



Norwegian Centre for Energy  
Transition Strategies

## Power year - 2020

Too much of a good thing? What do we do about surplus power production?

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Sintef Energy Research, Energy systems

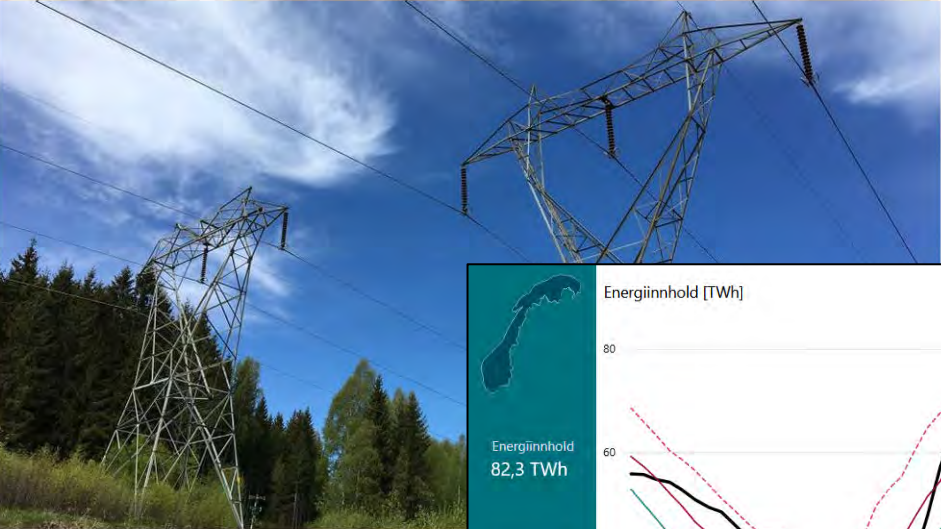


**E24** AKSJELIVE BØRS E24+ TIPS OSS

Søk MENY

# Fortsatt svært høy strømpris

Strømprisen til kunde steg 17 prosent i første kvartal i år mot samme periode i fjor. I snitt betalte folk 1,24 kroner kilowattimen, inkludert nettleie og avgifter.



FORSTATT DYR: Strømprisen holder seg skyhøy, og i snitt var prisen på 1,24 kroner kilowattim. Foto: Kjetil Malkenes Hovland, E24

