



# Nordic utilities: north-south markets diverge

## Generators in south, TSOs gain from higher prices; windfall taxes loom

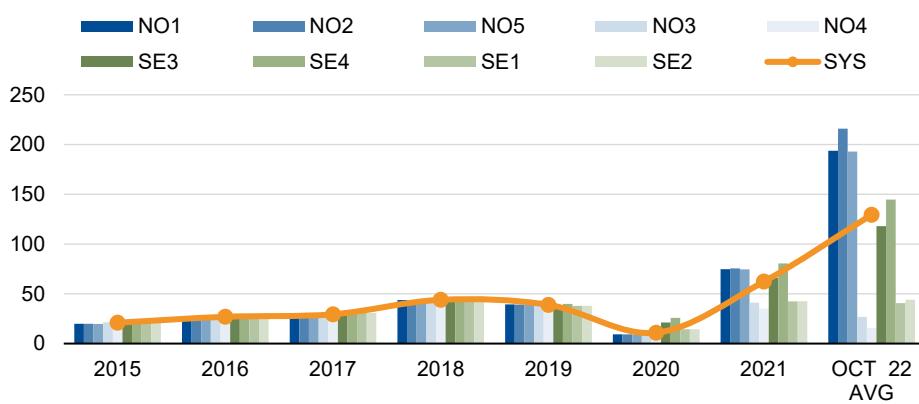
**Nordic utilities will likely face a prolonged period of high electricity prices, but divergence between pricing in the north and south of Norway and Sweden favour southern generators. Depending on location and operational performance, generators are set to benefit from the favourable pricing tailwinds. For distribution network operators (DSOs), the unbalanced electricity market will have little material impact as regulated tariffs ensure aggregated cash flows remain stable over time. National transmission system operators (TSOs) are gaining from congestion income, leading to improvement in credit metrics in the short term.**

The current energy squeeze in Europe, low rainfall in the southern Nordic region, an increased integration of the Nordic market to high price markets such as the UK and Germany through interconnectors and the north-south-Nordic transmission bottleneck have led to record high power prices in the south of Norway and Sweden for many months. In contrast, in northern regions, prices have touched record lows, as rainfall has replenished hydroelectric reservoirs, while transmission capacity to southern regions remains limited.

Electricity generators in the south have benefited from high prices which, given the high proportion of fixed costs in the Nordic sector, should boost earnings, creditworthiness, and the credit outlook. One condition is that utilities do not deploy excess cashflow on discretionary spending: extraordinary dividends or investments with limited cashflow potential. Another is that the newly proposed windfall tax in Norway is implemented in a way that does not significantly cap investment capabilities. Lastly, higher prices have put the spotlight on generators' hedging strategies and their liquidity, should divergence in market prices from hedged ones lead to more margin calls.

Grid operators' earnings, in contrast, are largely immune to swings in market power prices as the long-term upside and downside is capped by regulations. Norwegian TSO Statnett and Swedish counterpart Svenska Kraftnät (SvK) are near-term beneficiaries from considerable congestion income. However, this too will be reduced by lower regulated future income. The price differentials between regional price zones suggest the TSOs will face increasing capital expenditure to reduce these bottlenecks. For now, any short- to medium-term increase in capex is more likely to come from bringing forward projects rather than embarking on new ones particularly as decisions over investments at the TSOs tends to be lengthy and tied up with national politics.

**Figure 1: Nordic power prices by region vs. the Nordic system price (EUR/MWh)**



Source: Nord Pool, Scope

Area definitions: South Norway (NO1, NO2, NO5), North Norway (NO3, NO4), South Sweden (SE3, SE4), North Sweden (SE1, SE2)

