Enabling the Future of Offshore Renewables with Energy Storage

MDES: Policy and Markets Event, Vincent Bonnin

DMEC

Accelerating Offshore Renewable Energy Solutions

Advancing offshore innovations that provide benefits to the renewable energy system & natural environment, promoting a sustainable future for all

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Advancing Offshore Innovations

Industry

Support use cases across the value chain

Innovation

Advance technologies & business cases

Research

Advance scientific knowledge base & tools

Public Affairs

Advise policy makers on best practices

>170

Innovative technology Companies

€ 180M

Public & Private Investments

>150

Collaboration Partners

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Offshore Innovations

Renewable Energy

Wave, tidal, offshore solar & offshore floating wind energy

System Integration

Offshore storage, power-to-X, offshore charging & grid

Nature+

Nature-inclusive design (NID), mitigation & environmental monitoring

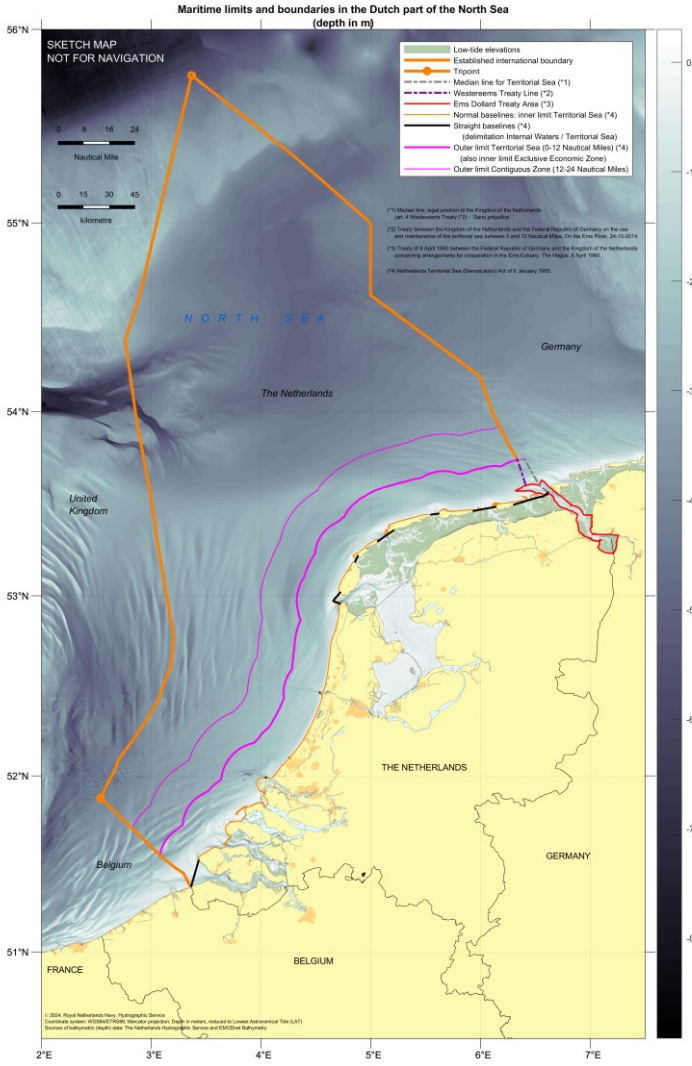
Offshore wind in NL

NL 2024 electricity mix: 55% renewables, 36% gas, 6% coal

Planted Capacity [GW] in NL

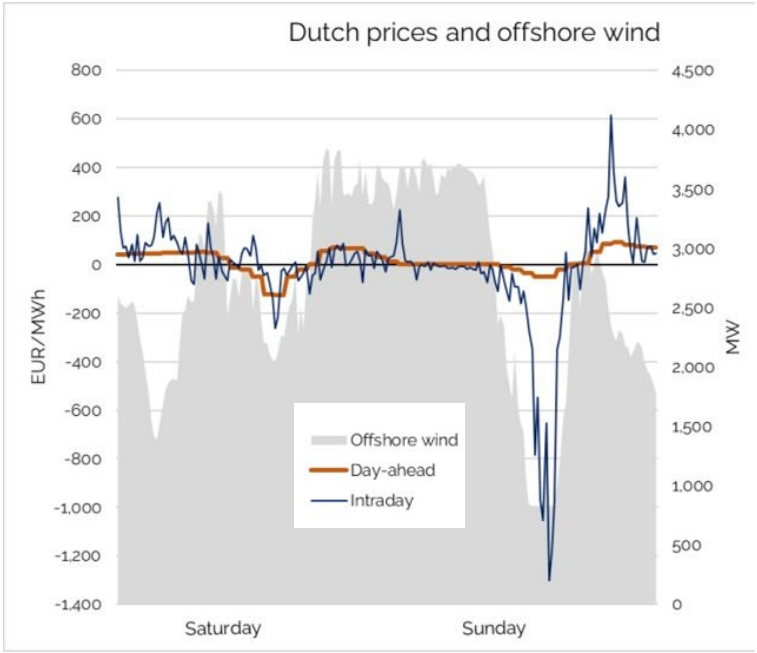
	2018	2025	2032	2040
Onshore wind	3.4	7	~8	~8
Offshore wind	~1	4.7 →	21	30-40

+5-6 GW tendered
...10 GW missing



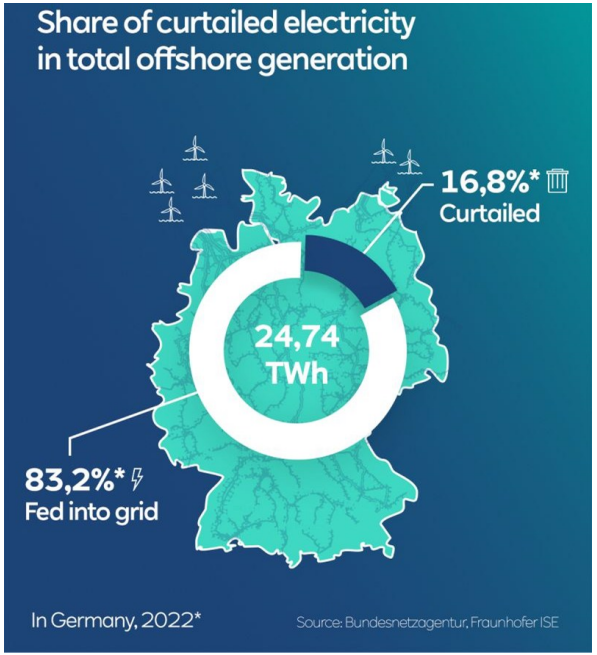
Offshore wind, case for storage

Economical curtailment (April 2024)
due to cannibalization in Netherlands



LinkedIN post, KYOS energy consulting B.V.