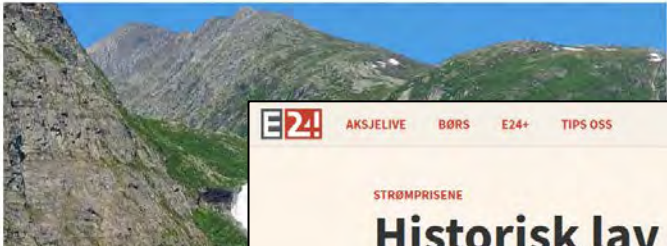
Source: e24.no

**TU Energi** MENY LEDIGE JOBBER WEBINARER BLI EKSTRA-ABONNENT

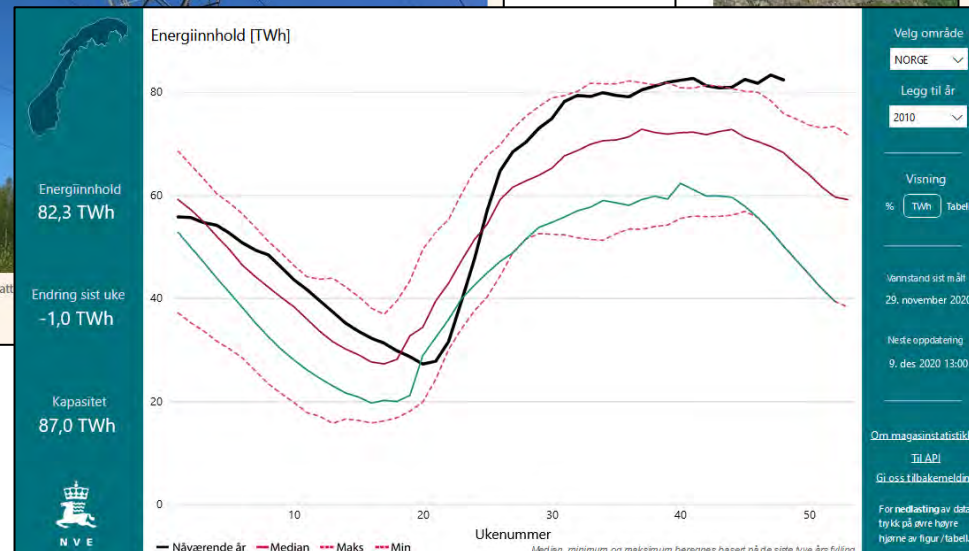
KRAFTKABLER TIL UTLANDET

## Kabler ute av drift: Norge må slippe vann forbi turbinene, mens Sverige betaler dyrt for mer kjernekraft

Tre av fire kabler til Danmark er ute av drift. Også NorNed og linjer til Sverige går på lav kapasitet.



Source: tu.no



Source: NVE [nve.no]