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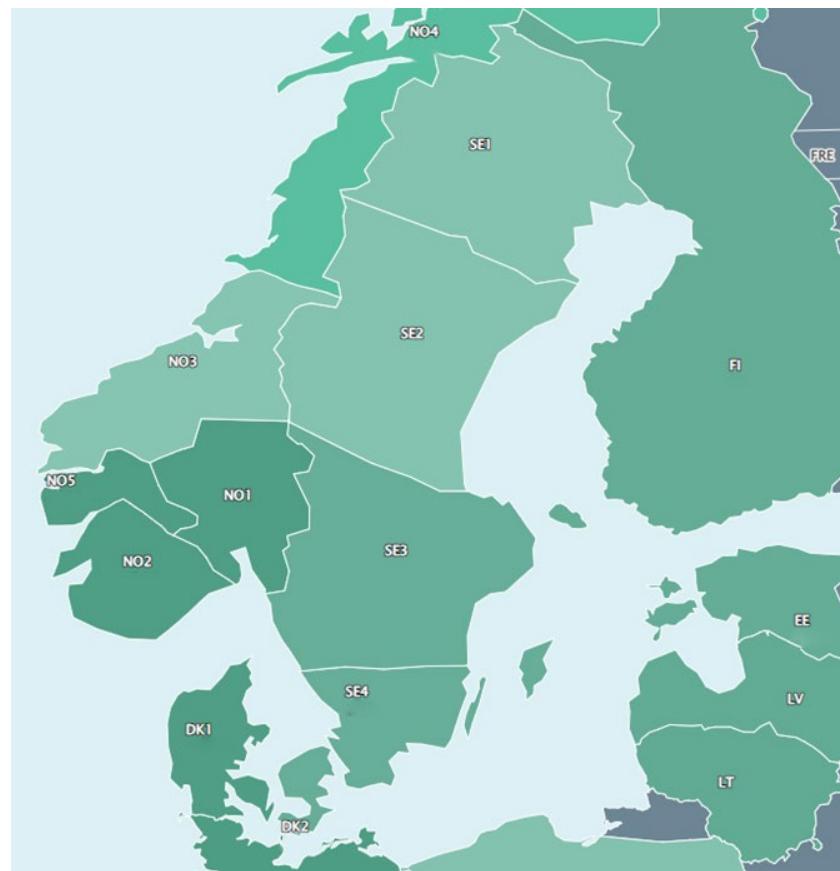
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Nordics divided into several price regions

### Multiple factors propel southern Nordic prices higher

For each Nordic country, the local TSO decide how to divide the country into price regions. The different price regions are meant to help constraints in the transmission systems and ensure that regional market conditions are reflected in the price. Because of bottlenecks in the transmission system, price regions may see different prices depending on available energy generation capacity in the different regions as well as available transmission capacity and congestion. The number of regions may vary over time as the transmission systems develop, but currently Norway has five regions, Denmark two, Sweden four, while Finland, Estonia, Lithuania, and Latvia each have one region.

**Figure 2: Nordic power price regions**



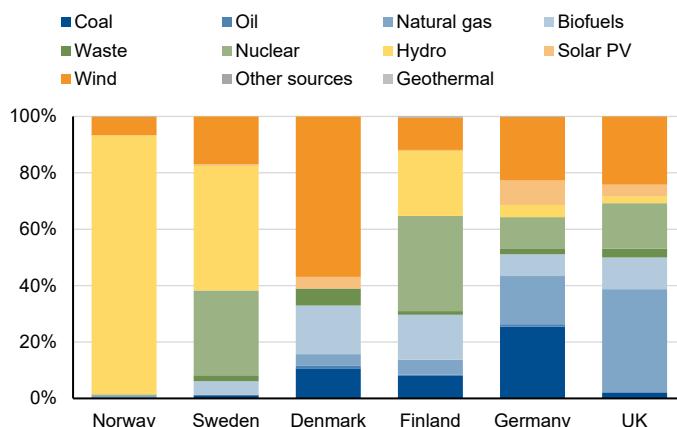
Source: Nord Pool

Historical prices driven by weather conditions

Power prices in the Nordics have historically been volatile, with 1-year forward baseload wholesale prices between 15-45 EUR/MWh, and a standard-deviation higher than other European markets. Largely driven by hydro and wind being the dominant source of production in the Nordics, meaning that prices are driven by the weather: rainfall (Figures 3 and 4) and wind determine supply; temperatures determine demand. Albeit volatile, regional prices have remained close to the Nordic average price (system price - SYS). Lastly, the region has enjoyed high production capacity compared to domestic consumption, and a lack of interconnectivity with the rest of Europe which has limited export volumes.

The weather effects have been apparent in recent years, as 2020 saw heavy rainfall, windy conditions, and warm temperatures that led to excess supply and low prices. In contrast, the second half of 2021 saw the opposite, with limited rainfall and cold temperatures. Consequently, prices spiked to new highs towards the end of the year.

