

**NORD  
POOL**

**2018**

**Annual Report**  
Defining Our Future

**“It has been an interesting year —  
a time of real change which poses  
new questions and challenges.”**

**Kari Ekelund Thørud**  
CEO



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# Bringing Our Expertise into Focus

## Kari Ekelund Thørud

CEO

**Having been in position as the new — perhaps not so new now! — Chief Executive of Nord Pool for nearly a year, I am pleased to be able to have this opportunity to address our customers and wider stakeholders across the European energy community, in person.**

It has been an interesting year; a time of real change which poses new questions and challenges to us, the undisputed experts in power market design, and to all those we work with to deliver simple, efficient and secure power trading.

Travelling around Europe to meet our many customers and hear what is front of mind for them in their trading activity, has made me very aware that Nord Pool must continue to work to design the market — and the products and services which allow it to work smoothly — to make our customers' lives easier now and into the future.

Once again 2018 was, for Nord Pool, a 'quiet' year on the face of it — a year characterised less by seismic deliveries on show to the outside world, than by our close cooperation with our customers out of the public eye. We took the time to assess and understand the 'new world' of power trading, its implications for future market design, and to determine what we can develop and deliver to benefit our customers.

### **First — to business!**

My background is defined by my deep involvement in the commercial, retail, side of the energy sector. I make no apologies for bringing a commercial approach and mindset to the work of the pioneering power house which is Nord Pool. In fact, I consider it absolutely imperative, given the new power exchange landscape in which we find ourselves.

With that in mind, it makes sense that the Foreword to our 2018 Annual Report should begin by reviewing the ever-important hard figures which amply illustrate Nord Pool's positive performance.

Dry numbers cannot tell of the complex work being undertaken throughout the year by Nord Pool's experts across so many disciplines and geographies. That is happening in the offices which we maintain in key locations to ensure that we are close to our customers and can clearly hear their concerns. But those numbers are proof that the business is moving forward strongly and together, with our sights always set on the pursuit of excellence. So I am delighted to be able to say that in 2018 they continued to be healthy, strong and moving in the right direction for on-going growth.

When I joined Nord Pool two things immediately struck me. Firstly the 'human factor' — the sheer diversity, in terms of gender, age and ethnic background, of the experts we employ. But also the 'commercial factor' — the sense that achieving records

in our numbers had become something of an annual habit! 2018 continued in a similar vein. The volume of power traded through Nord Pool grew to 524 TWh, with Nordic and Baltic day-ahead market trading rising to 396 TWh, UK day-ahead achieving 120 TWh, and volume on our intraday markets reaching an all-time high of 8.3 TWh — a growth of more than 20% on the 2017 figure. The Nordic and Baltic day-ahead market saw a record volume of 396 TWh.

January 2018 saw 41.2 TWh traded within the Nordic and Baltic day-ahead market; the highest monthly volume traded in the market's history. In addition all three Baltic countries reached new monthly record highs during the year; Estonia 777 GWh in March, Latvia 700 GWh in January and Lithuania 1,312 GWh, also in March.

And in the UK our customers clearly continue to see the value that Nord Pool brings, with volumes traded on our day-ahead auction reaching 120 TWh, up from 111 TWh in 2017.

Operating a successful power exchange, it is only too clear that we live in times of increasingly concrete competition. In such an environment maintaining strong numbers in our existing markets is not just reassuring, it is absolutely essential, as the foundation on which we will build our presence in new geographical areas.



## 25 years of customer focus

While a sustained 'tradition' of achieving records might be the norm at Nord Pool, it would be unfair to conclude that we somehow take that for granted. Nothing could be further from the truth.

2018 marked Nord Pool's 25<sup>th</sup> anniversary operating as a power exchange and in that quarter century we have never allowed ourselves to become complacent about the absolute necessity to serve our customers. It is that customer focus, the personal attention we bring to every customer challenge, which I feel keeps current customers happy and confident to trade with us, and attracts new ones to find out more about what Europe's Nordic-based power market can bring to the table.

An important exercise which we undertake every year, to remind us — should we ever need it — that we cannot take our great customer relationships for granted, is the Nord Pool customer engagement programme. The survey element of this has become a key 'peg' in our working year. We would not invest the time, money and resources which we do in undertaking the survey if we were not determined to understand, appreciate and act on the superb insight that it provides. We want to have a clear idea of how our customers assess our performance and also the valuable feedback to mould our delivery of what they want and need from us now and into the future. Elsewhere in this year's Annual Report we cover in greater detail the key findings

and outtakes from the 2018 survey, but I am pleased that, yet again, the scores we achieved from you were suitably high. What I hope that shows is that, even if 2018 was a year characterised by change and, to some extent, uncertainty, our customers — the most important people in our business — could still rely on us to deliver the products, services and innovations they needed.

## Challenging times

The ceaseless challenges that seem continually to face Nord Pool led us to make some fundamental changes during 2018. And I cannot say that I think that period of change is behind us.

Our frustration over the stipulations of the regulation governing power exchanges, led us to take decisive action during the year. This was no knee-jerk on our part, having campaigned long and hard to gain clarity

on how we should successfully balance on the one hand, the need to compete with other power exchanges, while at the same time sitting down around a table with them to achieve the presumed joint goal of pan-European cross-border market coupling. With these apparently opposing objectives seeming barely to give some players in the equation pause for thought, in May Nord Pool announced our intention to formally act to address objectives which otherwise seem directly to confront each other.

Our remedy? To unbundle once and for all the market coupling from the commercial power exchange side of our power market, with a legal split under a common Nord Pool umbrella. At the end of the year we published a white paper setting out in detail our reasons for doing so (a subject covered further, later on in this year's Annual Report) and challenging others to follow our lead in truly shaping ourselves for a competitive future.



Our 25 years in the power exchange business has taught us nothing if not that having a desire to innovate and pioneer needs to be more than just a case of fine words — it demands that we discover novel ways to achieve the best for our customers. In this case, where important regulation seemed to us to be unhelpful, we have felt the need to find a way to help ourselves handle the competitive realities with which we are faced. Because it had become clear that no-one was going to do it for us.

### **Future thinking**

2018 was a year which Nord Pool spent with our eyes set on new horizons. We were attempting to see into the future and what the power trading market may need to look like to manage the changing demands which unpredictable production circumstances and consumption patterns could place upon it.

An important part in our thoughts around that subject has been played by our close relationship with our partners at Agder Energi, with whom we jointly established NODES, the new marketplace to harness and exploit decentralised flexibility, early in the year.

For me, as this year's Annual Report will explore in greater detail, it is in the sphere of market design — for us very literally the 'shape of things to come' — where we can

truly prove our established pedigree as innovators and pioneers. If these are challenging times for a power market entering its 26<sup>th</sup> year of operation, they are exciting times too.

From a personal viewpoint, I feel that it is only fitting that I should, in closing, thank my colleagues here at Nord Pool, our owners and all of our customers — regardless of their size or geographical location and many of whom I am glad to have had the chance to meet face-to-face in my fact-finding travels around Europe over the past year — for their warm welcome, continued support and frank sharing of views and challenges. As a woman in an, historically at least, traditionally 'male' sector, I have found it particularly pleasing to join a business which has — regardless of gender, background, ethnicity — such a diversity of leaders, role models and experts in its ranks.

I opened this Foreword by looking at the reassuring volumes of trade which you, our customers, continue to place with us. But of equal importance to all of us here at Nord Pool is the feedback that you give us. That helps shape everything we do, to ensure our continued delivery of efficient, simple and secure power trading, in the place, at the time and in the manner you need it. I ask, please, that you continue to be just as frank — and equally demanding!

# 2018 Highlights

## January

Announcement of another record year for Nord Pool, with 512 TWh of power traded across all the company's markets.

Our Nordic and Baltic day-ahead market records the highest monthly volume in its history, with 41.2 TWh of power traded, while Latvia achieves its own highest day-ahead monthly volume of 700 GWh.

## February

Nord Pool announces the creation, with partners Agder Energi, of NODES — a new business supporting the EU drive towards an emission-free society by creating an open, integrated market place available to all flexibility providers and grid operators.

## March

Nord Pool's Board selects Kari Ekelund Thørud, formerly Deputy CEO and Senior Vice President Markets at Norwegian power company Hafslund ASA, as new CEO.

In day-ahead trading Estonia (777 GWh) and Lithuania (1,312 GWh) achieve new monthly record trade volumes.

## April

The German market gains new trading opportunities as Nord Pool launches an intraday auction to allow customers to effectively trade the increasing amounts of renewable power production becoming available.

## May

To address increasing demands that Nord Pool both compete and also cooperate with competitor power exchanges, the company announces its intention to separate out its market coupling operator and commercial power exchange functions.

## June

The launch of XBID, the European Cross-Border Intraday solution, sees a 'day of firsts' for Nord Pool, with the exchange recording the first ever trade on XBID, XBID's first cross bidding zone trade and first cross power exchange trade.

With the successful coupling of Croatia and Slovenia for day-ahead trading Nord Pool manages capacities as well as validating and sending results to Croatian transmission system operator HOPS, extending links with Croatian power exchange CROPEX.

## September

Nord Pool welcomes the successful GB — Ireland power market coupling, having played a key role in ensuring the island of Ireland's successful coupling with the rest of Europe.

