



The Norwegian Offshore Wind Paradox

Ignacio Herrera Anchustegui

Associate Professor

Faculty of Law – Bergen Offshore Wind Centre (BOW)



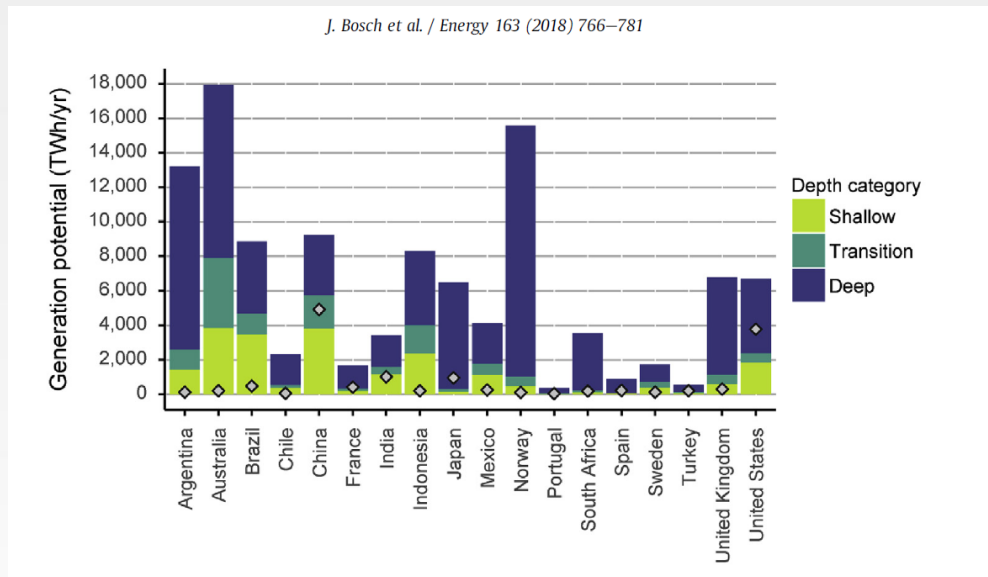






Excellent wind resources

- More favourable than other Northern Europe countries (NVE 2013) – best in Europe?



**Potential of 100
times hydropower
production!**

- But sure, deep waters, large wave height and non-homogeneous seabed






World-class offshore expertise






- Top class offshore oil & gas expertise
- Maritime industry
- Service industry
 - Cables
 - Foundations
- Used to operating in rough climate conditions
- Existing industry to create a new industry
 - *Technology transfer*

Major world player already:



- What we do >
- Where we are >
- How & why >
- Careers >
- Stories >
- About us >
- News & media
- Investors
- Suppliers





UK Wind US Wind Poland wind Norway wind

We're determined to be a global offshore wind energy major. Here's how.

The next decisive phase in the global transition to low carbon and renewable energy is happening now, with offshore wind at the centre of the revolution. For the green shift to succeed, what's needed is sheer scale: industrial and financial strength, and production capacity at a global level



Lots of ambition but no plan?

