel Fantoft  Elkem



Forward-looking. "Statkraft is one of the more creative and forward-looking companies in terms of customer development," says Alexander Strøm Arnesen, who is responsible for power purchases in Elkem.

Power-intensive industry. Elkem has been one of Statkraft's largest customers for many years, and the cooperation is poised to continue for many years to come.



Meet one of the **LARGEST** and one of the **SMALLEST** of Statkraft's customers

The app makes it easy, says Laila Bakkevoll, Trond Sandvik Simonsen and Synne.



THE CUSTOMER: Trond Simonsen

STATKRAFT'S DELIVERY: Charging stations for electric vehicles, delivered by Grønn Kontakt, partly-owned by Statkraft

Taking charge

The charging station operator Grønn Kontakt is investing NOK 100 million in fast chargers in 2017. Trond Simonsen convinced his partner and became a customer and electric vehicle enthusiast.

Grønn Kontakt has more than 250 fast chargers and 530 AC chargers throughout Norway. Every week new stations are commissioned, to the delight of the growing number of electric vehicle owners. Trond Simonsen from Kristiansand is one of them. "We bought our first electric car, a Renault Zoe, in June, and this summer we took a road trip from Kristiansand to Tromsø," says Simonsen. "It went like a dream. We use Grønn Kontakt's app, which shows us where we can find charging stations whenever we need one."

His partner was initially sceptical about replacing their petrol-driven car with an electric one, but it did not take long to convince her. "She suffered from range anxiety, but soon got over it," he says. "In five months we've driven 15 500 kilometres in our electric car."

The family saves NOK 4 500 a month after replacing their leased Toyota with an electric car. "When it's

so easy to charge, there's no reason not to drive electric," says Simonsen.

Grønn Kontakt is owned by 23 Norwegian power companies and grid operators. Statkraft and Agder Energi are the largest shareholders, each with 41 per cent.

"We build and operate fast-charging stations for electric vehicles all over Norway," says general manager Ole Henrik Hannisdahl. "We also hope to gradually win a large share of the market for chargers in private homes and companies."

As well as building and operating its own fast-charging stations, Grønn Kontakt has entered into cooperation with the Circle K chain of petrol stations and the Coop grocery chain, creating a win-win situation for everyone – particularly for customers.

"Circle K and Coop are on the investment side, while we build and operate the charging stations," says Hannisdahl. "Fast-charging an electric vehicle takes about 20 minutes, and customers like to spend that time enjoying a coffee or snack at a petrol station, or shopping in a store. This is a scenario where we can also generate business for our business partners." ●

The Elkem industrial group is one of the world's leading manufacturers of metals and materials such as silicon, ferrosilicon and foundry alloys, and Statkraft is Elkem's key power supplier. "The power is used in our smelting plant in Norway," says Alexander Strøm Arnesen, who is responsible for power purchases in Elkem. "Our main product is silicon of various grades, and the production process is energy-intensive. Statkraft has an important social role to play in power-intensive industries by offering long-term contracts that ensure predictability for us in our future operations," he emphasises.

CREATIVE APPROACH The customer relationship stretches over many decades. Representatives from Elkem and Statkraft meet regularly to discuss new contracts and opportunities. At Elkem Rana AS in Mo i Rana, the partnership includes more than

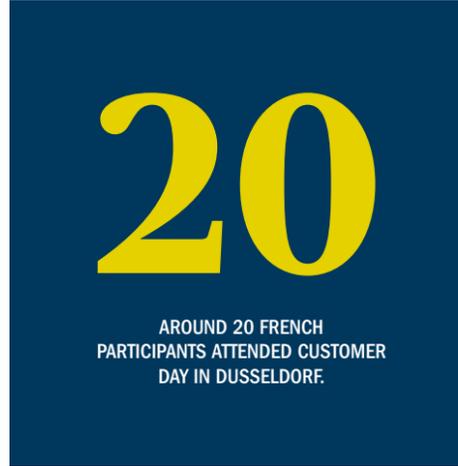
supplying power. As well as delivering power, Statkraft has balancing responsibility and manages the total power consumption of the business. Moreover, Statkraft offers hedging and fixed-price contracts and facilitates Elkem's participation in various flexibility markets for electricity. "We have a good and open dialogue with Statkraft," says Strøm Arnesen. "We talk to many actors in the power industry, and Statkraft is one of the more creative and forward-looking companies in terms of customer development. For the last three to five years, we have clearly seen Statkraft transform from being solely a power supplier to being much more. There has been more focus on the customer and on offering services beyond the power itself."

CLOSE RELATIONSHIP In the autumn of 2017 alone, Statkraft signed two new agreements with Elkem. Anders S. Conradi, senior contract manager in Risk Management

and Hedging, Nordic Energy in Statkraft, emphasises the good dialogue between the companies. "The good and close relationship with Elkem has been built over a long period," he says. "We regularly meet to discuss additional power requirements, hedging needs and other services that Statkraft can offer."

Every autumn Statkraft invites its industrial customers to a seminar where various power-related topics are presented. Elkem's Strøm Arnesen appreciates this initiative. "It's interesting and useful because we meet many people and get updated on what's happening in the industry, including areas such as market prices and regulatory conditions, and the latest developments in Statkraft's service concepts," he says.

Until 2020, Statkraft will supply approximately 2 TWh of power annually to Elkem's plants in Norway. From 2021 to 2027, the deliveries will be somewhat smaller, but still significant. ●



Dialogue. Customer day involves all parties sharing knowledge, says Lillian Dale, VP Business Development (left). Anna Klepan, Account Manager in Statkraft in conversation with customer Renate Dohse, wind park management, from Das Grüne Emmissionshaus, and Dominique Darne, CEO of Eurowatt, in conversation with Laura Jacobs from TTR Energy.

The meeting place

France is opening up its energy market, and there is a large need for new services. Statkraft invited French market players to a customer day in Dusseldorf, Germany.

Jenny Bull Tuhus *Oliver Tjaden*

There is a lot of activity. Busy traders move between an impressive number of screens. Numbers and graphs are continually changing. "The trading floor in Dusseldorf is the heart of Statkraft's market operations, so we wanted our potential French customers to come here to see how it works in practice," says Lillian Dale, VP Business Development in the Market Operations & IT business area. Since 2013 she has been working on networking and market access for Statkraft in France.

OPENING UP The changes in the French energy market represent new business opportunities for companies like Statkraft. The new market-based mechanism applies to new installations, and the first will be online around the end of the year.

"Earlier, in what was known as the feed-in-tariff system, wind and solar production was not exposed to market demand," says Dale. "Now producers will sell energy on the wholesale market for the first time. This means that there's a great need for expertise in balancing renewable production and market operations."

Statkraft's team Sales & New Products Germany (former MAXI team) has held customer days four times earlier and has learned how useful such a meeting place can be. The fifth event was therefore expanded with a separate programme for participants in the French market.

"In addition to French energy producers, we invited banks, investment companies and industry organisations," says Dale. "If you are going to start a wind

or solar project you must have backing in the form of capital. We have found that banks and investors are very interested in contract structuring and how we handle risk, producers are concerned with energy management, balancing and operational services, while industry organisations focus on the regulatory framework and the work we do on influencing energy policy."

GOOD RESPONSE Customer day is about networking and exchanging expertise.