XBID announces the achievement of more than 2.5 million intraday trades since go live.

## November

NODES, Nord Pool's joint venture with Agder Energi, unveils details of its new market design, enabling local flexibility to be used by grid operators to operate and manage power grid congestion.

## December

An all-time monthly high of 1.1 TWh is recorded in trading on Nord Pool's intraday market.

# Key facts and figures

**524**

**TWh**  
Total volume traded

**120** TWh  
UK day-ahead market

**8.3** TWh  
Nordic, Baltic and German intraday market



**396** TWh  
Nordic and Baltic day-ahead market

# 139

employees

# 360

companies from 20 countries trading on Nord Pool markets

# 25

years in operation

## Nordic system price

(average price in EUR/MWh)

The system price is an unconstrained market clearing reference price for the Nordic region. It is calculated without any congestion restrictions by setting capacities to infinity. The system price is calculated locally at Nord Pool after area prices are calculated for all bidding areas. Flows between the Nordics and the Netherlands, Germany, Poland and the Baltics from the area price calculation are taken into account in system price calculation.

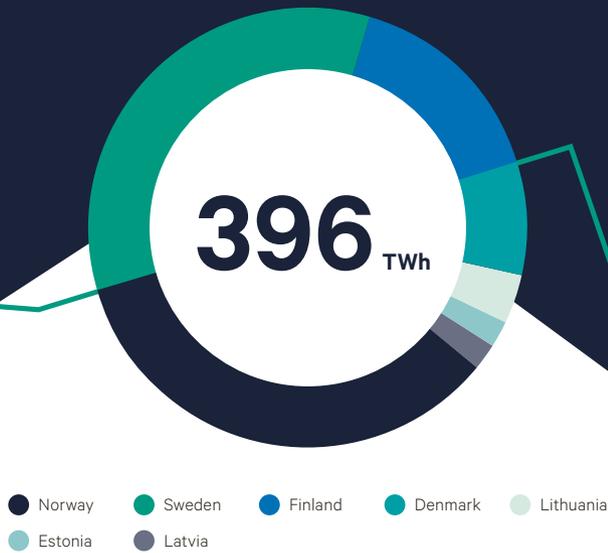


## Average system price (Nordic)

# 43.99

€/MWh

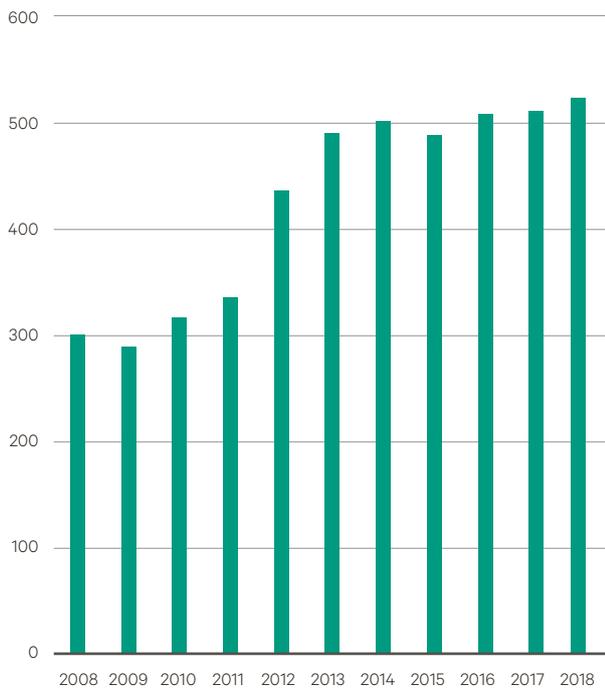
**Nordic / Baltic day-ahead volume turnover 2018**  
(per country in TWh)



**Traded volume growth**

(in TWh)

A total of 524 TWh traded in 2018.



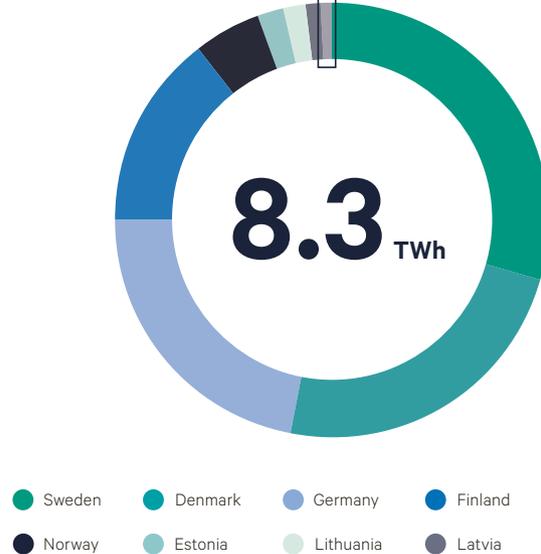
**Intraday turnover**

(per country in TWh)

**New 2018**  
 France 0.025 TWh  
 Austria 0.015 TWh  
 Belgium 0.013 TWh  
 United Kingdom 0.008 TWh  
 Netherlands 0.004 TWh

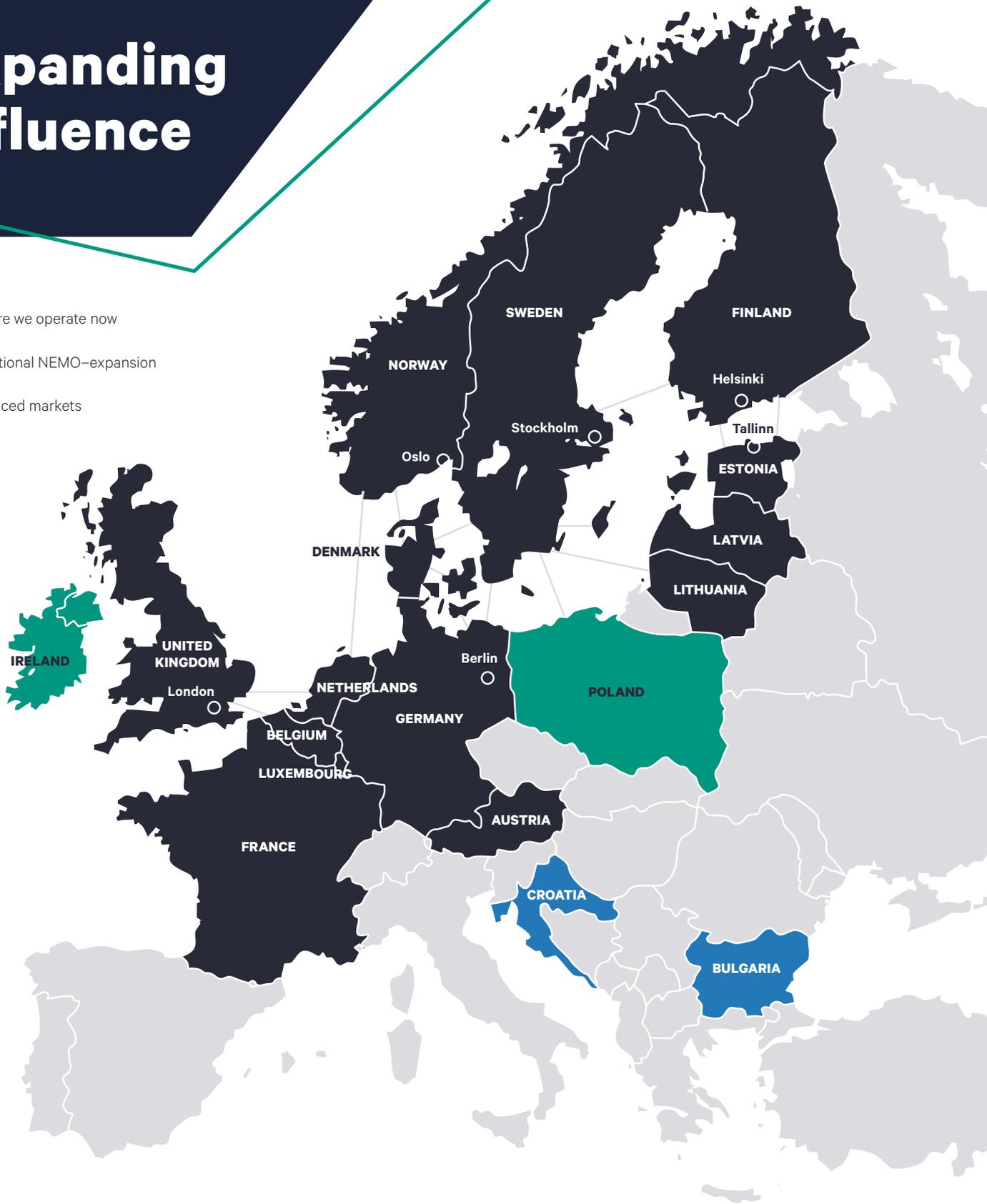
**+35%**  
from 2016 to 2017

**+23%**  
from 2017 to 2018



# Expanding influence

- Where we operate now
- Additional NEMO-expansion
- Serviced markets





# Engaging with Customers

**To ensure that we at Nord Pool are constantly moving and updating not just the key 'touch points' that our customers have with us (our frontline products and services) but also to adapt our role to help deliver the market developments of the future, it is essential that we listen.**

Part of what helps us do that are our regular Customer Advisory Board meetings, plus the input we receive from our team of dedicated market managers who spend a lot of time 'on the ground' talking to customers and other stakeholders to gain their views on issues that concern them. But sometimes a chat over a cup of coffee or a meeting involving many stakeholders does not enable us to get to the heart of the matter.

