Consequences of *«Norgespris»* in Norway and the Nordics

Estimated effects considering varying annual precipitation levels, and deliberations on the Norwegian government's consultation paper

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About the project

Project number	*NHO 25-01*
Project title	*Consequences of «Norgespris» in Norway and the Nordics*
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About the report

Report title	*Consequences of «Norgespris» in Norway and the Nordics*
Report	*2025-08*
Availability	*Public*

Project description

In January 2025, the Norwegian Government proposed new measures to curb high electricity prices. Among these were the following proposals:

- To offer a «fixed price» on electricity of 40 øre/kWh excluding VAT (popularly dubbed *Norgespris,* translating to "the Norway Price")
- To reduce VAT on grid tariffs with initial reductions down to 15 per cent.

THEMA has been commissioned by NHO Elektro, The Norwegian Heat Pump Association, EFO, Zero and Naturvernforbundet to calculate the impact of implementing Norgespris in the Nordic countries for different scenarios of annual precipitation levels.

Reservations
Several simplifications have been made in the analyses to accommodate the urgent deadline. We have described these simplifications in foils and footnote to the greatest extent possible where relevant.

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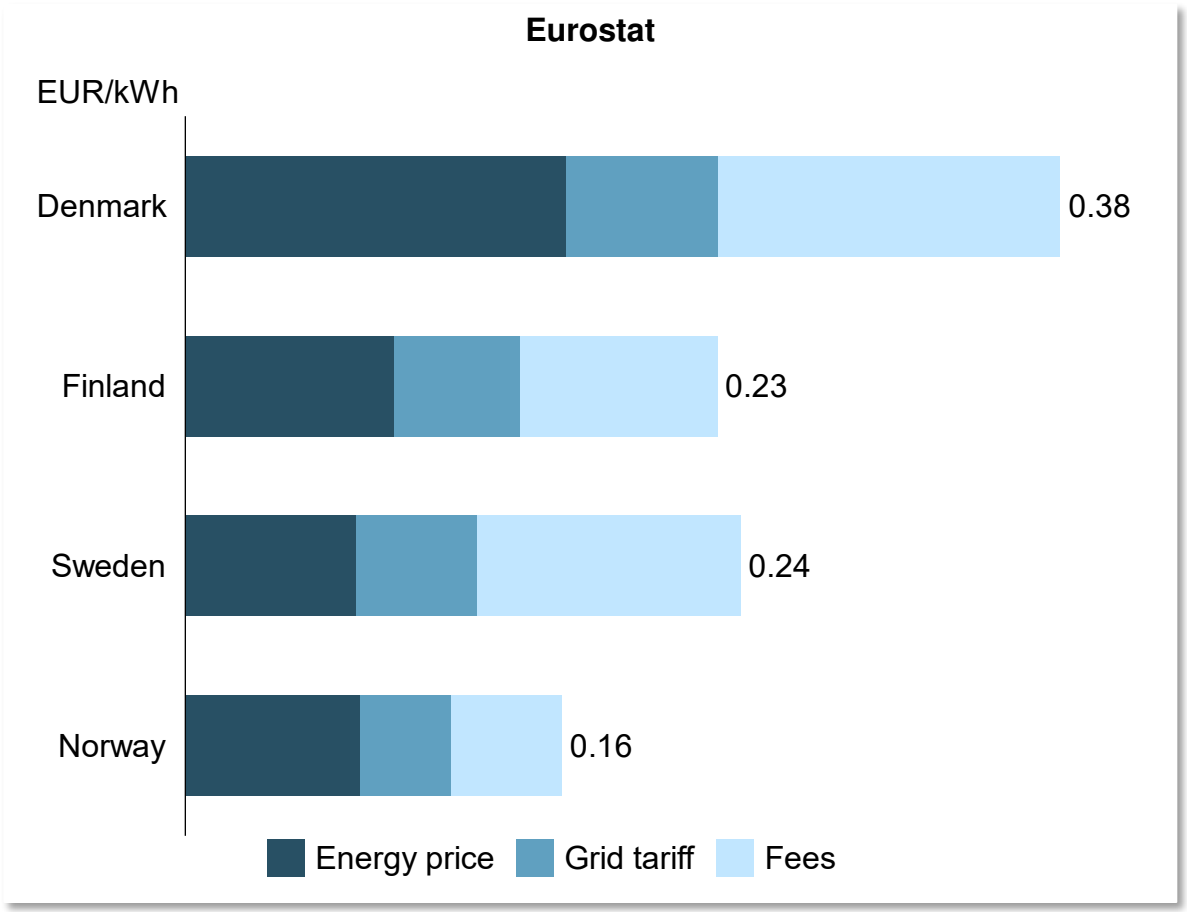
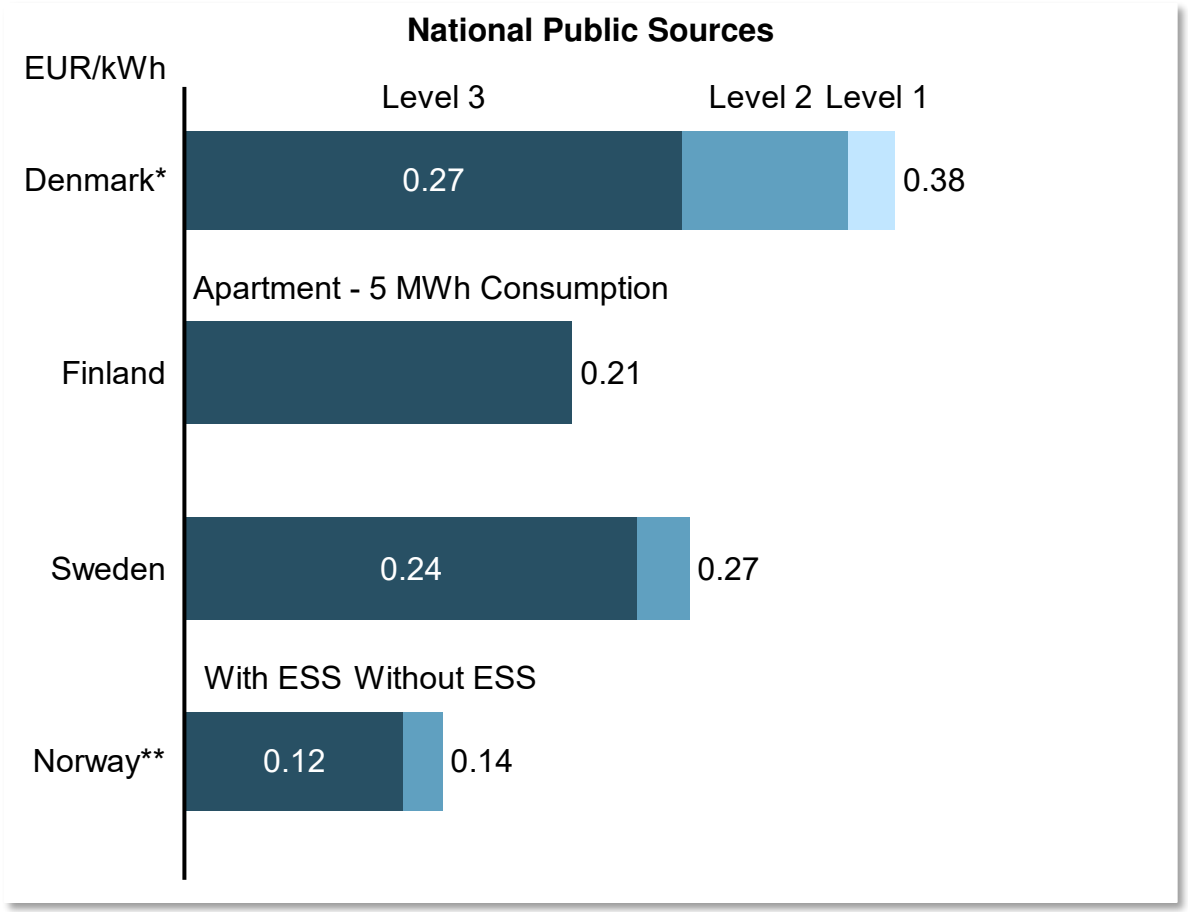
Household Energy Costs per kWh, Nordic Countries

Total Electricity Costs per kWh in 2023 (2023 EUR)

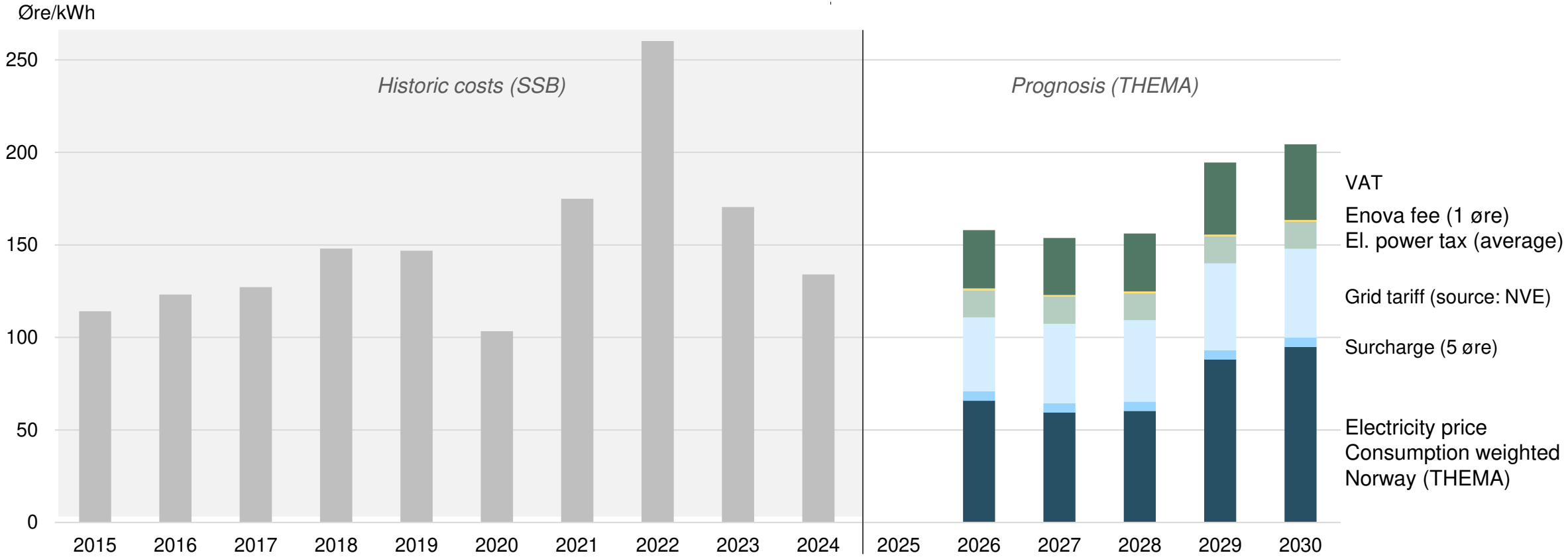




*Sources Eurostat, SSB, The Finish Energy Authority, Konsumenternas Energimarknadsbyrå, Statbank Denmark *Denmark's levels represents household electricity consumption; Level 1(1,0 – 2,4 MWh), level 2 (2,5 – 4,9 MWh), level 3 (5,0 –14,9 MWh). Households at level 1 pay a higher price than those at level 3. ** ESS (Electricity Support Scheme) refers to Norway's "Strømstøtte" policy, which offers some cost reimbursement to households.*

Households pay electricity prices, surcharge, grid tariff, electrical power tax, Enova fee and VAT. Future electricity costs with market prices will be 1.5-2 NOK/kWh, previous costs 1-1.5 NOK/kWh

Extensive electricity costs (market prices), in øre per kilowatt hour (kWh), 2025-NOK.
(temporary calculations from THEMAs Market Outlook, February 2025)



Assuming market prices(not including the Electricity Support Scheme for households). A reduction in grid tariff assumes that energy saving measures results in proportional reductions in both variable and fixed costs in the grid tariffs

Alternative price models: Households previously paid market prices but are now receiving price compensation. The Norwegian government propose “Norgespris” and reduces VAT for grid tariff

Market Prices

- Households pay spot price + additional costs
- Grid tariff VAT at 25 per cent

Electricity Support Scheme as of February 2025

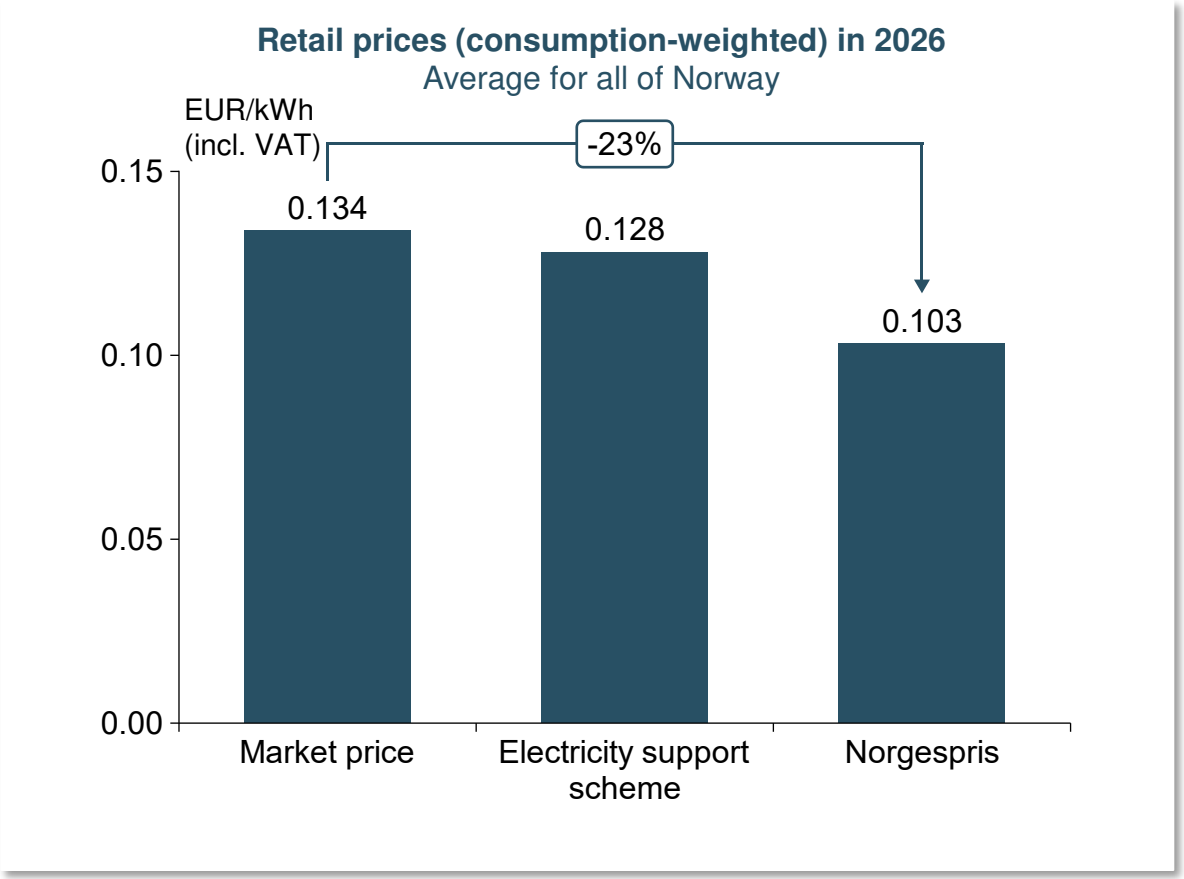
- The Norwegian government covers 90 per cent of the electricity price above 75 øre/kWh excluding VAT.
- Households pay the spot price for hours with electricity prices below 75 øre/kWh. Grid tariff VAT is at 25 per cent.
- Only applies to homes, not cabins/vacation homes.
- This policy is called *“Strømstøtte”* in Norway, directly translating to “Electricity Support”.

Norgespris (including VAT reduction.)

- The Norwegian government propose that households may choose to pay 40 øre/kWh (50 øre/kWh when including VAT)
  - The proposal states that the price shall be determined annually and may be adjusted if market prices are predicted to change.
  - We assume no annual changes to show the effect of implementing the 40 øre/kWh excluding VAT price.
- Households pay the 40 øre/kWh price even when the spot price is lower.
- Grid tariff VAT is at 15 per cent and assumed to remain at this level.
- Norgespris applies to both cabins/vacation homes and regular properties.