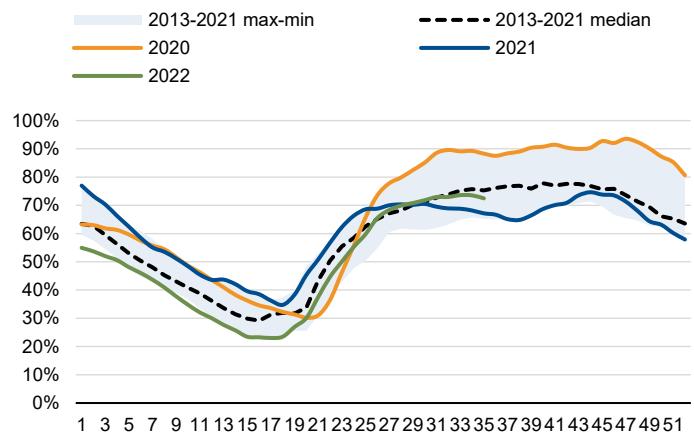
**Figure 3: 2020 power generation mix by country (%)**



Source: IEA, Scope

Tight Nordic balance; price pressure from UK, Germany

**Figure 4: Weekly reservoir levels, Nordics (%)**



Source: Nord Pool, Scope

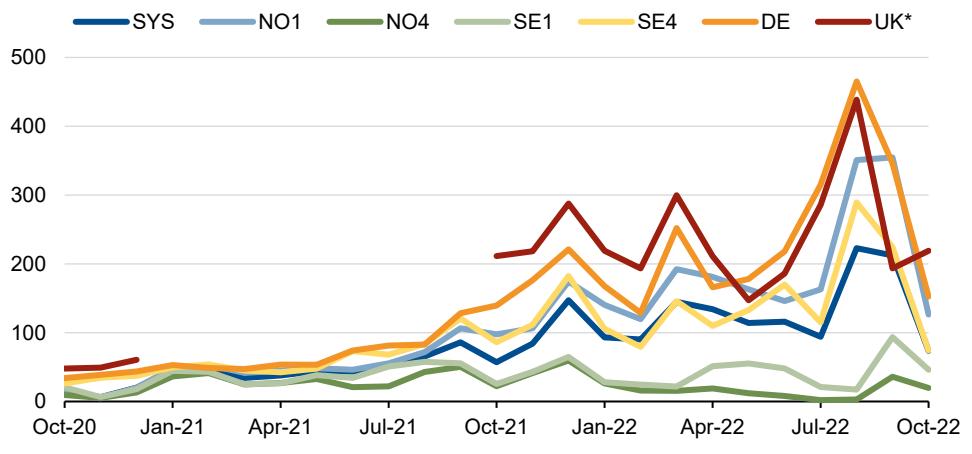
Additionally, two new subsea cables (interconnectors) between Norway and other markets became operational during 2021: NordLink (NO2 to Germany, 1,400MW) and North Sea Link (NO2 to UK, 1,400MW). The Nordic countries have had cross border power flows for decades, but largely between each other. The German and UK interconnections represent a large increase in transmission capacity to two regions – the UK and central Europe.

The UK and several European countries have larger shares of its electricity generated using coal, natural gas, and other sources with higher marginal production costs than for instance hydro and nuclear, which are dominant in the Nordics. This means that power prices in these markets are generally higher than for most Nordic countries. When the new transmissions opened in 2021, the increased electricity export from the south Nordic price zones to the UK and Germany put upwards pressure on already elevated Nordic power prices.

The increased pressure from the UK and central Europe intensified in 2022 when Russia invaded Ukraine, followed by Moscow's weaponising of energy exports to Europe. Russia supplied Europe with 40% of its natural gas consumption in 2021. As natural gas plays an important part of Europe's electricity production, this had significant impact on European power prices (**Figure 5**).

Effects compounded by Russia's weaponising of energy deliveries

**Figure 5: Monthly power prices, NO, SE, DE, UK\* (EUR/MWh)<sup>1</sup>**



\* No monthly price data on UK between December 2020 and November 2021.