"The French participants need information and knowledge about how the market functions and how we work," says Dale. "We want to become better acquainted with the customers to ensure that the products we sell actually meet their needs." She emphasises that customer day

The Nordic companies have a culture of corporate social responsibility that matches our profile.

DOMINIQUE DARNE, CEO, EUROWATT GROUP

is not a sales event, but helps to position Statkraft as a competent and reliable aggregator.

"Statkraft has long experience in market operations in several European countries," she says. "We are one step ahead in terms of knowledge about regulation and on the technology front. Obviously this gives us an advantage when we enter a new market."

About 20 French participants attended customer day, and the response was overwhelmingly positive.

"The fact that we are Norwegian and state-owned is popular in France," Dale says. "Statkraft's 120-year history and strong financial position are reassuring, and they see our extensive experience in balancing wind and solar power in other European markets." ●

What does the customer say?

When the French company **Eurowatt** chooses an aggregator, it is not just price and quality that play a role. The company's profile also weighs heavily. Eurowatt is one of France's 10-15 largest producers of wind power and has more than 20 years of experience with renewable energy, mostly wind and hydropower. The company, which also has installations in Portugal, Spain and Poland, is expanding and preparing itself for a new situation in its French domestic market.

"We need a partner who can sell our power in the wholesale market where the rules of the game are new to us," says Dominique Darne, CEO of the Eurowatt Group. "It was therefore very useful to attend Statkraft's customer day in Dusseldorf and get acquainted with the company and the services it can offer."

Balancing forecasts and delivery, with remote control and adjustment of production in line with supply and demand are becoming far more important to Eurowatt.

"The experience Statkraft has gained from other markets is of great importance, and I'm interested in the company's ethical standard," he says. "The Nordic companies have a culture of corporate social responsibility that matches our profile."

The Eurowatt CEO also draws attention to Statkraft's expertise and long experience in renewable energy trading. "The ability to stay ahead and monitor how policies and markets will develop is also important to us when choosing a partner," he adds.

The agreement Eurowatt is entering into with Statkraft provides the company with market access. Statkraft buys power and capacity certificates from Eurowatt's wind farms in France for sale on the power exchange. The agreement also includes risk management and services connected to developing forecasts and balancing power generation. ●



Good relations

Brazil is a key growth market for renewable energy. With close customer dialogue, Statkraft Brazil aims to create new business opportunities.

Fabiana Polido

Statkraft's market operations in Brazil buys and sells more than 900 MW per year and is among the largest energy traders in the country. Active dialogue with potential partners is key in developing new relations, products and services. In October, Statkraft hosted a networking event for 200 guests from the most reputable companies and institutions in the Brazilian power market.

"We established new relationships and strengthened the good contact we have with current customers and business partners," says Marcelo Lamar, who heads the company's market operations activities in Brazil. "At the same time it was a fantastic opportunity to promote the Statkraft brand. The market's response couldn't have been better." The event, which took place at the



Strong interest. Two hundred guests from customer and industry organisations in Brazil met at the venerable Belmond Copacabana Hotel.

Opportunities. Marcelo Lamar, who heads Statkraft's market activities in Brazil, sees many opportunities in a highly competitive market.

venerable Belmond Copacabana Palace Hotel in Rio de Janeiro provided a good platform to discuss business opportunities and new market activities in 2018.

"2017 has been a good year with positive feedback and good results," says Lamar. "Our market operations in Brazil

has not only been increasing volume in terms of number of agreements, we have also acquired more customers by offering customised solutions that fit their individual needs."

TEAMWORK The event also provided a good opportunity to congratulate the team behind this year's strong results and to praise the strategy of investing in talent.

"This is a result of excellent teamwork, collaboration with the business area International Power, system improvements and the opening of an office in São Paulo, in addition to the office in Rio de Janeiro," says Lamar. "Nevertheless, challenges lie ahead for the market operations team in Brazil in a very competitive yet promising market environment." ●

Creating chances

The theme "Towards a Flexible Future" attracted strong interest from customers and other representatives from the renewables industry at the annual customer conference in the UK.

Speakers with different perspectives on the industry discussed how the UK energy system could become more flexible and able to meet future demand, and what commercial opportunities this change creates for producers and suppliers of renewable energy. The customer conference was held for the third time in London in October. "I really got a lot out of the day," says Will Gaskell, assistant director for renewable energy at Ernst & Young. "There were many interesting participants and it was a useful networking opportunity."

One of the many speakers at the conference was Rob Samuelson, business development director at Statkraft's Joint Venture, Bryt Energy. He focused on the revenue potential in energy storage systems. "It was a very interesting conference with lots of presentations from different perspectives," says Michael Armstrong, director of Wessex Solar Energy.

The conference programme gave Statkraft a perfect opportunity to update participants on Statkraft's activities and new products and the chance to gather useful market information. ●

Competing for customers

Innovative, user-friendly solutions and guaranteed renewable energy will win corporate customers for Bryt Energy, Statkraft's new supply company in the UK.

Sissel Fantoft

With a long-term goal of exploring market opportunities in distributed energy, Statkraft established the supply company Bryt Energy last year in collaboration with Metchley Energy Associates, a consortium of experts in energy supply startups. "The reason we chose a joint venture is that Statkraft doesn't have the expertise required to start up this type of supply company alone, while our partners have established five such companies over the past 20 years," says Duncan Forsyth, finance director in Bryt Energy.

The company's plans assume a solid customer base. "Our long-term focus area is supplying distributed energy solutions to customers, initially by supplying, operating and optimising batteries through a virtual power plant," explains Forsyth. "Achieving this requires a customer base, so the first thing we're doing is establishing a business where we sell renewable electricity to British companies."

AMBITIOUS GOAL The UK supply market is fiercely competitive. In order to distinguish itself from its competitors, Bryt offers renewable energy at no additional cost and with innovative solutions. The focus is set on customers' needs by simplifying what appears to many, to be a complex product, and by helping customers reduce their energy costs. "We're going to excel at the basics; we'll provide accurate and easy-to-understand invoices and offer user-friendly online self-service solutions, as well as skilled service personnel and dedicated account management services for larger customers," says Forsyth.

Bryt's customers are mainly small and medium-sized businesses. The company currently has 25 employees. "We've just entered the UK market and so far, have signed agreements with 93 customers," he says. "Our goal is 10 000 customers, but the plans may change. Perhaps it will be more important to have fewer but larger customers. Our sales and marketing team is testing which parts of the market suit us best." ●



Powerful partnership. Bryt Energy is a joint venture between Statkraft and Metchley Energy Associates. From left: Bryt Energy's Ian Brothwell, operations director, Dave Cave, chairman, Duncan Forsyth, finance director and Duncan Dale, Statkraft's vice president for customers and new products in the UK.



Our goal is to create a market where carbon neutrality is not only the ideal, but the new standard.

ROLF BARMEN



POWERTALK

Ambitious goals. Rolf Barmen and Fjordkraft are attracting customers and have major plans for further growth. Fjordkraft's owners (BKK, Skagerak Energi and Statkraft) wish to lay the foundation for further growth and development of the company by listing it on the stock exchange. It is expected that the process will be concluded in 2018.