Technical Curtailment (2022) due
to grid congestion in Germany



LinkedIN post, Sven Utermöhlen, CEO RWE offshore wind

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Our storage activities

OASIS

Interreg North Sea

Offshore Accelerator for Storage and System Integration

SME training | Network | Research

OESTER

TKI MOOI project

Offshore Electricity Storage Technology for Energy Research

Optimal sizing | Life Cycle Analysis | Techno-financial analysis | Bankability

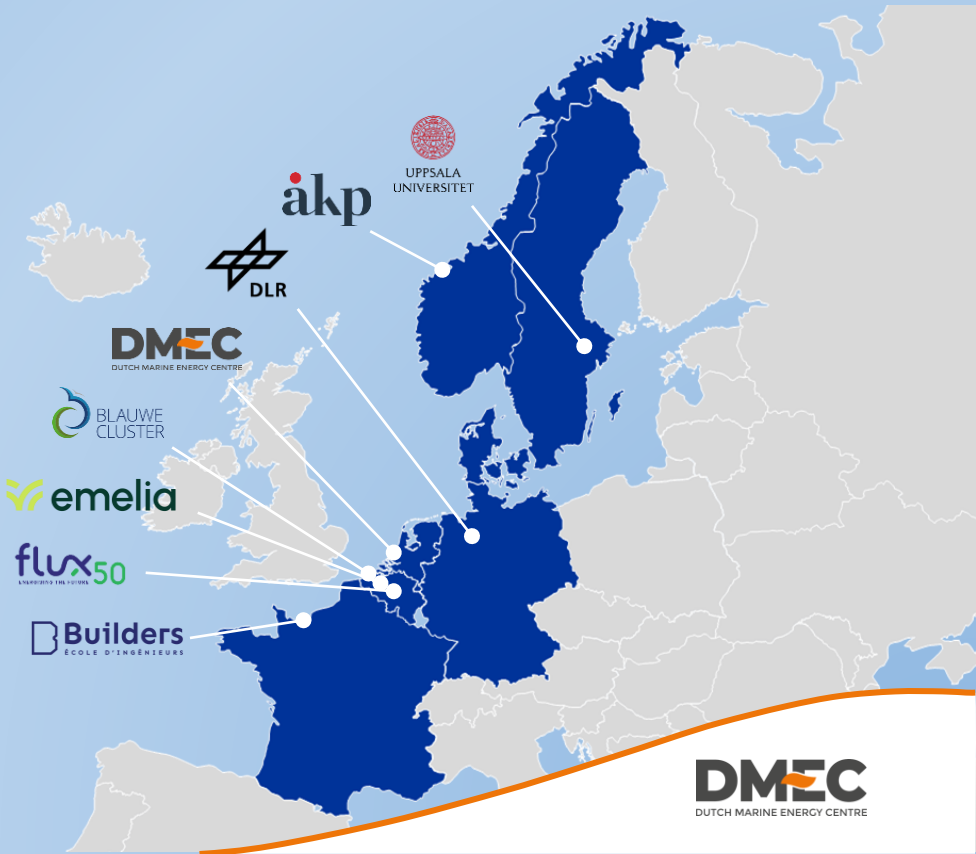
OASIS - Our accelerator for offshore storage & system integration

Interreg North Sea

Co-funded by the European Union

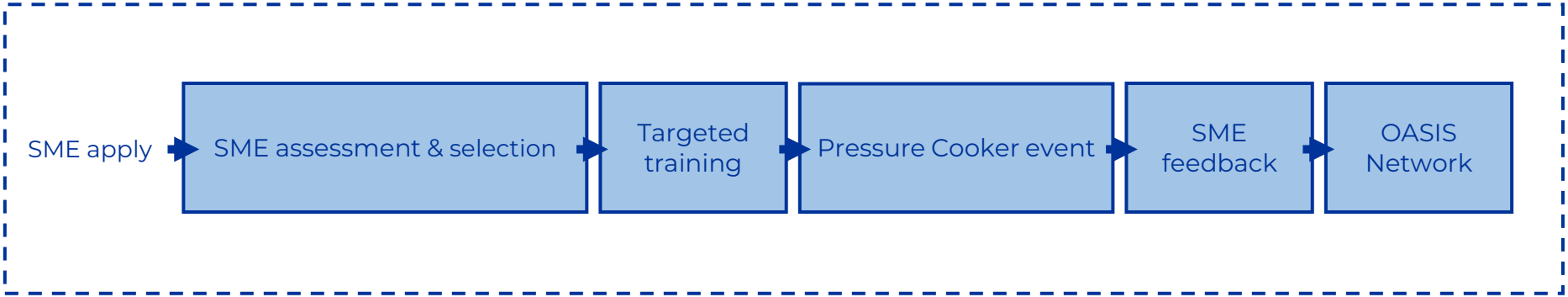
OASIS

Improve the capacity of SMEs developing innovative offshore system integration and energy storage solutions in the North Sea Region.



OASIS

OASIS *Support Calls* (aka *Accelerator Pilots*)



repeated 7x

→ Overall target: 45 SMEs assessed, 30 selected

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OASIS

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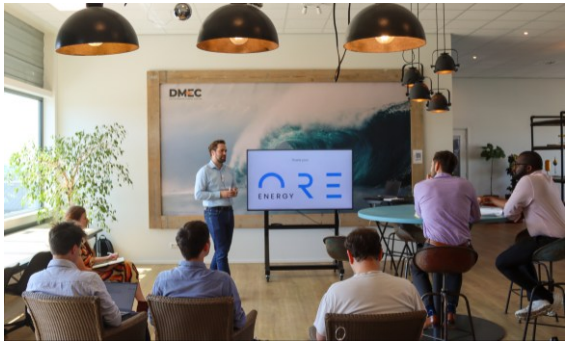
Brimanti Sari-de Bruin
Head of Legal
fairphone
Journey to Fairer Electronics


