

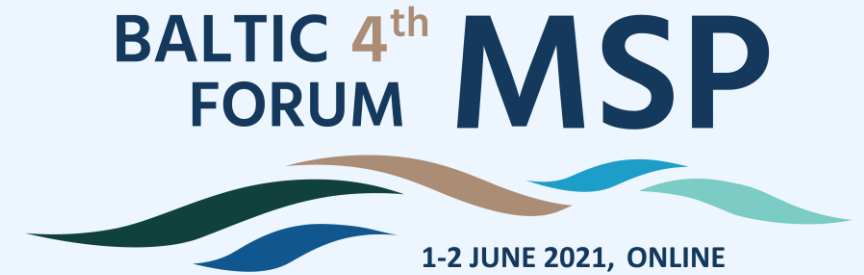
Workshop 5: The role of MSP in supporting sustainable ocean Multi-Use and Blue Economy

LOCAL COOPERATIVE
OWNERSHIP, WIND FARM
SITING AND TOURISM

Speaker: Hans Christian Soerensen, PhD

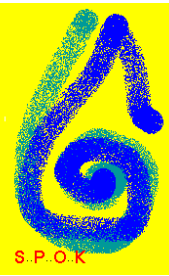
Co-author: Julia Fernández Chozas, PhD

SPOK and Middelgrunden Wind





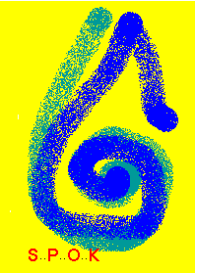
Subjects



- Background
- MSP in Denmark
- Does MSP in Denmark support Multi Use?
- How Middelgrunden Wind is combining power with tourism
- How MSP could support Multi Use, a proposal



Hans Chr. Soerensen Background



Business and university background

- PhD, 40 years with business development

Project management large projects

- Ocean wave energy (Wave Dragon), Tidal current (Tideng)

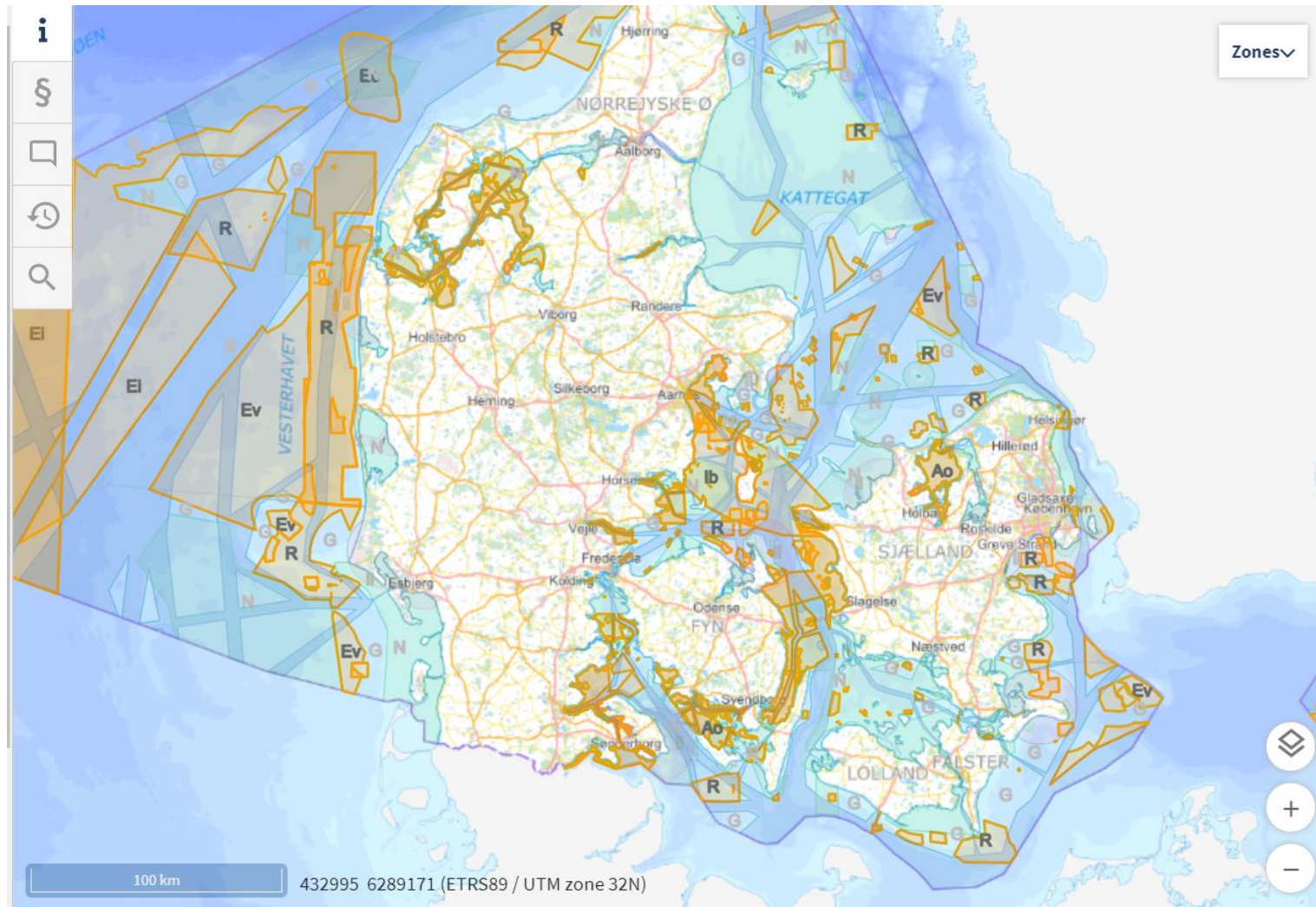
- Offshore wind (Middelgrunden 40 MW, Samsø 23 MW, Hvidovre 7.2 MW)