ROLF BARMEN



AGE: 53

POSITION:
CEO of Fjordkraft

EDUCATION:
MBA from the Norwegian School of Economics and Business Administration

MANAGEMENT EXPERIENCE:
Barmen has been operations manager of IKEA Bergen, regional director of Telenor Telehuset and CEO of Telering, Chess Communication and NextGenTel

FAMILY: Married to Charlotte Eriksen Barmen, has four children Kristoffer (24), Andreas (21), Helene (9) and Victoria (7)

The challenger

In Fjordkraft, there is no doubt about what really matters: the customers. Rolf Barmen's goal is to deliver climate-friendly power to 40 per cent of Norway's population.

✍ Knut Fjerdingstad 📷 Øystein Klakegg

The power supply company has experienced fantastic customer growth since its inception in 2001. Now the Group is warning its suppliers of tough climate requirements as of 2019. If Fjordkraft is to survive and make a profit, the company must offer something customers are willing to pay for.

"This is a fact we have to deal with every single day," says Rolf Barmen. "The money we're going to live on tomorrow comes from the customers we have today." Since becoming CEO of Fjordkraft in 2013, he follows developments in the market extremely close. Under his leadership, the end-user company has grown into the second largest in Norway.

MEETING PEOPLE Barmen's recipe for attracting customers' attention is to seek them out and be accessible. The human touch is still more important than technology.

"In addition to building a strong, high-profile brand, old-fashioned selling is important to us," he says. "If we do a good job, we see that the Internet helps us with sales, but we realise major results when we run campaigns and set up stands, when we meet people face to face – good old-fashioned door-to-door selling!"

Fjordkraft's customer base consists of households, municipalities, private companies and public enterprises. It is so valuable

that it is not left entirely in the hands of unfeeling robots. Today's customers expect more than a recorded voice telling them to choose between four keys, three times before they are given a chance to talk to someone.

"The customer expects to contact us through multiple channels," he says. "Many chat with us to get a quick answer or if they just want to get hold of someone to talk to. The challenge is to handle this fragmented picture in a cost-effective manner."

SOLAR POWER *What do you say to customers who want to produce their own power from solar panels on their roof?*

"We offer to buy surplus power from customers, but today the market is too small for us to set up a service to deliver solar panels. We're waiting to see how the market takes shape, and are preparing ourselves to enter it with what we're good at: marketing, retail, distribution, facilitation, financing, insurance and so on. We're going to look for opportunities to take our place in the value chain."

But isn't it now that the market is taking off? New operators like Otovo have already delivered around 1 000 solar power installations.

"What they're doing with solar production and the concept of neighbour power is very good, but it's doubtful that the majority of

POWER TALK

> potential customers are going to convert to it. Power is so cheap in Norway that there may only be a few idealists who will try it. I don't think it will have any significant impact on the market over the next three years. Fjordkraft doesn't have to be number one in this area. But when the time is right, we'll use our competitive advantage to really move in. This is our strategy."

NEW TECHNOLOGY Fjordkraft has a strong awareness of digitalisation and its importance for consumers. Fjordkraft is now testing an Enova-funded technology that extracts meter data from consumers and, using algorithms, calculates how much power customers use for heating cables, electric vehicle chargers and coffee makers.

"We are keenly aware of the consumer market, of smart technologies and smart homes – and gradually of those who will produce their own power. Fjordkraft is currently in a good position, but we can't spend a lot of money before we see the return on our investment."

What about batteries in people's homes? Is this coming?

"This is very exciting, but we're uncertain whether today's battery production is environmentally friendly enough. The environmental impact of extracting lithium, for example, is considerable, and the question is how long this technology is going to be allowed to call itself sustainable. The day we find out that electric vehicle batteries aren't sustainable, we have a huge problem."

FJORDKRAFT FACTS

- > Sells power to customers across Norway. In 2017, Fjordkraft also became a supplier of mobile telephony to private customers across the country.
- > Fjordkraft is owned 48.85% by BKK, 48% by Skagerak Energi and 3.15% by Statkraft. In turn, Statkraft owns 49.9% of BKK and 66.62% of Skagerak Energi. Trondheim Kraft AS is wholly owned by Fjordkraft AS.

The head of Fjordkraft believes that the big impact will come when we see a new type of battery technology, one that we're not yet aware of.

"Then our whole business will be turned upside down, but it will probably be some time before that happens."

LEADERSHIP Fjordkraft's ambition is to create the most attractive power supplier in Norway. In 2016, Fjordkraft had a turnover of almost NOK 5 billion. The goal is to double in size by 2020. This will require more employees, and Fjordkraft is constantly hiring new people.

"My management team's task is to chart a clear path for our collective aspirations, says Barmen. "Our mission is to create the most attractive power supplier in Norway."

TOUGH CLIMATE REQUIREMENTS

Recently, Fjordkraft surprised the market with a clear requirement that the company's suppliers must commit to being carbon neutral by 2019. The initiative is gaining international attention, and the UNFCCC (United Nations Framework Convention on Climate Change) has published an article on the climate requirement that has spread on social media.

"We see this attention as an acknowledgment of what we ourselves consider to be a bold and innovative decision, and an inspiration in our further efforts," says Barmen. "Hopefully, the media coverage inspires other companies to set the same requirement for their suppliers."

Fjordkraft recommends that suppliers follow three steps towards carbon neutrality: Measure their carbon footprint, reduce their own emissions and compensate for their residual emissions.

"Fjordkraft wants to create a market where carbon neutrality is the new standard," Barmen says. "Looking ahead, we may also demand that our suppliers' suppliers be carbon neutral. It's ambitious, but it will create a domino effect that will exceed all other climate measures. In Fjordkraft, we want this to be an example that others can emulate. If suppliers don't want to sign up for this, Fjordkraft will use its market influence to find alternative suppliers."

Rolf Barmen thinks it important that Statkraft is also on board.

"We are committed to finding solutions with an effect that reflects the challenge we face. Our goal is to create a market where carbon neutrality is not only the ideal, but the new standard. Companies have a responsibility beyond maximising profits, and a green shift can also provide a green bottom line. Carbon neutrality will be a competitive advantage for Fjordkraft and for all those who have the courage to go ahead and set the same requirements," says Fjordkraft's CEO. ●



JUAN ANTONIO ROZAS, country manager of Statkraft Peru, was recently named one of Peru's top 100 business executives. The Corporate Reputation Monitor (MERCOR) compiled the list which was presented in the country's largest newspaper Gestión.



There are two key words: leadership and cooperation. And the good news: They are both renewable resources. And truly needed for the green shift we are entering.

MINISTER OF TRADE AND INDUSTRY MONICA MÆLAND DURING THE CONFERENCE XYNTEO EXCHANGE 2017 IN OSLO, WHERE STATKRAFT HELD A SIDE EVENT



Look to Sweden

THROUGH SYSTEMATIC EFFORTS, Power Generation in Sweden has developed a strong health, safety and environment (HSE) culture from top management to front end technician. This has been observed, and in November the Swedish organisation with more than 170 employees was awarded the CEO's HSE award for 2017.

The justification for the award included the following: "Power Generation Sweden has shown that it is possible to create a workplace free of accidents and injuries. Over the last two years the frequency of registered incidents has decreased from 10 to zero, and there have been no serious near accidents since March 2016."