Norgespris results in a discount on electricity compared to market prices

Norgespris and reduced VAT will significantly reduce costs per kWh in 2026



The policy divided into two elements: 1) Fixed price/price security, 2) Expected price subsidy

The Norgespris policy may be divided into two main elements:

Fixed price

The policy will provide Norwegian households with what is essentially a fixed price contract (the government refers to it as price security)

Assuming this was transformed to market prices, consumption would be less sensitive to hourly price fluctuations, but the overall consumption would not increase

Price subsidy

In the short term, the policy would indicate a price reduction compared to market prices

Moving forward, we will mainly discuss the *effects of the price subsidy* elements of Norgespris on the energy market

Norgespris and reduced grid tariff VAT will contribute to higher household electricity consumption compared to estimates from market price forecasts – the question remains by how much

Our analyses indicate that household electricity consumption for 2026-2030 will somewhat increase when prices are subsidised

Theory: The law of supply and demand applies to nearly all products and goods: people purchase more goods when prices are low, and less when prices are high. This for instance may explain why stores launch sales campaigns in January to sell excess goods, and why Norwegian buy relatively many electrical cars (which have lower surcharges). Underlying explanations as to why people buy less when prices are high:

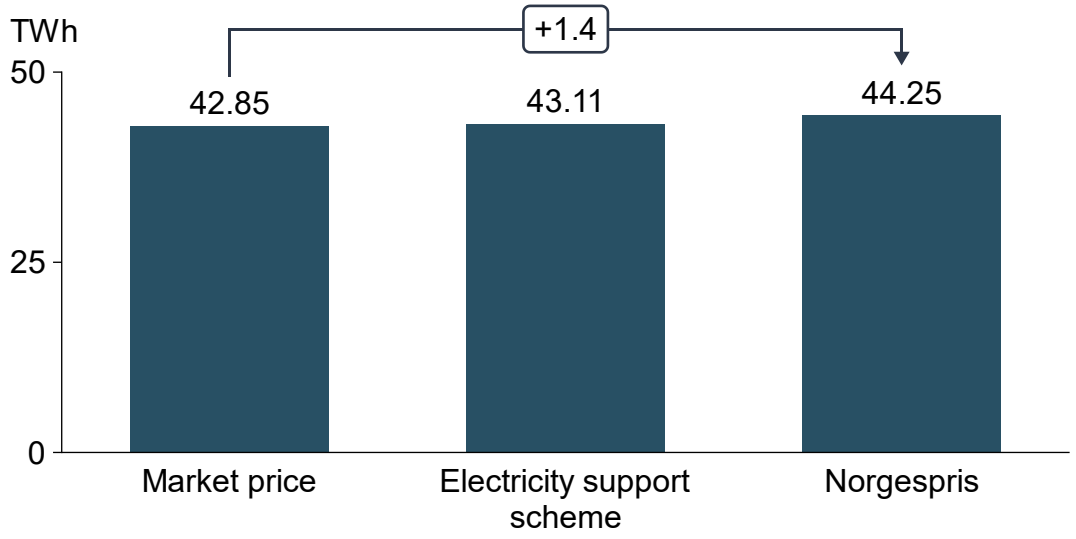
1. **Falling marginal gains** – the first kilometres of a car ride or kilowatt hours of heating, lights, or other electricity consumption, are more valuable to the consumers than the last ones.
2. **Substitution effects** – people seek to maximise their utility given their budget constraints. When petrol or electricity becomes expensive, and they receive fewer kilometres or kWh for their money, then they may choose to change their behaviour in a way that provides higher utility given the new prices of available goods.
3. **Income effects** – regardless of consumer preferences, budget constraints will contribute to an overall decrease of consumption when prices increase.

Electricity is considered a necessary, and thus inelastic, good, meaning consumption responds less to price changes than it does for other goods. This is particularly true in the short run, as electricity consumption is largely determined by habits and how our society is arranged. Regardless, electricity is not perfectly inelastic, and consumption does decrease when prices increase. This is supported through empirical findings, as discussed in the coming slides. The Norwegian government recognises this in the consultation paper regarding Norgespris as they propose a clause in the policy that allows the Ministry of Energy to suspend or adjust the Norgespris scheme and Electricity Support Scheme in the event of a “strained energy situation”.

Difficult to enumerate: Lower prices will contribute to increased consumption, but the extent of the effect remains unknown

It is highly uncertain to what degree household consumption will respond to price changes. Vista (2022) recommend a price elasticity of **-0.15** for household consumption with **short term adaptability**, implying that consumption increases by 1.5% if prices fall by 10%. Estimates vary greatly. This implies that with Norgespris and reduced VAT, **household consumption in Norway will increase with 1.4 TWh in 2026** compared to estimates with market prices.

Uncertain estimates – effects on household consumption in 2026



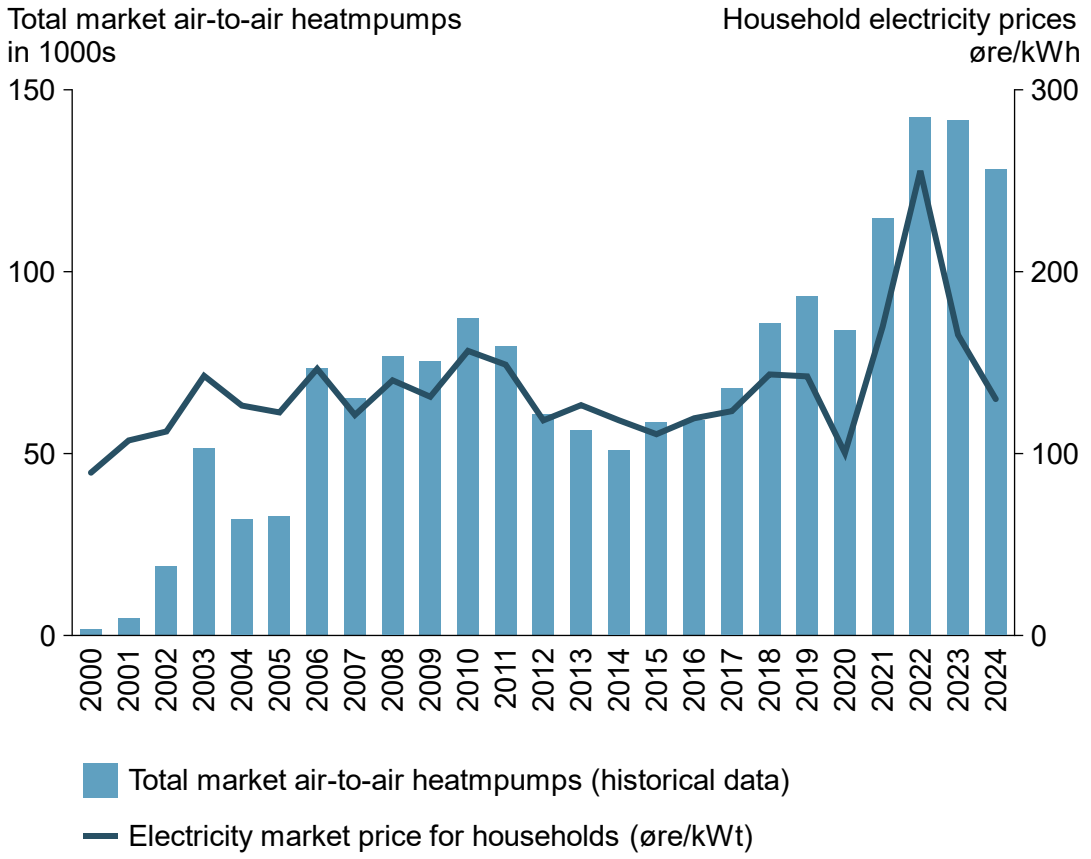
Sources: Vista (2022), «Virkninger av høye strømpriser på norsk økonomi», NVE (2024). Framskriving av nettleie i lokalt distribusjonsnett 2024-2030, THEMA (2024), «Energi- og effektbruk i husholdninger og tjenesteytende sektor. Hva skjedde i 2021-2023?», Note: Definitions of households and vacation homes (fritidsboliger) in THEMA's model may somewhat deviate from SSB's statistics.

We find short term adaptations for 2020-2023. Long term effects of price changes are greater as it affects investments in energy efficiency measures

Development of household electricity consumption 2020-2023*

- Annual temperature corrected electricity **consumption decrease by 2.2 TWh from 2020 to 2023**. This implies a roughly 5.5% reduction in household electricity consumption compared to the previous average level of 40 TWh (average from 2015-2020). Population growth in the same period was 3%.
- We estimate, based on sales and installation statistics of heat pumps, solar panels, and other construction technical measures, that around **1 TWh of the household electricity consumption reduction can be explained for lasting energy saving measures**. The remaining decrease may be explained by behavioural changes.
- The development varies drastically between Norway's different price areas. The consumption in the price area of south-west Norway (NO2), where the price increased the most, were 10 per cent lower in Q4 2023 than in Q4 2020.
- Thema's survey finds that households names prices as the main motivation for saving electricity.*

Historical comparison of electricity prices and heat pump sales**



*THEMA (2024), for NVE. **Market numbers from Norsk Varmpepumpeforening. Prognosis for the complete market towards 2035 based on a regression of historical data against expected market price and Norgespris. See appendix for literature review of electricity price elasticity from Vista/DNV

The Norwegian governments consultation paper provides important clarifications regarding the implementation of Norgespris

The consultation paper regarding Norgespris provides important clarifications

Price adjustments	• It is proposed that the price per kWh will be adjusted annually based on the market outlook regarding future electricity prices • At the same time, the policy will consider historical prices to meet its goal of providing predictable and stable electricity prices
Consumption cap	The following monthly consumption caps are proposed • Households: 5000, 4000 or 3000 kWh • Vacation homes properties: 1500, 1000 or 500 kWh
Binding period	• The binding period will be for the rest of the calendar year, meaning a customer who, for example, signs up for Norgespris in February will commit to 10 months • The binding period applies to the measuring point, meaning that individuals moving into a property where the previous owner pariticipated in Norgespris cannot cancel the contract until the calendar year ends
Cancellation during energy crises	• The Ministry of Energy proposes a clause that allows the Norgespris scheme and the Electricity Support Scheme to be changed or terminated under necessary circumstances, such as in the event of a “strained energy situation”
District heating	• The government proposes a measure for households that use district heating that enables them to benefit from Norgespris to the same extent as regular consumers, without the policy hurting district heating companies

In this analysis, we will deliberate on **the implications of these key points** from the consultation paper

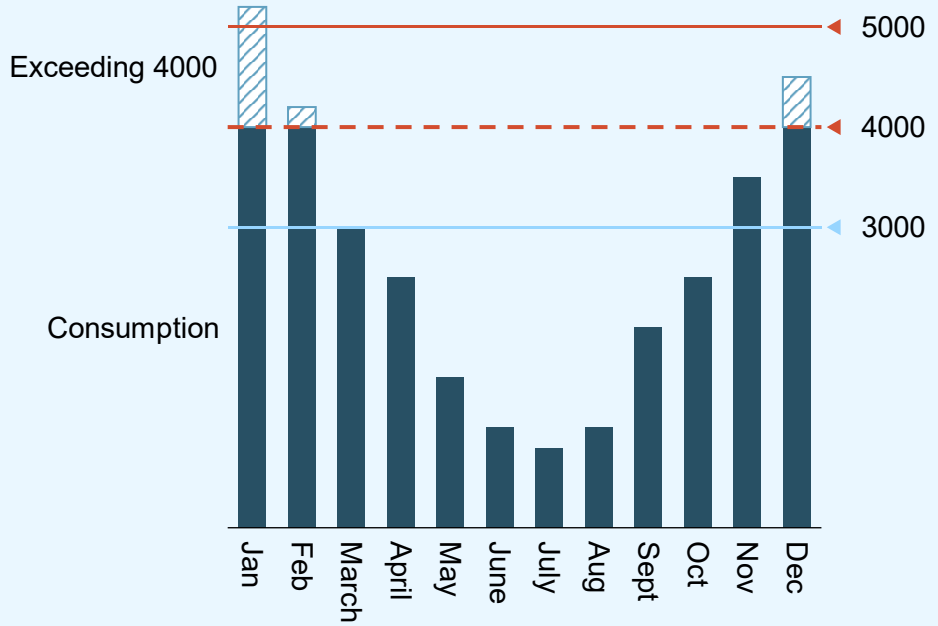
Sources: Energidepartementet (2025)

A monthly consumption cap for Norgespris at more than 3 000, 4 000 or 5 000 kWh has little effect on affected volume and governmental costs

Monthly Cap	Share of Consumers Affected	Excess Consumption of Total Household Consumption	Governmental Cost Reductions
5000 kWh	4%	0.3%	0.29%
4000 kWh	8.6%	1.3 %	1.2%
3000 kWh	20.9%	4.45%	4.02%

Illustrative Consumer Profile

for single unit houses with electric heat sources and a consumption of 32 000 kWh (the average for a single unit house is 26 000 kWh

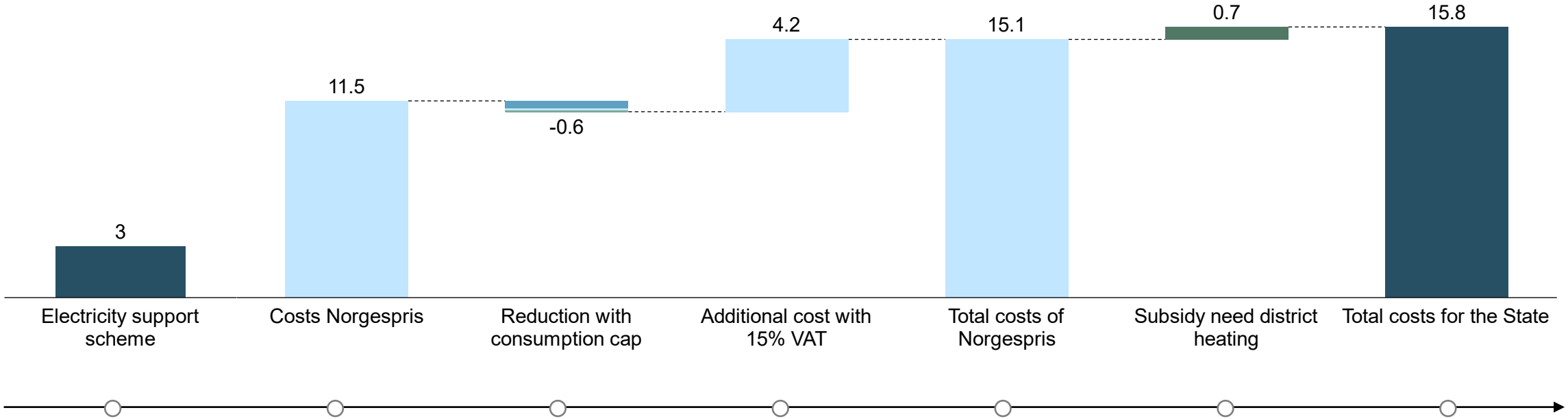


Annual consumption of **32 000 kWh**

For estimates of consequences of the consumption cap, see appendix. Effects of consumption caps for vacation homes are not estimated.

Governmental expenditures will increase with Norgespris. Total costs depend on whether you consider the Electricity Support Scheme, VTA reductions and district heating support

Estimated additional governmental expenditures with Norgespris and district heating support (bn NOK)



Simplified calculation of governmental costs

Does not consider consumption cap at 5000 kWh or that vacation homes cannot participate in the Electricity Support Scheme

Governmental expenditure associated with Norgespris, before consumption caps and VAT reduction

The proposed monthly consumption caps at 3000, 4000 or 5000 kWh provides a minimal cost reduction for the government (0.6 bn NOK with 3000 kWh cap)

The proposed grid tariff VAT reduction further increases governmental costs (it may be considered whether this will be compensated for through VAT on other products)

Total additional governmental expenditure

Necessary reimbursement to the district heating industry for income losses associated with Norgespris

Total governmental expenditure from implementing Norgespris and reimbursing the district heating industry

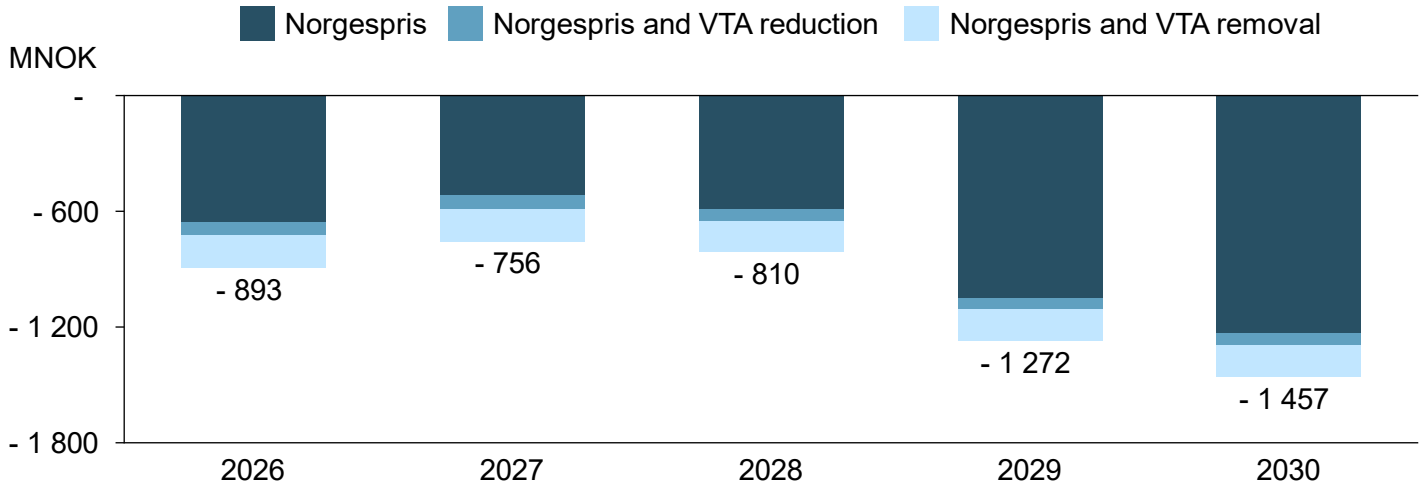
Effects of consumption caps for vacation homes are not estimated

If the district heating industry is compensated, annual governmental expenditure increases with ~1 bn NOK

The district heating industry will be compensated for consequential income losses from Norgespris

The Norwegian government stated that they will ensure that district heating consumers will receive equal benefits from Norgespris as consumers using electricity for heating, without this coming at a cost for the district heating industry. The necessary policies to enable this will be put through a separate hearing.