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STRØMPRISENE

## Historisk lav strømpris: I natt fikk nordmenn betalt for strøm

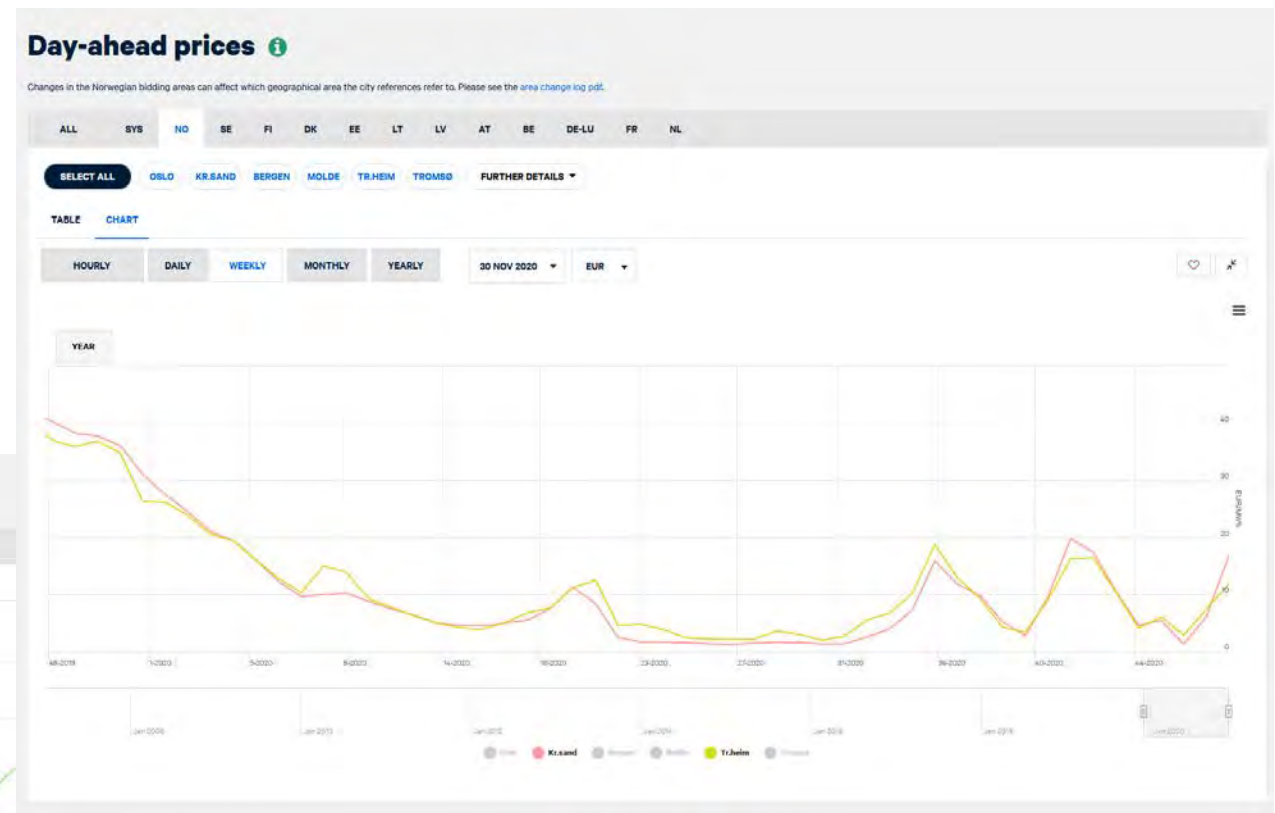
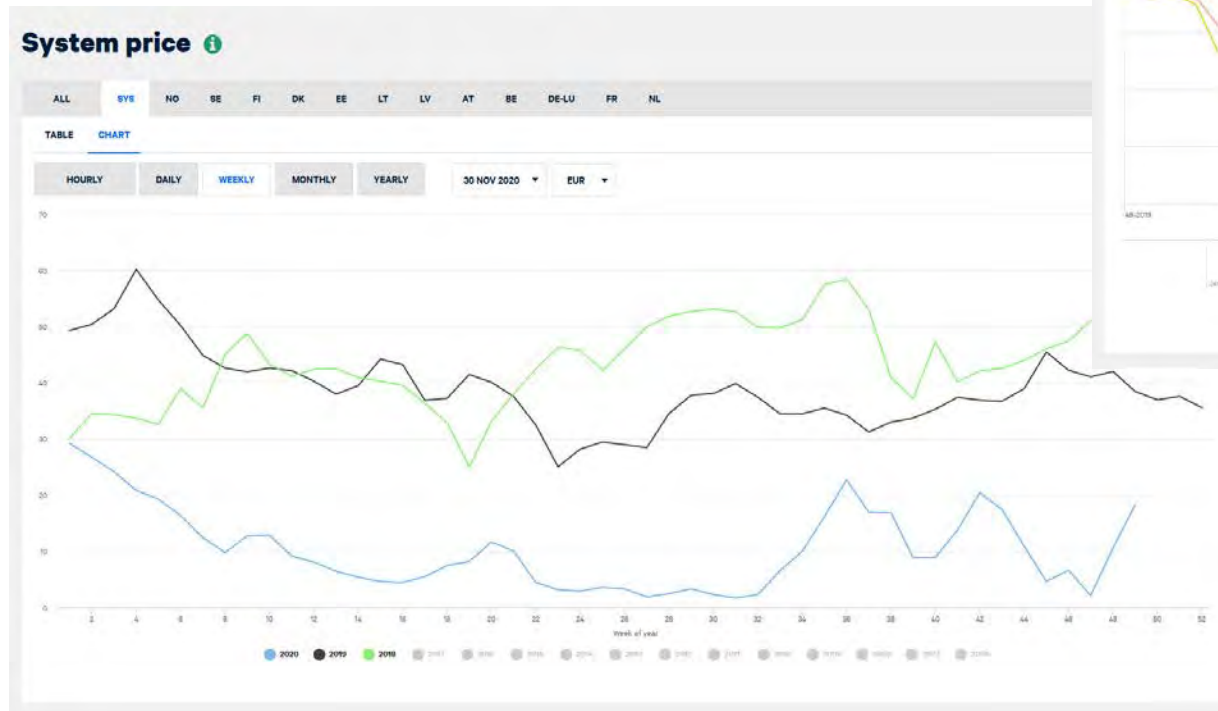
I Norge har vi aldri før sett en negativ strømpris, men det fikk vi tidlig mandag morgen. Snø i fjellet, begrenset eksport og sommerferie er noen av grunnene.



Hos nordmenn har det vært lavt forbruk som betyr til vannkraft som markedet ikke vil ha.