Many good contributions from Statkraft's other business areas competed for the HSE award, including a tunnel repair project at Kargi in Turkey, an access road project in the Fosen development and the work of the Lyon office in France on security measures for travelling employees in the event of terrorist attacks. ●



New job. From left: Thomas Ganåssæter, Eirik Smepllass, Eskil Rønning, Jon Einar Berdahl, Vebjørn Stølan, Iver Myklemyr, Jørgen Nordsether, Åge Bjørge, Stine Mari Murvold, Maliken Wedvik Brendmo, Arild M. Soleim.

First day on the job at Fosen

AN OPERATIONS ORGANISATION of 40–50 people was established in connection with the development of the wind farm at Fosen. The first nine operators selected had their first day on the job in Åfjord, 1 November. It was a young team that attended a welcome lunch hosted by Statkraft's regional director Svein Ove Slinde, power plant manager of Norway's wind farms Arild M. Soleim, and maintenance manager for Roan wind farm Åge Bjørge. All nine operators are between 20 and 35

years old, have vocational education in electrical or mechanical engineering and come from different parts of the country.

Now the team is undergoing a thorough introduction and training. In the new year, the team will receive six months of training at the wind turbine manufacturer Vestas in Denmark on the new turbines that will be installed at Roan in the spring. The group will return in the summer to participate in the installation and deployment. ●

RECHARGING

As a former professional football player – having played over 300 'A' series matches – and alpinist, Rolf Barmen still finds these sports important when he goes home from his job at Fjordkraft.



OUR PEOPLE

Statkraft has 3 800 employees, and there is always someone changing jobs.

ON THE MOVE



Name: Eivind Torblaa
Position: Managing Director, Fosen Vind DA
Country: From Turkey to Norway
Years in Statkraft: 17

On August 15, Eivind Torblaa took over as Managing Director of Fosen Vind DA, which is owned by Statkraft, Nordic Wind Power DA and TrønderEnergi. He is responsible for the development of six large wind farms in Sør-Trøndelag in Norway. His previous position was country manager for Statkraft in Turkey.



Name: Anne C. Bolle
Position: Senior Advisor, Public Affairs
Country: From Norway to Belgium
Years in Statkraft: 22

Anne's previous responsibilities in Public Affairs have been in the areas of climate policy and European regulations for renewable energy, with particular emphasis on the EU Emissions Trading System, EU ETS. As she now takes over as Statkraft's representative in Brussels, her main task will be to monitor energy and climate policy processes that affect the company.

*Egil Helmer Evensen planned to work in the oil industry, but was persuaded to attend university in Trondheim. This was the start of a life's work in district heating. Now he helps to warm up large parts of the city, including the famous Nidaros Cathedral. **We asked him about ...***

... the work. I am the technical director in the development department of Statkraft Varme. We're responsible for various types of projects, from the concept phase to an investment decision. The projects include everything from new buildings, expansions and acquisitions of plants, to improvement projects and operational optimisation for the district heating plants in Statkraft Varme. Our head office is located in Trondheim. Statkraft Varme owns and operates 10 district heating plants in Norway and four in Sweden.

... inspiration. A positive attitude, enthusiasm, expertise and innovative thinking inspire me – both on and off the job.

... the downs. At the beginning of my career, I worked as a researcher at SINTEF [Foundation for Scientific and Industrial Research]. I was project manager on an assign-

ment for a Norwegian industrial company. We had great ambitions, but unfortunately the project didn't deliver the results we expected, or hoped for. The project failed. At the time it was a major disappointment, but I learned a lot from it. Among other things, I learned that challenges in life seem major when they happen, but as time passes, they become minor and trivial. The most important thing is to always be honest with yourself, your colleagues and your business partners.

... the ups. Moving to Trondheim to study at the Norwegian Science and Technology University (NTNU) turned out to be a life-changing decision for me. Initially, I wanted to work for an oil company in Stavanger, where I grew up, but a friend convinced me to join him in Trondheim. I completed my studies, met my wife while I was at university, and got a job in Trondheim. It just goes to show how life is a

combination of coincidences. I've worked in district heating my entire working life, and earlier this year I was appointed an honorary member of our industry association, Norsk Fjernvarme. What an honour!

... balance. I'm primarily concerned with well-being, both at work and at home. I'm very enthusiastic about my work, which means there is an overlap between work and private life. Many of my best friends are work colleagues, we're together both on projects and at parties.

... pure energy. Pure energy is sustainable energy production, whether it's hydropower or surplus heat from industry. The advantage of district heating is that it's an energy-flexible supply system. This makes it an important part of the further development of sustainable energy production. ●

✂ Heidi Bruvik Sæther 📷 Ole Martin Wold

EGIL HELMER EVENSEN

Position: Technical director
Department: Development in Statkraft Varme AS
Country: Norway
Worked in Statkraft since: Trondheim Energi was acquired by Statkraft in 2002
Age: 64 years
Education: MSc in mechanical engineering in 1976
Currently: Recently named as honorary member of the district heating industry association

Stately customer. More than 30 per cent of the city of Trondheim is heated by Statkraft Varme, including Lerkendal football stadium and Nidaros Cathedral.

More PURE ENERGY

The energy sector accounts for a significant portion of global greenhouse gas emissions. Emissions trading, green certificates and guarantees of origin are some of the schemes that stimulate and guarantee production from renewable sources. What are they exactly?

 Sissel Fantoft  Mona Holm

Several instruments are being used to ensure a faster transition to renewable energy. "The work is proceeding in two steps: step one is to achieve a switch from 'dirty' power generation, for example from coal, to power generation from renewable sources like solar, wind and water," explains Lars Ragnar Solberg, advisor in Energi Norge. "Step two is to get consumers to use the clean energy."

Solberg is a social economist with a professional background in power trading. He believes Norway is in a fortunate situation compared to many other countries: "We've already completed step one by investing in hydropower from waterfalls and fjords right from the start," he says. "That's why we're ahead of the pack, and Statkraft is one of the leaders in the field."

PROMOTES TRANSITION Among the many different schemes established to stimulate and guarantee increased power generation from renewable sources, Energi Norge points to the EU's emissions trading system ETS, electricity certificates or what are known as green certificates, and guarantees of origin. "We believe ETS is Europe's most important tool for cutting greenhouse gas emissions," says Solberg.

"The system sets a ceiling on emissions in a geographic area so that they are kept at an acceptable level. The EU has set a goal that emissions from the energy and industrial sector (EU ETS) must be reduced by 43 per cent from 2005 to 2030."

Certain sectors are granted free quotas in order to ensure competitiveness.

"What the economists who designed the emissions trading system had in mind was that those who have the highest cost for reducing emissions can buy the quotas they need," says Solberg. "Companies that have the opportunity to restructure their production can do so to reduce their quota needs. They can also sell their quotas on the market. Through the market mechanisms and price signals, the system promotes cost-effectiveness, production of renewable energy and reduction of greenhouse gas emissions."

"Part of the problem in the quota market has been too much supply and hence low prices," he points out. The supply of quotas is predefined and is not affected by fluctuations in the market.