Estimated necessary governmental support to cover income losses for district heating suppliers, given current district heating consumption, excluding VTA



Report: [Støttebehov til fjernvarme ved innføring av Norgespris]

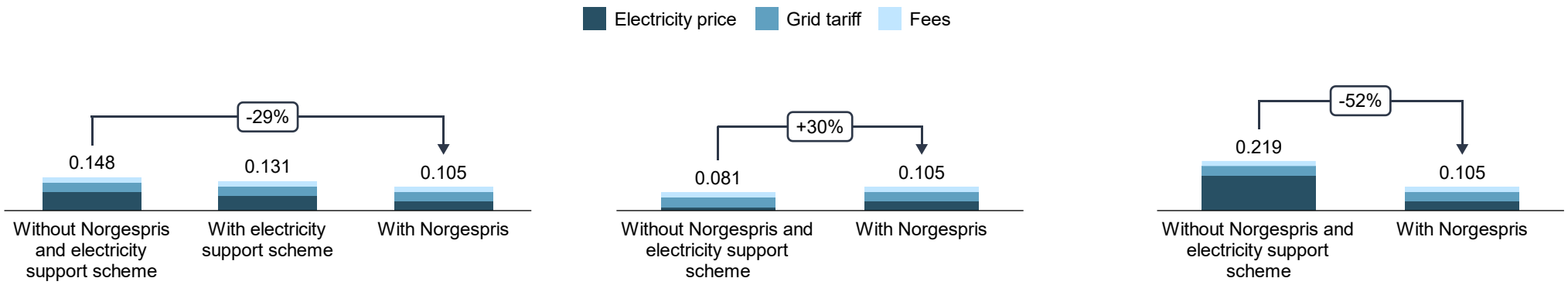
Future volume changes has not been accounted for and will increase the losses

- We have assumed that the current use of district heating will remain unchanged
- Without the government's electricity package, where Norgespris was proposed, supply will likely increase as can be seen from the growth of district heating in the last 20 years (see Energikommisjonen)
- The profit potential from investing in supply of district heating will be reduced with the proposed policies, thus reducing the incentive to develop new facilities
- Increasing future consumption and reduction in new projects will result in further income losses as a result of the energy package
- Reduced income from future projects might result in societally beneficial projects not being developed

Weather years affect the power balance and thus market prices in Norway.

The relationship between Norgespris and market prices, as well as government expenditure, will vary with different weather years.

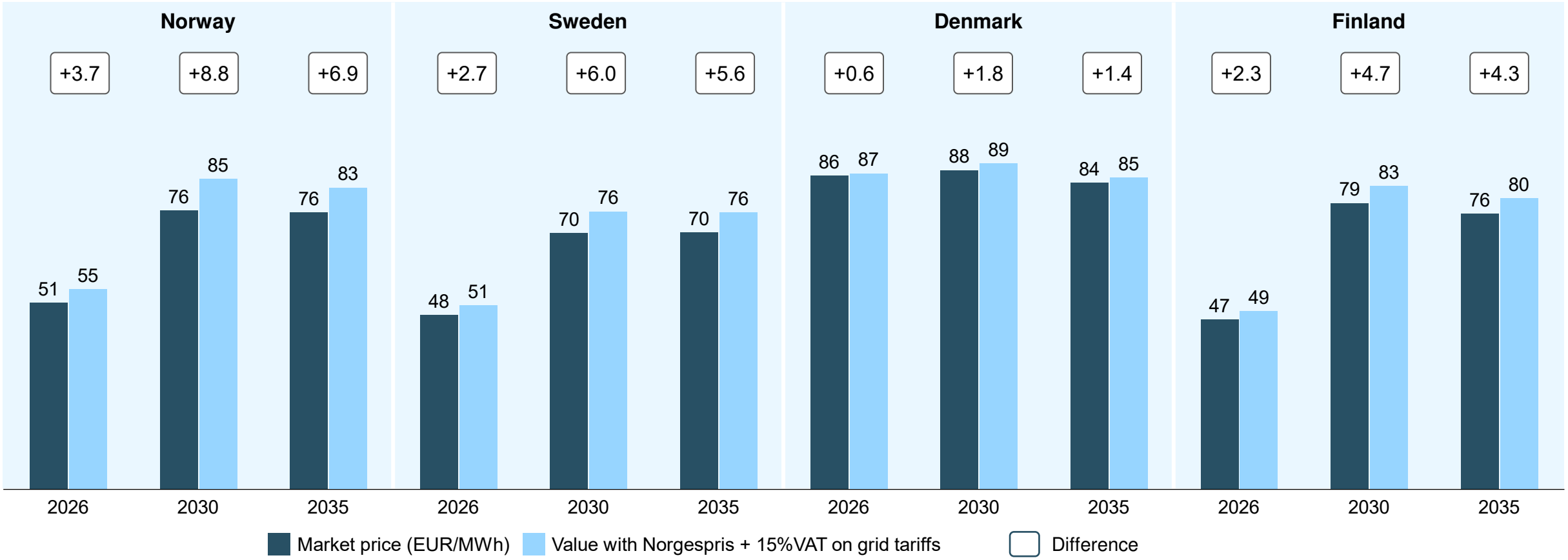
	Normal hydrological year	Wet year	Dry year
Power generation	In a normal year, we currently produce more than we consume in Norway	In a very wet year, power production in Norway **increases significantly**	In a very dry year, power production in Norway **drops significantly**
End-user prices in NO2 in 2026 **EUR/kWh (incl. VAT)**	**Norgespris < Market price** In a normal year, households will pay less with Norgespris than with market price	**Norgespris > Market price** In wet years, households will pay more with Norgespris than with market price	**Norgespris < Market price** In dry years, households will pay less with Norgespris than with market price
Government expenditure	Expenses will be **higher than with electricity support**	In wet years, the government will receive **net revenue** from Norgespris	Expenses will be **higher than in a normal year** *NB: In the event of a strained power situation, the government may, by the proposed regulation, suspend the Norgespris in order to safeguard the power supply.*



In addition to an increase in market prices in Norway, the other Nordic countries will experience higher market prices as a result of the introduction of Norgespris in Norway

Partial analysis: Market prices in the Nordics before and after the introduction of Norgespris (EUR/MWh)

The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh). Partial analysis, not taking into account that businesses in Norway and consumers in neighbouring countries will reduce their electricity consumption following increased consumption in Norwegian households and increased prices. The final price impact will be lower, as other consumers reduce their activity.



*The comparison on this page is made against a situation with market prices, without an electricity support scheme ("Strømstøtte"). See foils on consequences in a normal weather year for comparisons against Strømstøtte. ** Market price is the average spot price in each country*

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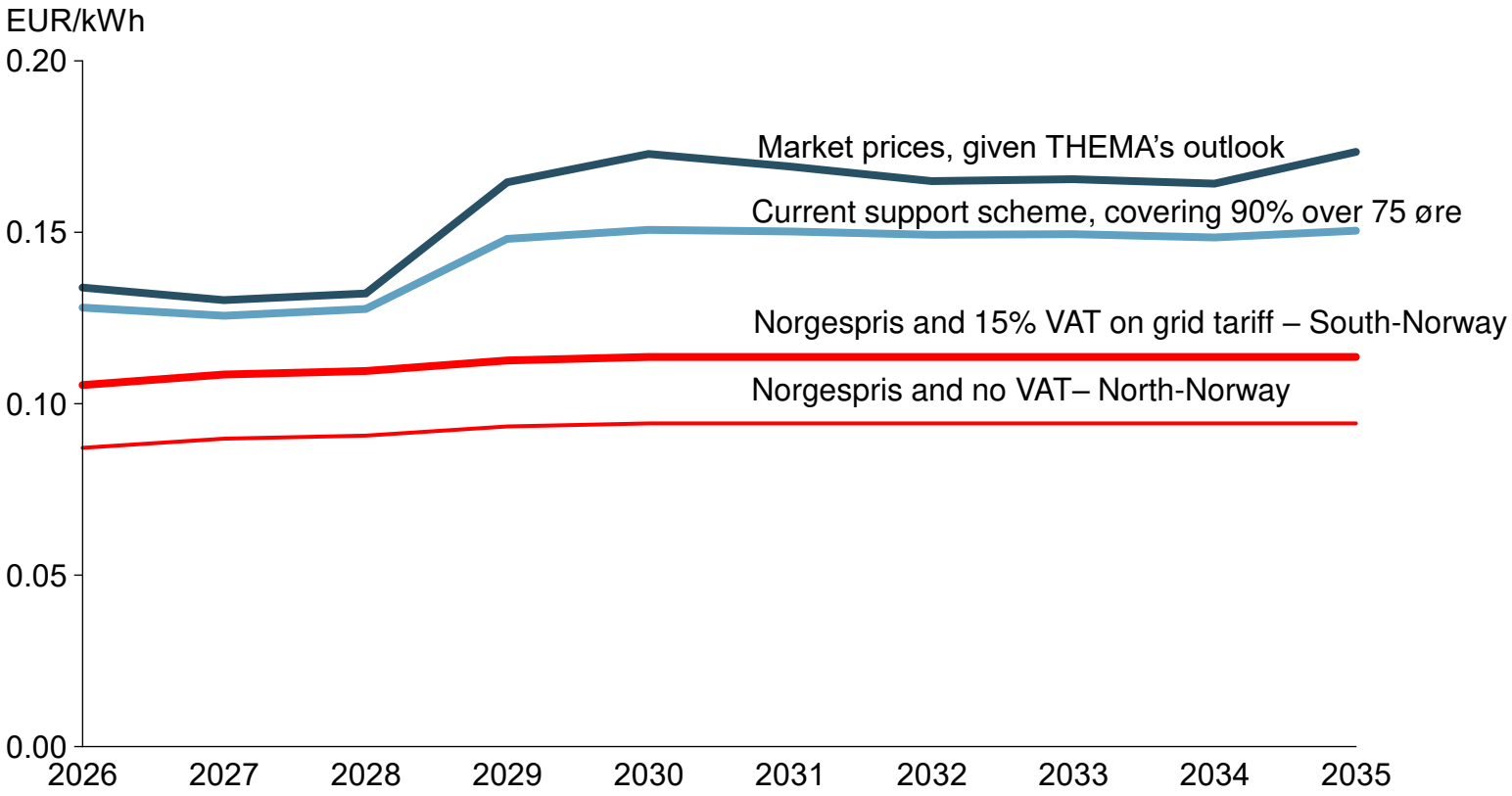
Average electricity cost per price model in EUR/kWh

Total electricity cost per kWh, including VAT (2025-NOK)



We assume that grid tariffs will increase in real terms towards 2030, in line with NVE's estimates. This explains why the Norgespris- path rises slightly from 2026 to 2030. The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh).

Average cost/kWh 2026-2035

Market price: 0.16 EUR/kWh

Current electricity support scheme: 0.14 EUR/kWh

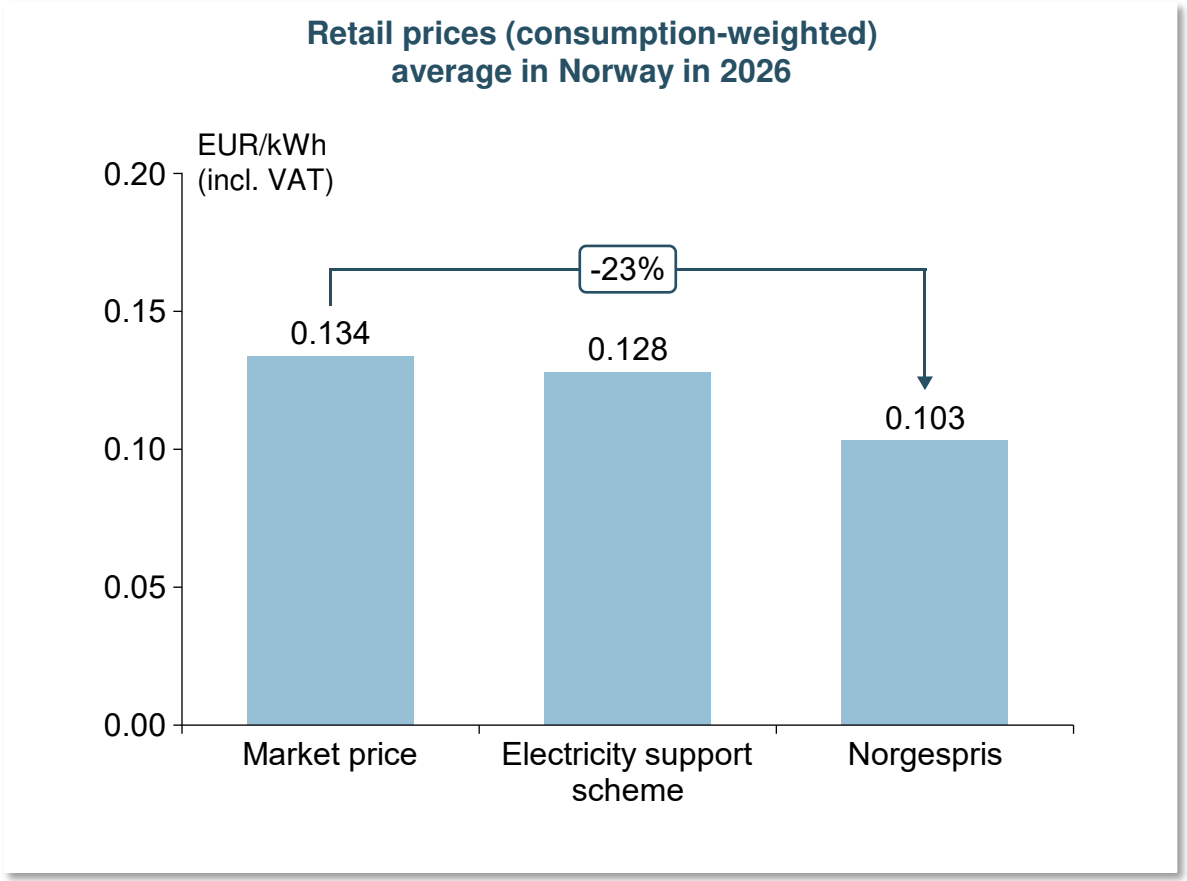
- *9% lower cost compared to market price*