That is why at Nord Pool we have been running a regular formal and professional customer engagement programme, administered for us by independent experts in the field, since 2016. Our engagement programme is an interview-based survey process where we ask the hard questions and offer our customers the opportunity (anonymously) to really talk tough to us about the realities of trading power now and into the future. We spend significant time analysing and absorbing the feedback results, because we are determined to act on them for the benefit of our customers.

## **A realistic approach**

The annual customer survey is driven by Nord Pool's Strategic Account Unit Leader, Emma McKiernan, who approaches the process with a refreshing realism.

"The insights that customers openly share with us are immensely valuable." Emma explains. "But it can never be a process of simply listening, patting ourselves on the back when the results we get are complimentary and then happily shelving things until next year. We know that we have to act on the feedback we get — our customers will rightly hold us to that!"

Each year the Nord Pool engagement programme targets a variety of customers and strategic partners over a three-month period, to really get in-depth responses to key questions around customers' strategic goals and challenges; analysis of how our customers view our service offerings and platforms; and, the real 'proof of the pudding', key satisfaction scores.

Emma continues; "The feedback we get across this wide range of questioning has real value. It is fed directly into our targets for the coming months and years, as a business. Be under no illusion — this is not some self-congratulatory box-ticking exercise. It has impact."

## **What our customers say**

So how did Nord Pool perform over 2018?

"Our customers were impressed with our relationship management and customer service overall," Emma reveals. "That personal touch is something we do pride ourselves on at Nord Pool, so it is pleasing to see that reflected in what our customers and other strategic partners say about us.

"But we do see a need to turn that positive partnership into something more meaningful for them. So we are looking at arranging events where we can gain an even better understanding of customer concerns around the key points at which we interact — our platforms and services — and how we can turn that into realistic action with our development team to actually address customer needs."

And what about those platforms and services? Again, Emma feels she has generally good news.

"In day-ahead trading the feedback has been very positive — customers like our platform's ease of use, intuitive user interface and strong application programming interface (API). OK, great — but that poses a challenge for us. Now we need to maintain that high level of performance in day-ahead while further improving it. But with the shift in market trading patterns we see that we also need to bring our intraday platform up to the same standard, at the very least."

“Our day-ahead platform will also need to be fit for purpose as we expand into new central European geographies and we believe we are ready for that,” adds Emma.

### **A focus on intraday**

So let’s talk about intraday. “The feedback we received on intraday trading was revealing,” says Emma. “We took a conscious decision to take a lead role in the shaping and delivery of the XBID cross-border intraday platform and that seems to have been recognised and appreciated by our customers. But we also knew that our role needed to go beyond bringing direction to the project through, for example, lobbying Transmission System Operators, to the technical handling of on-boarding customers and managing the actual launch process.

“We seem to have lived up to expectations, from what our customers tell us. But we cannot rest on our laurels here. It will, we know, be important to continue lobbying the relevant authorities around, for example, the expansion of the markets involved in XBID before 2020 and gaining equal access to all markets.”

And as a result of customer feedback there is now a very active focus on what Nord Pool can deliver in the intraday market, as Emma explains.

“We are very well aware that the increasing amount of renewables entering the system, the greater need for flexibility and the growth of automated trading, makes the power market a much harder place to trade than it was just a few years ago. We need to play our part in enabling the market to function in the best possible way, so we are already working hard to improve the performance of our intraday platform and API to support these developments — addressing outages and increasing the speed of our platform is paramount. Fifteen minute products are another priority”.

### **Improving APIs**

And in the sphere of APIs Emma also recognises the need for improvement.

“With clearing and settlement (CASS) in particular we know we need to look at enabling further automation and customisation functionality allowing customers to get the full benefits of being able to automate back office processes. That will help them improve operational efficiency and reduce the overall cost of trading.

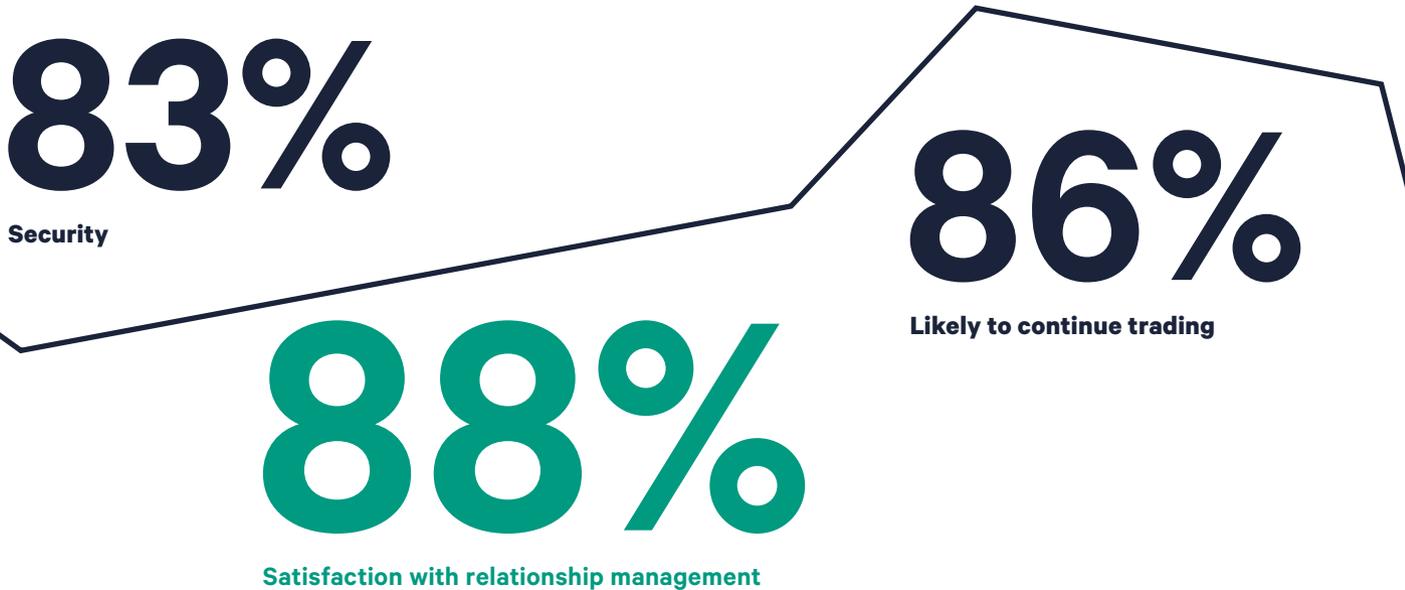
“With trading increasingly data-driven customer feedback will also lead to renewed activity around upgrading data services at Nord Pool”, Emma suggests.

“We are aware that speed of data retrieval is a concern for customers using our FTP server. Investing in data server capacity combined with a streamlining of filtering, greater automation and improved speed, are definite options we will be investigating”, she says. “The speed of data retrieval and interpretation are real challenges for our customers. We want to make that a lot more manageable.”

### **Expanding our reach**

But there is pressure from customers not just in the sphere of products, services and platforms. In an era of increased power exchange competition, they understandably want to see Nord Pool’s ‘face’ in new markets too.

“Customers expect us to deliver on new product launch plans we’ve shared with them, especially bringing improved intraday trading to the UK and day-ahead in Austria, Belgium, France, Germany, Luxembourg and the Netherlands. Not only are we forging ahead with these plans, we are consulting more closely with customers on our progress and inviting them to test these new services early, so that we are ahead of the game.”



**83%**

**Security**

**88%**

**Satisfaction with relationship management**

**86%**

**Likely to continue trading**

## Moving forward

So that is an overview of the findings of the Nord Pool customer engagement programme for 2018. But what are the key things Emma would like customers to take away as a result? She is very clear.

“In intraday, customers can look forward to improved performance of our user interface and API. We were asked to develop our CASS API to allow customers to automate more. We have already acted on that — our full CASS API offering is now available to customers, who can completely automate the invoicing process.

“The message from customers on us expanding our data offering and providing better ways to automate it, was pretty clear. So I’m glad to report that we are well progressed on a Nord Pool data API and expect to launch it this year. The aim is that this will provide access to all Nord Pool data through a single API solution enabling greater automation by customers. We will not close down our FTP server as we know that an API isn’t for everyone, but we will launch a new Secure File Transfer Protocol (SFTP) server to run alongside our FTP and API offering.

“And when it comes to expansion into new markets, right now we are preparing to launch our day-ahead offering for central and western Europe in time with the wider multi-NEMO arrangements. We wanted to be as early as possible with this, so have already been in contact with customers to make the product available for testing.

“So, as you can see, we have listened, and acted. And in times of increasing change, that is something we feel our customers can and should continue to rely on.”