REGIONAL COOPERATION The system of electricity certificates is a joint Norwegian-Swedish initiative. "Power producers



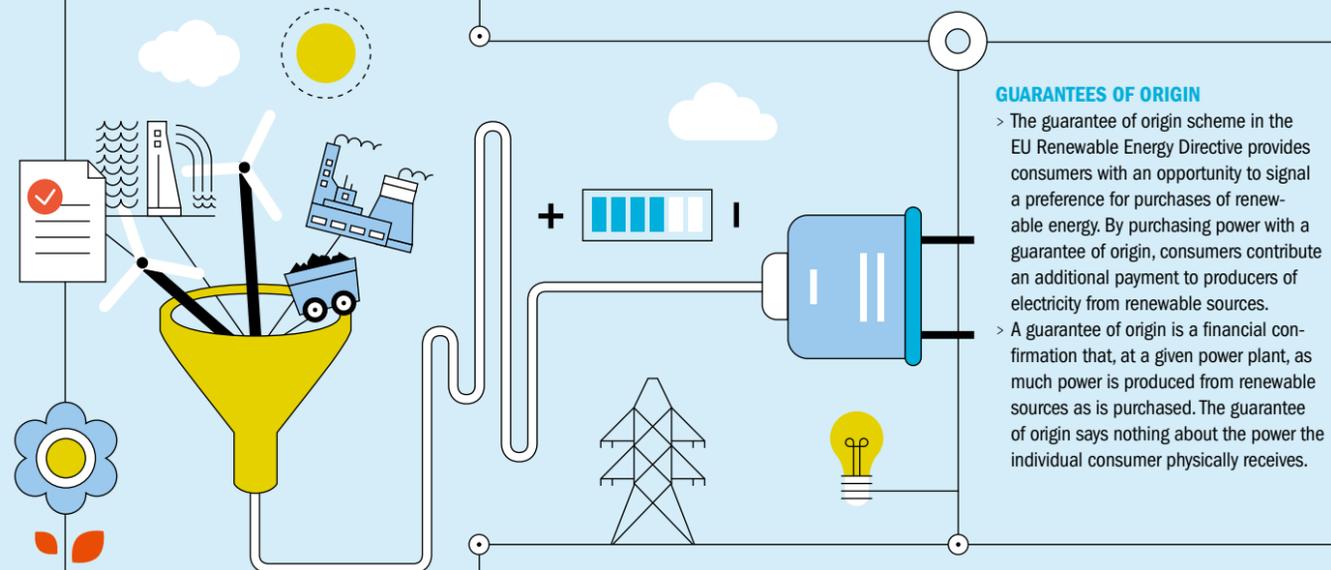
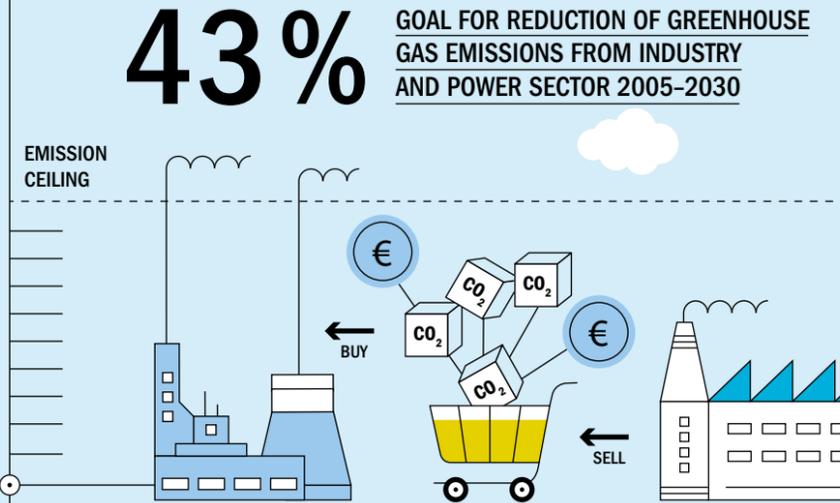
LARS RAGNAR SOLBERG is an advisor in Energi Norge. The interest and employers' organisation offers a series of courses on the electricity market, power grid and renewable energy production.

energinorge.no

SUPPORT SCHEMES TO STIMULATE INCREASED PRODUCTION OF RENEWABLE ENERGY

EU'S EMISSION TRADING SYSTEM (ETS)

- > The EU's goal is to reduce greenhouse gas emissions in the EU ETS sectors by 43 per cent from 2005 to 2030. The emission ceiling in ETS is being gradually reduced so as to reduce the number of quotas in the market, thus making it more profitable to choose climate-friendly solutions. The price is determined by supply and demand, where companies either purchase or sell quotas in the market according to their need to cover their own emissions.
- > Certain competitive sectors receive some free quotas.
- > Current quota trading period runs from 2013 to 2020. Negotiations on a revision of the system by 2030 recently concluded, and the formal decision is expected shortly.

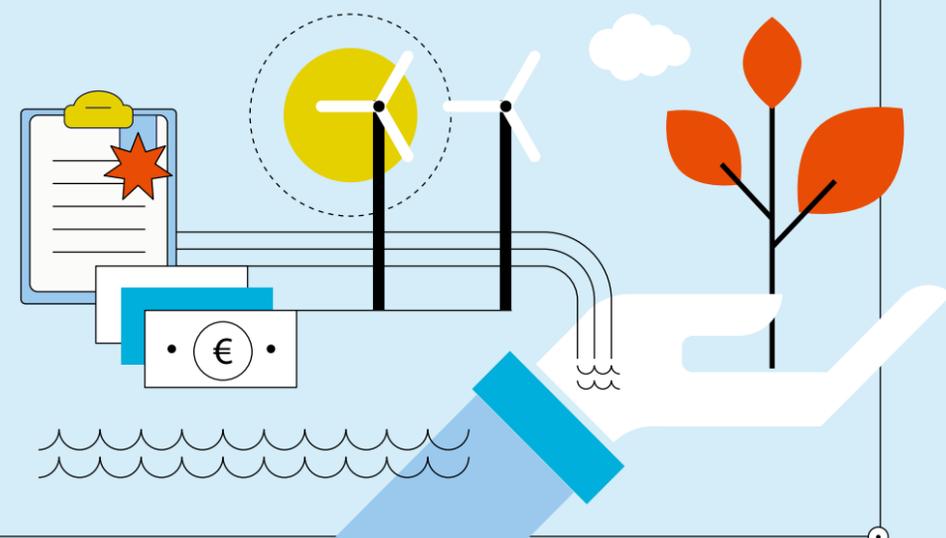


GUARANTEES OF ORIGIN

- > The guarantee of origin scheme in the EU Renewable Energy Directive provides consumers with an opportunity to signal a preference for purchases of renewable energy. By purchasing power with a guarantee of origin, consumers contribute an additional payment to producers of electricity from renewable sources.
- > A guarantee of origin is a financial confirmation that, at a given power plant, as much power is produced from renewable sources as is purchased. The guarantee of origin says nothing about the power the individual consumer physically receives.

ELECTRICITY CERTIFICATES

- > In order to increase production of renewable energy, Norway and Sweden agreed on a common market for electricity certificates in 2011. The goal is a total renewable development in the two countries of 28.4 TWh by the end of 2021.
- > Power producers who invest in renewable power generation can receive certificates that can be sold in a market. The electricity certificates ensure profitability.
- > Demand is ensured because power suppliers and certain power customers are obliged to purchase electricity certificates. The cost is included in the electricity bill to the consumer, who ultimately finances the scheme.



> investing in renewable power generation have the right to receive electricity certificates for 15 years, and power suppliers are obliged to purchase certificates for a given share of the power supply," he explains. "Trading in certificates takes place on the NASDAQ stock exchange, among other marketplaces, where the producers sell to the suppliers. Norway and Sweden have had a common market since 2012."