Norgespris and 15% VAT on grid tariffs: 0.11 EUR/kWh

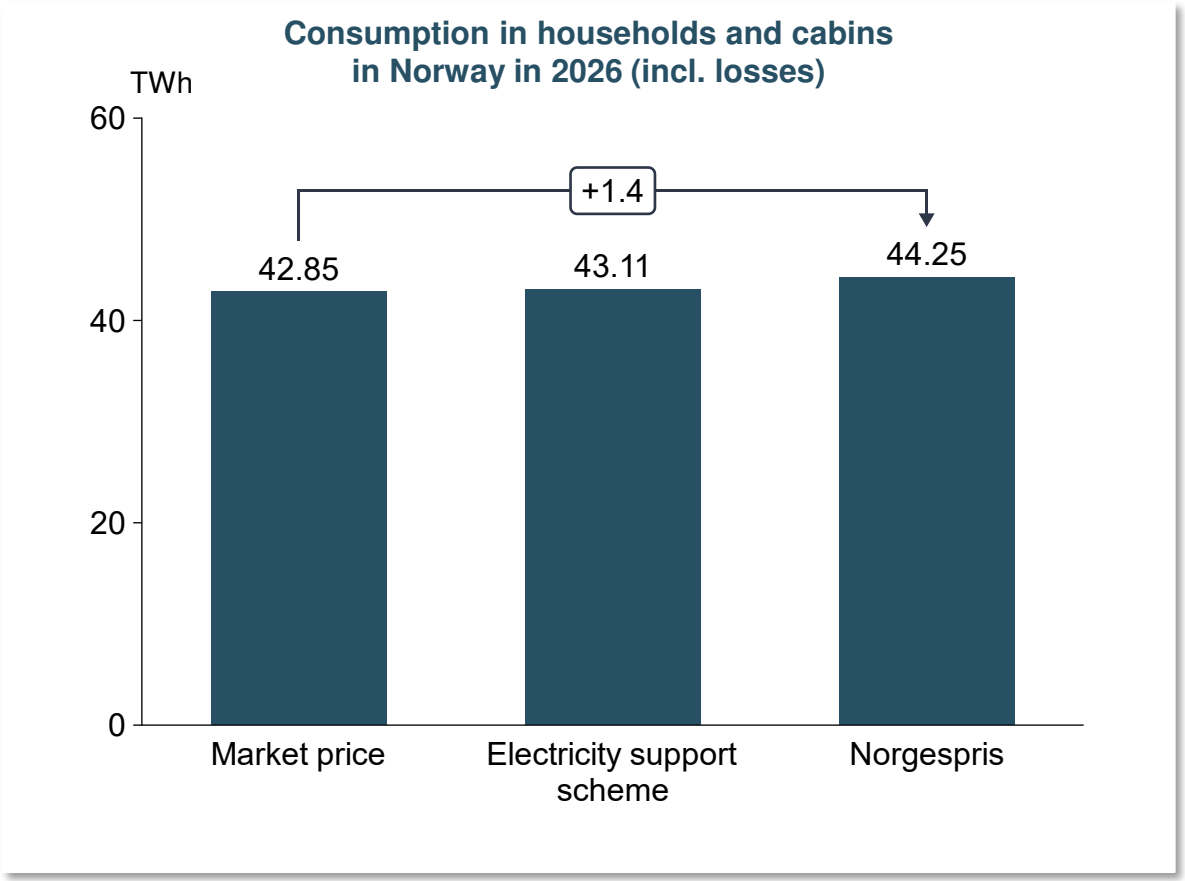
- *30% lower than electricity costs with market prices*
- *23% lower than electricity costs with the electricity support scheme*

Norgespris and reduced VAT on grid tariffs will result in increased electricity consumption in households

Household electricity prices per kWh will be lower in 2026 with Norgespris and reduced VAT on grid tariffs



Lower prices will result in higher consumption, but the size of the effect is uncertain



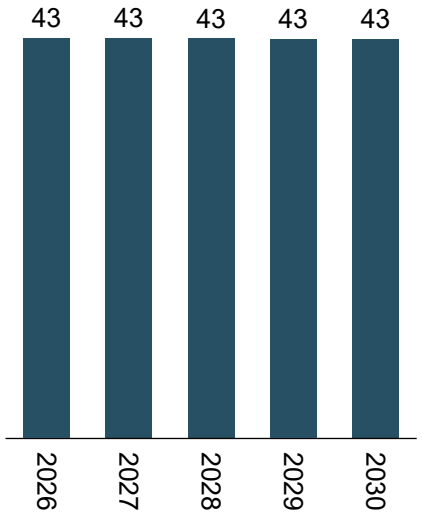
Sources: Vista (2022); NVE (2024); THEMA (2024). Note: The definitions of households and cabins in THEMA's model may differ slightly from Statistics Norway's historical statistics. The suggested consumption cap for Norgespris are not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh).

Long-term consumption growth is higher, as households adjust investments and habits

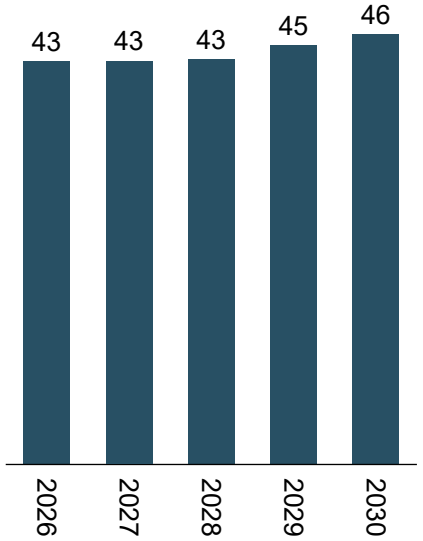
- The long-term impact of the Norgespris-scheme will be larger if it result in persistent lower electricity prices for Norwegian households.
- Vista (2022) recommends using a price elasticity of -0.6 for long-term adjustments (6 per cent increase in consumption given a 10 per cent reduction in the retail price).

If the price elasticity increases from 0.15 in 2026 to 0.6 in 2030, household consumption will increase with ~7.5 TWh given a "Norgespris" of 40 øre/kWh in the entire period

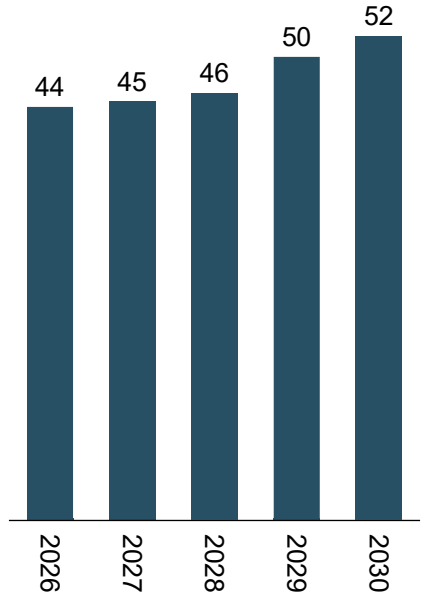
Market prices: Expected consumption (TWh) in households and cabins



Electricity support scheme: Expected consumption (TWh) in households and cabins



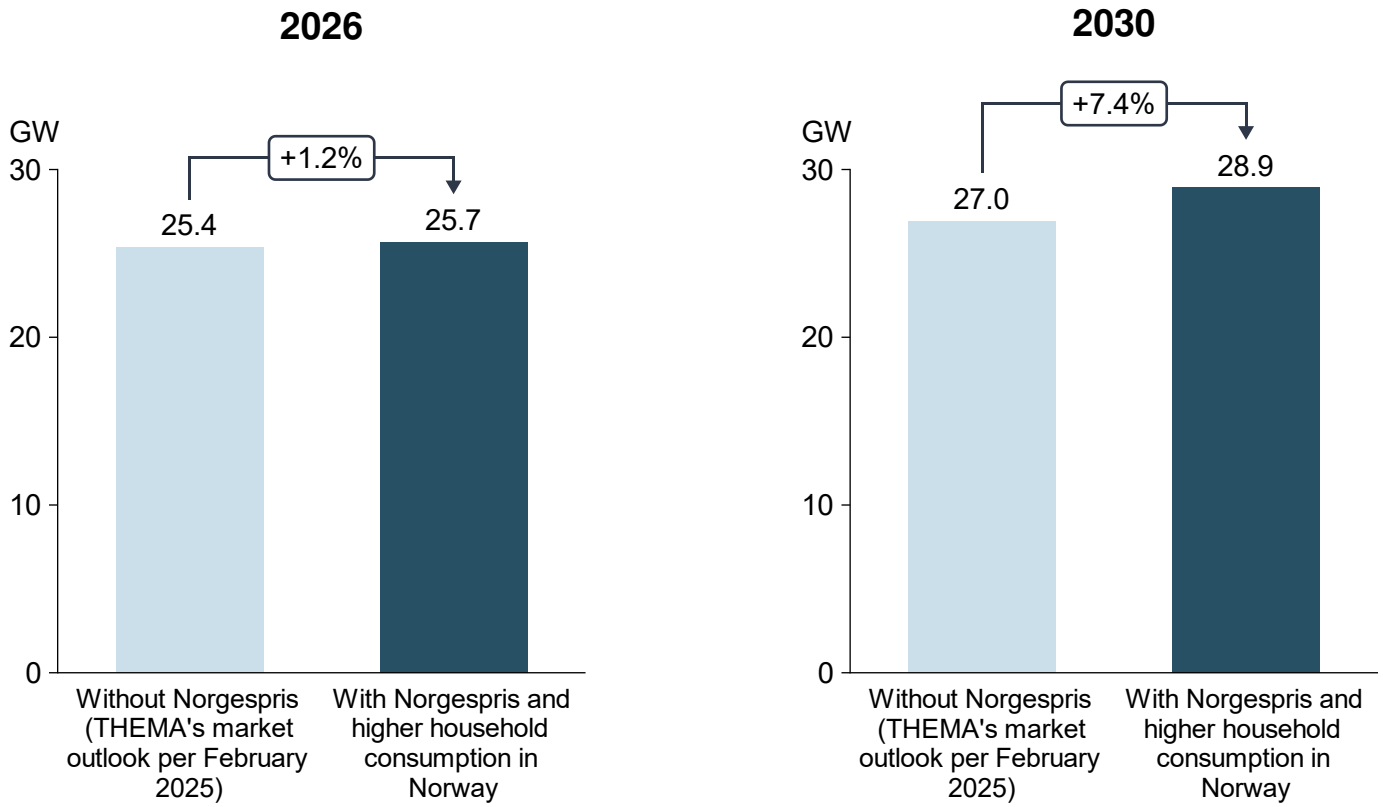
Norgespris + reduced VAT on grid tariffs: Expected consumption (TWh) in households and cabins



All prices are in real øre/real kroner. This means that we take into account an upward adjustment of the Norgespris in line with inflation, but not a real price adjustment. The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh).

Partial analysis of 2026 and 2030: Increased household consumption and less demand flexibility contribute to higher peak loads

Simulated peak load in Norway in 2026 in a normal hydrological year



Source: Simulations with the power market model TheMA. In the simulations, we have not taken into account any response in other sectors. The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh).

… leading to increased grid demand

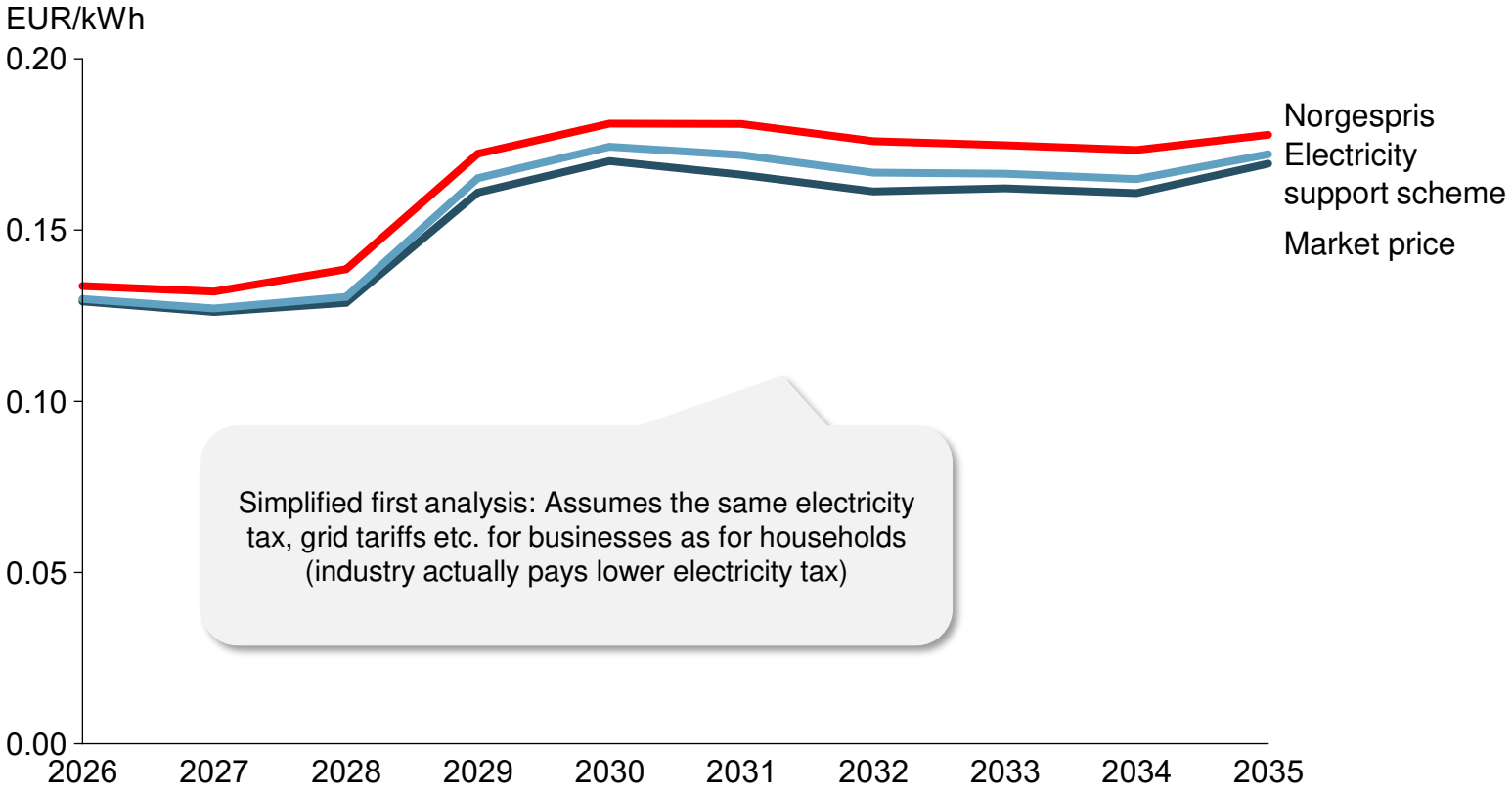
The peak load in the system increases more than the change in annual consumption would indicate due to the consumption profile of households.

With a higher peak load, the need for capacity in the grid also increases.

Results from a partial analysis, without considering reduced activity in businesses, the public sector and industry as a result of higher electricity prices.

Increased consumption as a result of electricity support and Norgespris results in higher prices for businesses, the public sector and industry

Total electricity cost per kWh for other customers (businesses, public sector and industry), including VAT, for businesses, given different support schemes for households



2025-NOK. The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh).