Source: Nord Pool, Scope

### Expectations of a continued Nordic price divergence

A perfect storm highlighting structural bottlenecks

Divergence widens, but only in the short to medium term

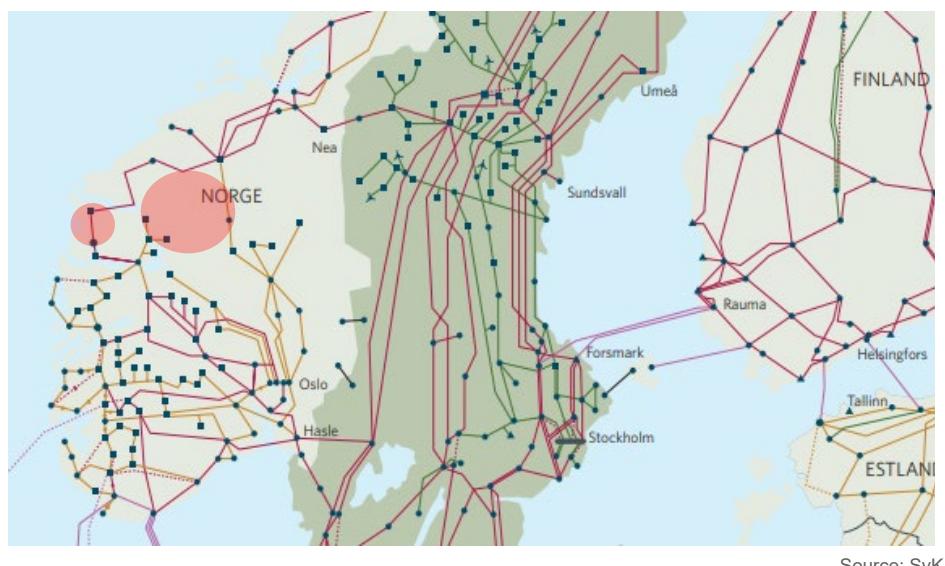
Although the north-south capacity constraints in the Nordic power transmission grid was known for years, the perfect storm of 2021-22 led to a much wider divergence in prices than anyone had foreseen. With southern regions directly impacted by the UK and central Europe through the new subsea cables, as well as low rainfall, prices rose close to those prevalent in such markets. Meanwhile, the northern regions were experiencing record low prices, driven by average rainfall, more wind, and limited capacity to transport excess production to southern price regions.

The price divergence is still likely to persist in the short- to medium-term, as both north-south transmission capabilities, and power production capacities are expected to remain rather unchanged. Alleviating the bottlenecks requires significant investment in the Nordic transmission grid. The TSOs are responsible but the decision-making process tends to be lengthy and bound up in national politics. Any short- to medium-term increase in investments will likely involve bringing forward projects already in the pipeline rather than new investment. In Norway, work began during the summer of 2022 on increasing capacity by upgrading a 300 kV transmission on the west coast (small red circle in **Figure 6**). This is a two-year project which addresses some, but far from all capacity issues in the Nordic grid. In the shorter term, closer collaboration between the Norwegian and Swedish TSOs to optimise grid use and the introduction of flow-based market coupling in 2024<sup>2</sup> could have some impact in reducing bottlenecks. Further out, Finnish TSO Fingrid is currently working on the first of many new interconnectors to Sweden, aimed at alleviated congestion between the countries. In Sweden, SvK is working on expanding the Swedish north-south capacity by 800MW by 2028. These capacity increases are expected to improve flows and promote balance beyond the medium-term.

<sup>1</sup> Notable dates: June 21 Nordlink (DE), October 21 North Sea Link (UK), February 22 Russia invades Ukraine

<sup>2</sup> Originally scheduled for 2023, but postponed in November 2022 to 2024

**Figure 6: Nordic transmission grid, red lines 400 kV lines, yellow lines 300 kV lines, bottlenecks highlighted in red**