# 93%

## Trust

**Emma McKiernan**  
Strategic Account Unit Leader



# Powering the Future

**When you originated a great idea, breathed life into it and made it work, it is easy to just sit back, watch your 'baby' grow and bask in the reflected glory. But things change, life rarely stands still. Sitting on the sidelines feeling pleased with yourself, you may find that things pass you by.**

To some extent that picture characterises, historically, the situation with the established model of cross-border power market. Jan Rönnback, Director Market Coupling at Nord Pool, explains: "Nord Pool established what a modern power exchange business looks like. We were the first to set up cross-border power trading, initially in our 'home' territory of the Nordic region and then expanding it outwards towards what has now become the EU European Target Model. The Nordic/Baltic model of power market which Nord Pool pioneered has worked well; people were happy with it — so why change?"

"We remain immensely proud of that achievement, and occasionally it helps to remind the world about our history; but we are ever-more aware of the changing power trading world — and if we weren't our customers would make very sure that we know the impact changing times are having on them!"

Vassi Kujala, Nord Pool's Finland Market Manager, agrees: "I think too much time passed without a lot of serious thought going into what power markets were going to need to look like in the future. Now we, the Transmission System Operators (TSOs) and our customers, are waking up to the need to develop the market to manage a changing world."

## **Disrupting the status quo**

Both Vassi and Jan believe that changing regulation has been a key disrupting influence, making the trading environment less passive and increasingly dynamic. "In that environment," says Vassi, "we see an opportunity for Nord Pool to have a more active role both in market design and market development, to match the changing needs of customers."

It has, perhaps, been easier, more 'instinctive', for power exchanges to conflate market expansion with market development, focusing on the former at the expense of the latter. That may have been natural when the main trading markets — day-ahead and intraday — have been stable for some time. But today, that 'status quo' is changing.

Fredrik Bomstad, Nord Pool's Director Strategy and HR, believes that in this environment Nord Pool's customers are looking for a 'champion': "With the high growth of renewables, it feels like the right time to go 'back to the drawing board' and readdress market design.

"We see our role as a power exchange changing. We know we need to be listening to and understanding the hopes, fears and ideas our customers have about the market and how it needs to develop. As I see it we need to act as a sounding board and, where necessary, as a voice to represent their needs. There is a need, for example, to accommodate the pressure for market development which is coming from central Europe, so that customers, wherever they are based, can benefit equally.

"Customers can't always achieve that alone — they sometimes need a collective 'voice' to represent their point of view."

## **An ear to the ground**

Nord Pool's Customer Advisory Board (CAB) is key to 'taking the temperature' of the market and understanding what is front of mind for customers.

Jan Rönnback comments: "We can't just sit, listen, smile and nod. We know we need to use our influence to take the views customers are expressing to us to, for example, TSOs and regulators. That means directly influencing stakeholders in the right forums, but also less formally expressing our views, for example through white papers. And we also see the need to pilot some of the stronger concepts we come up with — after all, pioneering is more than merely talking and writing."

A photograph of Fredrik Bomstad, a man with short grey hair and glasses, wearing a light-colored button-down shirt. He is shown in profile, looking towards the left. In the foreground, the back of a woman's head and shoulder is visible, also looking in the same direction. The background consists of large windows with vertical blinds. A large, dark green plant is visible on the left side of the frame. The image is framed by a white geometric shape on the left and a dark blue shape on the right.

**Fredrik Bomstad**  
Director Strategy and HR

# “Now feels like the right time to go back to the drawing board and readdress market design.”

**Fredrik Bomstad**

Director Strategy and HR

“That effort needs to be a local, national and Europe-wide one,” adds Vassi. “We have used the Nord Pool CAB as the foundation on which to build a process which will allow us accurately to assess the problems which are coming in the next five-to-ten years.”

So what sort of feedback has Nord Pool had through its CAB consultations? Fredrik explains it as having both ‘vertical’ and ‘horizontal’ characteristics: “Horizontal in the sense of the complex multiplicity of overlapping markets that confront market participants, who must constantly choose between them. On this ‘horizontal’ level we see that the set up must be simpler to, for example, allow renewables to participate fully.

“The ‘vertical’ feedback is all about harmonisation across jurisdictions. It is not easy to optimise your business if you face a number of separate markets that work differently, for example with big differentials between trading, products and delivery times. In the 21<sup>st</sup> century that is just not customer-friendly, nor will it be efficient enough, considering the challenges faced by the power system. On the other hand, further harmonisation would increase both the liquidity of markets and the efficiency of dispatch.”

## **A process of innovation**

Today Nord Pool has an active innovation process, looking at, and testing, future market design ideas. Vassi explains:

“We try to anticipate our customer needs in the medium and long term, so that we have answers to their challenges even before they come and tell us about them. That also allows us to highlight issues that we see approaching and ask our customers about them so that we can establish a better understanding of how their business is transforming. The bottom line is that we need to plan changes now, so that we are ‘ahead of the game.’”

On the one hand, that demands greater focus and coordination from Nord Pool, but it also needs to lead to concrete change that customers can ‘see’ and ‘touch’. “Otherwise,” as Vassi puts it, “everyone can see that the wheels are spinning, but we aren’t moving forward!”

## **Appreciating the basics**

Vassi believes that it is good to bear in mind the purpose of a well-functioning power exchange. “That aspect of what we do has not changed fundamentally,” he explains. “Even though the environment in which we operate is undeniably changing. We are here to optimise the efficiency of power production assets across borders so countries do not need to build big reserves to cover all their usage of power.

“What has changed is that today the whole agenda for the energy industry is being set by climate change, regulatory and safety factors, which will undoubtedly shape how the power market looks in the future. There are targets for cutting emissions, for example — those requirements are placed on our customers and the market needs to accommodate them. That requires greater input from and influence by renewables, with their particular production characteristics. So we in turn need to ensure that renewables producers have, for instance, easy access to the market.

“When we enter the realms of fifteen minute trading and generally trading closer to delivery, with intermittent production assets, customers will need to react faster, sooner and more frequently. Trading will be more data-driven, for example in forecasting wind production. That means relying far more heavily on APIs.

“How much trading will still be done on a ‘human’ user interface? What kind of needs will customers have? Will there be no ‘traders’ as we know them today and have done for decades, but instead just a small team observing a robot handling everything over an API? In that case, power trading will look very different from what we know, understand and find comfortable now.”

### **Expanding our knowledge**

Having a theoretical appreciation of customer concerns is one thing, but Jan Rönnback feels that a better understanding of the situation 'on the ground' demands a fuller immersion in the world of Nord Pool's customers.

"We have been expanding our knowledge by visiting the control rooms of customers outside our 'usual' territory of day-ahead and intraday trading, to try to gain a better appreciation of the whole value chain from the customer perspective. Only in that way can we truly hope to simplify the entire trading journey for our customers.

"And it's a bit confused out there. The balancing markets of the TSOs all work differently and are designed to 'face' the TSOs, of course, to address their needs, not those of the customer. Customers need to be able to place their orders in a simple way, but their needs have simply not been considered."

Fredrik Bomstad picks up on the theme: "A good example is that TSOs see the frequency control of their grid getting more challenging almost by the day. Greater use of renewables makes that more difficult, since renewable production is harder to predict and forecast. It can change drastically even within the hour, and that was not the case with 'traditional' types of production, where you could decide how much you were going to be producing and when.



**Vassi Kujala**

Market Manager Finland



**Jan Rönback**  
Director Market Coupling

“That creates problems for TSOs with keeping the grid stable, which is why they would like to see shorter balance settlement windows. Right now, ideally they would like to be able to plan how the grid is run in fifteen minute blocks. Plus, of course, customers want to trade themselves into balance closer to delivery and capture value creation opportunities for all their assets. It is up to us to ensure that they are provided with those opportunities.”

Solving those issues, although not insurmountable, is only part of the equation, as Jan illustrates: “It’s not just about finding and providing solutions, we also need to make it easier for customers to manage those solutions. As we move trading closer to delivery hour we begin to see overlap with markets that the TSOs are running themselves, with a mix of capacity and energy markets where trading is also going on. Customers are faced with difficult questions. They have to choose where to trade, where to offer assets, and that is not a great place for them to be.”

“These are problems for the customer, but just as much of a headache for the TSOs, that cannot get the best balancing orders, which increases the cost of balancing,” adds Vassi. “If I set up a power company today, I could be presented with a choice of five different TSO markets to choose between — so access can be very far from simple.”

### **Offering solutions**

So what should a ‘winning’ power exchange be offering its customers? Jan thinks differentiation is a real challenge.

“On the face of it, the key differentiators between power exchanges will be their successful blending of technology, reliability and speed — but if you can bring something extra then you are adding real value. Unfortunately, a market which is heavily regulation-driven, as we see today, tends not to be fertile ground for creativity, in terms of looking to the future, since so much market detail is set by the relevant codes, guidelines and so forth.”

Nord Pool is now at the stage of offering both solid suggestions for changes to market design, to make markets more integrated, and on how to help customers better use and access the current market.

“Looking at market design we have taken our suggestions to customers and agreed some key principles, but we have to be realistic and accept that it will be a medium-to-long term process,” explains Vassi. “For example, we know that as a power exchange we are not instinctively trusted as being experts in modelling — or re-modelling — TSO markets. We know we have to gain confidence and trust.”

“There is so much to consider here,” concludes Jan. “We have not even begun to talk about the key market design question of wider integration of power exchanges across Europe.”