Average expenditure/kWh 2026-2035

Market price (for all): 0.154 EUR/kWh

- *Lower than the household average market price due to different geographical spread*

Case with households' electricity support scheme: 0.157 EUR/kWh

- *2% higher cost than with market price*

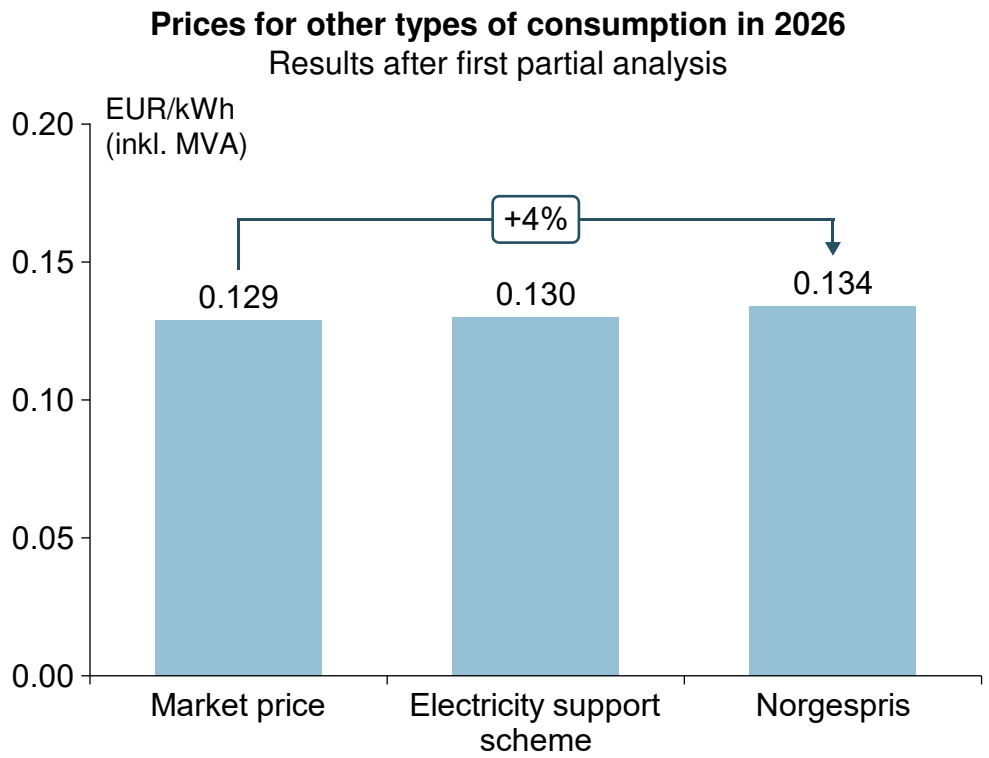
Norgespris and 15 per cent VAT on grid tariffs: 0.164 EURe/kWh

- *7% higher cost than with market price*
- *4,6% higher cost than with household electricity support scheme*

Results from a partial analysis, without taking into account the reduction in activity in businesses, the public sector and industry as a result of increased electricity prices

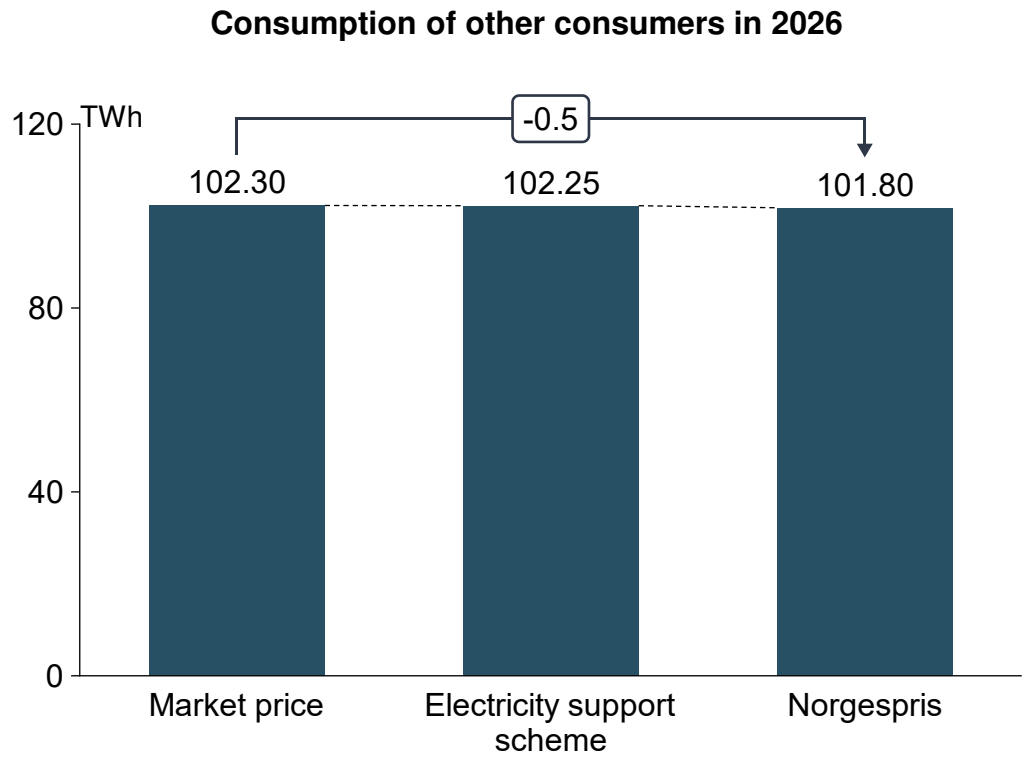
We expect businesses, the public sector and industry to reduce and discontinue activity as a result of higher prices

With Norgespris, we expect prices for businesses, the public sector and industry to increase



Simplified first analysis: Assumes the same electricity tax, grid tariff, etc. for businesses as for households (not true for industry)

Businesses, the public sector and industry will reduce their consumption, but it is uncertain how big the change will be



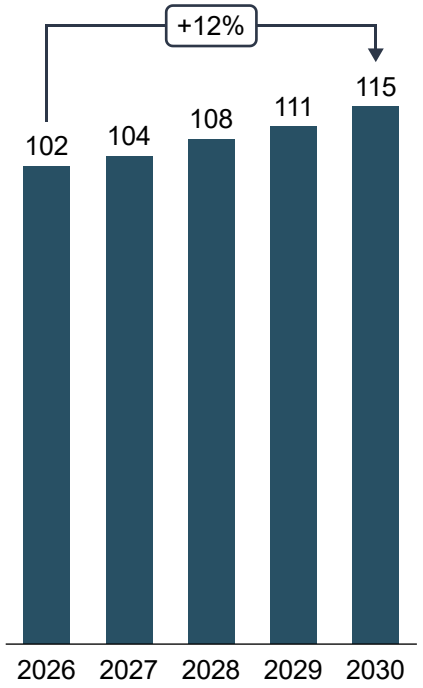
Sources: Vista (2022), NVE (2024); THEMA (2024). NB: The definitions of households and cabins in THEMA's model may differ slightly from Statistics Norway's historical statistics. The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh). See appendix with literature review from Vista/DNV on the price elasticity of electricity.

Companies are more elastic than households in the long run

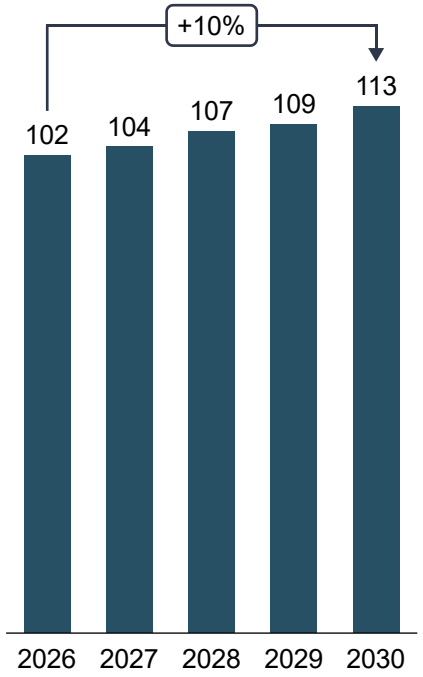
Vista (2022) recommends a price elasticity of -0,8 for long run adaptations (8 per cent decrease in consumption if the price increases with 20 per cent).

If price elasticity increases from 0,15 in 2025 to 0,8 in 2030, consumption among companies will be ~5 TWh lower with Norgespris at 40 øre excl. VAT than with market prices

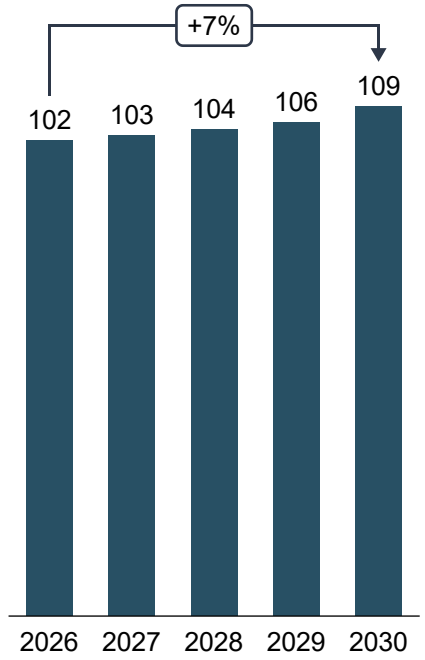
Market prices: Expected consumption (TWh) for the public and private sector



Electricity support scheme: Expected consumption (TWh) for the public and private sector



Norgespris+reduced MVA: Expected consumption (TWh) for the public and private sector



The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh). See appendix with literature review from Vista/DNV on the price elasticity of electricity.

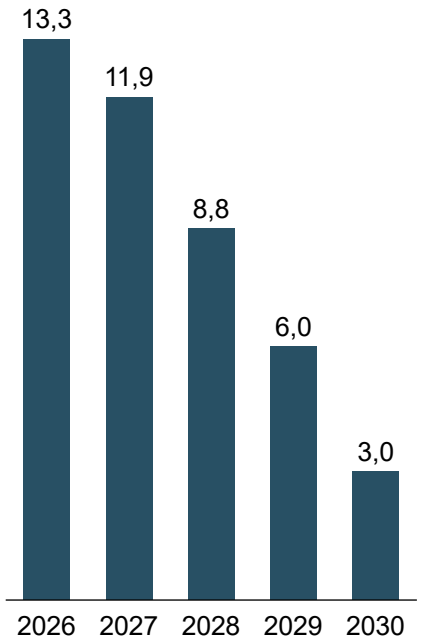
The power balance indicates that increased consumption by some in the short term must be matched by reduced consumption by others.

A positive power balance means that we export more than we import. This indicates that we have lower prices than the countries we trade with on average. This, in turn, is important for business competitiveness.

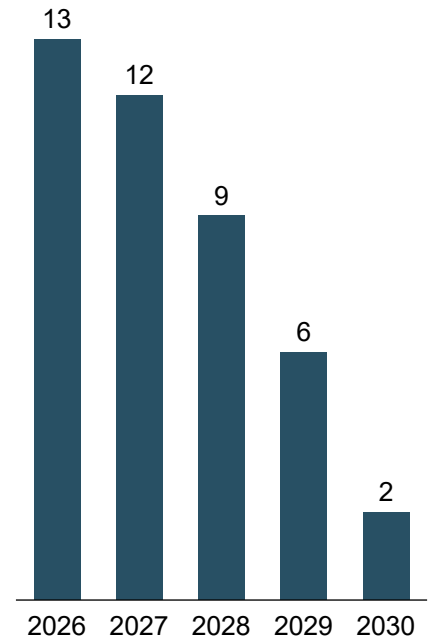
This development also explains why the Norgespris price must be expected to affect electricity prices in other Nordic countries. In an electricity system with prices above 0 øre and with many barriers to the development of new production, increased consumption by one group in one place will have to be matched by reduced consumption by other groups elsewhere, until new production is in place.

If the Norgespris is kept at 40 øre during the period, the power balance could deteriorate significantly

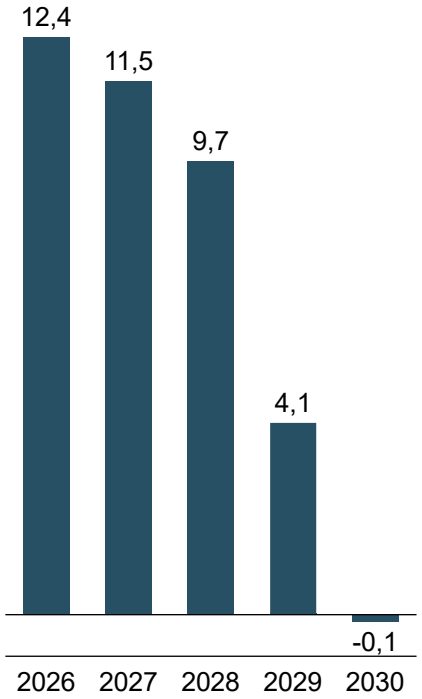
Market prices: Expected power balance (TWh) for Norway as a whole



Electricity support: Expected power balance (TWh) for Norway as a whole



Norgespris+reduced VAT grid tariff: Expected power balance (TWh) for Norway as a whole

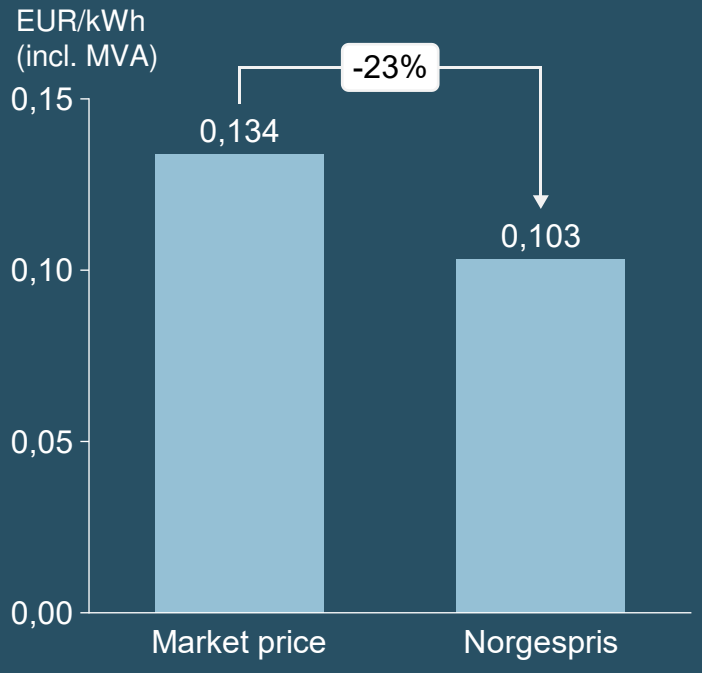


The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4,000 kWh).

Government spending will increase with Norgespris

With Norgespris, the government must cover the difference between the market price, grid tariffs etc. (incl. VAT) and Norgespris + VAT reduction.

Household electricity expenses (consumption-weighted) in 2026



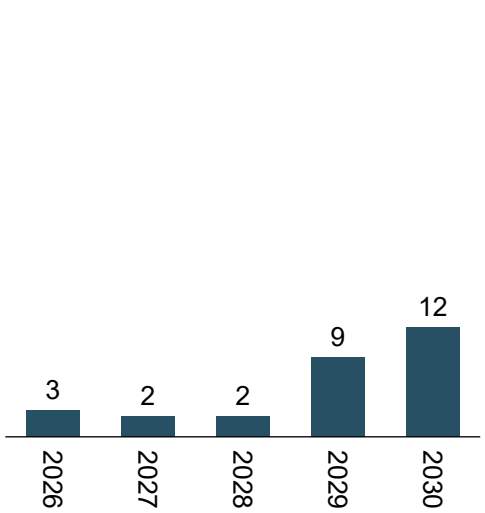
Source: Simulations with the power market model TheMA. In the simulations, we have not taken into account any response in other sectors.

The result depends on whether the electricity support scheme and VAT reduction is accounted for

Electricity subsidies:

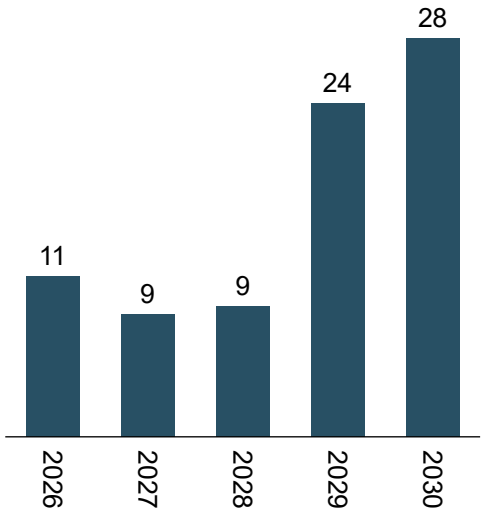
Simplified calculation of government expenditure in NOK billion.

Does not take into account the cap of 5,000 kWh and that cabins do not receive electricity subsidies.



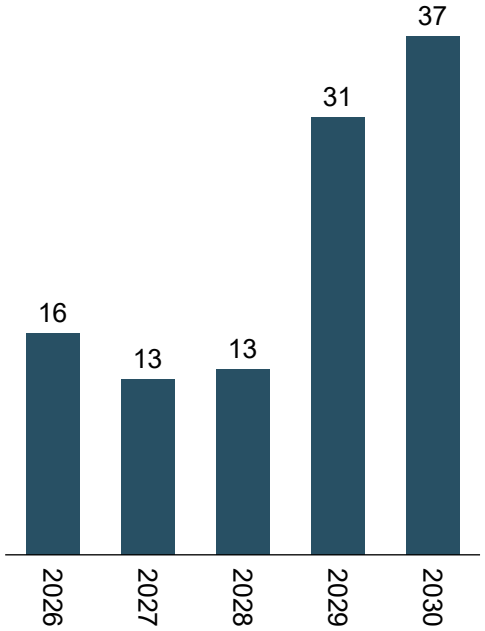
Norway price expenses excl. VAT reductions:

Government expenditure in NOK billion - Given Norgespris of 40 øre



Norway price expenses incl. VAT reductions:

Government expenditure in NOK billion - Given Norgespris of 40 øre



We assume that all electricity customers choose Norgespris. If we use monthly household consumption from Statistics Norway as a basis, together with quarterly forward prices for electricity from EEX, Norgespris will cost NOK 6.6 billion. 2026.

