

Floating Wind Solutions

Integrating Floating Wind with Energy Storage to Decarbonize Offshore
Oil & Gas Installations

Saverio Ventrelli, Global Head of Sales – Offshore BESS

SIEMENS
ENERGY

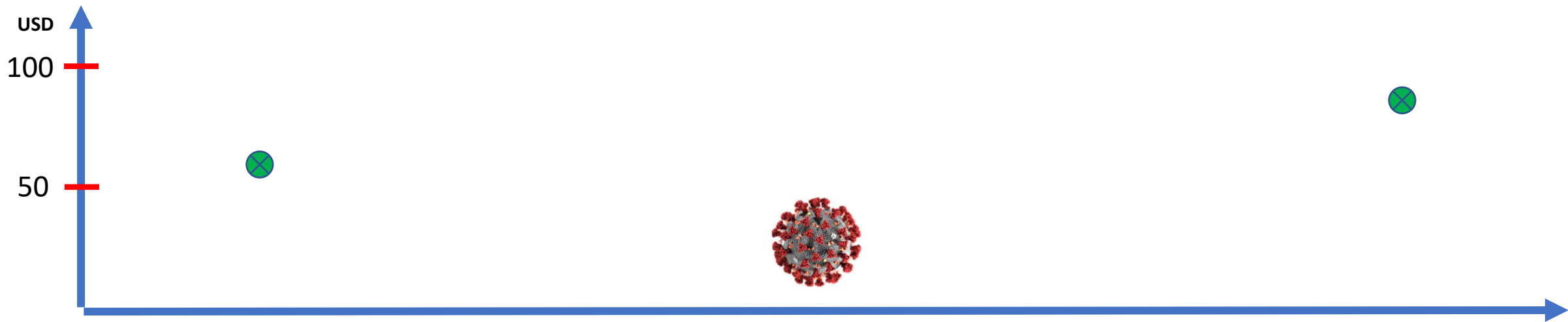
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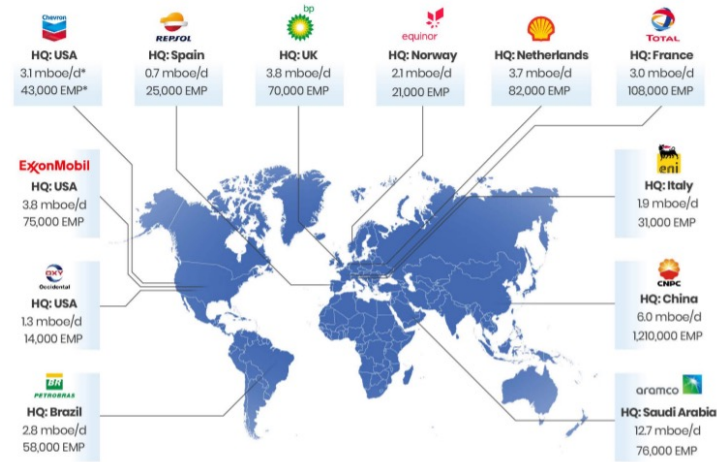
Quest Offshore

FWS
Unrestricted

The Marriott Marquis, Houston 1-3 March 2022



2015

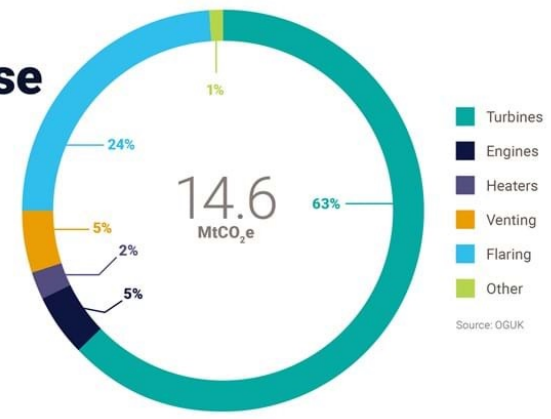


2020

~75% of carbon dioxide emissions from OGCI member company operations comes from the energy used to power them

Source: McKinsey 2020

Upstream greenhouse gases emission sources



2022 Floating Wind Solutions



“power from shore”