“When we think about the differing power markets it is hard to see that there could be a ‘one size fits all’ solution, since the TSO grids across Europe are so very different. Having a single model for the whole of Europe is a great idea, but is that truly practical? How can it be realised? And then there is the related issue of legal separation between Market Coupling Operator functions and power exchange functions — something that Nord Pool is proud to have led the way on.”

“It is clear that when it comes to market design, there is a lot still to be determined.”

Powering the Future

# Shaping for Success

**In recent decades the European power market has been through profound changes aimed at enhancing security of supply, maximising socioeconomic welfare for end-consumers and enabling more renewable energy.**

A single integrated European energy market has been the agreed way forward from the EU Commission. At the heart of that are the power exchanges, which have historically operated across several countries with a clear role of securing efficient market operations and security of supply. Traditionally power exchanges operated as natural monopolies in different geographical areas but today they may operate in full competition across most European power markets.

As Hans Randen, Nord Pool's Director Market Coupling Operator, explains, this transition creates a challenge for how the European power exchanges operate.

“Power exchanges participate in and implement pan-European cross-border power trading projects. They are also facilitating secure and transparent power trading. They must cooperate, to build robust, reliable, efficient power markets. At the same time they are competing, to ensure a viable forum in which power can be traded.

At Nord Pool we have struggled to ‘square’ this particular ‘circle’ and in 2018 decided it was time to take action. So we have remodelled our organisation to ensure it is better fit for purpose.”

Nord Pool has recreated its business as two organisations under a single Nord Pool umbrella — separating out the differing requirements to cooperate and compete by forming a Market Coupling Operator (MCO) company and a Power Exchange company.

## **Why restructure?**

“The change has been driven by the lack of clarity we see in the Network Guidelines on Capacity Allocation and Congestion Management (CACM) — the European Regulation governing our cross-border business, which tries simultaneously to govern both cooperation and competition,” continues Hans. “CACM provides the basis for implementation of a single energy market across Europe, while at the same time administering competition between power exchanges. We saw a need to separate-out the distinctly commercial tasks of our market operations (the power exchange functions) from the cross-border market-coupling tasks of market operations (the MCO function).

“At Nord Pool we want to deliver the very best that we can for our customers — which means ensuring that they get the benefits of what fair competition between power exchanges should deliver.

With the CACM regulation as it currently stands we see some real challenges. Power exchanges are forced to make choices. Do they invest in their own products, systems and services to deliver what customers want? Or do they invest in the common European projects in which exchanges are required to participate, to provide benefits to wider society? And our competitors also benefit. Of course, commercial concerns are nearly always uppermost — which causes inevitable delays when power exchanges are tasked to cooperate.”

Hans sees the ‘fallout’ from this situation being key European implementation projects taking longer and becoming more costly than necessary, where parties are in head-to-head competition. But he has other concerns besides the waste of time and money.

“There are parts of the CACM regulation that maintain barriers to new power market entrants, holding back true competition. In some geographical regions this goes as far as to distinctly favour the incumbent power exchange over any operation trying — as CACM encourages — to offer a competitive alternative. And, for us, that does not feel much like competition — in fact it must mean that there will simply be no competition in some markets.

“We believe that the truly competitive future power trading landscape which the CACM regulation envisages is achievable. A change in governance to ensure that commercial and cooperative interests can be pursued independently by separate entities, will be required. We have led the way by separating out these different interests within or own business.

“There is no room for complacency. We are unbundling for the future; developing a fully commercial, fit for purpose, power exchange organisation to deliver the benefits of competition; and a separate market coupling operation to lead from the front in important on-going market integration projects. And our experience is that this is not hard to do — the change can be made with minimal disruption, if the desire to do it is there.”



**Hans Randen**  
Director Market Coupling Operator

Powering the Future

# New Developments with NODES

**The ‘green shift’ is creating challenges for our power system. The increasing share of solar and wind in the power mix, the majority connected at dispersed locations, creates congestion in the distribution grid. New cloud-based technology and increased computing power are creating opportunities today that did not exist back in the 1990s when our current power markets were designed. And new consumption patterns, with increased electrification of transport, are ramping up the pressure on today’s grid infrastructure. As a result, the distribution grid needs flexibility in order to avoid massive investment in new infrastructure.**

That is where our joint venture company NODES, established with Agder Energi, comes in, as the company’s Chief Executive, Enno Böttcher, explains: “NODES has created a new local market layer providing a localised approach to solving problems in the physical grid, since the very complex distribution grids that exist are just not reflected in current market design. Distribution grid operators, in their current role, simply do not have access to the energy markets.

“NODES will facilitate a more efficient use of local distribution grids, providing a market-based alternative when solving congestion where no such solution exists in wholesale markets (prompt, intraday, day-ahead) or ancillary service markets (balancing,

regulating, re-dispatch). Grid operators can use this in their new Distribution System Operator (DSO) role.”

NODES’ vision is: ‘Building Europe’s most customer-centric, integrated energy marketplace to unlock the value of local flexible power resources and support the drive to a sustainable, emission free future’. But what does that mean, on the ground?

Enno continues: “Currently, the wholesale market is regulated by the Capacity Allocation and Congestion Management (CACM) guidelines while the ancillary markets are regulated by the Electricity Balancing Guidelines and individual national legislation. Local flexibility markets do not currently have a regulatory framework, and roles in this market are being formed as we speak. NODES wants to be in the forefront of this process. We have invested heavily developing our innovative and viable market design which is being shared and discussed with stakeholders in the European energy market, including regulators.

“There are flexibility assets that are not connected to the wholesale or to ancillary service markets, and they do not see a market price for the flexibility they can offer, both locally and nationally. NODES wants to inspire new business models to involve those who are investing in renewables — solar, wind, biomass, electric vehicles, etc. Those types of assets will benefit from local markets, whether they are industrial, commercial or aggregation of private households.

“Our aim is to integrate assets for system balancing and security of supply while also keeping them profitable for generators at a local level. There is a need to create a market that gives those who both produce and consume power — ‘prosumers’ as we call them — the opportunity to sell their flexibility, while at the same time reducing costs for re-dispatching and balancing, for grid operators.”

Enno sees two major challenges in establishing NODES’ place in the market.

“In Europe we have more than 2,000 grid companies at distributor level, confined by what regulation allows them to do. The Clean Energy Package permits more market-based flexibility platforms. What grid operators need to learn is how to look beyond simply what is allowed within regulation to see that they have an option as a system operator to activate local flexibility”, he continues.

“Experiences from our pilot project in Europe demonstrate that a market-based approach can allow operators to secure system and grid operations. However, cooperation between DSO and TSO is needed in order to release the real value of flexibility on all levels of the power grid. NODES welcomes the positive trend we see across Europe. Gaining traction with that change in thinking is our first major challenge.”



In addition to the 'political' challenge for NODES, there is a technological one to overcome too, as Enno explains: "The rise of algorithmic trading, with thousands of trades entered every hour, is a massive hurdle that households and small commercial units cannot overcome. To operate in that market, they need aggregators who can bring the technology to allow their participation; a local market that is attractive enough for them to take part but where they do not have prohibitive costs. NODES is not an aggregator, but we see that there is a need to identify potential aggregators for small scale renewable sources, who can collect small units into a single portfolio, optimise that and trade on the wholesale/ancillary service markets."

And Enno believes that NODES is making progress. From the initial Agder Energi proof of concept at Engene substation in Norway, there are now about 50 pilot projects and discussions are taking place across ten countries. Current projects and discussions are taking place with stakeholders in Germany, the UK, Norway, Sweden, Denmark, Finland, the Baltic countries, Greece and Portugal.

"It's a hot topic. The Clean Energy Package signals that subsidies for renewables should decline. Regulators are looking into the NODES market-based approach and we are increasing the knowledge base. I think legislation needs to change to give grid operators more freedom to act in the market.

"As the Clean Energy Package is implemented into national legislation, it will create the potential for local markets, under national oversight, that will be complimentary to the existing wholesale and ancillary markets. I would like to see more than 100 local markets in Europe in the next five years."

And what message does Enno have for the wider energy market community?

"What NODES is doing fits very well with the sustainable development goals of the United Nations, concentrating as they do on cooperation. Striving for affordable clean energy, we need to cooperate to make new markets work. What we are presenting is an extremely cost-effective opportunity, not just for grid operations but from a wider national economic welfare viewpoint too. This can reduce the high numbers of redispatch which so amply illustrate the inefficiency in the system. So much money can be saved if we can only utilise the potential of flexibility across Europe."

**Enno Böttcher**  
CEO, NODES



# Strength in Diversity

At Nord Pool, we see one of our key assets being the diverse mix of dedicated experts we have working for us — and for our customers. From our offices in Oslo, London, Berlin, Espoo (Finland) and Stockholm our team of 139 employees, of whom more than 30% are women, bring their differing professional abilities to bear on some of Europe's greatest energy challenges.