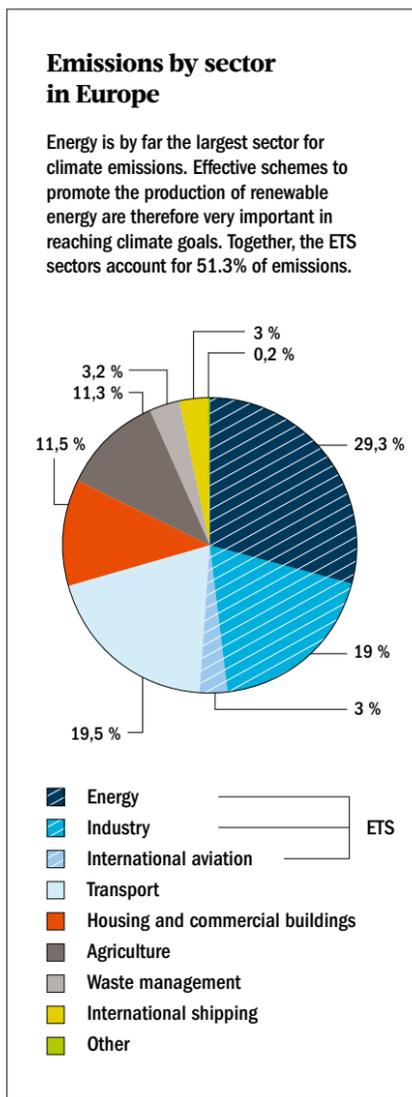
After 2021, new projects in Norway will not receive certificates, while the Swedes wish to stimulate increased renewable production until 2030. The system will then continue until 2045, but the quota requirement will not increase after 2030.

"The large power surplus weighed heavily when Norwegian politicians decided to cancel the subsidies, while the Swedes are more uncertain about the future when they will eventually shut down their nuclear power," says Solberg.

IMPORTANT PART OF SOLUTION

A guarantee of origin serves as evidence that the power is produced and delivered to the power grid from a specified power plant based on renewable energy. All EU and EEA countries must have a documentation system for power originating from renewable energy sources. By purchasing a guarantee, customers can express their preference for power from renewable sources and signal that production of this type of power should increase. There are different prices for different types of renewable energy, and the revenues benefit the power producers.

"It's difficult to provide consumers with a guarantee that the electricity they



consume comes from a renewable energy source, because electricity from many different sources flows into the same market," says Solberg. "Imagine a bathtub filled with water from different sources and then mixed. When drained it's impossible to say exactly which source the water came from. Similarly, it's difficult to say which power source is used to produce the electricity in your sockets. If you as a customer buy a guarantee of origin, you can at least say that you're paying for renewable power generation and use the documentation in your environmental accounts."

"The thinking behind this is sound and important," he emphasises. "Finding schemes that increase the share of power generation from renewable sources is an important part of the solution to climate change. But the tools used must be refined and further developed. We simply have no choice but to try things out as we move forward."

AUCTIONS TAKING OVER Solberg also points out that experiences of poor market exposure and overcompensation in different renewable energy support systems have led most countries in Europe to shift to different auction models where producers must submit bids and compete on price.

The European Commission's Directorate General for Competition has been the driving force behind this. The winning bids in auctions in Germany and the UK in recent years show that support for renewable energy is now dwindling significantly. ●



Mutual benefit. As part of an environmental programme to raise awareness about recycling, schoolchildren from Osmancik collected paper and plastic. Delivering it to the recycling station provided revenue for the school and the pupils were also rewarded with used PCs from Statkraft.

Recycling knowledge

Paper, plastic and other forms of waste in reservoirs is a constant challenge and a constraint on hydropower plant operations. In Turkey, a cooperation project with local schools had positive spillover effects.

Johan Tingulstad Bahadir Sezegen

The rubbish that accumulates in the reservoir of Statkraft's Kargi hydropower plant was becoming a major problem. Employees spent many hours removing waste from the debris filter on the plant's water intake. The solution was to involve the local community. In the spring of 2017, Kargi personnel started a campaign to achieve a sustainable and long-term solution to the waste problem. It was decided to focus on increasing knowledge and awareness in the local community regarding waste management, as well as, on immediate and concrete measures.

WIN-WIN In close collaboration with local authorities, local schools were chosen for a pilot project where every tonne of paper and plastic waste collected was rewarded with a used and recycled Statkraft computer. Not long after the campaign was kicked off, 10 tonnes of waste were collected and an impressive level of enthusiasm created. "Knowing the general challenges we face in Turkey with regards to waste management

KARGI

The Kargi hydropower plant is situated by the Kizilirmak River in the districts of Osmancik and Kargi in northern Turkey. After four years of construction the plant was commissioned in the spring of 2015. The company Kargi Kizilirmak Enerji AS is wholly owned by Statkraft.

and recycling, I am deeply impressed by the efforts and commitment from the school children and their administration," says Bahadir Sezegen, who coordinates environmental and social issues for Statkraft in Turkey.

SUSTAINABLE HANDLING OF WASTE The initiative continued even without the computer incentive from Statkraft, as the local schools increased and expanded their efforts. In fact, the schools receive welcome income from all paper and plastic waste delivered for recycling. The Kargi power plant has in turn reduced the debris flowing into the Kizilirmak River and on to the reservoir.

"This pilot project will not lead to a clean reservoir overnight, but we have put into place a simple system for waste handling which ultimately will educate people, improve the local environment and help Statkraft reach its objective of less waste flowing into the reservoir. I'm proud to be part of this," says Sezegen. ●

OTHER SUPPORT SCHEMES FOR RENEWABLE ENERGY			
CfD	RECs	I-REC	REGO
<p>Contracts for Difference Introduced in the UK in 2014 and replaces the British Renewable Obligation Certificate (ROC) for new projects from 2017. Support contracts are awarded through auctions, and will reduce risk and cost of investing in low-carbon energy companies by marking up the power price when it falls below a certain level. Thus, the producer receives a fixed total electricity price per MWh for the next 15 years. When the market price is lower, the company receives money from a fund which suppliers of power to end users must pay into. When the price is higher, the producers pay back to the same fund.</p>	<p>Renewable Energy Certificates The United States has a number of certificate schemes that guarantee that the electricity is generated from a renewable energy source, including Green Tags, Renewable Energy Credits, Renewable Electricity Certificates and Tradable Renewable Certificates.</p>	<p>This is an international standard based on the guarantee of origin systems in Europe and North America and is used in countries that do not have their own guarantee schemes for suppliers of renewable energy, primarily in Asia, Latin America and Africa. In 2016, Statkraft was the first I-REC provider in Brazil and India.</p>	<p>Renewable Energy Guarantees of Origin This UK system for implementing guarantees of origin shows the percentage of an electricity supplier's energy that comes from renewable sources.</p>



Satisfied salmon. Both the fish and the anglers who catch them appreciate the improved conditions for salmon in Sjøforsen. Stocking of salmon will still be important for maintaining the fish population in the river. Benjamin Fredriksen with a fine catch a little further down the river.

Return of the salmon

When the Røssåga watercourse was developed in the 1950s, parts of the river were left dry and overgrown. Now the water and the salmon are back.