Celebrity

QUINTEQ
cyan
ORE ENERGY
WORKYBE

Our SMEs:

FLASC Renewable Energy Storage
elestor
DOT



Our Advisory Board members:

Eneco
Port of Amsterdam
POM maakt werk van West-Vlaanderen
PARK WIND JERA GROUP
TRACTEBEL ENGIE
subsea 7
INVESTNL

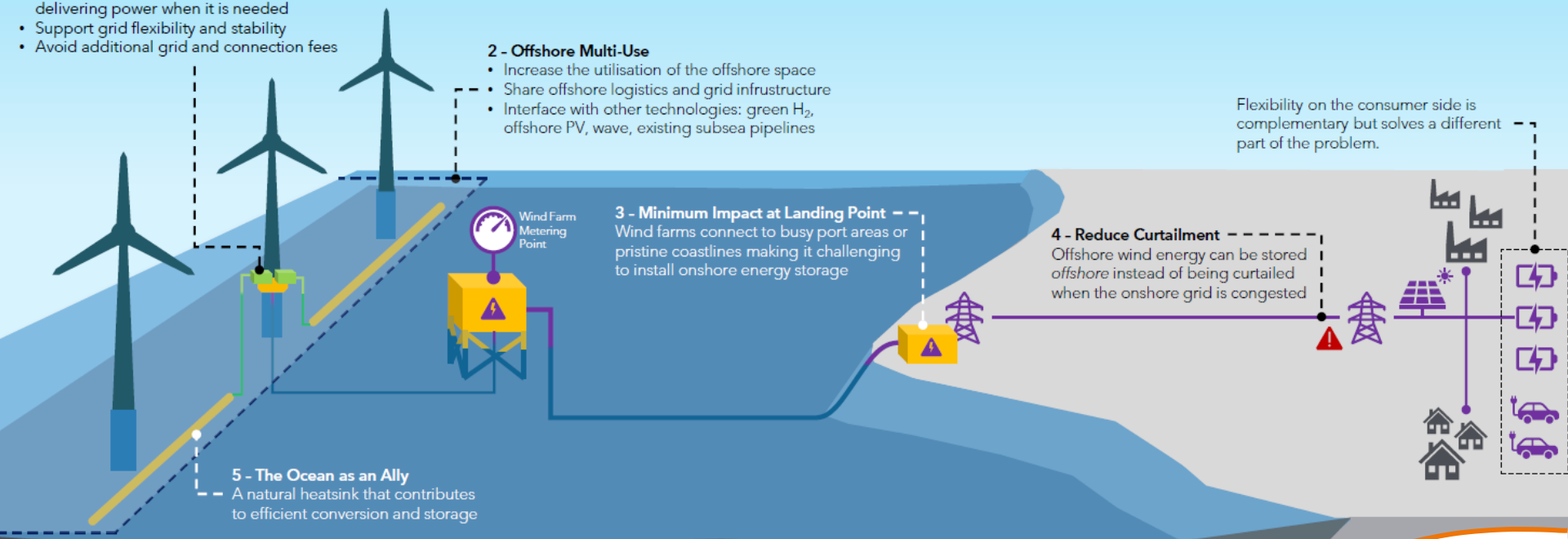
OESTER

FLASC

Energy Storage: *Why Offshore ?*

1 - Behind-the-Meter Optimisation
- Increase value of the wind farm output by delivering power when it is needed
- Support grid flexibility and stability
- Avoid additional grid and connection fees

2 - Offshore Multi-Use
- Increase the utilisation of the offshore space
- Share offshore logistics and grid infrastructure
- Interface with other technologies: green H_2, offshore PV, wave, existing subsea pipelines



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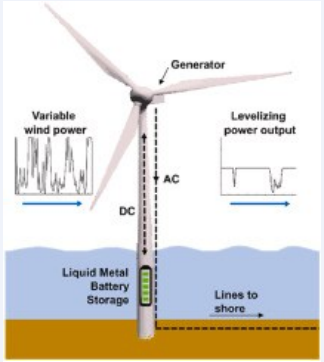
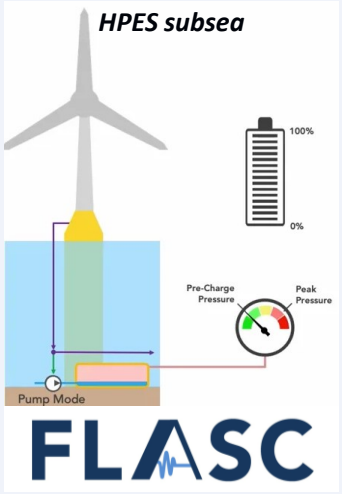
Li-ion battery inside monopile subsea