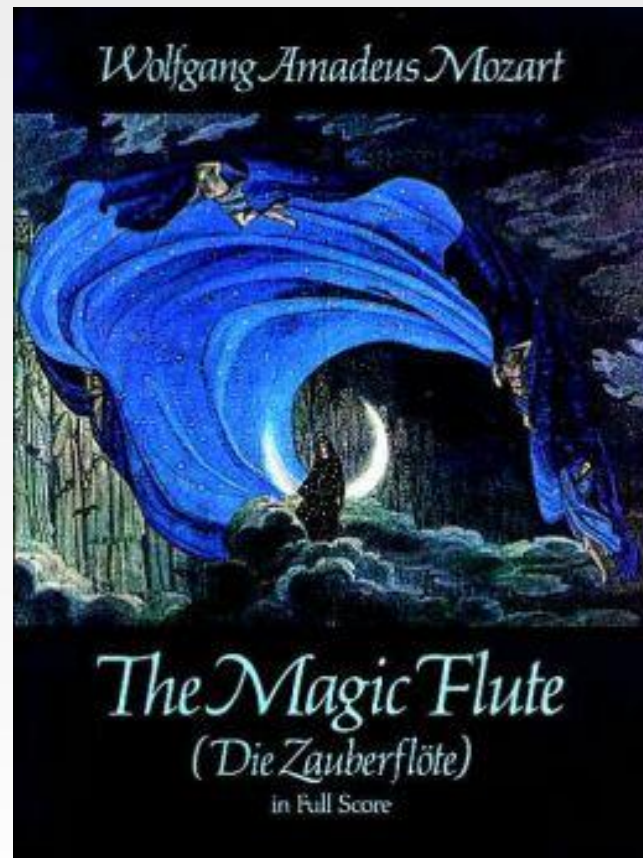


Pilot project
Hywind Tampen is
far from 1 GW

Only 0.088GW



Paradox in 3 Acts





Act I: the People





Support for renewables vs oil & gas

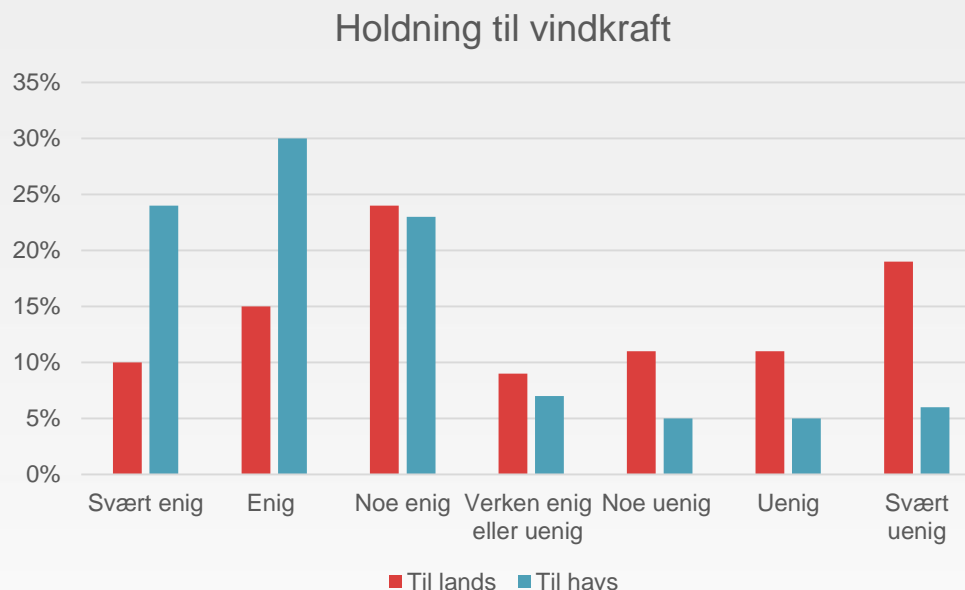
- Most Norwegians are climate interested/aware
 - Some more than others, of course
- As a whole, renewable power is part of the Norwegian mentality
 - Hydropower for electricity'
 - Barely use of gas for housing heating/cooking
 - And yet, 29% of the country's GDP is hydrocarbons
 - And more than 55% of its exports
 - Fish is second with 11%





Support for wind power, autumn 2019

“Should wind turbines be built in Norwegian soil or sea?”



Kilde: Medborgerpanelet, T. Gregersen, E. Tvinnereim

<https://energiogklima.no/nyhet/vindkraft-pa-land-og-til-havs-nordmenns-holdninger/>





Good on paper, bad in my fjord?

- Abstract support vs concrete support
- Resistance once construction projects start (Karlstrøm & Ryghaug, 2014)
 - They look really ugly
 - Or kill birds
 - Or make noise

COMMODITIES SEPTEMBER 25, 2019 / 12:48 PM / 5 MONTHS AGO

Norway's public backlash against onshore wind threatens sector growth

Lefteris Karagiannopoulos, Nerijus Adomaitis

4 MIN READ





Yet fear of electricity price increases

Vent på havvind

Under 1 min Publisert: 05.05.19 — 19.55 Oppdatert: 9 måneder siden

«Ingen vil betale prisen» for havvind i Norge, sier Øyvind Isachsen, leder i vindkraftforeningen Norwea, og avviser at havvind er løsningen for å dekke vårt fremtidige behov for fornybar kraft (i [artikkel i DN 26. april](#)).