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THEMA CONSULTING GROUP

Power production in Norway increases significantly in years with high precipitation levels

Wet years contribute to high inflow to hydropower reservoirs and often coincide with milder temperatures

If the weather from 2020 repeats itself	Improvement in Norwegian power balance (TWh)
Supply to Norwegian hydropower plants increases from 137 TWh in a normal year to 145 TWh	+ 8
Wind power production in Norway increases from 16.6 TWh in a normal year to 17.2 TWh	+ 0,6
Consumption in Norway falls from 145 TWh in a normal year to 144 TWh	+ 1

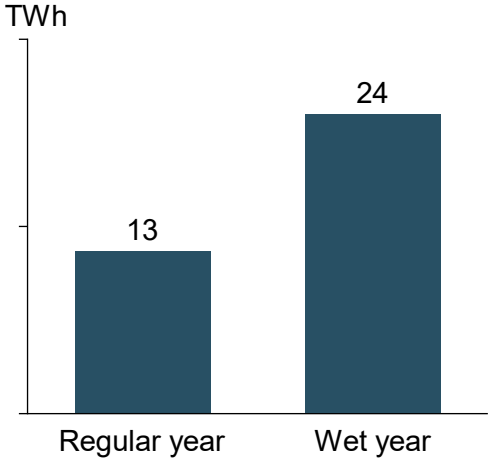
Note that consumption in a wet year is lower than in a normal weather year, despite potentially lower electricity prices. This is because the average temperature is typically lower in a wet year. Household consumption will therefore be lower as a result of milder temperatures. An example is the year 2020, with both low electricity prices and low consumption of electricity.

Sources: THEMA weather year database; NVE (figures for 2026).

... resulting in a positive power balance and low prices

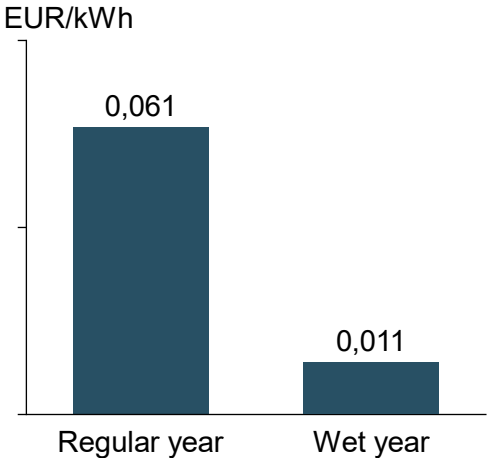
The change in the resource situation has significant consequences in the power market

Norwegian power balance



If the weather from 2020 is repeated in 2026, Norway will have an improved power balance. In these calculations, we assume that it is not possible to move water between years.

Prices in NO2



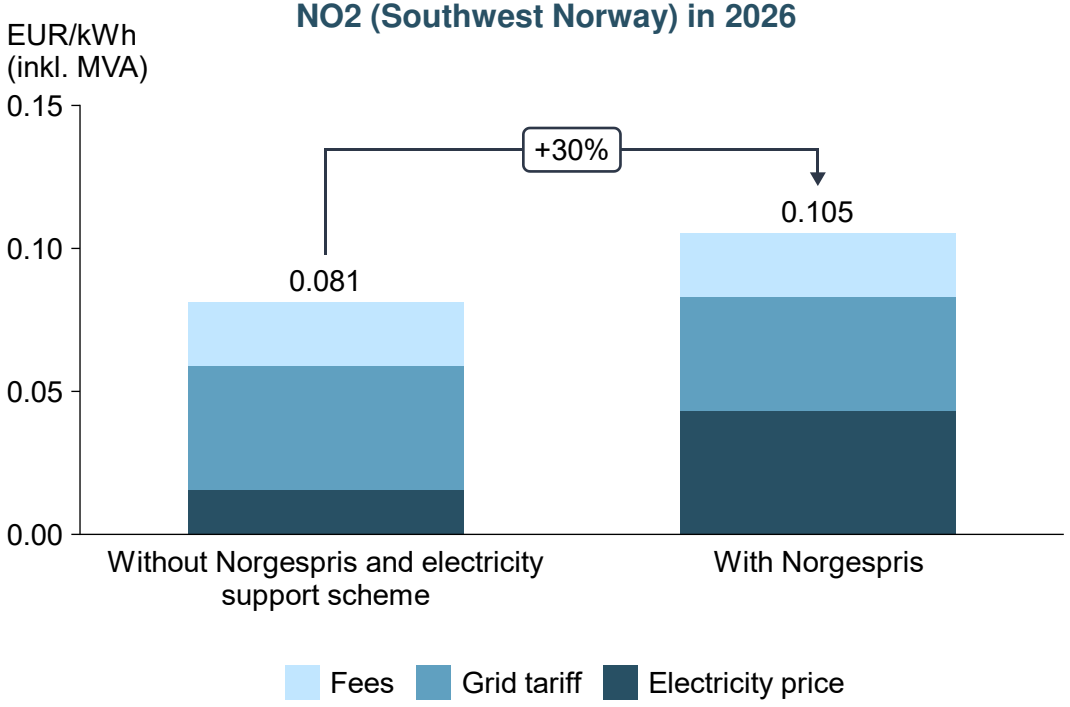
With a larger power surplus, prices will be significantly lower than in a normal year. This is because demand for electricity is lower than production.

Source: simulations with the power market model TheMA, without the possibility of moving inflow between years in multi-year reservoirs.

The household retail price will be higher with the *Norgespris* than the market price in a wet year, leading to lower consumption than in a normal situation.

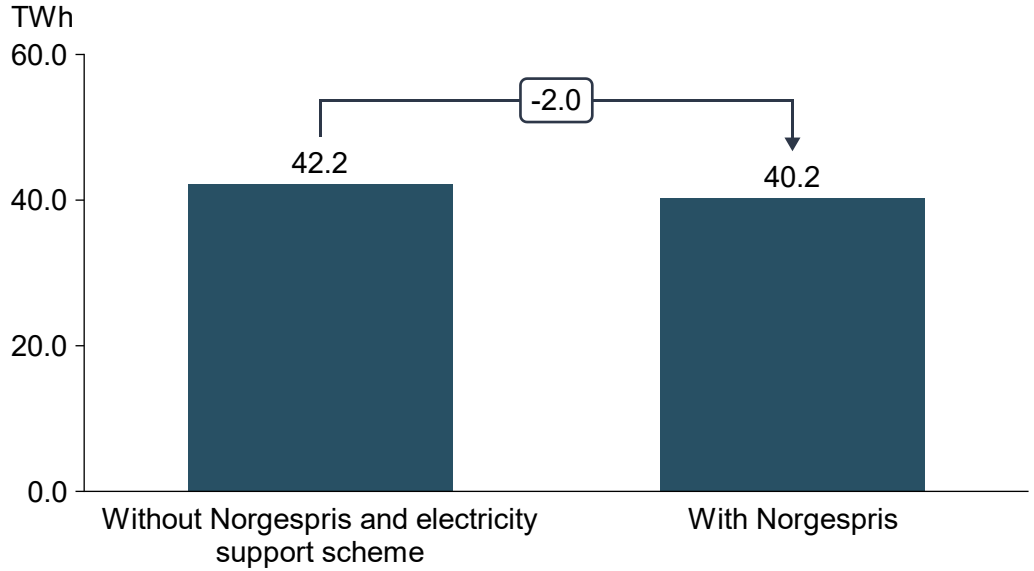
In a wet year, the Norwegian price will lead to a higher retail price

Retail prices (consumption-weighted) in NO2 (Southwest Norway) in 2026



Household consumption is reduced compared to a normal situation in wet years

Consumption in households and cabins in Norway in 2026 (incl. losses)

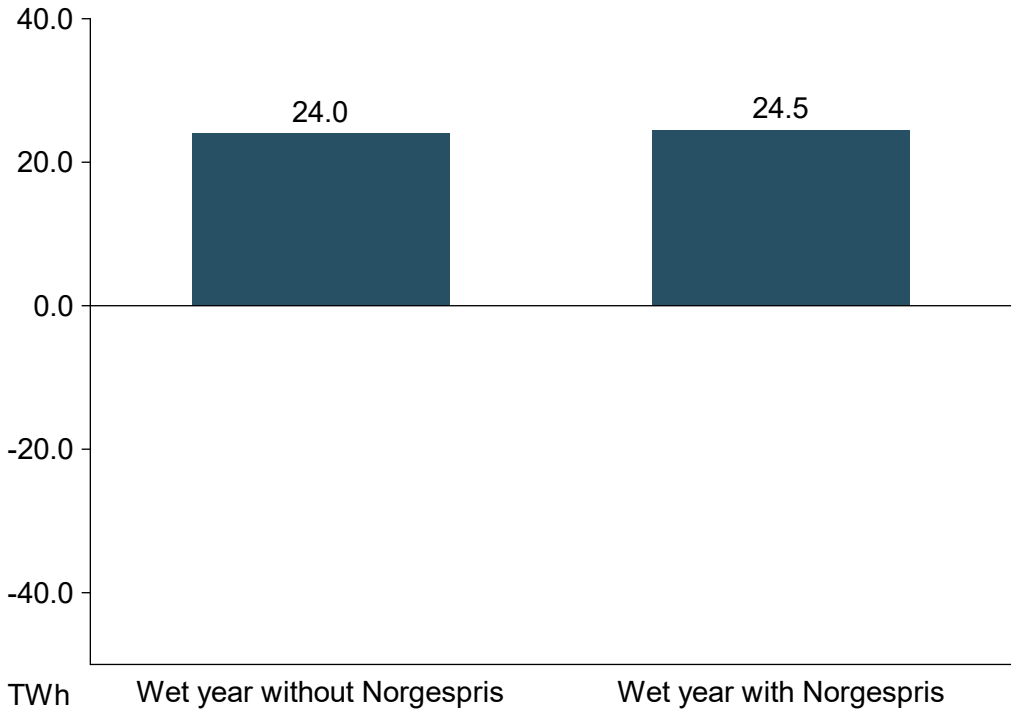


In a wet year like 2020, consumption will initially be lower than in a normal year due to milder temperatures. In a wet year, a situation with low prices and yet low consumption is therefore expected. With Norgespris, the household retail price is higher than it would be with the market price, which helps to reduce consumption.

We use a price elasticity of -0.15 for short-term adjustments in consumption. The comparison on this page is made against a situation with market prices, without an electricity support scheme ("Strømstøtte"). See foils on consequences in a normal weather year for comparisons against Strømstøtte. The suggested consumption cap for Norgespris are not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh).

In a wet year, Norgespris results in a slight improvement in Norwegian power balance

Norwegian power balance in 2026, without the possibility to move water between years in multi-year reservoirs



Source: simulations with the power market model TheMA, without the possibility of moving water between years in multi-year reservoirs. Comparison with market price, not electricity support, which Norway has today.

... but the low prices might make Norgespris customers react

In a wet year, Norgespris customers will pay more than the market price

- Due to the production surplus in a wet year, the spot price is low compared to a normal year
- In this case, households with a Norway Price agreement will pay more per kWh than if they did not enter into the agreement
  - How much cheaper the spot price will be than the Norgespris price will also depend on what level the Norgespris price is at that year
  - If the spot price is significantly lower than the Norgespris price, some end-user customers may be dissatisfied.
- In the Government's proposal for the design of Norgespris (as of 10 March 2025), the Norgespris agreement will be binding for the entire calendar year for the given metering point
  - If a person moves to a house where the previous owner entered into Norgespris, they will not be able to terminate the agreement - even if they were not the one who entered into it.
  - This restriction may reinforce a potential dissatisfaction among some households

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THEMA CONSULTING GROUP

Power production in Norway drops significantly in a very dry weather year

Dry weather years contribute to low inflow to hydropower reservoirs and often coincide with low temperatures and less wind

If the weather from 2010 repeats itself:	Reduction in Norwegian power balance (TWh)
The supply to Norwegian hydropower plants falls from 137 TWh in a normal year to 101 TWh	- 36
Wind power production in Norway drops from 17 TWh in a normal weather year to 14 TWh	- 3
Consumption in Norway increases from 145 TWh in a normal weather year to 153 TWh	- 8

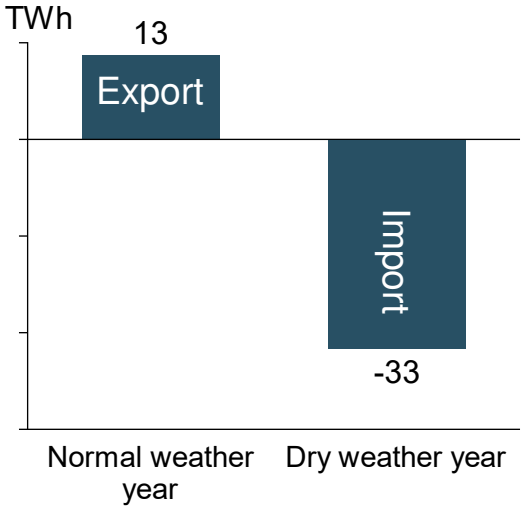
Note that some of the hydropower plants in Norway have multi-year reservoirs and can potentially increase production in a dry year beyond the inflow in that year. How much hydropower production is available also depends on reservoir levels at the start of the year. Note also that when there is little rainfall in Norway, there is also less rainfall than normal in Sweden, which can amplify the market effects.

Sources: THEMA Weather year database; NVE (data for 2026).

… which results in higher power prices and a need for imports

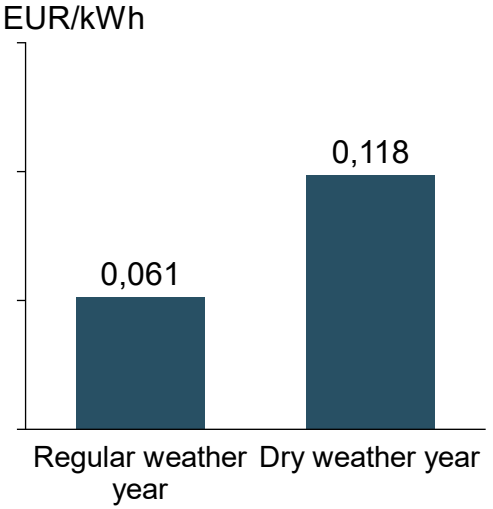
The change in the resource situation will have significant consequences in the power market

Norwegian power balance



If the weather year from 2010 repeats itself in 2026, Norway will be in need of importing power, due to dry and cold weather in combination of less wind. In these calculations, we assume that it is not possible to move inflow between years in multi-year reservoirs, but even if this was possible, Norway would need to import power.

Prices in NO2



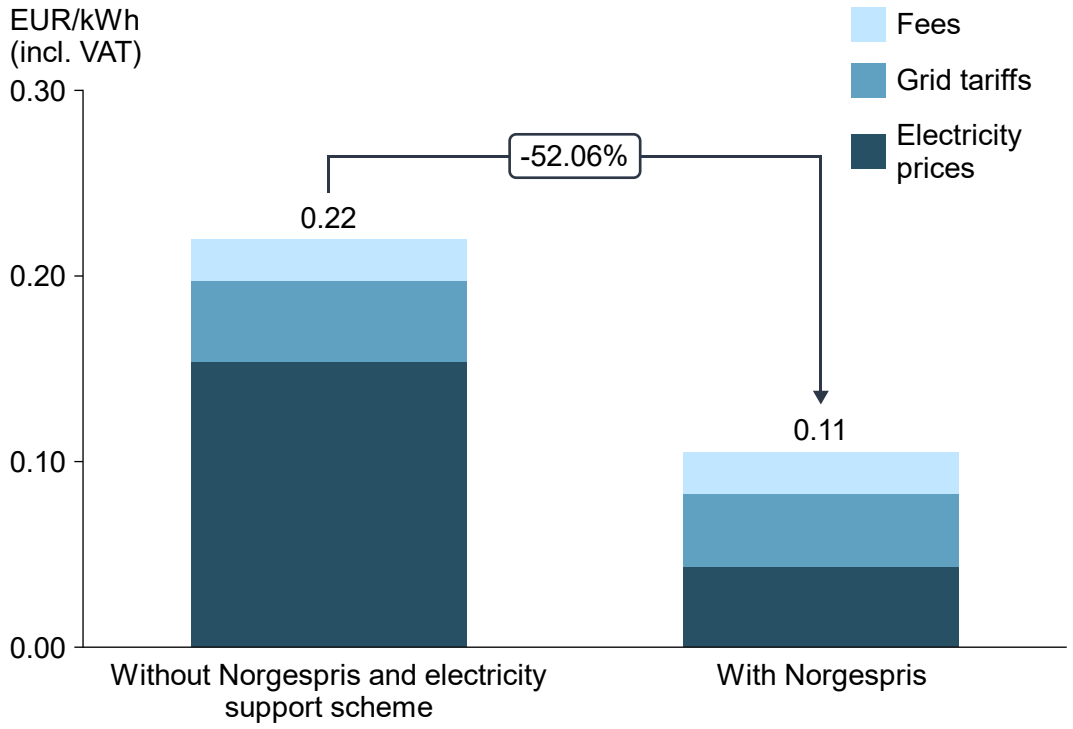
With a large need for imports, Norwegian power prices will increase to continental price levels. Prices in southern Norway will be slightly above Germany prices in order to trigger sufficient imports. German prices are influenced by high gas and CO2 prices, and are almost twice as high as Norwegian prices in a normal year.