Source: e24.no

# Spot prices



Source: Market | Nord Pool

# Power infrastructure



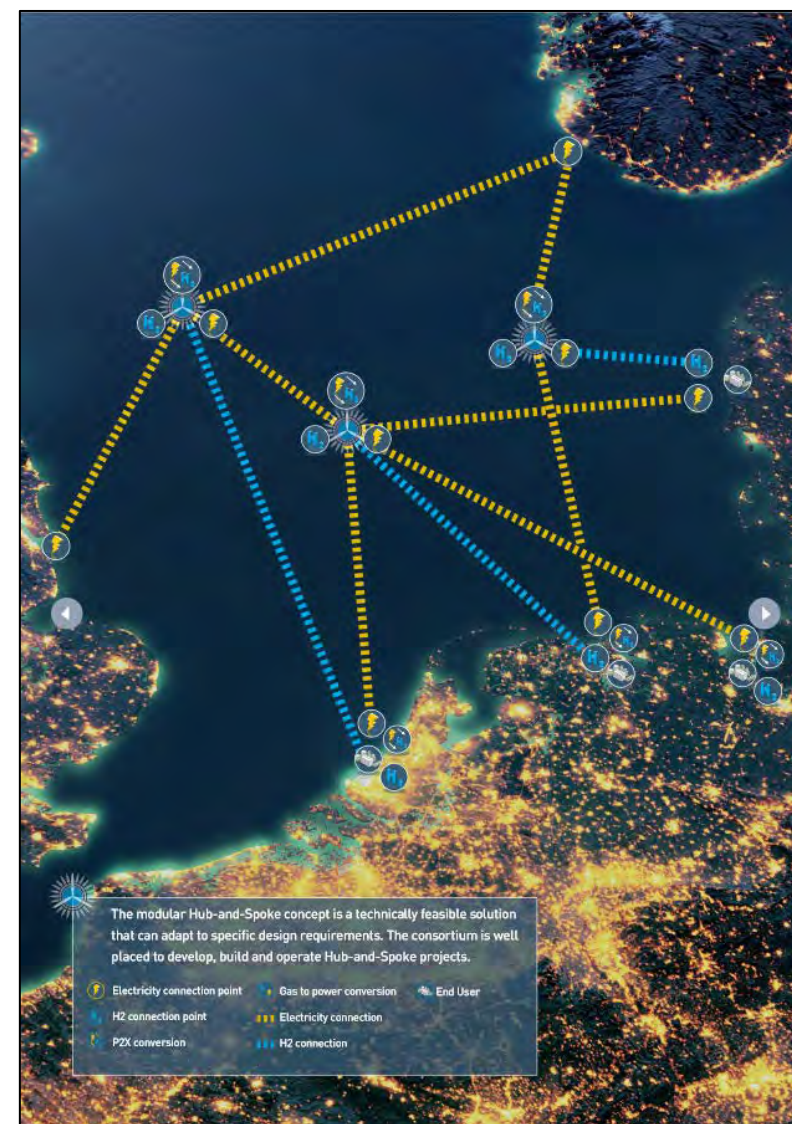
Source: NVE [www.nve.no/energiforsyning/elsertifikater]

## Åpning av havvindområder



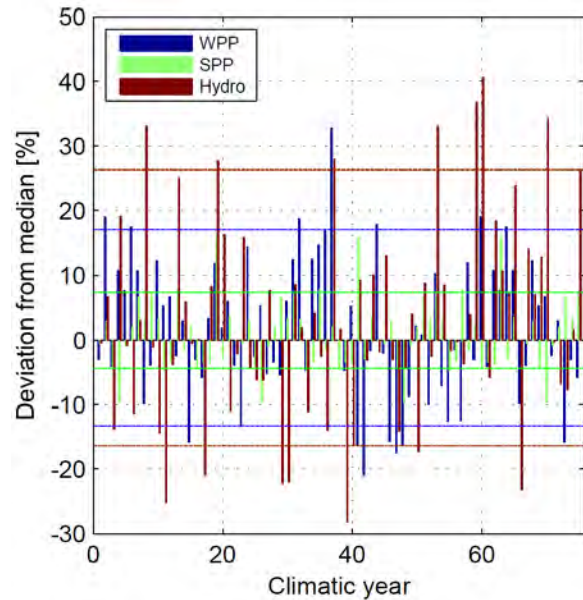
**Utsira Nord**  
500 – 1500 MW  
Utnyttelse: 6 – 19 prosent

**Sørlige Nordsjø II**  
1000 – 2000 MW  
Utnyttelse: 6 – 10 prosent



Source: North Sea Wind Power Hub [northseawindpowerhub.eu]