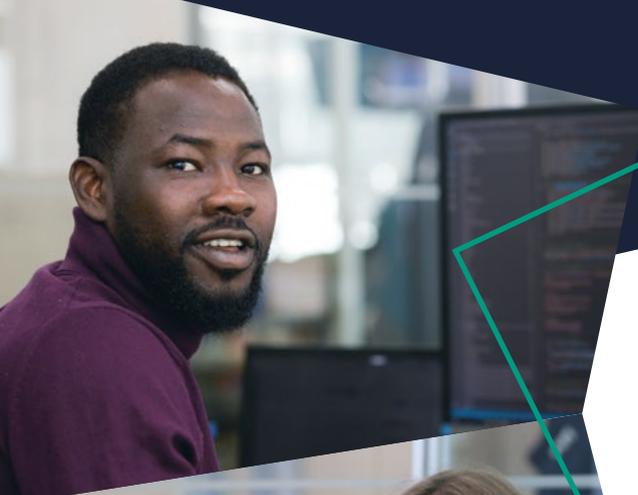
**We caught up with four Nord Pool staff, all with very different backgrounds, to get a sense of why they joined Nord Pool and what excites them about working in the power sector.**

Elena Volkova, 28, comes originally from Belarus and first worked with Nord Pool as a contractor, but, as she says: "I liked the project I was working on so much and found the power business so interesting, that when the opportunity for a permanent position came up — I jumped at it!"

Elena has an academic background in both software engineering and economics. "Right now I am working on developing our intraday trading platform. Nord Pool, and the energy sector more widely, is a place where I can bring my technical expertise, agile mindset and customer-oriented approach to bear on the IT solutions we need for the future."

Sujatha Srideve, 37, from India, has a master's degree in computer science and started her working life with Indian multi-national Tata Consultancy Services. She joined Nord Pool because: "I was very impressed with what Nord Pool expected of me. I applied for a job and was waiting desperately to hear. When I heard I had got it, I was delighted!"

Sujatha's background is in quality and process improvement techniques, something which she finds very useful at Nord Pool: "I am focused on improving the processes we have to deliver quality products and services to our customers. And automation is a big thing for me, especially in Application Programming Interfaces."



**Olanrewaju Oladunjoye**



**Elena Volkova**



**Sujatha Srideve**

Olanrewaju Oladunjoye comes from Lagos, Nigeria. He is proud not only to be part of the Yoruba tribe, but also to have been born on Nigeria's day of national independence! He has a degree in information technology and joined Nord Pool: "Because I was fascinated by the complex IT infrastructure needed to make the company efficient, as well as being curious about the power sector more widely. It is great to be part of a team that is working to help the company solve problems and create innovative solutions for customers."

Matin Bagherpour, 42, moved from Tehran to Norway ten years ago, to pursue post-doctoral research after gaining a PhD in industrial engineering. She was interested in applying her theoretical knowledge in a business setting and Nord Pool provided that opportunity. "I enjoy connecting the knowledge I have gained from academia, particularly in applied mathematics (optimisation), to the needs for modelling and analysis that we have in Nord Pool."

So what do four Nord Pool employees with such different backgrounds see as the most interesting aspects of working in an energy sector business? There is some common ground.

Sujatha was keen to find out more about the energy business: "I had never worked in the power sector before and was curious about its complexity and challenges. Energy provision and pricing continue to be pressing issues. Working in an energy company is fast-paced and exciting. There's a steep learning curve, but I like that."

And curiosity drives Olanrewaju, too: "For me it's really interesting to learn more about the power sector and to better understand the IT infrastructure that is pushing it forward."

"The energy sector is so dynamic and gives lots of opportunities for me to use my expertise, develop my skills and have a role in a greener future," adds Matin. "And at Nord Pool I feel appreciated, heard and supported. The work environment is friendly — people care about each other."

Are there any particular advantages to having a diverse work environment? Elena has no doubt. "Diversity in the workplace is really important. Employees from different backgrounds, age and gender offer such a broad range of ideas and solutions from very different perspectives. I constantly see different talents being brought together to achieve common goals and that has a really positive influence not just on the working environment, but in the solutions we can bring to customers. The working atmosphere at Nord Pool is almost like a family. There may not be that many of us but there is a vast diversity in nationalities, backgrounds and that means a diversity of ideas, too. It feels like everyone can bring their ideas forward and make a difference."

Olanrewaju agrees: "Nord Pool is a very interesting place to work. There is such a diversity of nationalities and backgrounds with the opportunity to be presented with — and to solve — a wide variety of challenges."



**Matin Bagherpour**

And what about those challenges — what does the Nord Pool team see as the key future focus areas for the power sector?

"Introduction of more renewable, and therefore intermittent, energy sources has changed the whole energy market in Europe," comments Matin. "There is a real need to redesign the market in a way that serves market participants best and Nord Pool has a key role in developing the right market options."

Elena agrees: "A key challenge is the constant growth of renewable energy and with it the need for short-term adjustments. The intraday market is becoming increasingly important as it gives the possibility to trade close to physical delivery. The energy sector is facing unprecedented challenges from rapidly changing market demands, with the added complication that we now see power exchanges in much closer competition — but at least that's good news for customers!

"At Nord Pool we know we must adapt to rapidly changing market demands through the technology choices, development and solutions we offer our members. And that is what we are doing."

"Of course lowering emissions and encouraging power generation from renewable sources is important," concludes Sujatha. "But at a more business-specific level, I see that organisations like Nord Pool are going to have to integrate new technologies and ensure all employees are comfortable working in an increasingly digitised environment, if we are going to turn challenges into opportunities."

# Directors' and Financial reports

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## Report of the Board of Directors

**Nord Pool Holding AS is located in Oslo. The Nord Pool Holding Group is constituted by the parent company Nord Pool Holding AS, and the two subsidiary groups; the European Market Coupling Operator (EMCO) group and the Nord Pool group. The structure originates from the 2018-demerger of Nord Pool AS, separating the EMCO (monopolistic) and Nord Pool (competitive) operations into two separate legal entities. The demerger does not affect the group accounts for Nord Pool Holding AS.**

The EMCO group comprises European Market Coupling Operator AS, European Market Coupling Operator AB and European Market Coupling Operator Oy. The Nord Pool group comprises Nord Pool AS, Nord Pool AB, Nord Pool Finland Oy, Nord Pool Consulting AS and GB Day-Ahead Pooling Company AS (in the process of being dissolved).

European Market Coupling Operator AS holds NEMO-licenses in 15 countries and through delegation of these to Nord Pool AS, organises simple, efficient and secure power trading — centred on day-ahead and intraday markets — to customers in the Nordic and Baltic countries, the UK and Germany (intraday).

Furthermore, Nord Pool offers compliance services for its customers and for transmission system operators (TSOs), around European regulatory requirements such as the Regulation on Energy Market Integrity and Transparency (REMIT) and others.

Nord Pool has its main office in Lysaker, and branch offices in London, Berlin, Espoo and Stockholm. Nord Pool is owned by the TSOs Energinet, Fingrid Oyj, Statnett SF, Svenska kraftnät, Elering AS, Augstsprieguma tīkls AS and Litgrid AB.

## Operational highlights

2018 was another highly successful year for Nord Pool as volumes, revenues and profitability reached record levels. Continued efforts were made in developing and upgrading Nord Pool's system platforms and significant efforts were also made to reach go-live of XBID in June 2018. XBID has created a joint integrated intraday cross-zonal market. The purpose of this is to enable continuous cross-zonal trading and increase the overall efficiency of intraday trading on the single cross-zonal intraday market across Europe.

The year also saw Nord Pool make its first investment into the development of a decentralised market for flexibility by taking a 50% stake in NODES AS. NODES is a marketplace for a sustainable energy future where grid owners, producers and consumers of energy can trade decentralised flexibility and energy.

During 2018 Nord Pool has restructured the group so that market coupling activities and power exchange activities are organised into two different legal substructures.

The Board wants to express its gratitude to its customers and employees for their contribution in 2018.

## Annual Accounts 2018

Group revenues in 2018 were NOK 382.9m (2017: NOK 345.3m) whereas operating profit was NOK 103.2m (2017: NOK 54.1m). Net income amounted to NOK 62.0m (2017: NOK 38.2m) for the Group. Corresponding numbers for Nord Pool Holding AS were revenues of NOK 0, operating profit of NOK -1m and net income of NOK -1m.

By the end of 2018, total equity and liabilities for the Group was NOK 2.677m (2017: NOK 1.1874m). The equity and liabilities of Nord Pool Holding AS were NOK 333.6m as at 31<sup>st</sup> December 2018 (2017: NOK 0.1m).

The Board of Directors considers the equity to be adequate with regards to the company's exposures and collateral posted by market participants.

The annual accounts are prepared on the going concern assumption, and the Board of Directors confirms the basis for this. No events of material significance (for the 2018 annual accounts) have occurred up to and including the signatory date of this report.

## Liquidity

Group cash and cash equivalents changed from NOK 526m at the end of 2017 to NOK 555m at the end of 2018.

## Risks

Nord Pool's activities have no negative impact on the environment. Nord Pool operates in an environment increasingly defined by regulatory requirements. This gives rise to new business risks — and opportunities — such as potential market entry of new competitors, regulatory or other legal amendments, technical changes or modifications of the product landscape, etc.

### **Market Risk**

Nord Pool is exposed to currency risk, as physical power trades are settled in multiple currencies. This exposure is hedged using contracts where settlement and VAT is hedged on a daily basis, while revenues are locked-in once a week.

In the UK market, Nord Pool also faces imbalance risk due to being a nomination agent and thus requires members to post collateral reflecting replacement cost in case of non-delivery or rejection of notified volumes.

