

Multipurpose artificial islands

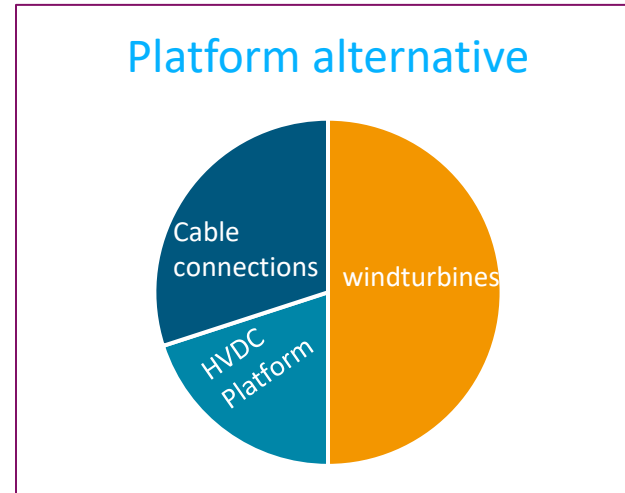
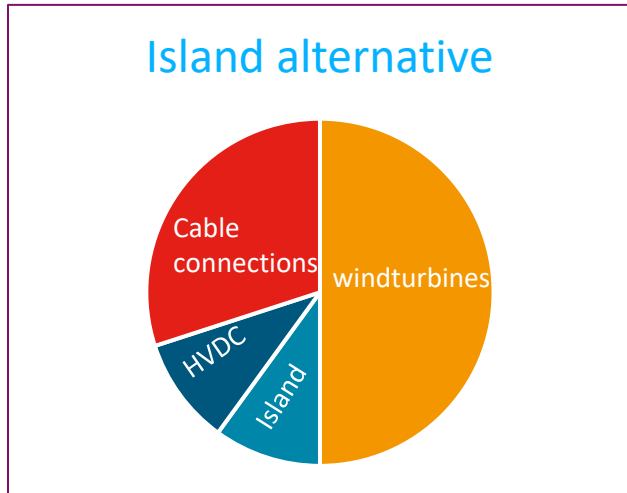
Island CAPEX / OPEX

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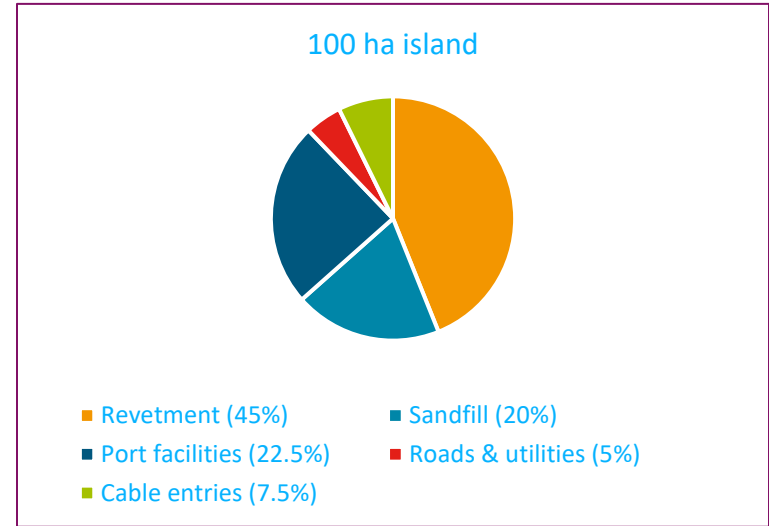
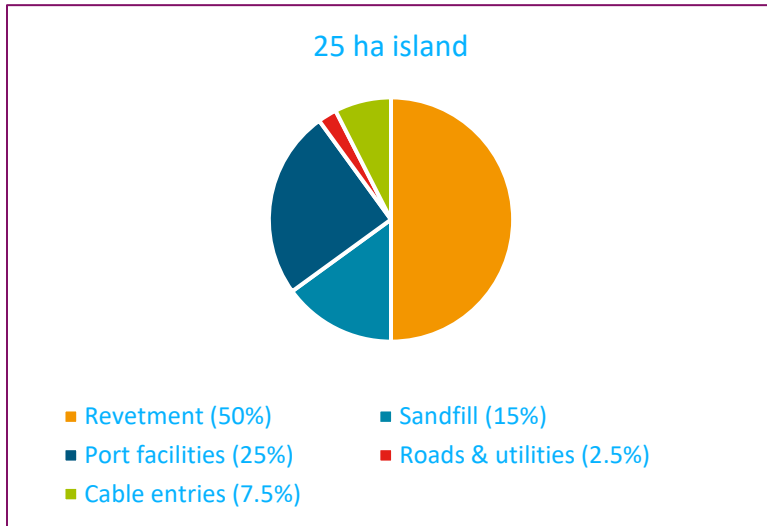
CAPEX Island versus platform

- Costs for an offshore island are only small percentage of overall costs of energy infrastructure (5 to 10% of total costs); offshore windfarms (50%) and cable connection to land (20 to 25%) have a higher contribution.
- Costs for an island can compete against costs for platforms for only HVDC case (studies Blix, 2018 and COWI, 2020). For larger islands (10 GW connection and multipurpose island) island costs are considerable less compared to platforms.



CAPEX Island substructure

- Smaller islands (25 ha) CAPEX are in the range of 500 to 700 million euro (2,000 €/m²), for larger islands (120 ha) CAPEX are 1,400 to 1,800 million Euro (1,200 €/m²).
- Costs are depending largely on water depth, wave conditions, sand borrow areas and subsoil conditions.



OPEX

- Maintenance costs for island are expected to be small, some 1% of CAPEX for monitoring and damage repair of revetment. When sand is used as fill material, no maintenance is expected for the island base. Pavements and vegetation is expected to keep erosion due to wind limited.
- OPEX for energy infrastructure is expected to be smaller on an island compared to a platform, as people can easier access and stay on the island (less transport time) and facilities are easier accessible
- OPEX costs for offshore windfarms is expected to be reduced when the island is used as a maintenance base. This benefit will be larger as wind farms are located further from land.