Source: simulations with the power market model TheMA, without the possibility of moving inflow between years in multi-year reservoirs.

The effect of Norgespris on power prices will be relatively stronger in a dry year. Most households will not have incentives to react to a strained situation in the power system

Norgespris will contribute to a significant reduction in household electricity prices

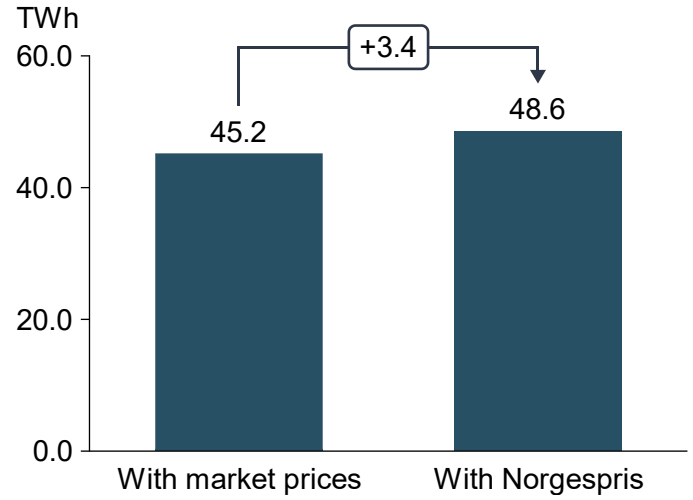
Retail prices (consumption-weighted) in NO2 (Southwest Norway) in 2026



Household consumption increases relatively more than in a normal situation as the Norgespris discount become greater

In a dry weather year, like 2010, consumption is generally higher than in a normal weather year due to lower temperatures. Since power prices are also higher in a dry weather year, the impact of Norgespris will be amplified. This follows from the discount being larger, reducing incentives to limiting consumption.

Consumption in households and cabins in Norway in 2026 (incl. losses)



We use a price elasticity of -0.15 for short-term adjustments in consumption. The comparison on this page is made against a situation with market prices, without an electricity support scheme ("Strømstøtte"). See foils on consequences in a normal weather year for comparisons against Strømstøtte. The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh).

Increased consumption in a strained situation in the power system can contribute to more extreme hourly prices

Illustration: Simulated hourly prices in NO1 in 2026 without Norgespris in a very dry year

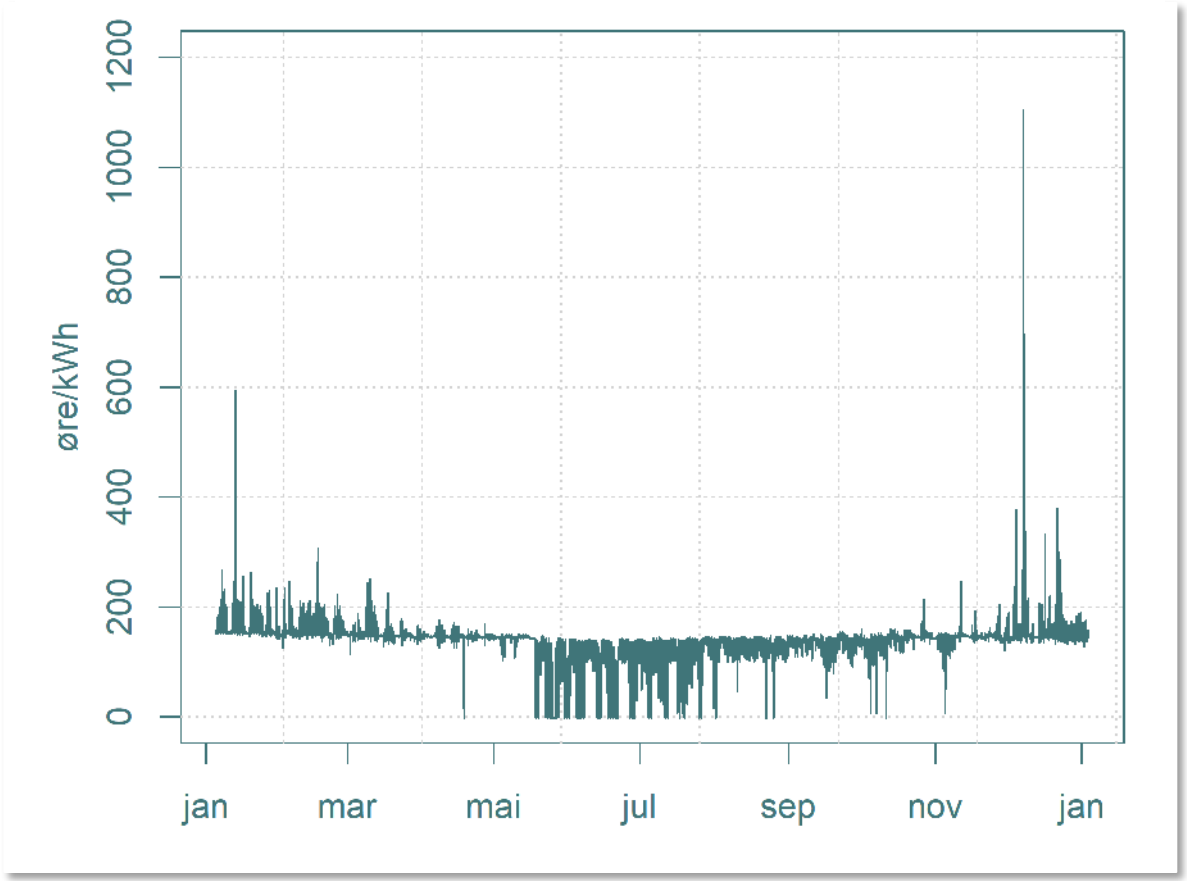
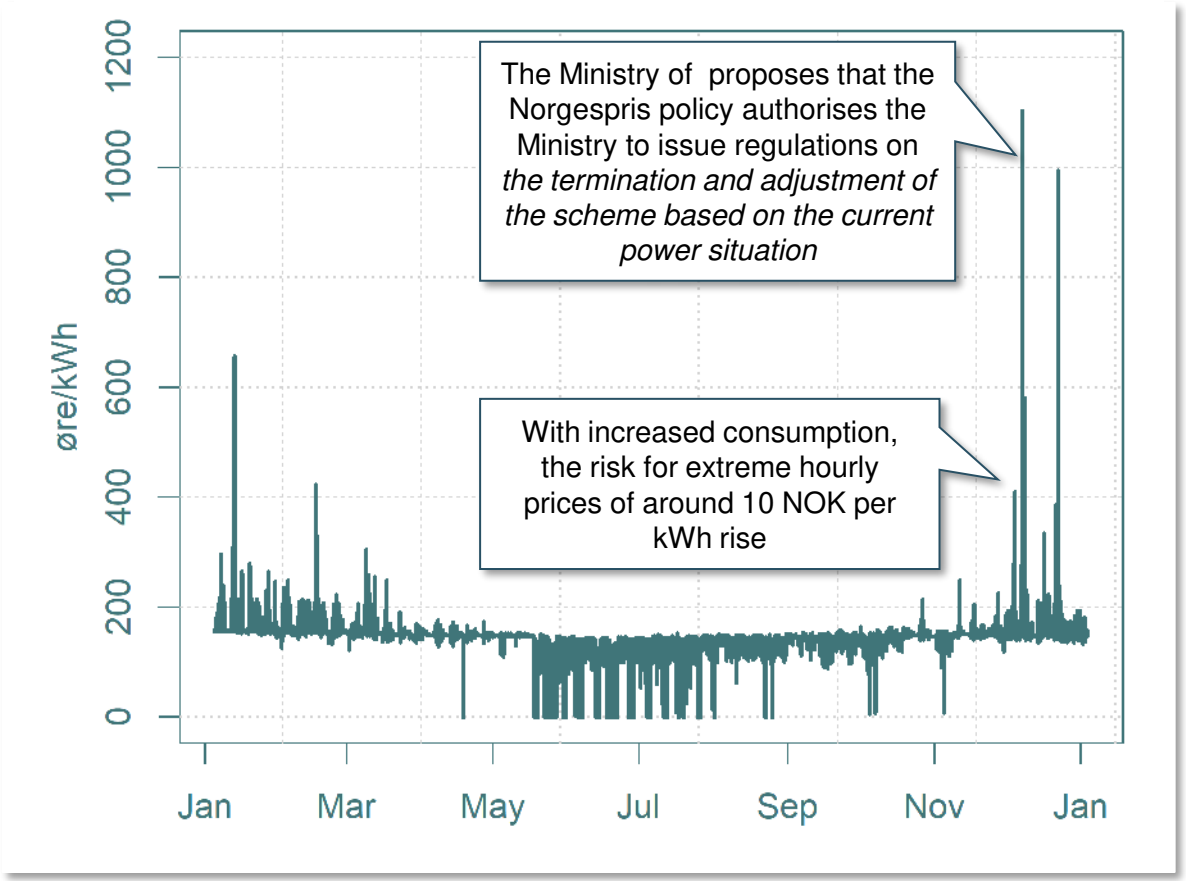


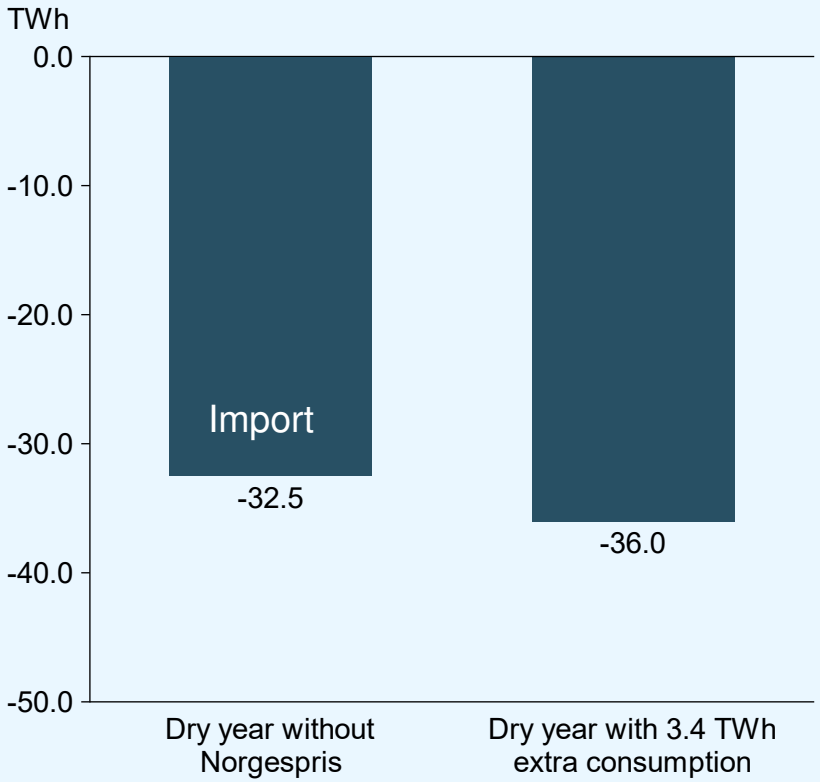
Illustration: Simulated hourly prices in NO1 in 2026 with Norgespris and higher household consumption in a very dry year



Source: Simulations with the power market model TheMA, without the possibility of moving inflow between years in multi-year reservoirs. The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh).

Increased electricity consumption contributes to an increased need for imports, which can lead to a reduced security of supply

Norwegian power balance in 2026, without the possibility of moving water between years in multi-year reservoirs



Security of supply depends both on weather and available production and transmission capacity

- Under normal circumstances, the system will be able to handle a significant power deficit, as Norway has interconnectors to Sweden, Denmark, Germany, the Netherlands and the UK, but power prices will increase, and we are likely to experience more '13 NOK hours'.
- If Norway experiences a very dry year combined with lower availability of production or interconnectors, security of supply could be threatened.

The consequences of Norgespris in a dry year can be amplified by a sustained increase in household consumption

- If the Norgespris policy leads to persistently lower electricity prices for Norwegian households, the incentives to invest in new efficient solutions, such as heat pumps or retrofitting insulation, will be reduced. **It is therefore likely that the response in the long term will be greater than in the short term.**
- Given that household consumption is increasing, the consequences of a dry year can be amplified in the long term. Increased consumption reduces the country's historical power surplus. Consequently, there will be a greater shortage of electricity, which will increase prices further than if consumption had been lower. In addition, Norway will import electricity, and consequently prices will also be higher than with a lower import requirement.

The Ministry of retains the right to terminate the Norgespris policy

In the consultation proposal on the Norgespris policy (11.02.25), the Ministry states that it can issue regulations to terminate and adjust both the current electricity support scheme and Norgespris *for the sake of the power situation.*

Soruce: Simulations with the power market model TheMA, without the possibility of moving inflow between years in multi-year reservoirs.; THEMA (2022).
The suggested consumption cap for Norgespris is not taken into account (which affects only a small amount of consumption with a limit of e.g. 4 000 kWh).

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THEMA CONSULTING GROUP

Alternative to market price, electricity support and Norgespris: **Consumption-*independent* support for electricity bills**

Issue: Consumption-dependent subsidies make us poor

With market prices, a Norwegian with a monthly budget can choose:

Suitable amount of power (slightly low indoor temperature)

Appropriate amount of restaurant visits

Norgespris limits people's opportunities due to electricity subsidies and higher taxes

More electricity than he/she is willing to pay the cost of

Increased taxes/ fewer public services to finance subsidies

Fewer restaurant visits, as a result of lower disposable income and higher electricity costs in restaurants

Alternative: Consumption-independent support for electricity bills

Some alternatives:

- **Equal support per person,** e.g. aiming to make the average bill equal to the average from 2015-20
- **Electricity subsidy based on average consumption for similar homes -** Each household receives electricity subsidy for a predefined number of kWh

Proposal prepared by SØA for Huseierne, NBBL, NHO elektro, Norsk Varmepumpeforening and Solenergiklyngen

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If a cap of 3 000, 4 000 or 5 000 kWh is set for monthly consumption, this represents 0.3 - 4.5 per cent of the total consumption of households not covered by Norgespris.

Calculation of exceeding consumption over 4000 kWh

- Figures from Elhub show that 8.6 per cent of households have at least one month with electricity consumption above 4,000 kWh.
- A sample dataset from 2021 with 1,136 households shows a total electricity consumption of 14.86 GWh, of which 109 households (9.6%) have at least one month with consumption above 4,000 kWh. This is assumed to be representative of 8.6% at national level*.
- The consumption of these 109 households amounts to 3.6 GWh, of which 0.2 GWh per month exceeds 4,000 kWh. This corresponds to 5.52% of the relevant consumption and 24.2% of the total consumption in the dataset.

Consumption of more than **4 000 kWh per month** will account for around **0.534 TWh, or 1.3%, of the total** household consumption of 40 TWh.

Calculation of exceeding consumption over 3000 kWh

- Figures from Elhub show that 20.9 per cent of households have at least one month with electricity consumption above 3,000 kWh.
- A sample dataset of 1,136 households shows a total electricity consumption of 14.86 GWh, of which 233 households (20.51%) have at least one month with consumption above 3,000 kWh. This is assumed to be representative of national figures.
- The consumption of these 233 households totalled 6.53 GWh, of which 0.66 GWh per month exceeded 3,000 kWh. This corresponds to 10.12% of the relevant consumption and 43.97% of the total consumption in the dataset.

Consumption of more than **3 000 kWh per month** will account for around **1.78 TWh, or 4.45%,** of the total household consumption of 40 TWh.

Calculation of exceeding consumption over 5 000 kWh

- Figures from Elhub show that 4 per cent of households have at least one month with electricity consumption above 5,000 kWh.
- A sample dataset of 1,136 households shows a total electricity consumption of 14.86 GWh, of which 46 households (4.05%) have at least one month with consumption above 5,000 kWh. This is assumed to be representative of national figures.
- The consumption of these 46 households totalled 1.73 GWh, of which 0.05 GWh per month exceeded 5,000 kWh. This corresponds to 2.74% of the relevant consumption and 11.65% of the total consumption in the dataset.

Consumption of more than **5 000 kWh per month** will account for around **0.128 TWh, or 0.3%,** of the total household consumption of 40 TWh.