Source: SvK

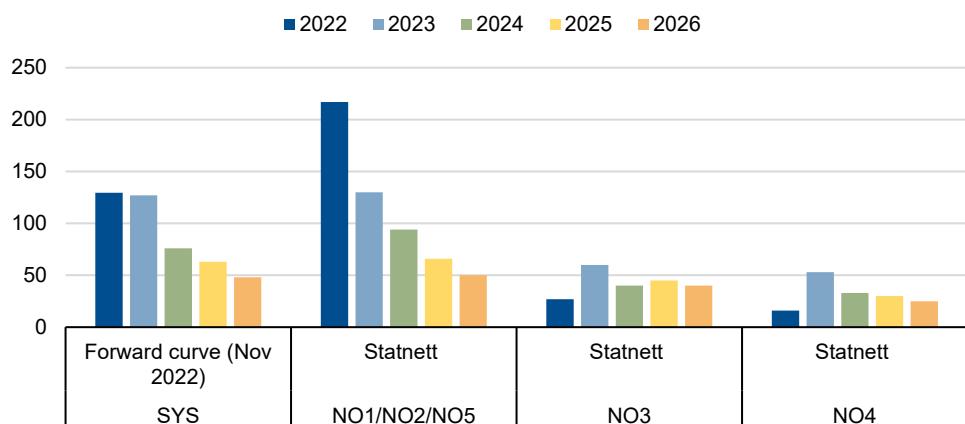
**South-Nordic power prices to normalise at a new, higher level**

**Nordic TSO sees diverging prices beyond 2025**

Assuming normalised hydro reservoir levels, prices in the southern regions are expected to remain at a new, higher, normalised level than in the north. This is predominately due to the increased interconnectedness between the south and the UK and central Europe. Further, this is expected to remain so for the foreseeable future. Although we see some near-term improvements in the transmission grids, we expect these to be overshadowed by pressures from the UK and central Europe, even beyond the short- to medium-term.

Our view on the diverging regional pricing is supported by Nordic TSO Statnett's latest short-term analysis (**Figure 7**), which forecasts diverging prices between Norwegian price regions beyond 2026. Our expectations of higher future price levels are supported by the November forward prices, that indicate levels well above historical prices of around 30 EUR/MWh<sup>3</sup>.

**Figure 7: Norwegian regional power price forecasts by Statnett, and Nordic system forward prices (EUR/MWh)**



Source: Statnett short-term market analysis (09.11.22), Nasdaq OMX, Scope

<sup>3</sup> As traded on the Nasdaq Commodity Exchange

**Location becomes crucial factor for Nordic generating assets**

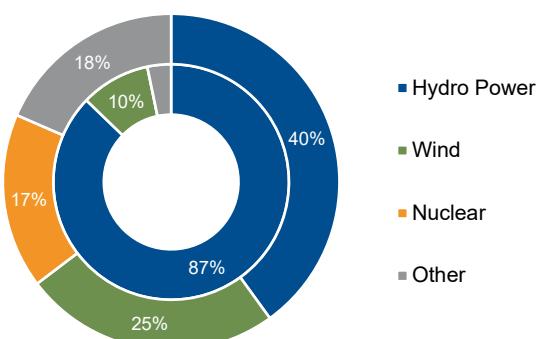
The major beneficiaries are Southern power generators

### Southern generators the major beneficiaries of the Nordic price divergence

The differences between price regions, in line with the structure of the Nordic electricity market where most utilities operate in just one price region, leads to a significant divergence in the realised prices, cash flow generation and credit metrics for the different companies. Considering the very low levels in hydro reservoirs in southern Norway, and the effect of Russia's war in Ukraine on the tight European power market, any normalisation of the Nordic market looks unlikely in the short term. Southern generators will likely continue to benefit from high prices for several quarters. Northern generators likely will see prices more in line with historical levels, resulting in significantly lower expected cash inflows than their southern counterparts. The net effect will depend on how companies utilise these increased earnings, but utilities with significant generation exposure and a low variable cost structure are the big winners.