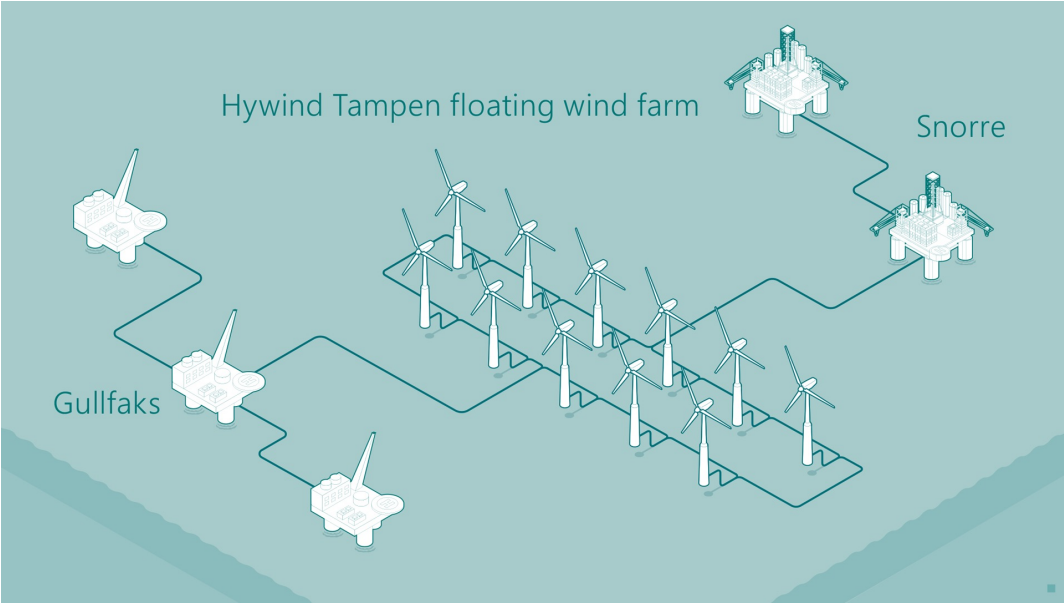
“Off grid” renewable power

Green fuels
(ammonia, biodiesel, etc.)

Carbon capture, storage and offloading



How can Offshore O&G assets be decarb?



Our advanced lithium-ion battery-based solution

- 12% REDUCTION** NO_x emissions
- 15% REDUCTION** CO₂ emissions
- estimated 42% REDUCTION** in the runtime of on-platform diesel engines
- 10,000** equivalent to annual emissions from approximately 10,000 automobiles



- Customer Benefit**
- Reduced OPEX by 25%
 - Reduced GHG-emissions by 90% in combination with SCR due to low OPEX
 - Awarded new contracts
 - Increased reliability and safety
 - No operational interruption
- Installation and commissioning during offshore rig operation

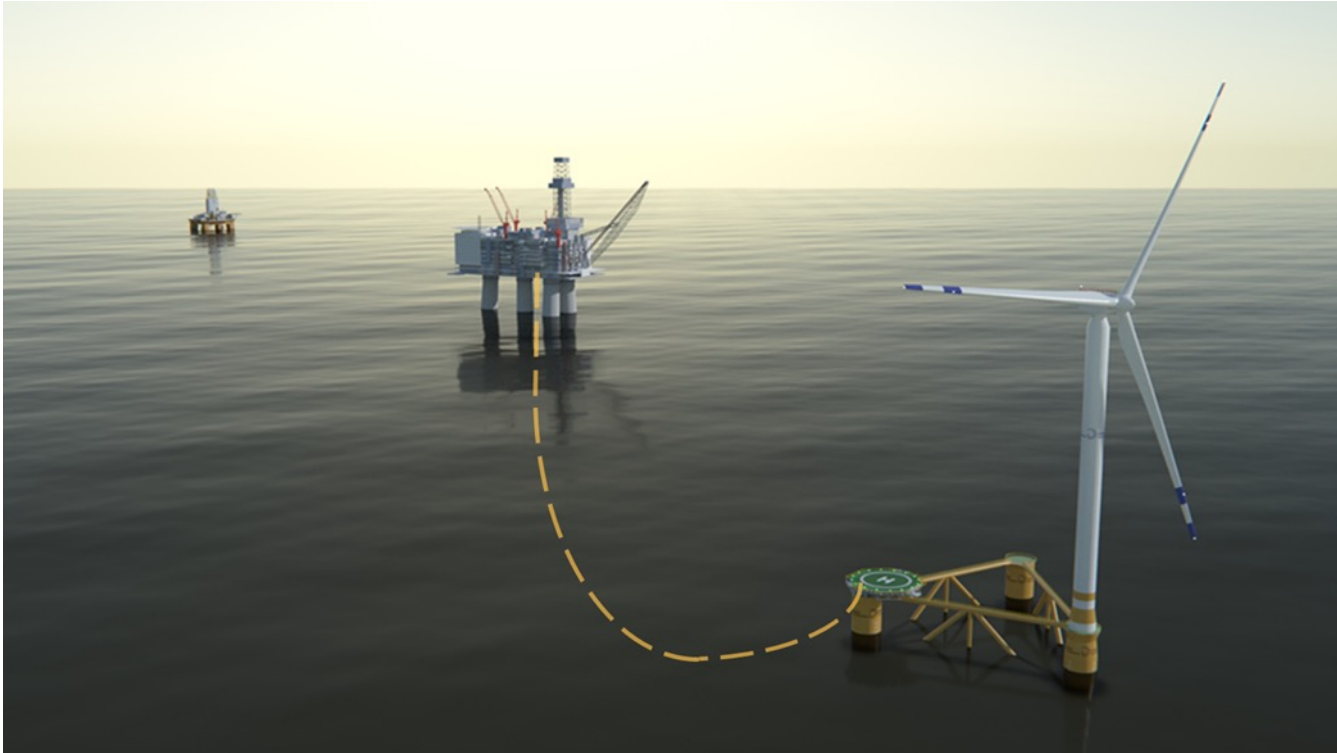
Hybrid battery power for Deep Arctic cuts emissions by 20 percent