As we enter a more competitive environment among power exchanges, due to the advent of a single European power market, Nord Pool anticipates greater competition in its established markets, even as the company enters new geographical markets itself. The Board regards Nord Pool to be very well positioned for future competition.

Nord Pool is campaigning to ensure robust cost recovery associated with work undertaken in relation to European market coupling. At the time of writing, this is not assured.

### **Credit Risk**

All Nord Pool trades are settled on the day of trading or on the following business day, with invoices and credit notes being dispatched in the afternoon. Financial settlement is due one banking day after trading for net buyers and two banking days after trading for net sellers. The credit risk related to financial settlement is mitigated by holding collateral as a payment guarantee for unpaid invoices.

Collateral requirements are regulated by the Clearing Rules. Collateral can be posted either in the form of cash on a pledged account, or as an on-demand-guarantee or letter of credit. Year-end accounts receivable amounted to NOK 1,752m (2017: NOK 994m) of which NOK 1,724m referred to trading.

Variations in settlement cycle following variations in banking days over the new-year period give rise to significant fluctuations in accounts receivables from year-to-year.

### **Liquidity Risk**

Nord Pool has a solid liquidity position, as invoices from physical power sold as a main rule are due one banking day prior to self-billing invoices for purchased volumes.

### **Counterparty Risk**

Counterparty risk for Nord Pool is regarded as low and is mitigated through members and financial counterparties being subject to an internal risk assessment prior to trading and financial exposure, as well as monthly monitoring and reporting using both internal and external sources. Members must comply with and fulfil daily security requirements, while the solidity of financial intermediaries is monitored using external credit ratings. There was no debtor loss registered for Nord Pool in 2018. In the case of a member default Nord Pool expects to recover all outstanding claims by calling on the member's collateral.

### **Risk capital**

The concession granted to Nord Pool from the Norwegian Water and Energy Directorate (NVE), requires that the company holds sufficient risk capital and that the size of this is reviewed regularly. The company complies with this and continuously monitors the situation.

### **Organisation and working environment**

The talent base of the group is significant. As per 31<sup>st</sup> December 2018 the Nord Pool Group had 139 employees based in Norway, Sweden, Finland, Denmark, the UK, Estonia, Germany and Lithuania. Of these 36 were in European Market Coupling Operators AS and 103 were employed in Nord Pool AS. Nord Pool Group had 45 female employees and 94 male employees at 31<sup>st</sup> December. There are female employees at all Nord Pool offices.

The Nord Pool Holding Board of Directors consists of four men and two women. The Chairman of the Board is male. The CEO is female. The group corporate management team consists of five women and four men.

Health-related absence during the year was 1.4%. No lost-time accidents or personal injuries were suffered in 2018. Nord Pool human resources policy is based on equality, meaning that there shall be no differences between male and female salary when expertise and experience are comparable.

The group has an equal opportunity approach and encourages employees of both genders to establish solutions which make it easier to combine work and family life. There were three employees on maternity/paternity leave as per 31<sup>st</sup> December 2018, and the company had one employee working part time at the end of the year.

Nord Pool Holding AS was incorporated and inserted at the top of the existing Nord Pool AS group in 2018. Nord Pool Holding AS issued shares to the existing shareholders of Nord Pool AS in exchange for the shares already held in that entity. There are no changes to the shareholder group immediately before and after the reorganisation.

### Allocation of profit

The Board proposes to distribute NOK 45,889,352 as dividend for 2018, and to allocate NOK 10,000,000 to other equity.

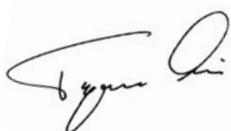
### Outlook for 2019

The Board welcomes the future competition between power exchanges following the implementation of Multi-NEMO arrangements across Europe, expected to take place in 2019. Upon implementation, Nord Pool will be ready to extend its market offerings for day-ahead and intraday trading.

Positive developments from last year continue into 2019 and the year is expected to yield strong results. Nord Pool remains committed to pioneering European power markets, and to driving innovation for the benefit of all customers and stakeholders.

On the basis of power exchange activities being outside of the owners' core activities strategic options for these are considered.

LYSAKER, 23 APRIL 2019



**Torger Lien**  
Chairman



**Søren Dupont Kristensen**  
Member of the Board



**Jan Montell**  
Member of the Board



**Niclas Damsgaard**  
Member of the Board



**Aistė Krasauskienė**  
Member of the Board



**Kristin L. Munthe**  
Member of the Board



**Kari Ekelund Thørud**  
CEO

# The Board of Directors

## **Torger Lien**

Chairman  
Chief Executive Officer,  
SN Power

## **Jan Montell**

Member of the Board  
Senior Vice President, CFO,  
Fingrid Oyj

## **Niclas Damsgaard**

Member of the Board  
Senior Vice President  
Market and System Development,  
Svenska Kraftnat

## **Søren Dupont Kristensen**

Member of the Board  
Chief Executive Officer,  
Energinet Electricity System Operator,  
Energinet

## **Kristin L. Munthe**

Member of the Board  
Senior Vice President,  
Statnett SF

## **Aistė Krasauskienė**

Member of the Board  
Head of Market Development Division,  
LITGRID AB

# Profit and loss account

Nord Pool Holding AS			Nord Pool Holding Group	
2018	2017	Amounts in NOK 1000	2018	2017
0	0	Fixed fee revenues	34 966	31 671
0	0	Volume dependent fees	223 584	216 978
0	0	Other operating income	124 441	96 643
<b>0</b>	<b>0</b>	<b>Total operating income</b>	<b>382 991</b>	<b>345 292</b>
0	0	Depreciation	6 773	10 499
0	0	Payroll expenses	141 111	138 873
750	6	Other operating expenses	131 899	141 866
<b>750</b>	<b>6</b>	<b>Total operating expenses</b>	<b>279 783</b>	<b>291 238</b>
<b>-750</b>	<b>-6</b>	<b>Operating profit</b>	<b>103 208</b>	<b>54 054</b>
56 859	0	Net financial items	-20 733	-4 036
<b>56 109</b>	<b>-6</b>	<b>Profit before taxes</b>	<b>82 475</b>	<b>50 018</b>
220	0	Taxes	20 441	11 816
<b>55 889</b>	<b>-6</b>	<b>Net income</b>	<b>62 034</b>	<b>38 202</b>
<b>ALLOCATED TO:</b>				
<b>45 889</b>	<b>0</b>	<b>Dividend</b>		
<b>10 000</b>	<b>-6</b>	<b>Allocated to / from other equity</b>		

# Balance sheet

## Assets

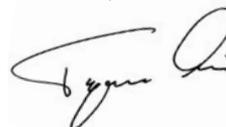
Nord Pool Holding AS			Nord Pool Holding Group	
31.12.2018	31.12.2017	Amounts in NOK 1000	31.12.2018	31.12.2017
		<b>ASSETS</b>		
		<b>FIXED ASSETS</b>		
		<b>Intangibles</b>		
-	-	Intangibles assets	14 971	9 342
-	-	Deferred tax benefit	1 191	1 192
-	-	<b>Total intangible</b>	<b>16 162</b>	<b>10 534</b>
-	-	<b>Tangible fixed assets</b>	<b>1 264</b>	<b>1 110</b>
		<b>Financial assets</b>		
276 672	-	Investment in subsidiaries		
		Investment in associated companies	32 578	
<b>276 672</b>	-	<b>Total financial assets</b>	<b>32 578</b>	-
<b>276 672</b>	-	<b>TOTAL FIXED ASSETS</b>	<b>50 004</b>	<b>11 644</b>
		<b>CURRENT ASSETS</b>		
		<b>Receivables</b>		
-	-	Accounts receivables	1 752 416	994 447
56 859	-	Other receivables	319 193	341 453
-	-	Group receivables		
56 859	-	<b>Total receivables</b>	<b>2 071 609</b>	<b>1 335 900</b>
<b>102</b>	<b>102</b>	<b>Bank deposits</b>	<b>555 127</b>	<b>526 556</b>
<b>56 961</b>	<b>102</b>	<b>TOTAL CURRENT ASSETS</b>	<b>2 626 736</b>	<b>1 862 456</b>
<b>333 633</b>	<b>102</b>	<b>TOTAL ASSETS</b>	<b>2 676 740</b>	<b>1 874 100</b>