 Jenny Bull Tuhus

 Henrik Fredriksen, Tine Poppe, Bjørn Grane

When Nedre Røssåga power plant in Hemnes Municipality in Nordland County needed rehabilitation, Statkraft decided to build an additional power plant, New Nedre Røssåga. "This is a good example of a rehabilitation of an old power plant providing opportunities to reduce negative environmental impact," says Bjørn Grane, environmental coordinator in Statkraft. "For the original Røssåga development, the draining of Sjøforsen was undoubtedly one of the most controversial."

The "Sjøforsen" stretch of the Røssåga River has been restored. The water is back and the salmon have good spawning areas, without affecting power generation.

CHALLENGES The 650-metre-long stretch of the river was originally an important spawning and living area for the salmon. After the hydropower development in the 1950s, water flow was greatly reduced. Vegetation and forest took over. "The extensive restoration project has not only brought back the water and the salmon, the restoration also meant that overgrown areas were reopened and made accessible for hikers with established trails," says Grane. "In addition, comprehensive measures have been taken to control flooding."

CRUCIAL Gry Elly Fordelsen is one of many who appreciate the rehabilitation of the river. She is the general manager and owner of Korgen Camping and a member of the Røssåga River Business Association. "In this location we have hosted salmon fishing folk for



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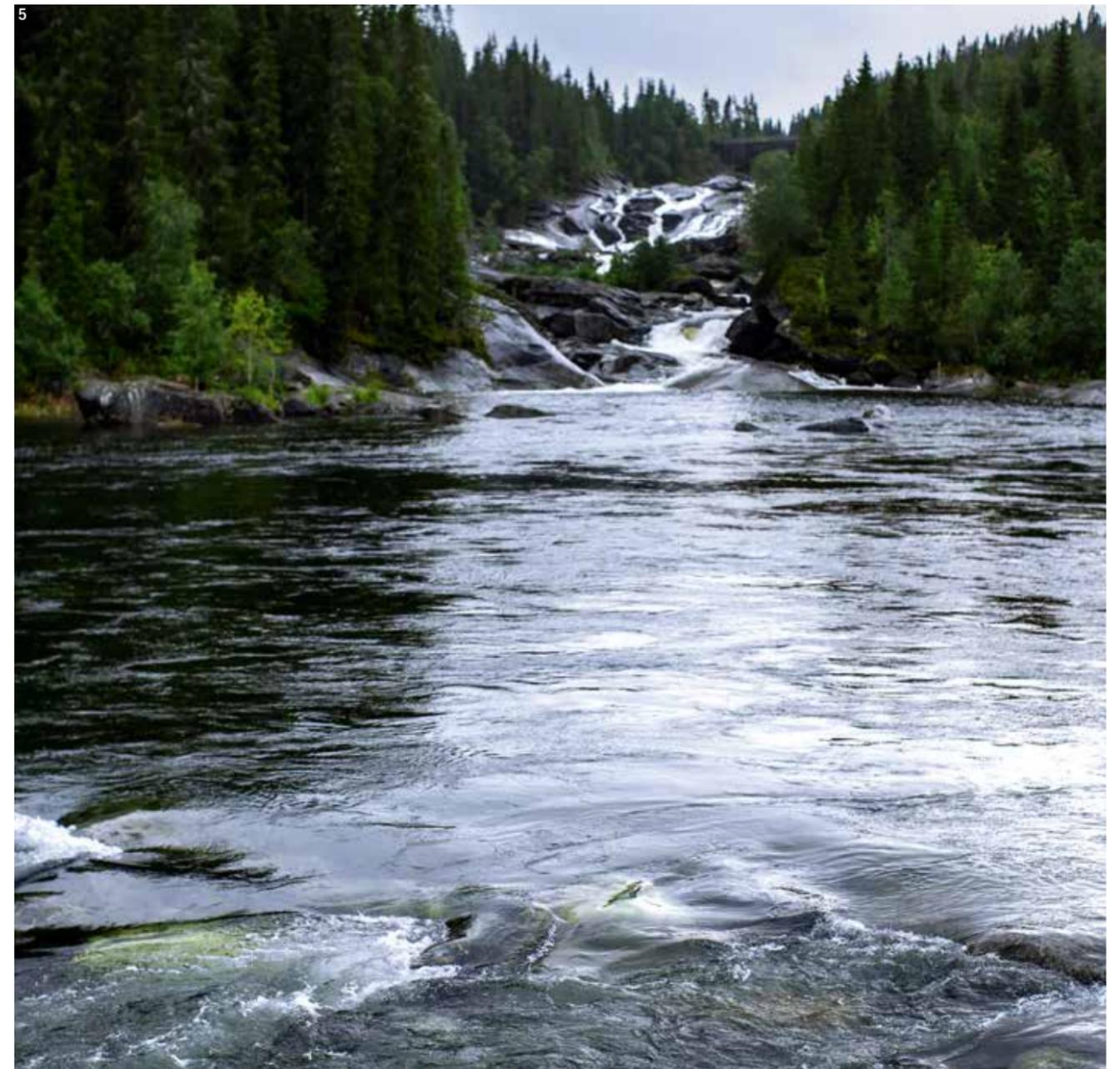
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1 | **Happy hikers.** The project has installed hiking paths to make the river more accessible. 2 | **Effective.** Bjørn Grane, environmental coordinator in Statkraft, is looking forward to the excellent results of the measures. 3 | **Pleased.** Gry Elly Fordelsen, general manager of Korgen Camping is pleased with the rehabilitation, but will be following developments closely in the future. 4 | **Flood protection.** The structures along the shoreline are covered with natural stone to blend into the landscape. 5 | **Good flow.** The water is back in Sjøforsen.



Statkraft earns a lot from our river, so it's natural that the company contributes with environmental measures. At the same time, they deserve credit for what has been a major improvement, both visually and through the monitoring being done by a fish biologist.

GRY ELLY FORDELSEN, GENERAL MANAGER AND OWNER OF KORGEN CAMPING AND A MEMBER OF THE RØSSÅGA RIVER BUSINESS ASSOCIATION



5

> almost 200 years, from the British 'Salmon Lords' who travelled here in the 1800s to today's camping tourists," she says. "The life in the river is absolutely crucial to us."

Fordelsen gets positive feedback from her guests every day regarding the improvements. "There've been some difficult years of construction work, but now it has become very nice," she says. "Every day we get compliments from anglers and other camping tourists, and the area has become very popular with locals too. The hiking trail and planting are a great finishing touch. The river has become very accessible. Now we are looking forward to the salmon fry growing to be nice and big. You have to have a long-term perspective, because it will take many years before we really see the results of the rehabilitation."

She praises Statkraft for the initiative and the work that has been done.

"Statkraft earns a lot from our river, so it's natural that the company contributes with environmental measures," says Fordelsen. "At the same time, they deserve credit for what has been a major improvement, both visually and through the monitoring being done by a fish biologist."

SPECIAL DESIGN Bjørn Grane and the Statkraft team resurrected an old idea when the new power plant was being planned. By placing the new outlet right up under Sjøforsen, they could direct water back to this stretch of the river. The outlet has been placed in a way that ensures acceptable water flow.

Freshwater biologist Øyvind Kanstad Hanssen was added to the project to ensure a design that would be beneficial for the salmon.