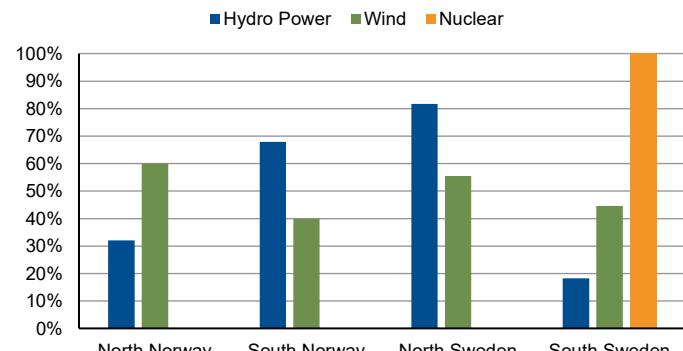
Finland only has one price region, so divergence phenomenon is relevant to Norway and Sweden. In Norway, 68% of the country's hydro power capacities are in the southern region. Most of these assets have the added benefit of reservoir capacity which could translate to higher achieved prices if timed successfully. In contrast, only 18% of Sweden's hydro power producing assets are in the southern regions. However, Sweden also has significant nuclear power production which has low variable cost and will benefit from the higher normalised price levels. Both countries have wind power producing assets in the south. The benefit here is less prominent due to the intermittent nature of wind power, and the relatively small capacity compared with other power generating asset types.

**Figure 8: Sweden (outer ring) and Norway (inner ring), 2021 power generation mix (%)**



Source: SvK, NVE, Scope

**Figure 9: North-South-Nordic generation, % of total capacity per generation type**



Source: SvK, NVE, Scope

**Windfall taxes set to reduce potential upside**

### Windfall taxes could offset benefits of higher price

Exceptional levies on energy companies as governments look for resources to cushion businesses and households from soaring energy costs are one risk that utilities in the Nordics and the rest of Europe face<sup>4</sup>. Norway provides a good example of what approach other European governments might take.

Norwegian hydro production profits have been subject to an extra hydro profit tax of 37% in addition to the corporate tax rate of 22%, since 1997<sup>5</sup>. This has generally been considered an efficient and fair way to redistribute profits gained from utilising the

<sup>4</sup> A windfall tax is a higher tax rate on profits that result from a sudden gain to a particular company or industry  
<sup>5</sup> Marginal tax rate of 59% = general corporate tax of 22% + tax of 37% on profits from hydro power production

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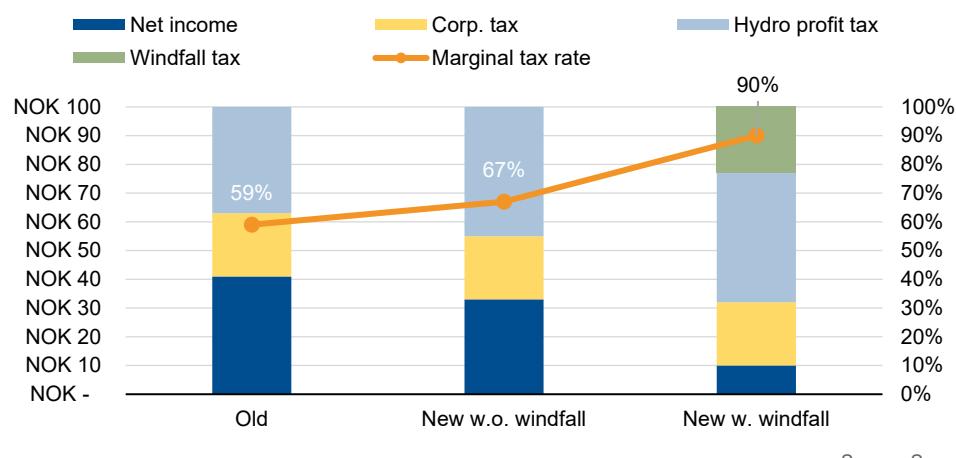
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### Norway may set hypothetical 90% marginal tax for pure hydro

country's natural resources. However, due to expectations of higher profits in the short- to medium-term, the Norwegian government recently proposed an increase in the hydro profit tax to 45%<sup>6</sup>.

In addition, Norway has proposed a temporary windfall tax of 23% on profits made at spot prices above 70 EUR/MWh. This could hypothetically lead to a marginal tax rate of 90% on such hydro power profits. However, as most Norwegian hydro power producers are vertically integrated the overall effect on gross marginal tax rates is expected to be much lower. Furthermore, the proposal is still subject to change and has received criticism for reducing the industry's investment capabilities at a time where it is needed the most, as well as being centralising, re-distributing profits away from the municipal owners and towards the central government.