I Danmark vil kostnadene til utbygging og drift i den nye havvindparken Horns Rev utenfor Esbjerg kreve en strømpris på 59 danske øre per kilowatttime (KWH), ned fra 77 øre i den fem år gamle parken ved Anholt, ifølge DR.dk. I havvindparken Kriegers Flak i Østersjøen, som vintest ferdig i 2021, trengs 37 øre per KWH.



steigan.no

Nyheter ▾ MDTV Forum Om Doner Languages ▾

Hjem ▸ Energi

Energi Norge Økonomi

Ny rapport: Havvind vil gi dyrere strømregning

Av redaktør · 18. september 2019

2





Act II: the objective

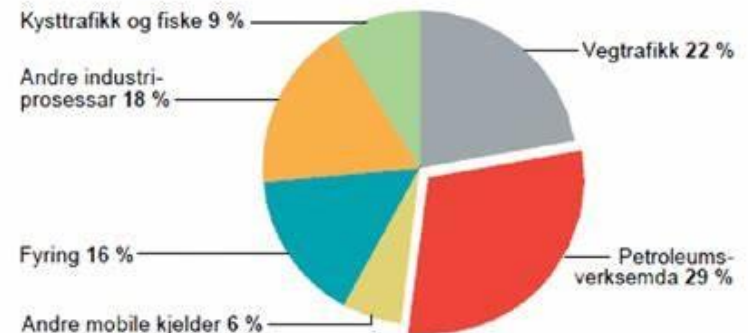




Offshore wind for what? To extend life of hydrocarbons?

- CO₂ emissions by oil & gas production
- Out of this, 85% of due to platform activity (Norsk petroleum 2018)
- Plans to electrify turbines
- «Green washing»?

CO₂ Emissions Norway



Oil and gas industry 29 %, Cars and trucks 22 %, Industry processes 18 %, Heating 16 %, Boats and ships 9 %, Other sources 6 %





Offshore wind for electricity demand?

- Norway is increasingly electrifying
 - Transport is a key example
 - But also industry to substitute gas
- Some argue there is no need for power
 - Statkraft last week?
 - Hydro is enough?
- While others seem to indicate there is need for more
 - Statnett (Et elektrisk Norge – fra fossilt til strøm, 2019)





Or to sell power?

- Lots of opportunities here, perhaps?
- <https://www.nordpoolgroup.com/Market-data1/#/nordic/map>
- But
 - No one wants to build cables
 - «Our prices will go up!»
 - Yes, but?
 - ACER is the devil
 - No, not really – read the rules?





Act III: the architect





Vague policies and regulations

- No true regulation in place
- Basic rules in the Havenergilova
 - Which says almost nothing
- Proposal for a regulation of sea energy
 - Creates some basic (and unclear) application+license system
 - Based on first to come first be served
 - No fostering of competition or price reduction





Vague policies and regulations

- Does include special (i.e.: don't apply much) rules for pilot projects
- No rules for possibilities to grant pledges or mortgages over offshore wind turbines
 - Limiting the private financing of these projects
- No rules on benefits to communities
 - See Denmark with ownership
- Does include, however, rules on fisheries compensation





No clear sign of public financial support

- No clear signals from the State to support offshore wind
 - Through energy auctions
 - Such as paying a premium (contract for difference)
 - Or feed-in-tariffs
- No trace of any of these schemes in the proposal either
 - No incentives, hard to invest
 - No competition, no prices down





No clear sign of public financial support

- State support – statsstøtte seems to be a swear word or rather small
 - ENOVA – 2.3 billion NOK



- Compare to other countries/projects:
 - 20 offshore wind farms in Germany (2015)
 - 29.3 billion Euros – 293 billion NOK
 - 6 offshore wind farms France though feed-in tariffs





Concluding thoughts

