

Reuse of oilplatform for windpower

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The Norwegian oil and gas platforms

- 12 concrete structures, 63 bottom-fixed, 21 floating steel structures.
- Decommissioning.
- Alternative reused as foundations for offshore wind turbines.

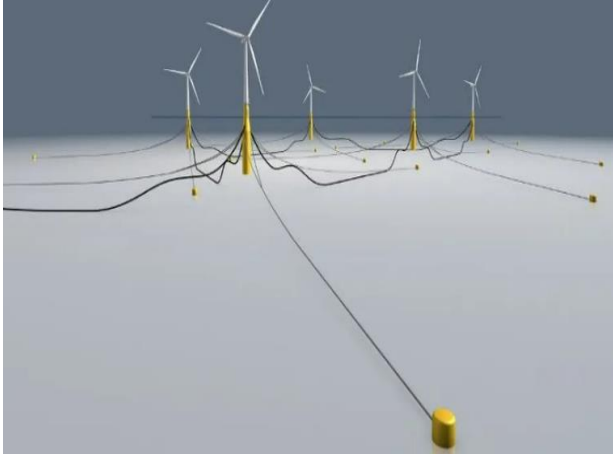


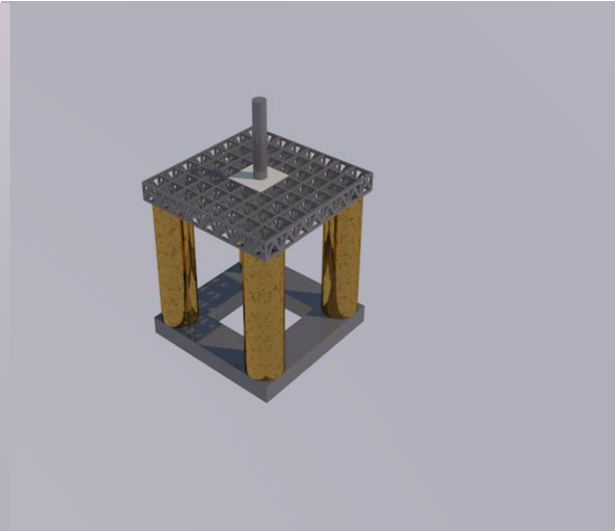
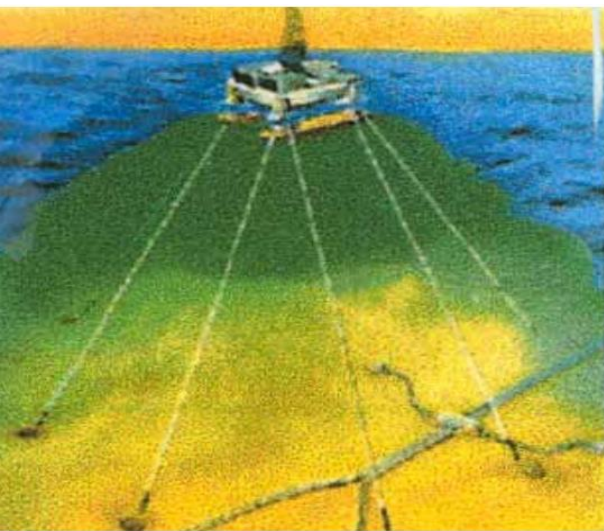
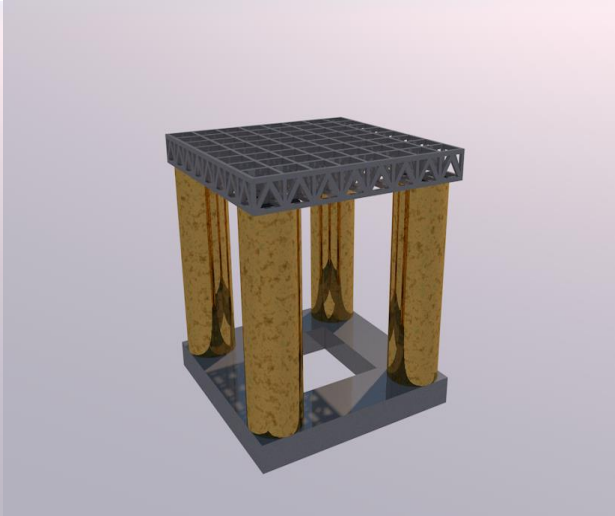
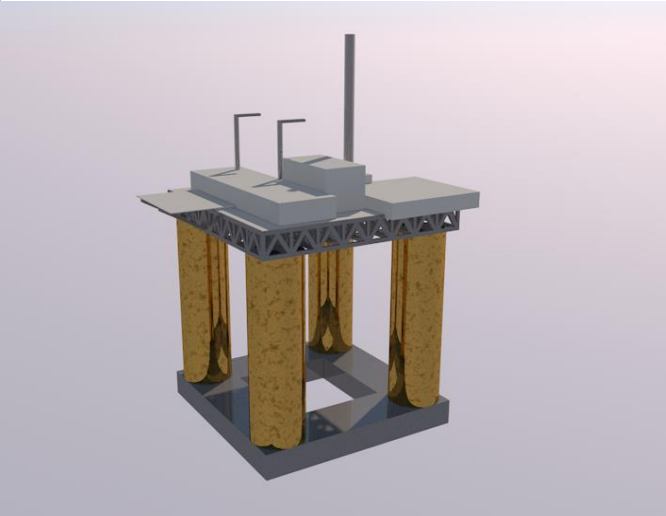
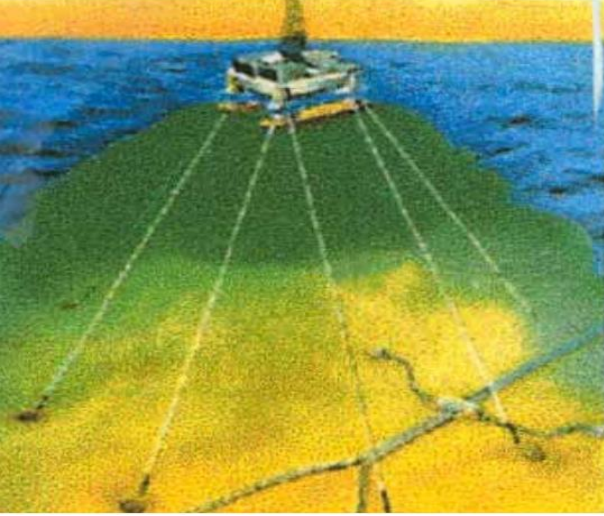
Starting points