**Figure 10: Example, new proposed taxation of Norwegian hydro power producers, marginal tax rate on profits made at prices above EUR 70 MWh**



Source: Scope

### EU and Finland also propose windfall taxes

The European Commission recently proposed a EUR 140bn windfall tax on the earnings of oil and gas companies. Similarly, the Finnish government plans to introduce windfall taxes on energy profits to finance a EUR 800m support package for consumers. In contrast, Swedish utilities are subject only to corporate tax rates. The new Swedish government is yet to indicate a preference for windfall taxes to help balance its budget.

### Increasing margin calls cause short-term headache

### Diverging prices makes it hard to efficiently hedge

Another potentially offsetting element is how the diverging regional prices affects utilities' ability to successfully hedge future production using exchange-traded financial contracts. Because of more intermittent generation and extreme weather conditions the Nordics power spot price volatility has increased in recent years. Hence, hedging has been favourably viewed as it increases the predictability of future cash flows. However, as these contracts utilise the SYS price as the reference price, it is becoming increasingly difficult to efficiently hedge production as prices differ quite substantially across regions.

### Margin calls squeeze liquidity for European utilities

Additionally, to mitigate counterparty risk future contracts have what is commonly referred to as "marginining deposits". These deposits are increased when the price difference between the spot price and the contracted price increases. This is a safety mechanism set in place to protect all parties of a contract against price fluctuations in the underlying commodity and a default of the seller of the future. This process is continuous and follows the commodity price until the contract matures and the marginining deposit is released from the clearing house when the contract has been settled. When spot prices deviate greatly

<sup>6</sup> <https://www.regjeringen.no/en/aktuelt/profits-from-natural-resources-will-be-better-distributed/id2929123/>

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### Paradox of booming revenues and liquidity crunches

from the agreed upon price, additional margin calls can cause large negative working capital effects for the losing party, regardless of the outcome of the contract at maturity.

### Nordic government provides support

This has led to a paradoxical situation for many utilities in the Nordics and Europe, where increasing prices not only lead to record performance, but also large temporary negative cash outflows related to increasing margin calls. Some companies risk breaching loan covenants if increasing margin calls are financed by additional debt.

### Regulated tariffs limits medium term impact for grid operators

The SYS price losing its value as the reference price, unrealised losses on hedged positions, and increasing margining deposits have all led to generators lowering hedge ratios and / or tilting towards a higher degree of bilateral agreements<sup>7</sup> instead.

In the Nordics, the Swedish, Finnish, and Danish government are providing guarantees on behalf of its respective utilities. Norwegian utilities are less exposed, due to a higher degree of bilateral agreements that do not require margin deposits, though the Norwegian government says it is monitoring the situation and will step in if needed.

### Grid operators expected to have unchanged cash flows over time

We see limited impact of the shifts in Nordic energy markets on grid operators' earnings, as they operate with regulated tariffs. These tariffs are set each year based on historical costs and assumptions on a distributor's grid efficiency. At year end, if costs deviate from estimated costs, this will be reflected in future tariffs<sup>8</sup>. Hence, the aggregated cash flows over time are not expected to change for either DSOs or TSOs.

However, the short-term effects do vary between TSOs and DSOs, and for DSOs depending on geographical location.

### Significant congestion income Statnett and SvK

TSOs are in practice the only distributor with cross-zonal capacity, meaning they can purchase energy in low price regions, and sell for a higher price in a different region, effectively profiting from potential bottlenecks in the transmission grid. These profits are often referred to as congestion income. With the current regional price divergences, both domestic and abroad, Nordic TSO's Statnett and SvK have benefited from significant congestion income. Further, these are likely to continue until these bottlenecks are significantly reduced. As of H1 2022 Statnett and SvK reported year-to-date congestion income of NOK 8.9bn and SEK 29bn respectively. These are extraordinarily high levels, and both countries have announced that these funds will be transferred to domestic DSOs to prevent the latter from raising tariffs towards the end customers.

<sup>7</sup> Directly between producer and end-customer which do not necessarily require margining deposits.

<sup>8</sup> <https://www.nve.no/norwegian-energy-regulatory-authority/network-regulation/network-tariffs/>

### Effects on Scope-covered utilities in the Nordics

Several utilities under Scope coverage are benefiting from favourable tailwinds in current and the expected future market conditions despite the risk that margin calls pose to short-term liquidity and the potential new windfall tax on hydro-power profits.