# Balance sheet

## Equity and liabilities

Nord Pool Holding AS			Nord Pool Holding Group		
31.12.2018	31.12.2017	Amounts in NOK 1000	31.12.2018	31.12.2017	
<b>EQUITY AND LIABILITIES</b>					
<b>EQUITY</b>					
<b>Paid-in-equity</b>					
53 720	107	Share capital	53 720	53 613	
223 059	-	Share premium	51 300	51 300	
<b>276 779</b>	<b>107</b>	<b>TOTAL PAID-IN-EQUITY</b>	<b>105 020</b>	<b>104 913</b>	
<b>Retained earnings</b>					
9 994	-5	Other equity	182 054	165 832	
<b>9 994</b>	<b>-5</b>	<b>TOTAL RETAINED EARNINGS</b>	<b>182 054</b>	<b>165 832</b>	
<b>286 773</b>	<b>102</b>	<b>TOTAL EQUITY</b>	<b>287 074</b>	<b>270 745</b>	
<b>LIABILITIES</b>					
<b>Provisions for liabilities</b>					
-	-	Pension liabilities	3 517	3 958	
-	-	<b>TOTAL PROVISIONS FOR LIABILITIES</b>	<b>3 517</b>	<b>3 958</b>	
<b>Current liabilities</b>					
-	-	Derivatives	767	35	
-	-	Accounts payable	2 234 793	1 468 124	
220	-	Taxes payable	18 557	9 790	
-	-	Public duties	5 920	6 595	
45 889	-	Dividend	45 889	33 179	
751	-	Other current liabilities	80 223	81 673	
<b>46 860</b>	<b>-</b>	<b>TOTAL CURRENT LIABILITIES</b>	<b>2 386 149</b>	<b>1 599 397</b>	
<b>46 860</b>	<b>-</b>	<b>TOTAL LIABILITIES</b>	<b>2 389 666</b>	<b>1 603 355</b>	
<b>333 633</b>	<b>102</b>	<b>TOTAL EQUITY AND LIABILITIES</b>	<b>2 676 740</b>	<b>1 874 100</b>	

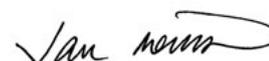
LYSAKER, 23 APRIL 2019



**Torger Lien**  
Chairman



**Søren Dupont Kristensen**  
Member of the Board



**Jan Montell**  
Member of the Board



**Niclas Damsgaard**  
Member of the Board



**Aistė Krasauskienė**  
Member of the Board



**Kristin L. Munthe**  
Member of the Board



**Kari Ekelund Thørud**  
CEO

# Cash flow analysis

Nord Pool Holding AS			Nord Pool Holding Group	
2018	2017	Amounts in NOK 1000	2018	2017
<b>Cash flow from operating activities</b>				
55 889	-6	Net income	62 034	38 202
0	0	Ordinary depreciation	6 773	10 499
0	0	Gain (-)/ Loss (+) of operating assets	0	1 957
0	0	Change in accounts receivable	-757 969	-663 595
0	0	Change in accounts payable	766 669	688 246
0	0	Change in pension liabilities	-441	-172
-55 889	1	Change in other current receivables and liabilities	28 026	-126 744
<b>0</b>	<b>-5</b>	<b>NET CASH FLOW FROM OPERATING ACTIVITIES</b>	<b>105 092</b>	<b>-51 607</b>
<b>Cash flow from investment activities</b>				
0	107	Equity from shareholder	0	0
0	0	Income liquidation from subsidiary	6 000	0
0	0	Purchase of tangible fixed assets	-1 181	0
0	0	Purchase of intangible fixed assets	-10 560	0
0	0	Purchase of associated companies	-37 528	0
0	0	Investment in subsidiaries	-73	-30
<b>0</b>	<b>107</b>	<b>NET CASH FLOW FROM INVESTMENT ACTIVITIES</b>	<b>-43 342</b>	<b>-30</b>
<b>Cash flow from financing activities</b>				
0	0	Payment of dividend	-33 179	-55 328
<b>0</b>	<b>0</b>	<b>NET CASH FLOW FROM FINANCING ACTIVITIES</b>	<b>-33 179</b>	<b>-55 328</b>
0	102	Net change in liquid assets	28 571	-106 965
102	0	Liquid assets as of 1 January	526 556	633 521
<b>102</b>	<b>102</b>	<b>LIQUID ASSETS AS OF 31 DECEMBER</b>	<b>555 127</b>	<b>526 556</b>

# Accounting principles

**The annual accounts have been prepared in accordance with the Norwegian Accounting Act of 1998 and generally accepted accounting principles.**

## **Consolidation principles**

The Group accounts include the parent company, Nord Pool Holding AS, and the subsidiaries European Market Coupling Operator AS, European Market Coupling Operator AB, European Market Coupling Operator Oy, Nord Pool AS, Nord Pool Finland Oy, Nord Pool AB and Nord Pool Consulting AS.

The Group accounts have been prepared as if the Group were a single financial entity. Intercompany transactions and balances have been eliminated. The Group accounts have been prepared based on similar principles, the subsidiary applying the same accounting principles as the parent company.

A purchased subsidiary is recorded in the Group accounts based on the parent company's acquisition cost. The acquisition cost is based on identifiable assets and liabilities of the subsidiary, which are recorded in the Group accounts at market value at the time of purchase. If the acquisition price exceeds (or is less than) amounts attributable to identifiable assets and liabilities, the excess is recorded in the balance sheet as goodwill (or negative goodwill) and amortized on a straight-line basis over the expected useful lives of the purchased assets.

Associated companies are valued in the Group accounts in accordance with the equity method. The allocated proportion of the profit of the associated company is based on the after tax results of the associated company, after deducting any internal gains and any depreciation on any excess value caused by a higher acquisition price of the shares than the acquired part of equity recorded in the balance sheet. The allocated proportion of the profits is recorded in the profit and loss accounts as "Income from associated companies".

## **Subsidiary**

The company's subsidiary is valued according to the cost method in the company accounts. Investments are valued at acquisition cost for the shares unless a write-down has been necessary. Investments are written down to market value if the decline in value is viewed as non-transitory in nature and it is deemed necessary according to generally accepted accounting principles. Write-downs are reversed if the conditions for the write-down are no longer present.

## **Power turnover**

Purchases and sales of electrical power and gas are settled at the same price. Consequently, the monetary value of trading has no effect on the profit level of the Nord Pool Group.

## **Income from fees**

The income base of the Nord Pool Group consists of:

- annual fees
- volume-dependent fees
- FX fees

Volumes fees in the physical market relate to power traded (MWh) and are invoiced together with the power following delivery. FX fees apply for customers buying or selling electricity in other currencies than EUR. It is calculated as a % of invoice value.

## **Classification and valuation of balance sheet items**

Current assets and short-term liabilities include items that fall due within one year of the acquisition date. Other items are classified as fixed assets/long-term liabilities.

Current assets are valued at the lower of acquisition cost and market value. Short-term liabilities are recorded in the balance sheet at face value at the time of recording.

Fixed assets are recorded at acquisition cost, but are written down to market value in the event of a decline in value, which cannot be expected to be transitory in nature. Long-term liabilities are recorded in the balance sheet at face value at the time of assuming such liabilities.

## Receivables

Accounts receivable and other receivables are recorded in the balance sheet at face value after provision for bad debts. Provisions for bad debts are based on an assessment of individual accounts. In addition, a general provision for bad debts is made covering assumed losses for other accounts receivable.

## Foreign currency

Accounts receivable and accounts payable in foreign currencies are valued at the year-end exchange rate on 31<sup>st</sup> December 2018.

## Financial instruments

The Group uses financial instruments to manage foreign exchange exposure. Spot exchange contracts are used solely to hedge currency exposures incurred in connection with the settlement of physical trading. Gains and losses on spot exchange contracts are reported and evaluated in tandem with the hedged item. Gains and losses on hedging instruments rolled over prior to their expiry are recognised in the balance sheet and income statement over time along with the hedged item. Financial derivatives are booked at market value.

## Tangible fixed assets

Tangible fixed assets are recorded in the balance sheet and linearly depreciated over the expected useful lives of the assets. Direct maintenance costs related to tangible fixed assets are currently expensed as

operating expenses, whereas upgrades and improvements are added to the cost base of the operating assets and depreciated at the same rate as the assets to which they refer.

## Intangible assets

Intangible assets are recorded in the balance sheet to the extent a future financial benefit relating to the intangible asset can be identified. If such benefits cannot be identified, the expenses are recorded as costs on a current basis.

## Pension costs and liabilities

The Group has a contribution-based pension plan for all employees, where the current year's pension costs correspond to the current year's premium payment.

Net pension costs for the year are included as a salary expense in the profit and loss account. Premiums paid are treated as investments in pension funds.

Nord Pool AS and European Market Coupling Operator AS has in addition a defined benefit pension plans which provide the employees with the right to defined future pension benefits (defined benefit plans). Benefits are based on the number of years of employment and salary at retirement age. This plan covers two former employees.

Contributions to the pension fund are made in accordance with the actuarial method of calculation. Pension assets in the pension fund are primarily invested in securities. Pension liabilities are calculated in accordance with the Norwegian accounting standard (NRS) for pension costs.

Pension obligations are valued at the present value of future pension liabilities earned as at the balance sheet date, which are to be paid through the company's own pension fund or financed by operations.

## Taxes

Tax expenses in the profit and loss account consist of tax payable for the period and changes in deferred tax. Deferred tax is calculated on the basis of the temporary differences between accounting and tax values, as well as the tax deficit at the end of the year to be carried forward.

Tax-increasing and tax-decreasing temporary differences, which are reversed or reversible in the same period, have been eliminated. Any net deferred tax benefits are recorded in the balance sheet to the extent they are expected to be utilized.

As of 31<sup>st</sup> December 2018, net negative temporary differences between accounting and tax values have been recorded by the Group. The associated deferred tax benefit is recorded in the balance sheet under assets.

## Cash flow

The cash flow analysis has been prepared using the indirect method. The model is based on an adjustment of the after-tax net income resulting in the net cash flow from operating activities. Cash flows from investment and financing activities are presented as gross figures.



# NORD POOL

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