- Kristin:
- 80 m x 80 m x 80 m platform
- 4 floating columns with 20 m diameter each.
- Ca 70 000 tonne
- 5.5 MW turbin.
- High endurance limit



Alt 1.





Alt 2.

Detail

- Goal is to avoid buying a floating platform.
- To do it in addition to another project.
- Alternative 1 can be faster.



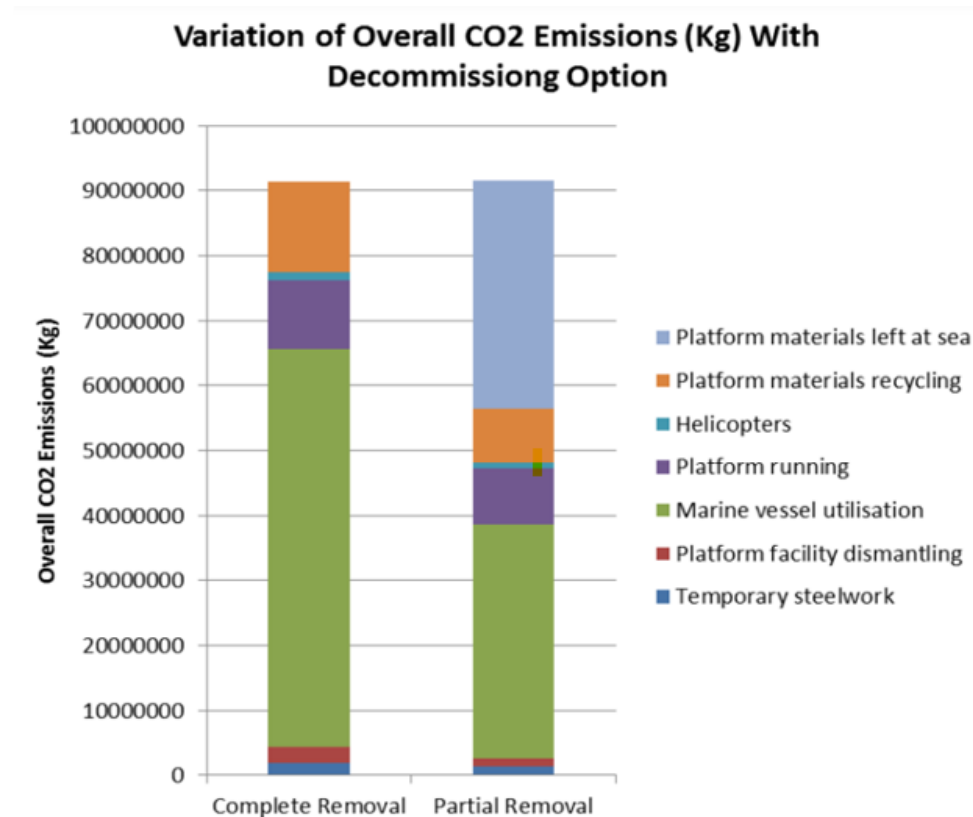
CO2 emisjon alt.1

Emisjon for decommission of Semi-FPS:
40 000 000-50 000 000 kg CO2

Production spare-bouy 5500 tonne:
4 950 000 kg CO2 (0.9 tonne
CO2/tonne betong(IEA))

Transport spar-bouy: 124 kg CO2/km
(IEA)

Tottal: ca **45 100** tonne CO2.



(LCA for Offshore Installations Decommissioning: Environmental Impact Assessment, Amy Ngu Pei Jia, 2013)

CO2 emisjon alt.2

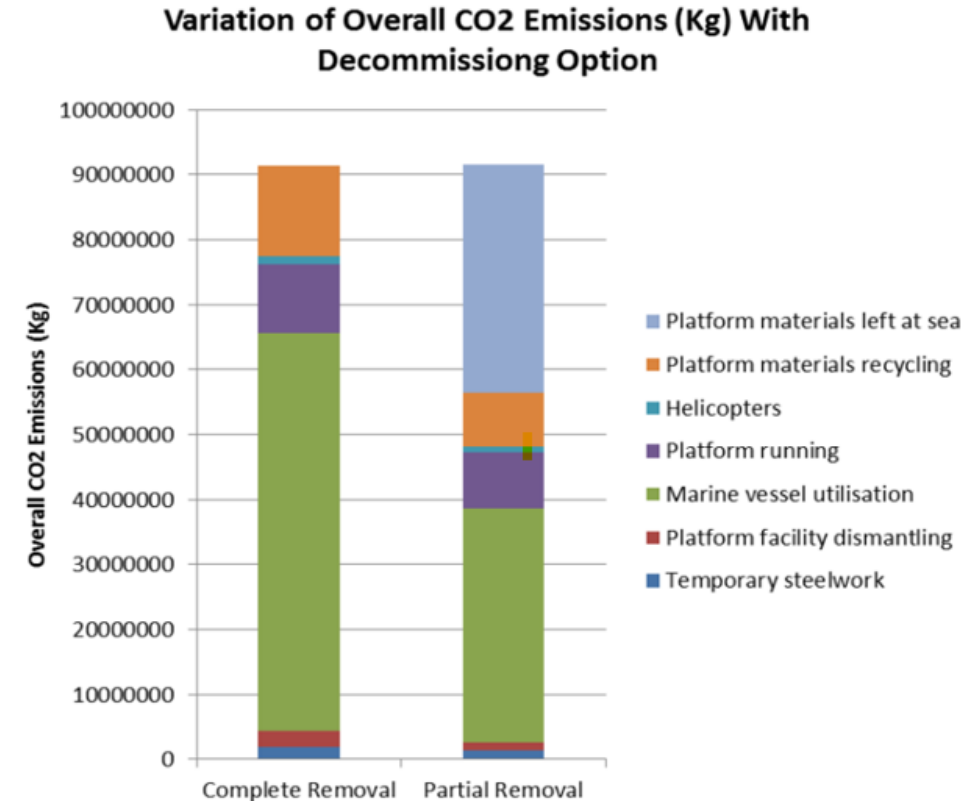
Emission for decommison 2000 tonne of Semi-FPS:

20 000 000 kg CO2

Production of transisjon piece 1200 tonne: 2 260 000 kg CO2.