*Sources: Zenodo dataset sample (2023). * It is also natural to assume that reduction in electricity consumption observed after 2022 are made by households with consumption above 4 000 kWh, which may be an explanation for the decline in per cent from 2021.*

Wet year: Norgespris has relatively little impact in a wet year, when there is basically a surplus of electricity production

Results from a partial analysis, without taking into account the reduction in activity at businesses as a result of increased electricity prices

Variable	Value given market prices	Value with Norgespris +15% VAT	Difference
Household electricity consumption (TWh)	42.2	40.2	-2.0
Peak load (GW)	22.9	22.6	-0.3
Power balance (TWh)	24.0	24.5	0.6
Net exchange NO1 and SE3 (TWh)	-2.0	-1.7	0.3
Net exchange NO2 and DK1 (TWh)	8.5	8.5	0.0
Average price Norway (EUR/MWh)	10.6	10.4	-0.2
Average price Sweden (EUR/MWh)	13.8	13.7	-0.1
Average price Denmark (EUR/MWh)	70.0	70.0	0.0
Average price Finland (EUR/MWh)	11.0	10.9	-0.1
Price NO1 (EUR/MWh)	11.2	10.9	-0.3
Price NO2 (EUR/MWh)	11.5	11.2	-0.3
Price SE3 (EUR/MWh)	10.3	10.1	-0.1
Price DK1 (EUR/MWh)	70.6	70.6	0.0

Dry year: Even in a dry year, Norgespris will contribute to higher prices

Results from a partial analysis, without taking into account the reduction in activity at businesses as a result of increased electricity prices

Variable	Value given market prices	Value with Norgespris +15% VAT	Difference
Household electricity consumption (TWh)	45.2	48.6	3.5
Peak load (GW)	27.0	27.7	0.6
Power balance (TWh)	-32.5	-36.0	-3.5
Net exchange NO1 and SE3 (TWh)	-11.8	-12.2	-0.4
Net exchange NO2 and DK1 (TWh)	-4.0	-4.8	-0.8
Average price Norway (EUR/MWh)	117.3	119.8	2.5
Average price Sweden (EUR/MWh)	95.6	96.3	0.7
Average price Denmark (EUR/MWh)	107.5	107.9	0.4
Average price Finland (EUR/MWh)	93.4	94.0	0.5
Price NO1 (EUR/MWh)	117.7	120.2	2.4
Price NO2 (EUR/MWh)	118.2	120.5	2.3
Price SE3 (EUR/MWh)	96.5	97.2	0.7
Price DK1 (EUR/MWh)	107.7	108.2	0.4

Normal year: Effects of Norgespris in a normal year on consumption and exchange

Results from a partial analysis, without taking into account the reduction in activity at businesses as a result of increased electricity prices

Variable	Year	Value given market prices	Value with Norgespris +15% VAT	Difference
Household electricity consumption (TWh)	2026	42.9	44.3	1.4
	2030	42.7	51.8	9.1
	2035	42.6	51.7	9.1
Peak load (GW)	2026	25.4	25.7	0.3
	2030	27	28.9	2
	2035	28.7	30.7	2
Power balance (TWh)	2026	13.3	11.9	-1.4
	2030	3	-6	-9
	2035	7.8	-1.3	-9.1
Net exchange NO1 - SE3 (TWh)	2026	-7.7	-8.2	-0.5
	2030	-8.2	-10.6	-2.4
	2035	-4.8	-7.5	-2.7
Net exchange NO2 - DK1 (TWh)	2026	7.5	7.2	-0.3
	2030	3.4	2.4	-1
	2035	7	5.2	-1.8

Normal year: Norgespris will contribute to increased electricity prices throughout the Nordic region, EUR/MWh (1/2)

Results from a partial analysis, without taking into account the reduction in activity at businesses as a result of increased electricity prices

Variable	Year	Value given market prices	Value with Norgespris +15% VAT	Difference
Norway	2026	51.2	54.9	3.7
	2030	76.4	85.2	8.8
	2035	75.9	82.8	6.9
Sweden	2026	47.8	50.5	2.7
	2030	70.2	76.2	6.0
	2035	70.4	76.0	5.6
Denmark	2026	86.0	86.6	0.6
	2030	87.5	89.4	1.8
	2035	84.0	85.5	1.4
Finland	2026	46.5	48.9	2.3
	2030	78.5	83.2	4.7
	2035	75.6	79.9	4.3

Normal year: Norgespris will contribute to increased electricity prices throughout the Nordic region, EUR/MWh (2/2)

Results from a partial analysis, without taking into account the reduction in activity at businesses as a result of increased electricity prices

Variable	Year	Value given market prices	Value with Norgespris +15% VAT	Difference
NO1	2026	55.8	60.2	4.4
	2030	77.2	85.5	8.3
	2035	77.9	86.4	8.5
NO2	2026	61.2	65.2	4.0
	2030	77.4	85.5	8.1
	2035	74.7	80.6	5.9
DK1	2026	86.4	87.1	0.6
	2030	85.4	86.9	1.5
	2035	85.8	87.1	1.3
SE3	2026	47.8	51.0	3.2
	2030	69.9	76.2	6.3
	2035	70.0	75.9	5.9

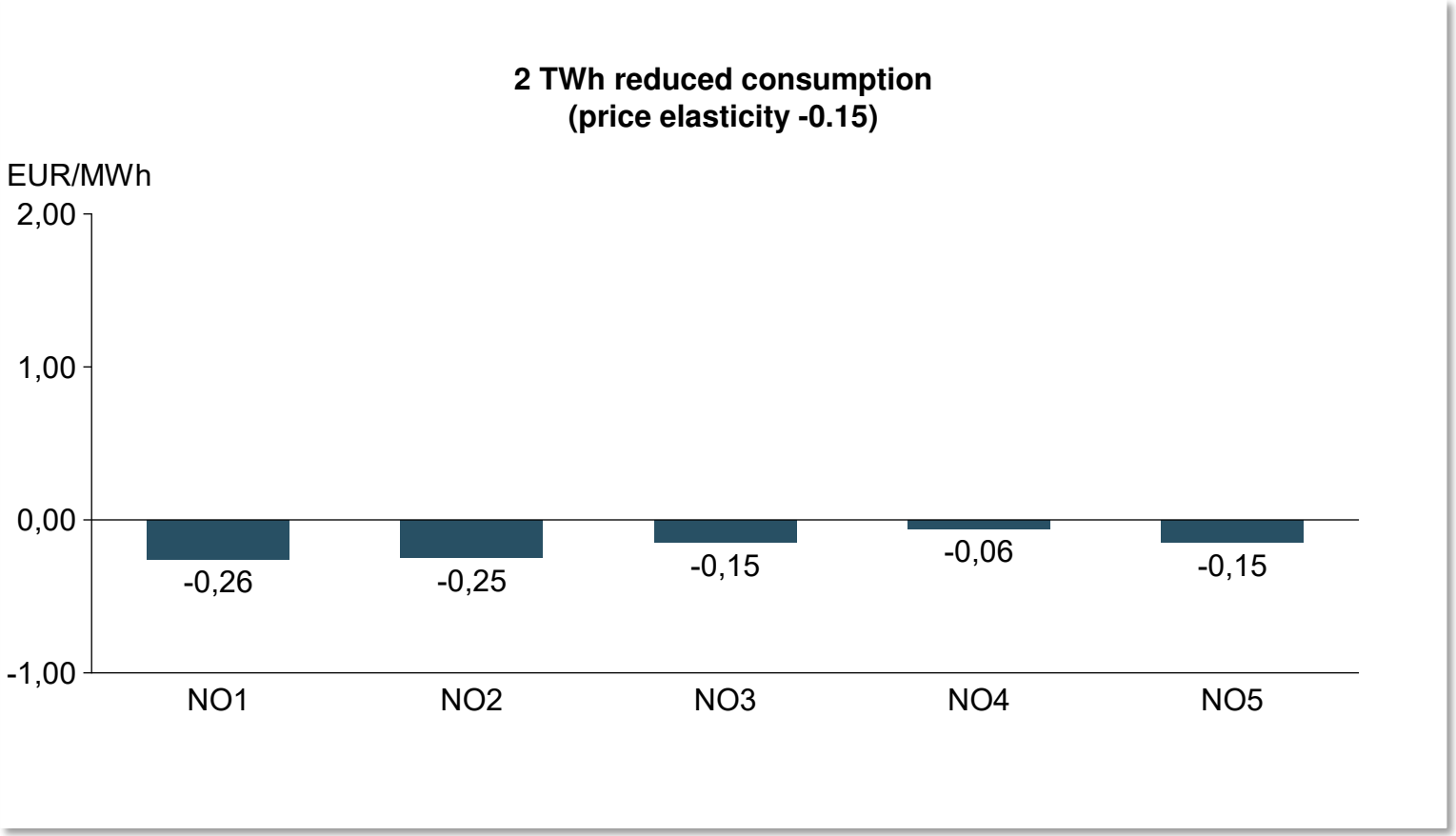
Number of hours with prices higher than 200 øre/kWh in 2030

Results from a partial analysis, without taking into account the reduction in activity at businesses as a result of increased electricity prices

Variable	Value given market prices (number of hours)	Value with Norgespris +15% VAT (number of hours)	Difference
NO1	32	42	10
NO2	20	26	6
NO3	17	29	12
NO4	17	29	12
NO5	17	29	12
SE1	29	39	10
SE2	29	39	10
SE3	33	42	9
SE4	46	55	9
DK1	49	50	1
DK2	66	74	8
FIN	96	98	2

Wet year: With Norgespris, the market price will be reduced in a situation with already low prices

Change in market price as a result of Norgespris in 2026 in a wet weather scenario

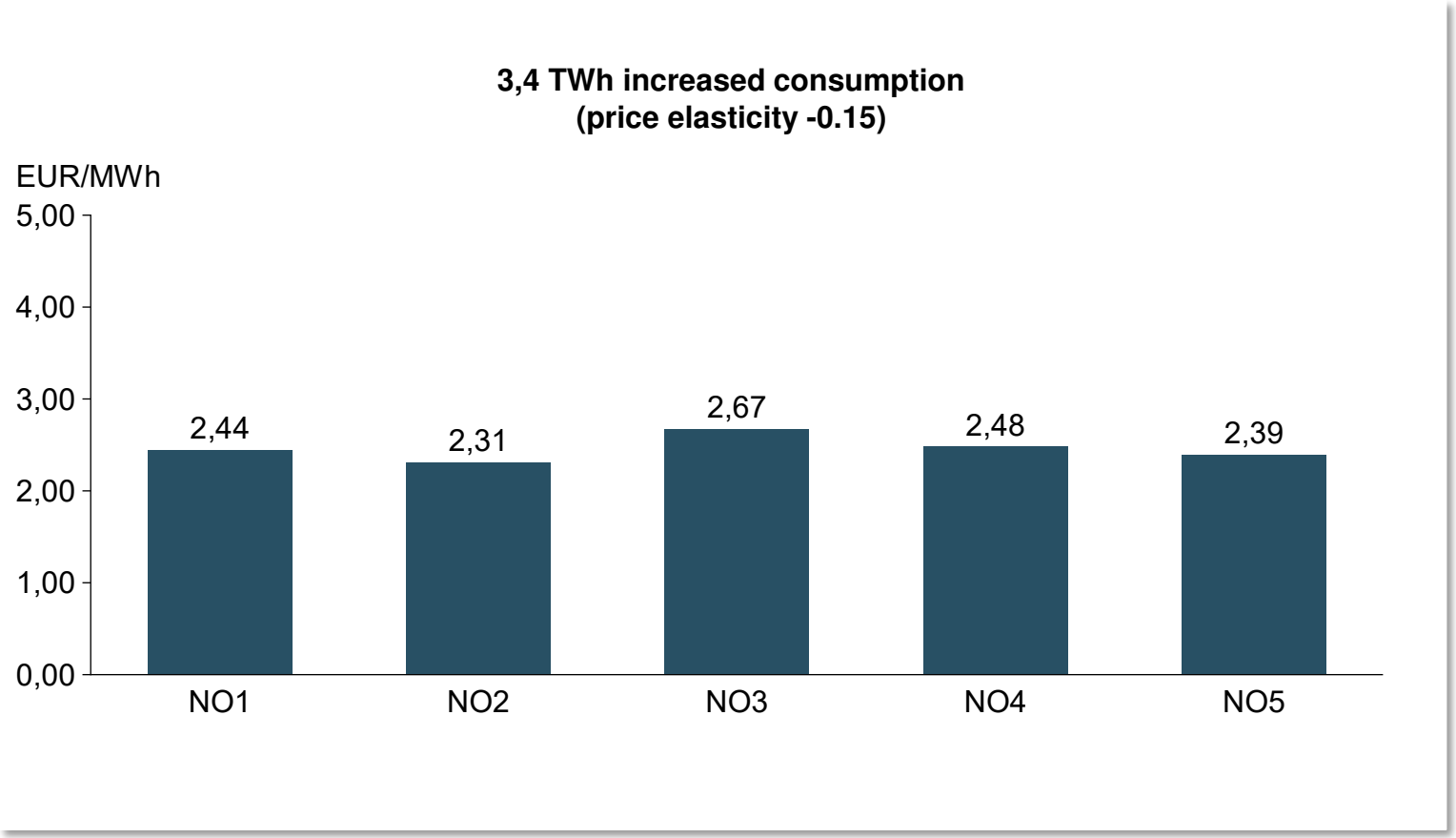


In a wet year, Norgespris contributes to lower consumption than in a normal situation (situation without Norgespris). This is because households receive a higher price than they would without the Norgespris price.

Source: simulations with the power market model TheMA, In the simulations we have not taken into account any consumption response in other sectors. Compared with market price, not electricity support. Consumption cap not taken into account (which affects small consumption at a limit of e.g. 4,000 kWh).

Dry year: With Norgespris, spot prices will increase in both normal and dry years, but relatively less in a normal year

Increase in market price due to Norgespris in 2026 in a dry weather scenario



Source: simulations with the power market model TheMA, In the simulations we have not taken into account any consumption response in other sectors. Compared with market price, not electricity support. Consumption cap not taken into account (which affects small consumption at a limit of e.g. 4,000 kWh).

In an import situation (dry year), prices will already be relatively higher

In a dry year, Norgespris helps to increase consumption, and therefore also increase power prices for those not covered by the scheme.

The price effects are somewhat lower than in a normal situation, since Norwegian prices are already at a level that is somewhat higher than prices on the continent (we will be in an import situation).

We are not aware of any studies that indicate that the price elasticity of electricity is zero. The question is how large the elasticity is, for different groups and in the short and long term (1/2)

Literature review by Vista/DNV (2022): selected results in international literature

Study	Comment	Short term (up to 1 year)			Long term (more than 1 year)		
		Households	Industry	Total	Households	Industry	Total
Halvorsen et al. (2005)	Norway, 1993-1995, annual end-user prices, various household characteristics	-0.649					
Bye & Hansen (2008)	Norway, 2000-2004, Spot price, hourly price - Summer: spot price end-user price - Winter: spot price end-user price	-0.12	-0.08	-0.04	-0.42	-0.28	-0.14
Holstad & Pettersen (2011)	Norway, 1996-2010, spot price, monthly, general supply Spot price (end-user price)			-0.05 (-0.15)			
Vista Analyse (2011)	Nordics (various price areas), 2009-2010 Spot price			-0.02 (for Central Norway)			
Andersen (2015)	Master's thesis. Energy-intensive industry.			-0.011 to -0.075		-0.28 (Energy-intensive)	
Hofmann & Lindberg (2019)	Oslo, spot price winter, temperatures from -10 to 0 °C						
Bergland (2021)	Norway, 1993-2019, annual end-user prices	-0.06			-0.11		

Kilde: Vista/DNV (2022)

We are not aware of any studies that indicate that the price elasticity of electricity is zero. The question is how large the elasticity is, for different groups and in the short and long term (2/2)

Literature review by Vista/DNV (2022): selected results in international literature

Study	Comment	Short term (up to 1 year)			Long term (more than 1 year)		
		Households	Industry	Total	Households	Industry	Total
Labandeira et al. (2017)	Meta-study based on 428 studies			-0.126			-0.365
Zhu et al. (2018)	Meta-study based on 103 studies			-0.228			-0.577
Cialani & Mortazavi (2018)	29 European countries, 1995-2015, annual end-user prices	-0.041 to -0.044	-0.029 to -0.052		-0.189 to -0.302	-0.118 to -0.198	
Csereklyei (2020)	EU, 1996-2016, annual end-user prices	-0.08	-0.10		-0.53 to -0.56	-0.75 to -1.01	
Pellini (2021)	12 European countries, 1975-2018, annual end-user prices				-0.48 (for all 12 countries)		-0.668 (for Sweden)
Burke & Abayasekara (2018)	48 U.S. states, 2003-2015, annual end-user prices	-0.11		-0.1	-1	-1.2 or greater for industry; -0.3 to -0.6 for service sectors	-1

Kilde: Vista/DNV (2022)

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About THEMA:
THEMA Consulting Group is a consulting firm focused on electricity and energy issues, and specialising in market analysis, market design and business strategy.

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