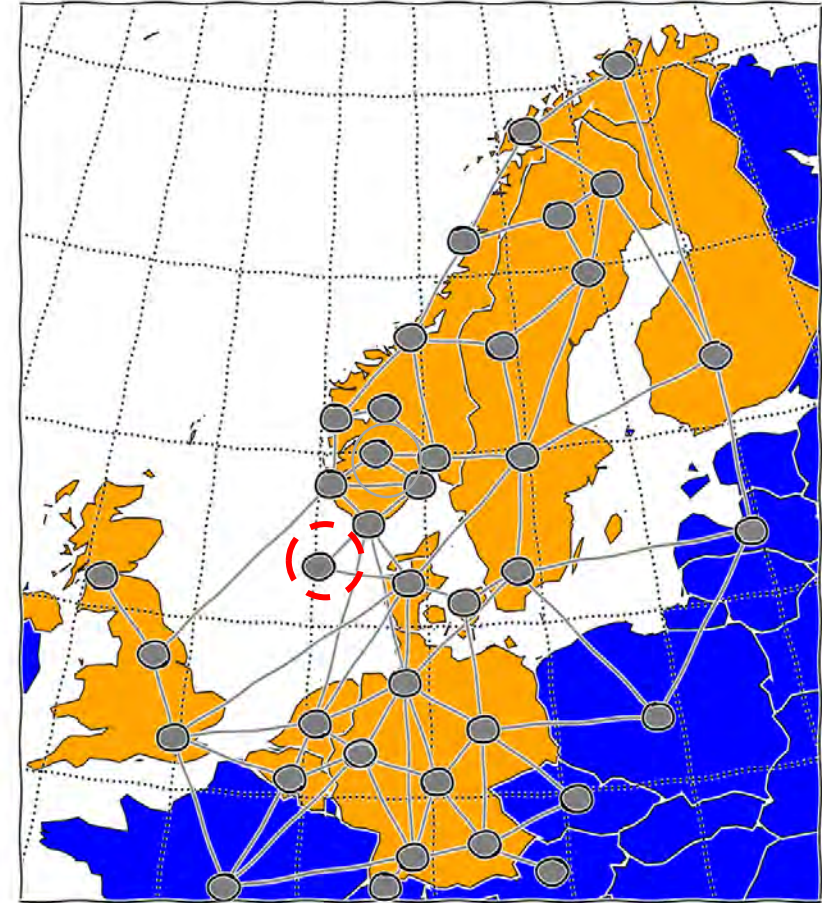
# Analyses



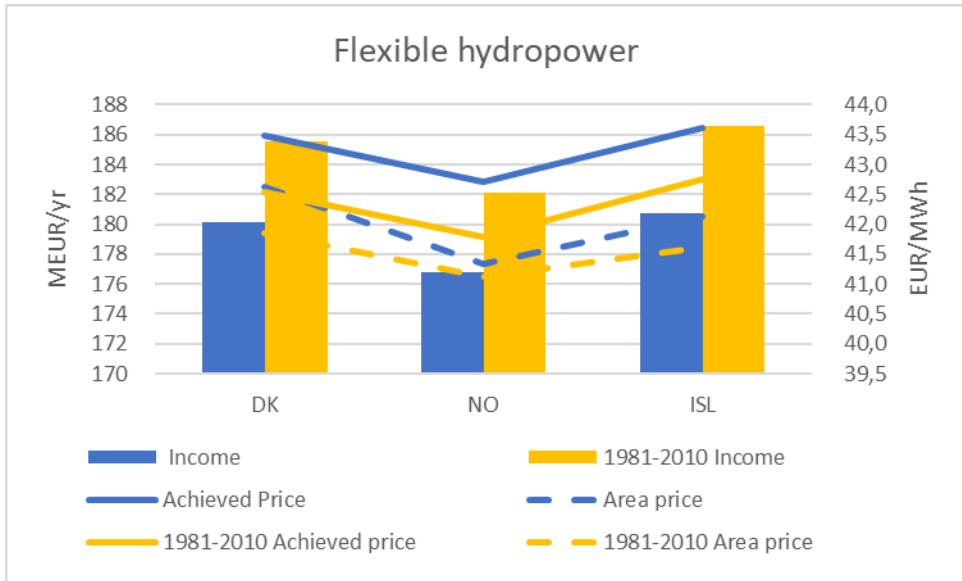
Source: Own illustration

## Annual variation

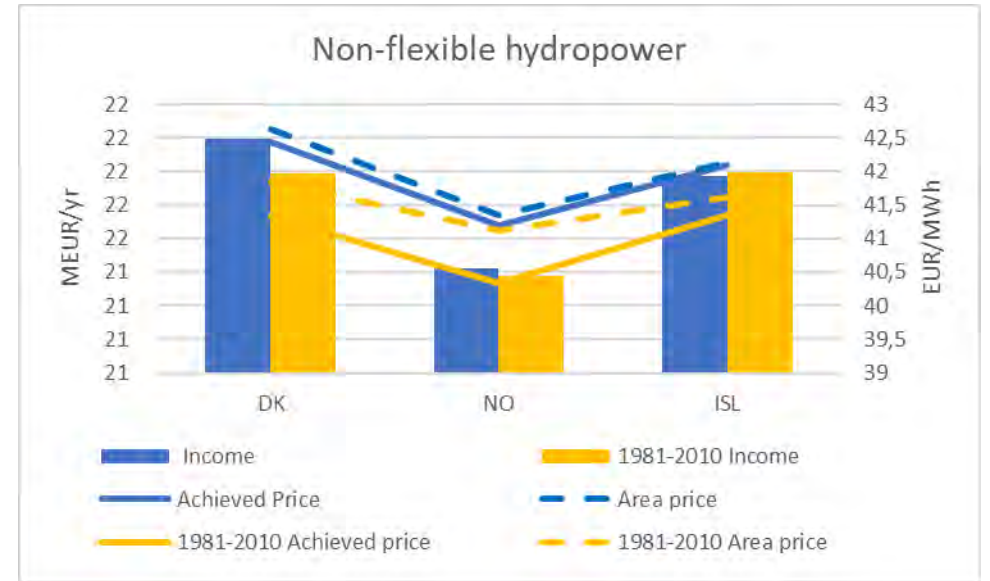
- Wind power production  
+30%/-20%
- Solar power production  
+15%/-10%
- Hydro power production  
(inflow to reservoirs)  
+40%/-25%