Committees

- Danish Wind Turbine Owners Association, board to 2018

- European Ocean Energy Association, vice president to 2011

MSP in Denmark



<https://havplan.dk/en/page/info>

Zones Reset

Development zones

Ah = Marine aquaculture

Ak = Cultivation and transplantation banks for the production of shellfish

Ao = Farming of shellfish in the water column

Ec = CO₂ storage

Ei = Renewable energy and energy islands

Eo = Oil and gas exploration and extraction

Ev = Renewable energy

lb = Specific transport infrastructure projects

R = Natural resource extraction

Ek = Cable corridors for renewable energy

Er = Specific transit pipelines

G = General use zone

Ik = Compensation excavations

Il = Protective measures for aviation

L = Specific land reclamation projects

N = Nature and environmental protection areas

S = Shipping corridors

Proposed changes

In consultation

Consultation completed

MSP in Denmark, R: Renewable Energy



Nothing about MUP

<https://havplan.dk/en/page/info>

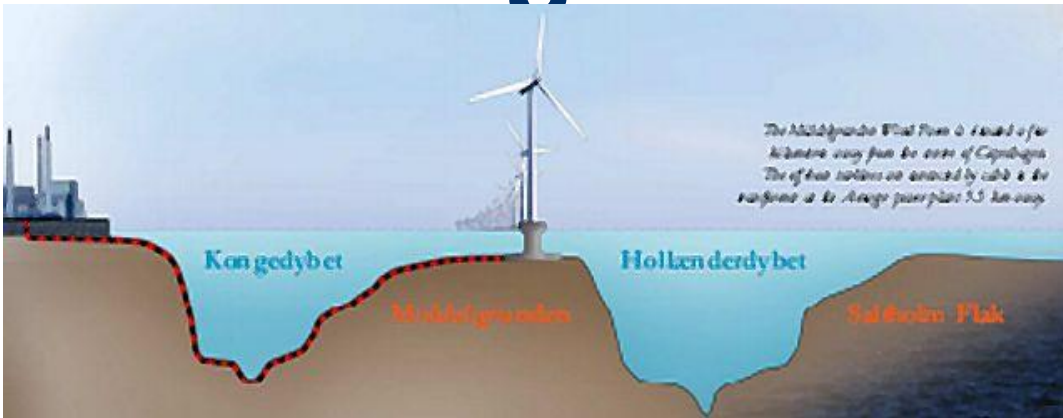
Middelgrunden Wind and tourism



- Situated just 3.5 km's off the harbor in Copenhagen, Denmark.
- Established 2000 as the largest offshore wind farm in the World.
- Delivering 3% of power to Copenhagen.
- Two owners each 50%:
 - ❖ HOFOR (Copenhagen Municipality) and
 - ❖ A Cooperative with 8,550 members



Visiting a windfarm is an old tradition in Denmark



- Owners have been invited to visit their wind farm 3rd Sunday in June (windmill day).
- We started already during the construction phase having 1600 people on the building site.
- At Middelgrund we have 150-200 people every 2 years on a sailing trip including climbing the turbine.





The opportunity of visiting spread to universities and developers



Copenhagen gives easy access to an offshore wind farm either with a larger boat or with a RIB boat