verlume

HPES subsea



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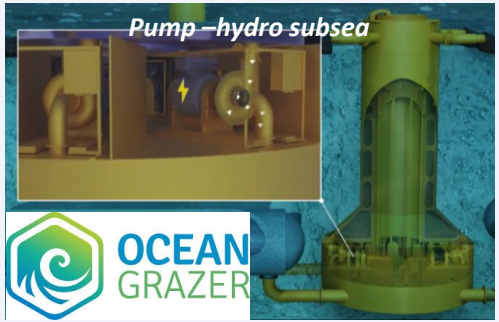
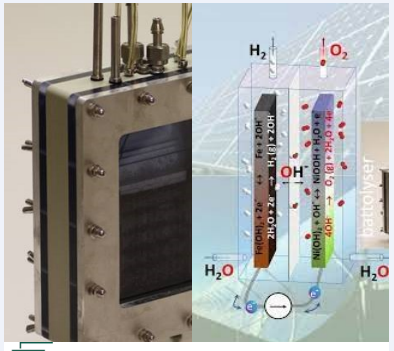
Pump –hydro subsea



OCEAN GRAZER

Battery + Electrolyser In a platform



Battolyser Systems

Short-term flexibility — ***Minutes***

Medium-term flexibility — ***Hours*** — ***Days***

Long-term flexibility — ***Weeks***

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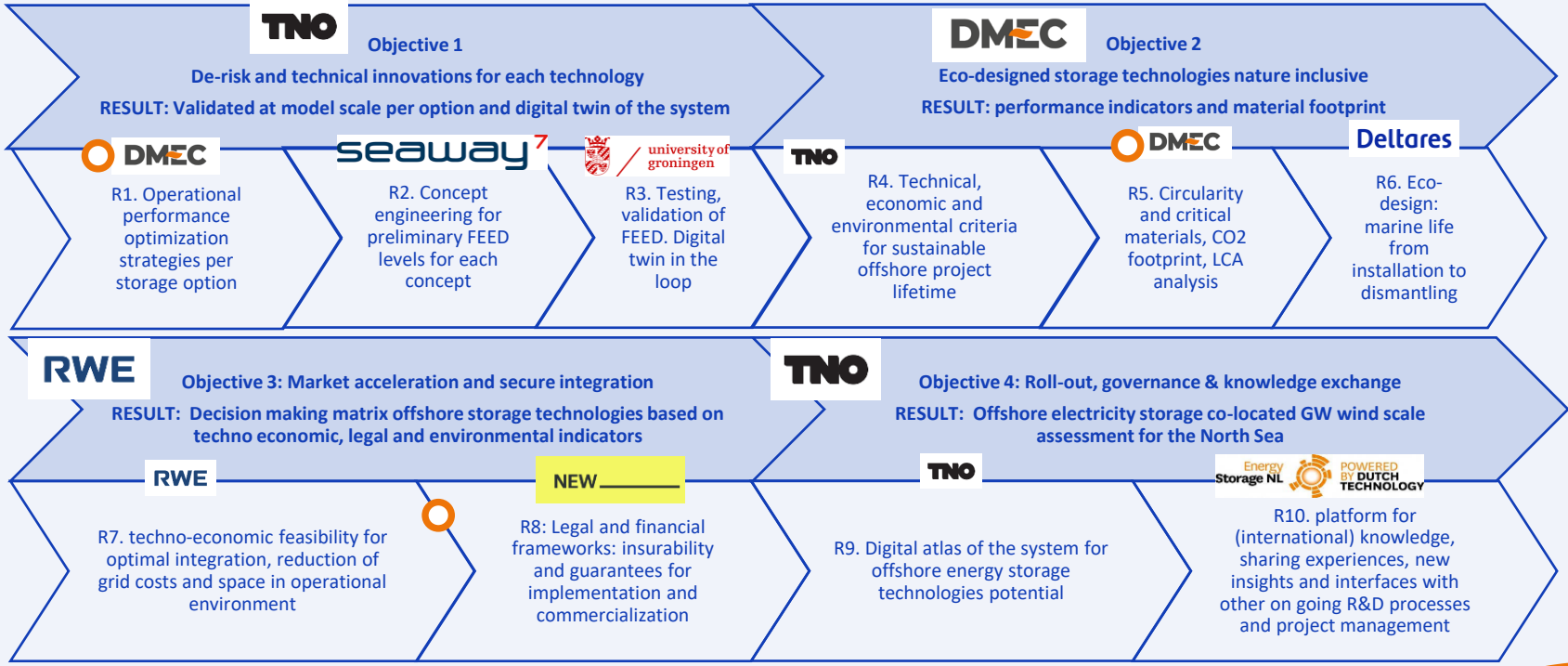