Transport spar-bouy: 124 kg CO2/km (IEA)

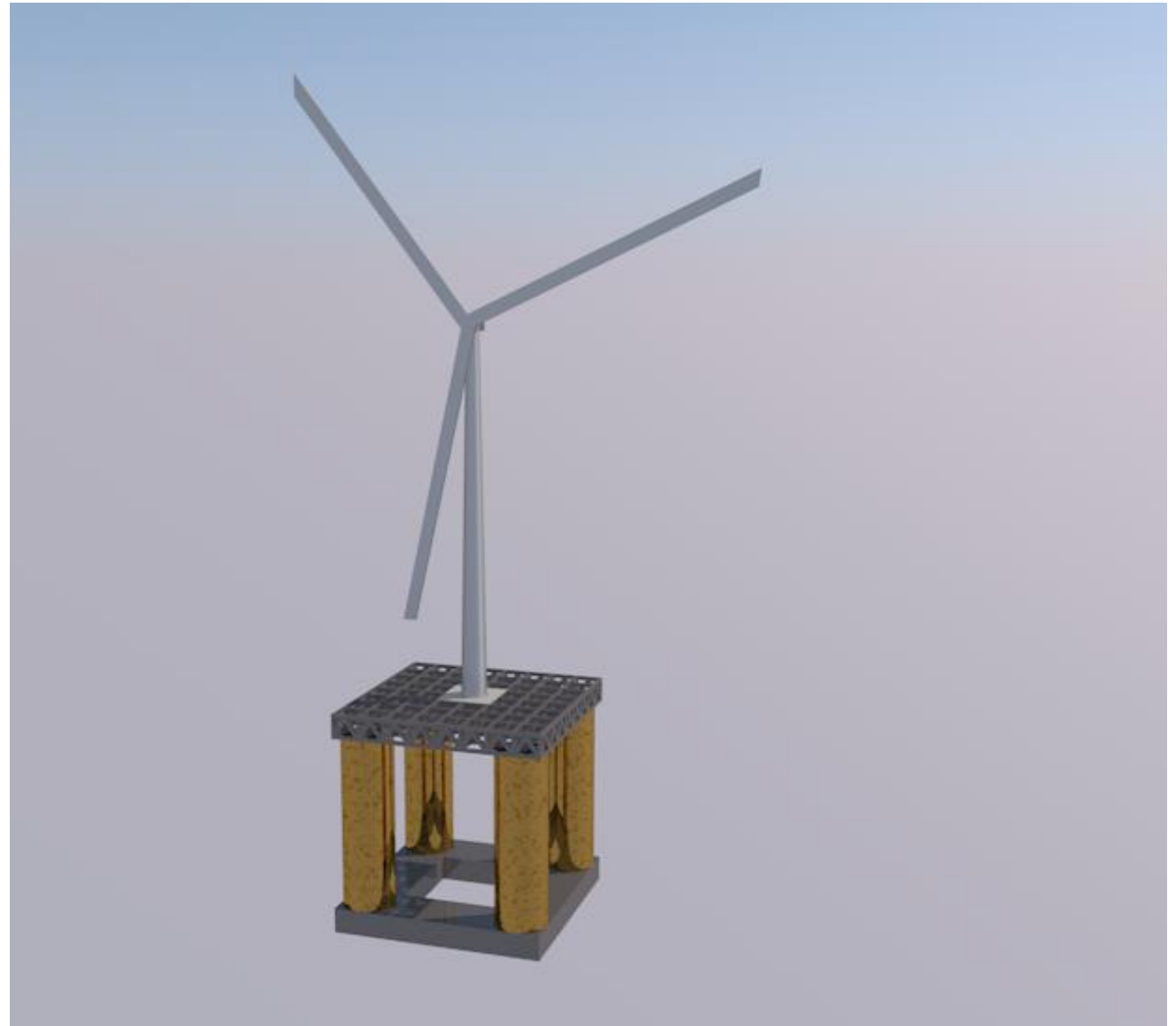
Tottal: ca **22 260** tonne CO2.