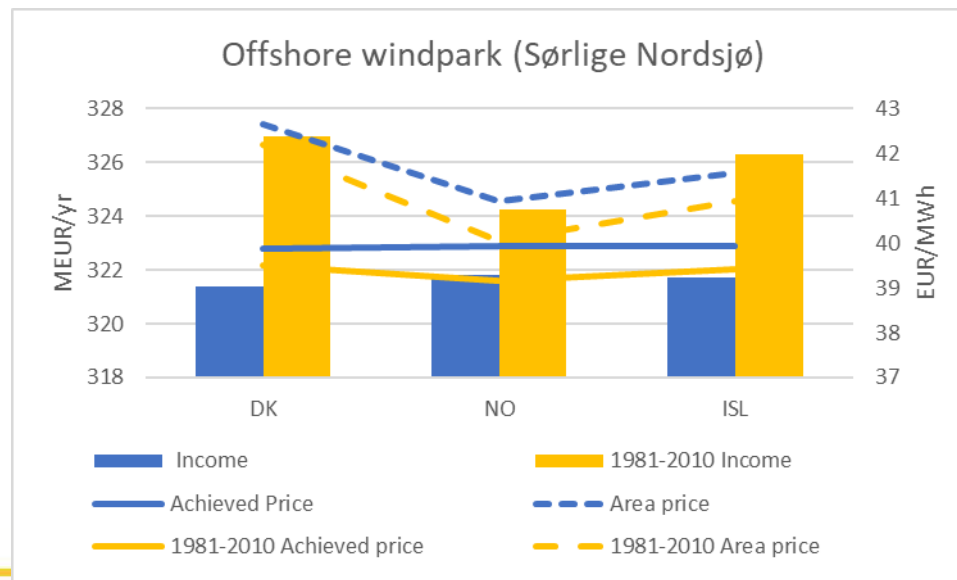
Source: Own illustration



Source: Own illustration



Source: Own illustration



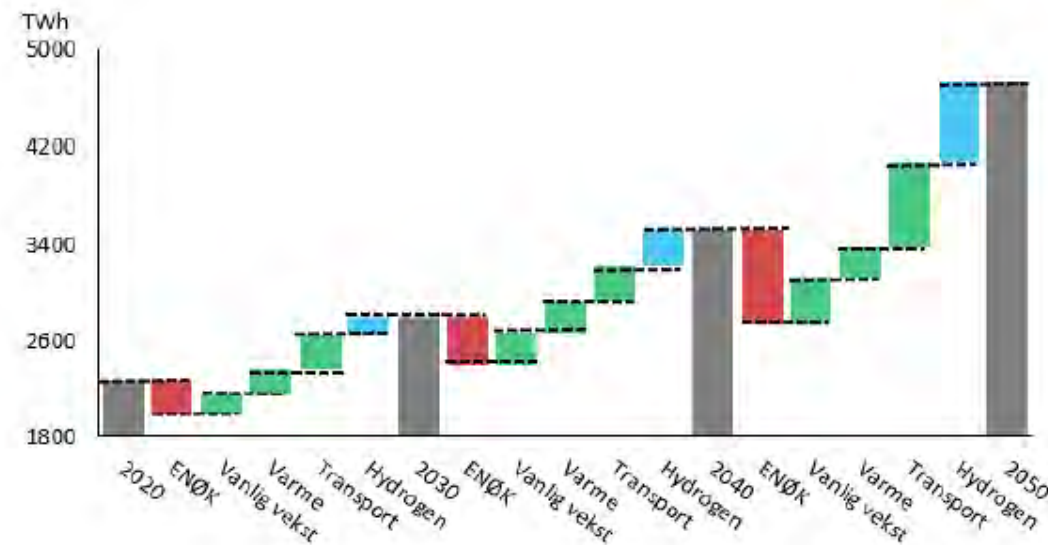
Source: Own illustration

# Demand development



FIGUR 1-3 FREMSKRIVNING AV KRAFTFORBRUK I EU

Source: NVE – Langsiktig kraftmarkedsanalyse 2020 - 2040



Figur 6-4: Årsaker til vekst i kraftforbruk fra 2020 til 2050

Source: Statnett – Langsiktig markedsanalyse Norden og Europa 2020 - 2050

# NTRANS User case

Renewable power development and its potential uses

Utilising Norway's offshore wind resources, what are the consequences of export and / or new national industrial development and how can the development be affected in different directions?