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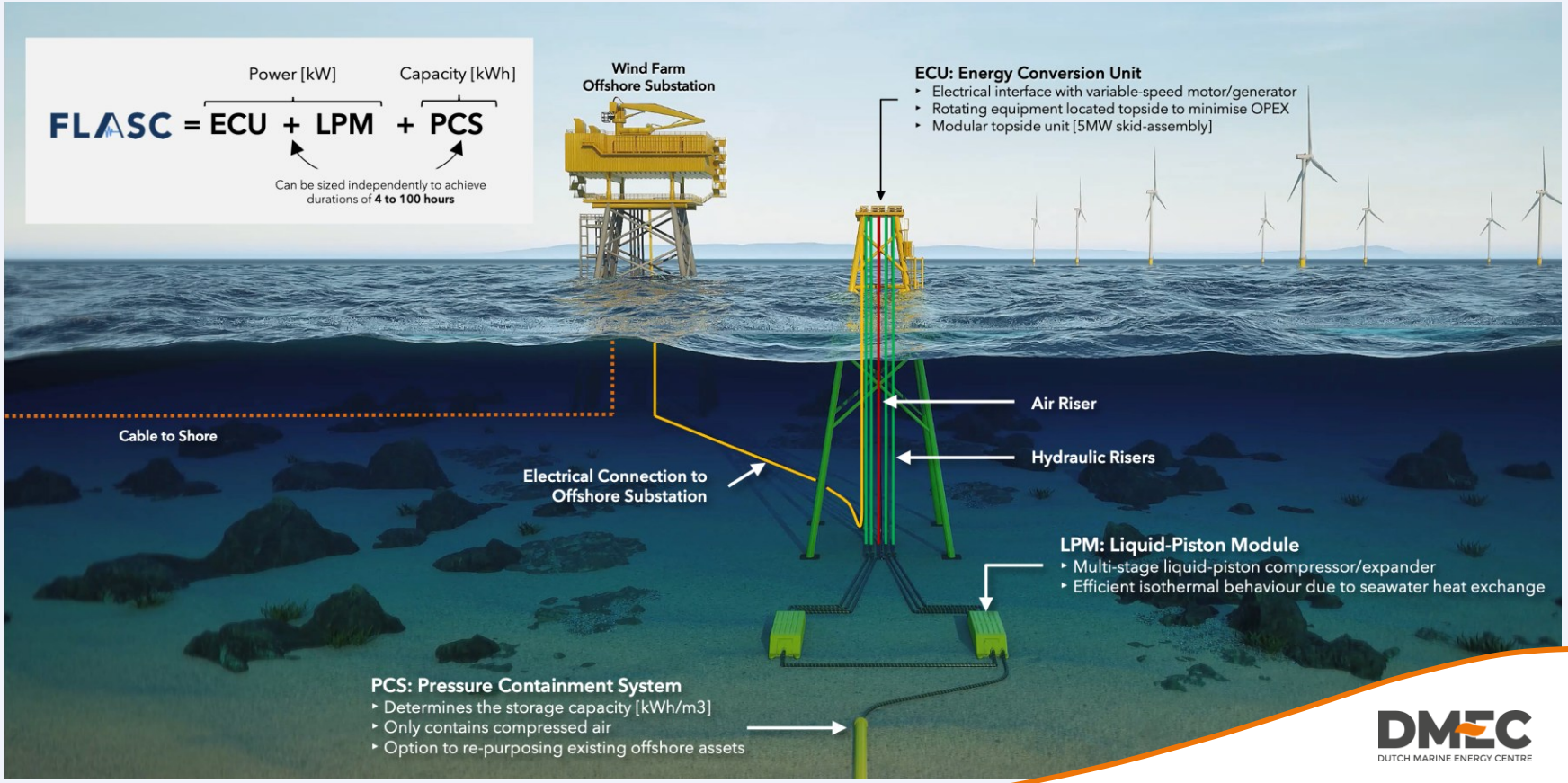