**Figure 11: Scope covered utilities in Norway and Sweden**

Issuer name	Type of utility	Price region	Rating	Outlook	Latest report
Hafslund-ECO	Generator	NO1	BBB+	Positive	<a href="#">Link</a>
Sunnhordland Kraftlag (SKL)	Generator	NO2	BBB	Stable	<a href="#">Link</a>
Trønderenergi	Generator	NO3	BBB	Stable	<a href="#">Link</a>
Haugaland Kraft	Integrated (generation in SKL)	NO2	BBB+	Positive	<a href="#">Link</a>
Eviny	Integrated	NO5	BBB+	Positive	<a href="#">Link</a>
Lyse	Integrated	NO2	BBB+	Stable	<a href="#">Link</a>
AgderGlitre	Integrated	NO2/NO1	BBB+	Positive	<a href="#">Link</a>
Eidsiva Energi	Integrated (generation in Hafslund-ECO)	NO1	BBB+	Stable	<a href="#">Link</a>
Akershus Energi	Generator	NO1	BBB	Stable	<a href="#">Link</a>
Helgeland Kraft	Integrated	NO4	BBB	Stable	<a href="#">Link</a>
Tensio	Grid operator	NO3	A-	Stable	<a href="#">Link</a>
Statkraft	Integrated	Nordics +	Subscription rating available on Scope One		<a href="#">Link</a>
Vattenfall	Integrated	SE, FI, UK, EU	Subscription rating available on Scope One		<a href="#">Link</a>
Statnett	Transmission system operator	NO1-5	Subscription rating available on Scope One		<a href="#">Link</a>

Source: Scope

#### Most Scope-covered utilities have ample financial headroom

Southern generators had benefited from consistently high prices since 2021 when the liquidity effects from increasing margin calls became evident during the summer of 2022. Consequently, most Scope covered utilities have had ample financial headroom to manage these margin calls without compromising their balance sheets. The liquidity risk going forward is considered moderate, based on potential support from local governments, reports of declining hedging ratios, increased use of bilateral agreements, and positive working capital flows as spot prices have declined and released margining deposits. We also see lower volatility, and a lower gap between spot and contracted prices than over the last 12 months, this will reduce the level of margining depositions for both initial margins and margin calls.

#### Credit outlooks little impacted by Norway's windfall tax

The new proposed tax scheme for Norwegian hydro power generators will likely lead to lower FFO, net income, lower dividends, and lower investment capabilities, but the aggregated effect on the credit outlook for Scope covered utilities will be moderate as we expect affected utilities to still earn more than before when energy prices remained at significantly lower levels.

Leverage, as measured by Scope-adjusted debt (SaD)/EBITDA would be little changed by the increased taxation, at least for the utilities in our coverage as most have some degree of vertical integration, reducing the overall effect of the new levy on gross marginal tax rates. Dividends would also decline automatically as they are mostly calculated as a percentage of net income.

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More Nordic utilities' credit outlooks could turn positive

Lastly, although the increased tax will reduce profits in 2022 it will not impact cashflows before 2023 when taxes are paid. This gives utilities time to adapt to the higher taxation without compromising their balance sheets.

Some utilities deploy extra cashflow on acquisitions

For utilities where we see a net strengthening of projected credit metrics, this might translate into positive rating outlooks or even rating upgrades. Recent examples where our assessment of the credit outlook has already changed for the better are Eviny, Hafslund-ECO, the soon-to-be merged AgderGlitre, and Haugaland Kraft.

No significant changes for northern utilities

Some utilities will likely use the increased projected earnings to fund growth projects. While such moves might dilute the immediate impact of higher price-related cash flows on credit metrics, such investment could improve a utilities' business risk profile over time, without straining the balance sheet. Recent examples of such growth transactions include Lyse's EUR 0.6bn acquisition of ICE Group ASA, strengthening its telecom business, and Hafslund-ECO becoming the majority owner of Norway largest producer of district heating, Hafslund Oslo Celsio (formerly Fortum Oslo - owned by Finnish Fortum Oyj).

Lastly, utilities operating in the northern regions have experienced record-low prices in 2022. This has put downward pressure on credit metrics, but we consider this temporary as prices are expected to normalise towards year-end when temperatures decline.



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