"There were several challenges related to the rehabilitation of the river," says the biologist. "We had to provide enough water so that the fish didn't risk being stranded. At the same time, it was important that the water speed did not get too high, being so close to the outlet from the power plant."

The solution was to divide the watercourse and create two zones for the water flow.

"We made a motorway for the water on one side of the river and a sidewalk for slower traffic on the other side," says Kanstad Hanssen. "We slowed the water by laying out a number of groups of rocks, and built a threshold that helps reduce water

speed. This threshold also ensures adequate water levels when production in the power plant varies. To create good spawning areas, we aerated the gravel in the river and removed sand and sludge. Good living areas for young fish were created by adding large amounts of rock."

GOOD RESULTS The project has carried out several measurements of life in the river before and after the implementation of the environmental measures. The first fish biological studies in the river were carried out a few months after the New Nedre Røssåga power plant was commissioned in July 2016. Measurements showed that young salmon had already begun using the new stretch of river.

"We saw the effect immediately," says Kanstad Hanssen. "During a spawning survey in the autumn, 40 per cent of all spawning fish in the river were found in Sjøforsen, where before there were hardly any spawning fish or young fish."

He believes it is important that power companies take responsibility for the environment in regulated watercourses. "As a society, we know more and consider

> other criteria than we did during the great hydropower developments in the 1950s and 1960s," says the freshwater biologist. "Therefore, I think this could be a model to be followed in other situations. The restoration was not mandated by the government authorities. Statkraft started and carried out the project on its own initiative.

FLOOD CONTROL The project has taken into account that unforeseen things can happen.

"We have built connections in the outlet tunnels between the old and new power plants that ensure safe water distribution to the newly restored section of the river regardless of the operating status of the power plants," says Statkraft's environmental coordinator Bjørn Grane. "Next year an automatic diversion valve will be installed, which will deliver water to the river in the event of a shutdown of the power plants."



The extensive restoration project has not only brought back the water and the salmon, the restoration also meant that overgrown areas were reopened and made accessible for hikers.

BJØRN GRANE, ENVIRONMENTAL COORDINATOR IN STATKRAFT

With increased water levels in the river it has also been important to prevent flood damage.

"Extensive safety measures have been implemented," says Grane. "Several major structures along the shoreline are in place. These are covered with natural stone to blend into the landscape."

The restoration of Sjøforsen has clearly been an extensive process.

"Overall, this environmental measure is one of the largest of its kind in Norway," says Grane. "It's very satisfying that the environmental conditions in Sjøforsen have changed from very bad to good. For Statkraft it's also extremely important that one of the biggest environmental challenges at Nedre Røssåga power plant has been significantly reduced. It is a good example of the fact that unwanted environmental conditions from previous power developments are largely reversible." ●

The Vefsna River given a clean bill of health

After nearly 35 years with the infamous salmon parasite Gyrodactylus Salaris, the Vefsna and eight smaller rivers in the area were recently given a clean bill of health from the Norwegian Food Safety Authority. The development of the Røssåga watercourse in Nordland County in the 1950s, is the background for Statkraft's long-term involvement in this situation. In 1960, the company was granted permission to transfer water from the upper parts of the Vefsna River to Lake Røsvatn for power generation at two hydropower plants, Øvre Røssåga and Nedre Røssåga. Among other things, this led to an order being issued in 1966 to stock 15 000 salmon fingerlings each year. Just over ten years later, the dreaded parasite was discovered in the Vefsna River. Most of the young salmon died and the salmon catch was severely reduced.

Thanks to extensive control, re-establishment and monitoring efforts involving many



PHOTO: GAUTE FORBERGSKOG / VEFNSNA REGION

Good news. The clean bill of health is good news for salmon anglers.

parties, the salmon parasite has now been eliminated. Statkraft has been, and will continue to be for some years to come, an important contributor to the rebuilding of the salmon population in the Vefsna River by supplying roe from the gene bank at Bjerka in Nordland County and funding fish biological studies that document the effect of this work.

"We already see very positive results in the salmon population in the Vefsna River, which is one of the most important salmon river systems in Norway, with a salmon-bearing stretch of 164 kilometres," says Sjur Gammelsrud, senior environmental specialist in Statkraft.

Arne Lyse, project manager for wild salmon in the Norwegian Hunting and Fishing Association, believes that the clean bill of health for the rivers is very important.

"For wild salmon in Norway, this is some of the most important, positive news for many years, maybe decades," he states on njff.no. ●

STATKRAFT NATION FRANCE

Statkraft has operations in more than 20 countries. One of them is presented in each issue.



PHOTOS: SHUTTERSTOCK



FRANCE

POPULATION: 67.5 million
CAPITAL: Paris
SYSTEM OF GOVERNMENT: Constitutional republic
PRESIDENT: Emmanuel Macron
LANGUAGE: French

POWER MARKET

France is the second-largest hydropower producer in Europe, generating around 65 TWh. Hydropower accounts for 13 per cent of total electricity production in the country and is the most important source of renewable energy. The hydropower sector employs 20 000 people. France derives 75 per cent of its electricity from nuclear energy. Renewable energy sources, including hydropower, account for 18 per cent. The remainder comes from thermal power plants based on fossil fuels. The share of electricity from renewable sources has increased in recent years.



DID YOU KNOW

129

129 GW is the installed capacity in France, providing an annual production of around 550 TWh.

- > **FRANCE'S ENERGY TRANSITION ACT** aims to promote sustainable economic growth and create sustainable jobs. Planned measures will boost the gross domestic product by 0.8 per cent by 2020 and by 1.5 per cent by 2030.
- > **FRANCE** is the most popular tourist destination in the world, according to the UNWTO, world tourism organisation.
- > **FRANCE** is the only country in the world to exercise sovereignty over territories spread across three oceans and two continents.
- > **THE GASTRONOMIC MEAL OF THE FRENCH** is listed on the UNESCO Intangible Cultural Heritage List.
- > **THE LOIRE** is France's longest river. It stretches for 1 006 kilometres and has a catchment area of 117 356 square kilometres.

STATKRAFT IN FRANCE

Statkraft France was established in 2009. The employees at the Lyon project office work mainly on Statkraft's tenders in connection with the renewal of French hydroelectric licences in the French Alps, Massif Central and the Pyrenees. In addition, Statkraft France is supporting with finding market partners for power purchase agreements. Three agreements have already been signed. Statkraft currently has no physical power generation activities in France, but is working on becoming a long-term partner in renewable energy.

EMPLOYEES

Statkraft's project office in Lyon has six employees.

@ho_farstad Autumn at Smøla wind farm #høst #autumn #regnbue #rainbow #sologhagl #utpåtur #turansomtælle



Minister of Trade and Industry Monica Mæland and Innovation Norway CEO Anita Krohn Traaseth at Statkraft and Innovation Norway's conference "Norway as a lab for a green future."



NORWAY WILL BE GREENER, BETTER AND MORE INNOVATIVE, THANKS FOR ENGAGED CONVERSATIONS! @InnovasjonNorge @KrohnTraaseth @NFdep @Statkraft

@BEngesland

#STATKRAFT CREATES PASSION

Keep tagging your photos on Instagram with #Statkraft. We will select a few for the next issue of People and Power.

@staasmr #statkraft #powerplant #runner



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@marimuan #sliten #syra #tikkemøthelg #statkraft



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