Some trips only have a look into the turbine –

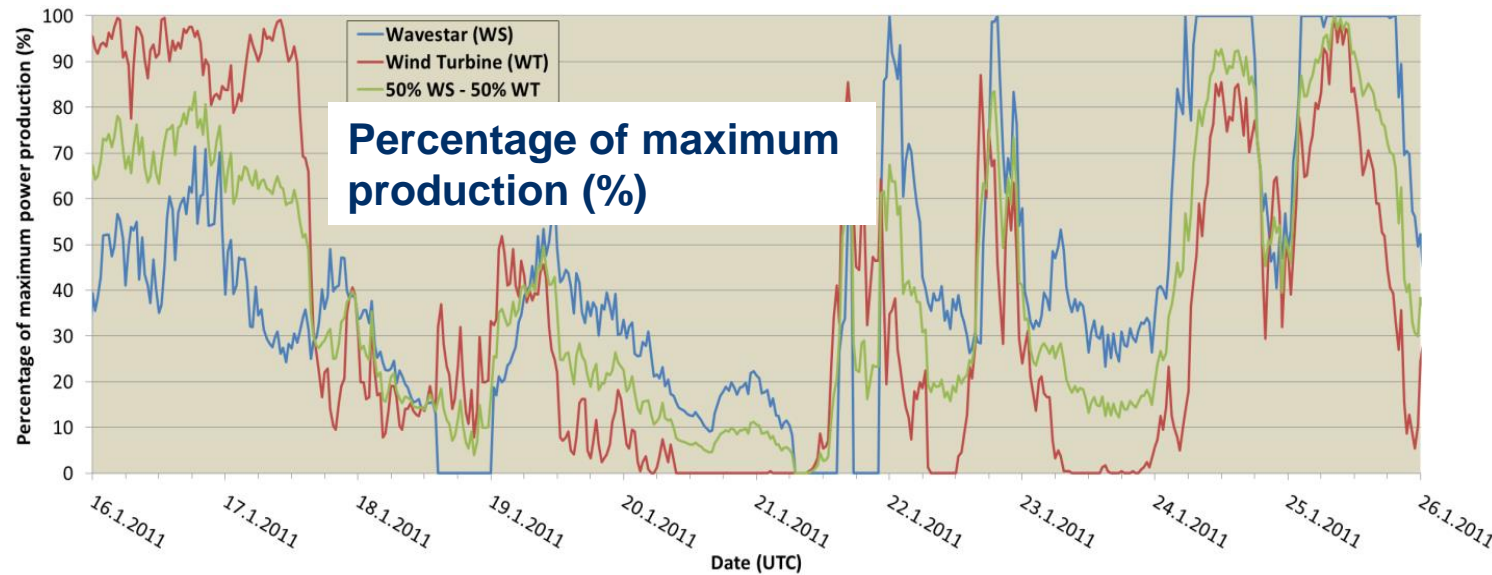
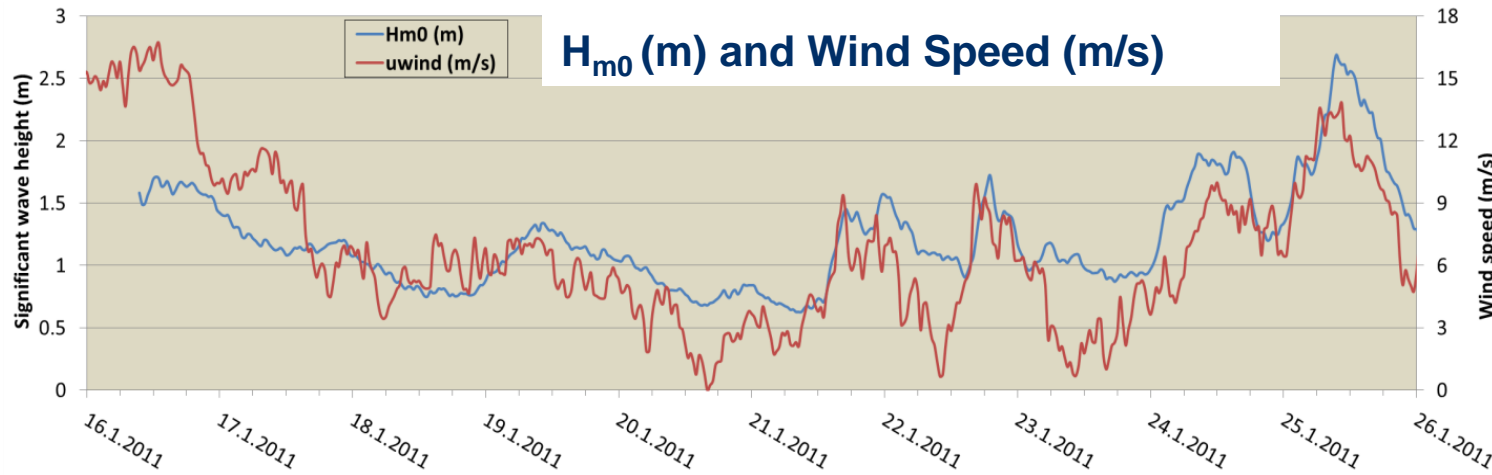
other visitors, introduced by international developers, wants to know “everything”

How about the safety and insurance?



- Only turbines from before around 2003 have several floors and can be climbed without safety line.
- Owners have no interest – if not cooperative to organise a visit.
- The legal and safety rules for professional service people cannot be followed, - and need not to be followed.
- The UNITED Project is helping to solve these issues.

How MSP could support Multi Use a proposal



- Combining offshore wind and Wave Energy has perfect synergy
- There is 6-8 hours between the peaks
- The same grid infrastructure can be used
- A case from the North Sea is showing 10 M€ saving in balancing cost just adding 100 MW wind and 100 MW wave

Source: ICOE 2012 report by Julia Fernandez Chozas, H. C. Soerensen et. al

BALTIC 4th FORUM MSP



1-2 JUNE 2021, ONLINE

Delivering MSP Interactions and Capacities Across All Levels



Thank you



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Sources: <https://www.h2020united.eu/> and www.middelgrunden.dk



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