(LCA for Offshore Installations Decommissioning: Environmental Impact Assessment, Amy Ngu Pei Jia, 2013)

15 MW

- 6.5 deg tilt.

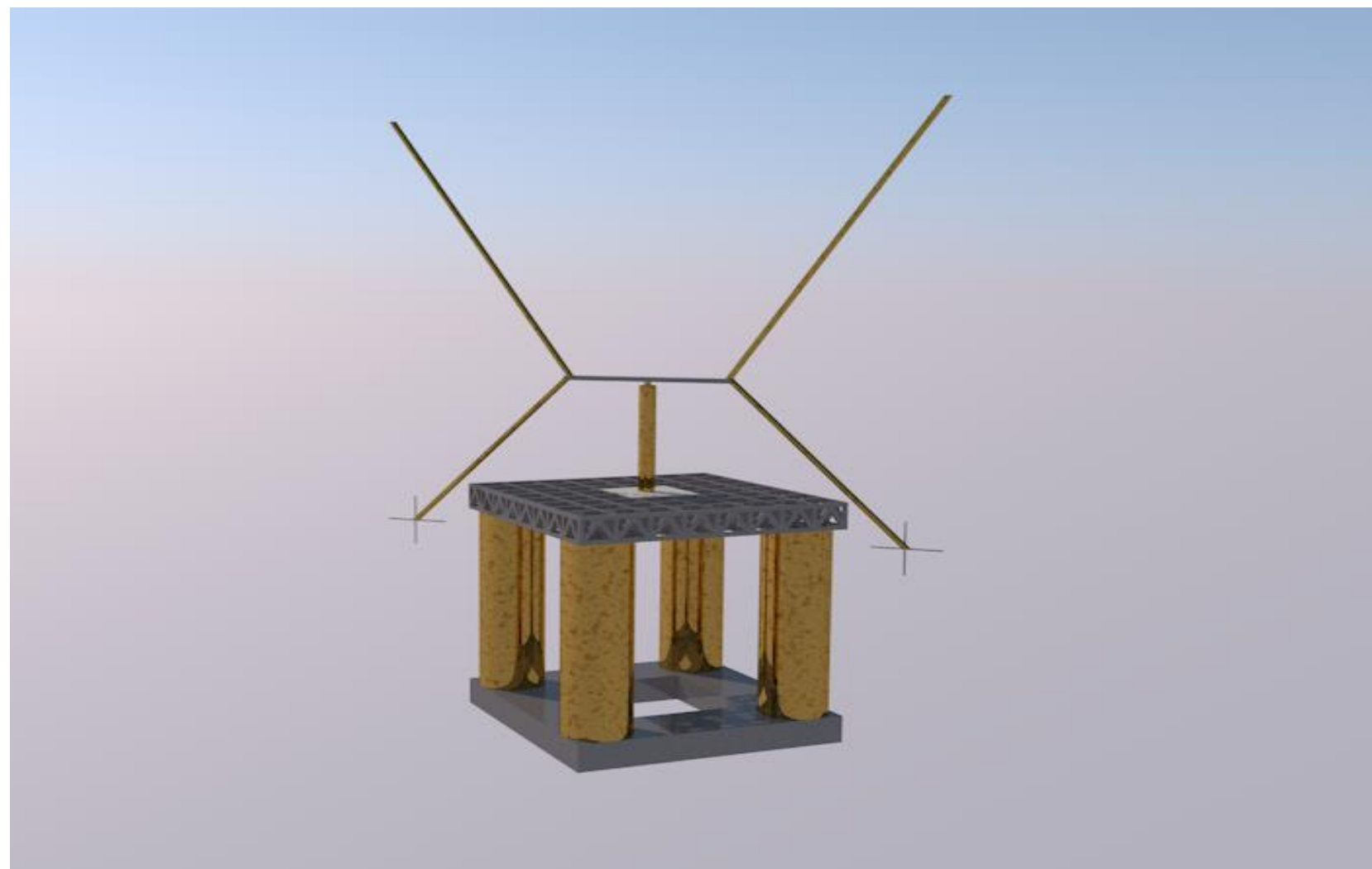


5.5 MW

- 2.5 deg tilt.



X-rotor 5.5 MW



Questions?