**(Floating) offshore wind**

**Data center**

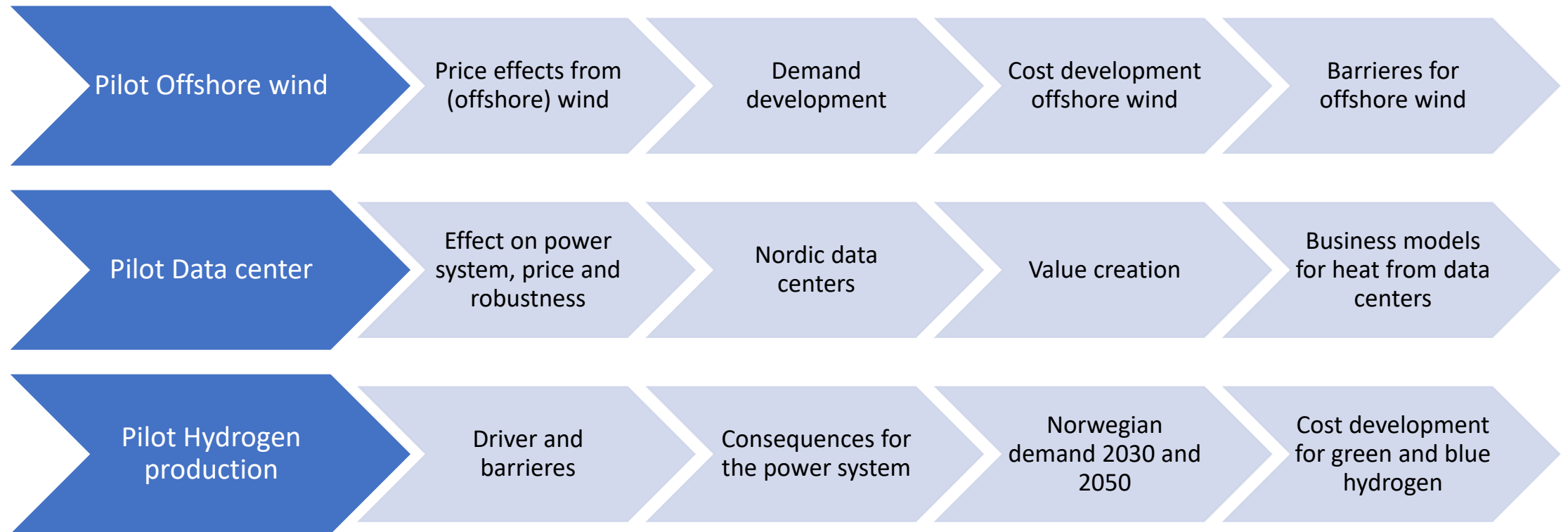
**Hydrogen production**

**(Pumped hydro storage)**

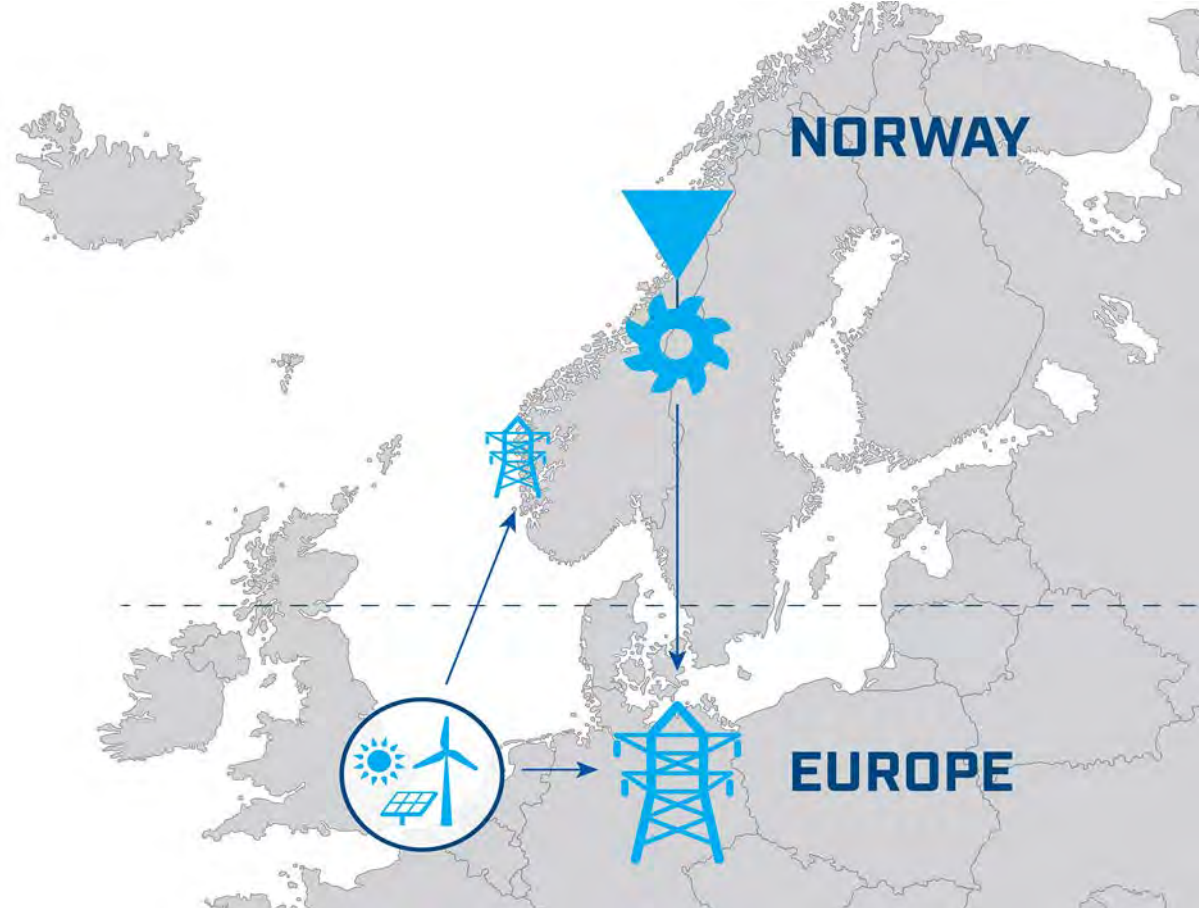
**(Certificates of Origin)**



# NTRANS User case



# Renewable energy to Europe



Source: Own illustration