- Expected GHG-emission reduction around 35%
- GT's are constantly running all the time as a blackout prevention measure

....is this enough?
How can we do it better?

“BlueWind” for Offshore O&G assets



- Ongoing FEED for a project in the Norwegian Continental Shelf
- FID expected autumn 2022
- First MW spring 2024



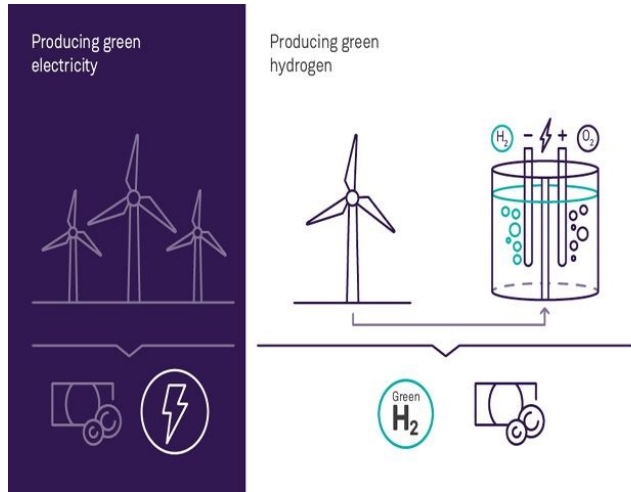
BlueWind

Floating Wind Solutions

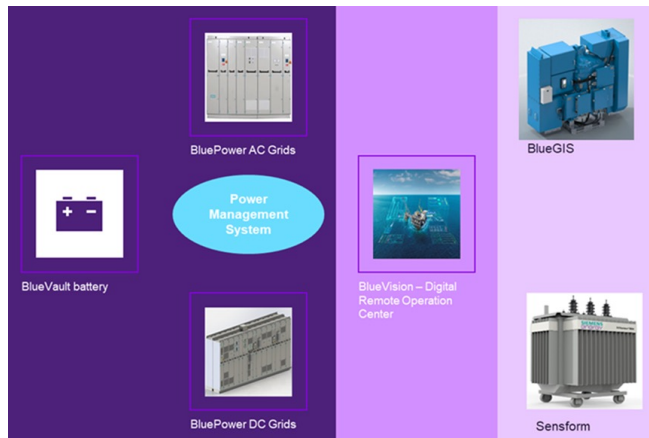
“BlueWind”: Estimation of Emissions Savings and major benefits

- Early studies indicate that **60-70% CO2 emissions reductions** are possible when compared to power generation solely from gas turbines (using the North Sea environment as a baseline).
- **Other Major benefits:**
 - No need for major upgrade on the hosting platform for connecting to the solution
 - Fuel savings for the time GT are not running (**45%-55% electrification** in a case analyzed in the NCS)
 - Less Maintenance and Overhauling intervals
 - HSE conditions onboard (less noises and vibrations)

“BlueWind” + Green Hydrogen Production will be the future?



+



Possible advantages:

Higher electrification level of the O&G assets resulting in:

- ↓ GHG-emissions
- ↓ Fuel consumption
- ↓ Less maintenance
- ↑ Longer lifetime of the asset
- ↑ Increased HSE onboard

Challenges to be overcome:

Cost reduction
Scalability
Regulation

Floating Wind Solutions

Thank you!

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