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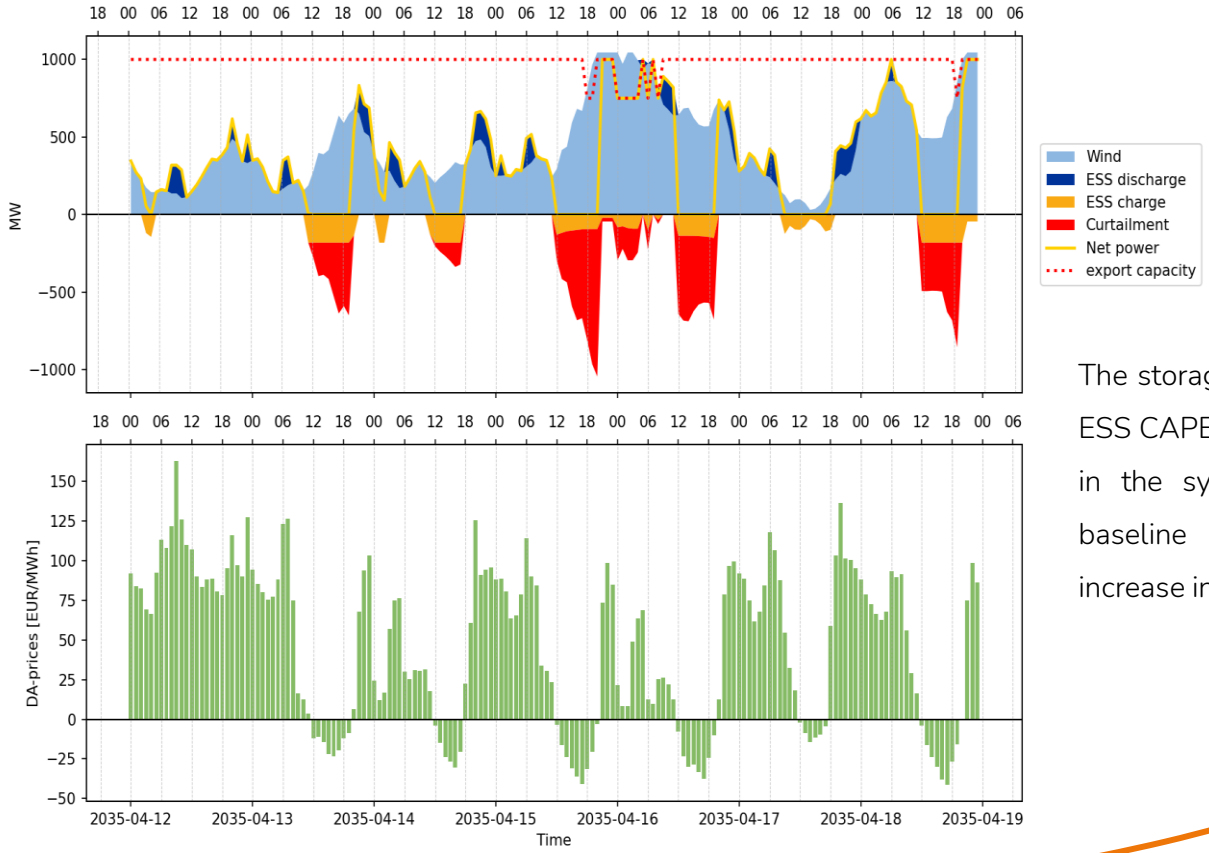

The storage dispatch is optimized to minimize the ESS CAPEX required to deliver a net improvement in the system value of time-shifting over the baseline no-storage case, expressed as the increase in export volume weighted by DA prices.

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What is next?

Explore how energy storage – either onshore or offshore – can best support the deployment of offshore renewables.

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Thank You!