**Orsted** 

# Ørsted's Power-to-X business

VoltaChem Annual Event 13 April 2023

**Mareike Beckers** 





### Offshore

- Global leader in offshore wind
- Develop, construct, own and operate offshore wind farms

### Onshore, solar PV & storage

- Building a leadership position in onshore renewables
- Energy storage solutions and solar

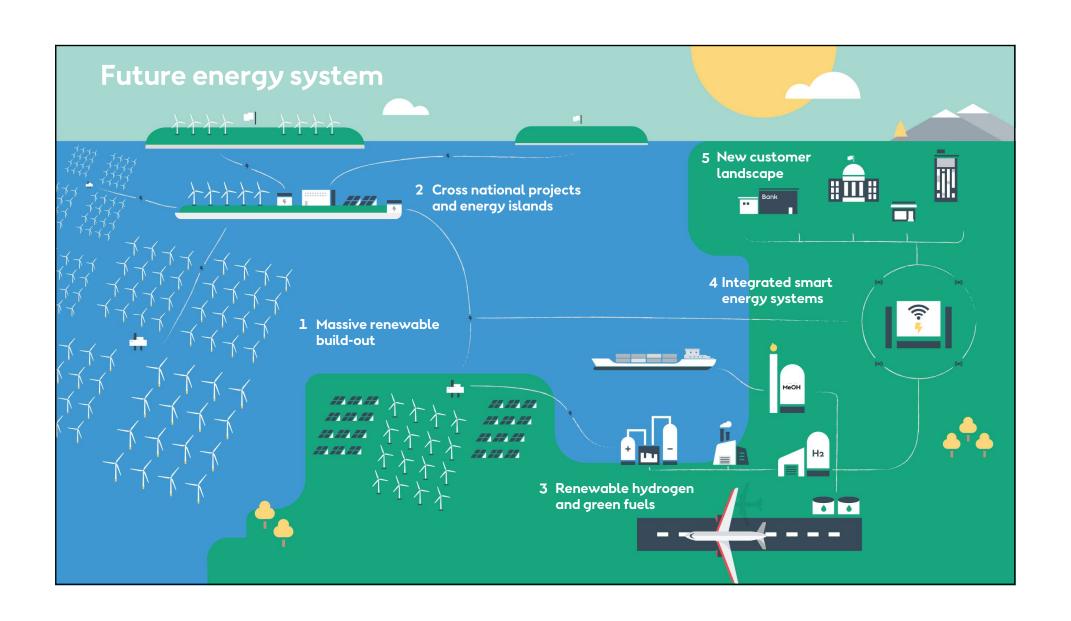
### Bioenergy & other

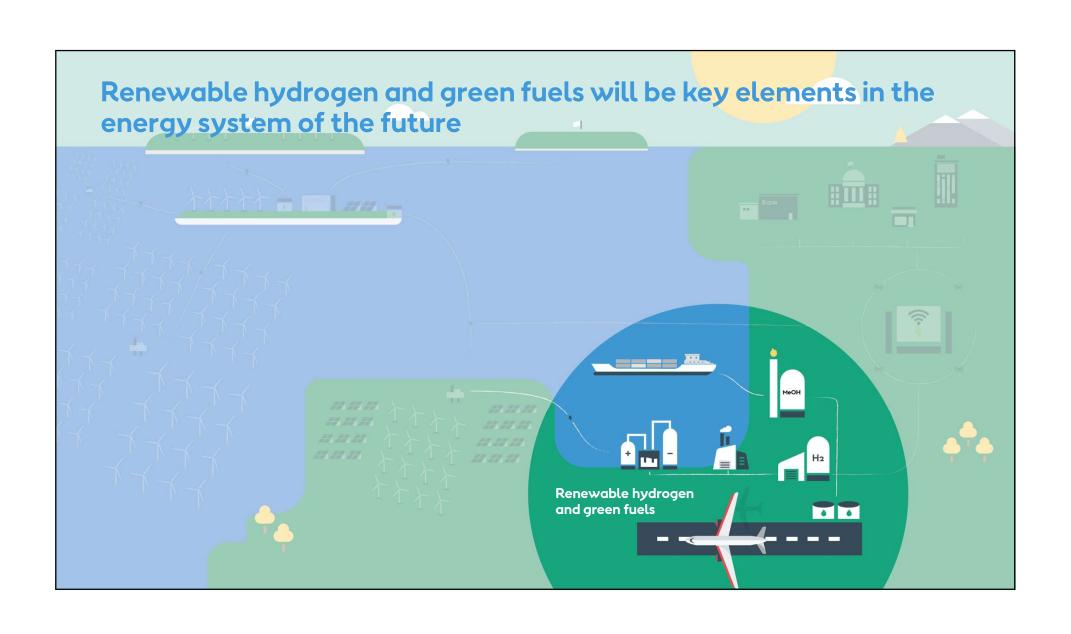
 Presence in Europe, including bioenergy plants, legacy gas activities and patented waste-to-energy technology

### Renewable hydrogen and green fuels

- Emerging platform with 10 pipeline projects (+3 GW)
- Ambition to become a global leader in renewable hydrogen and green fuels by 2030

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### We have a diverse range of global projects involving many partners and key stakeholders Offtake segment(s): ( ) Heavy transport ( ) Refineries ( ) Chemicals & fertilizers ( ) Steel **Product:** • Hydrogen • eMethanol • Multiple FlagshipONE • 70 MW **Project Star** Idomlund • 150 MW SKOVGAARD ENERGY Orsted Orsted **\*** MAERSK Orsted GFDK<sup>1,2</sup> • 1.3 GW Caparatagues Alayaria 🚟 💥 MAERSK 😿 DFDS SAS DSV Orsted & MOLSLINJEN Everfuel COWI BCG nel **H2RES** • 2 MW Brintbranchen DSV ENERGINET Everfuel® 0 Giaastack • 100 MW Hermone nel Orsted **Orsted** Westküste 100<sup>3</sup> SeaH2Land • 1000 MW hynamics Othogo Storwess Rec. Orsted Dow Orsted Arcelor/Mittal 0 Lingen Green Hydrogen Haddock<sup>2</sup> Œ, • 100 - >500 MW • 100 MW Orsted Orsted 1. Green Fuels for Denmark (GFDK) Orsted 2. Project has received IPCEI status

3. Project has received Reallabor status

### FlagshipONE Overview

Europe's largest FID'ed green e-methanol facility and first Ørsted e-fuels project

FlagshipONE is located in Sweden at a site with access to the grid and low renewable energy power prices, a biogenic carbon source & infrastructure to enable offtake





#### Location

- Location enables cost efficient power sourcing which is competitive with other European sources
- Site specific benefits underpin reduced CAPEX and facilitate operation



### **Partners**

- Facility 'hosted' by local municipality-owned Övik Energi
- Ørsted is EPC lead with a group of Tier 1 suppliers including Siemens Energy, Carbon Clean and Topsøe. These suppliers worked with Liquid Wind who developed the project until Ørsted entered at the end of 2021



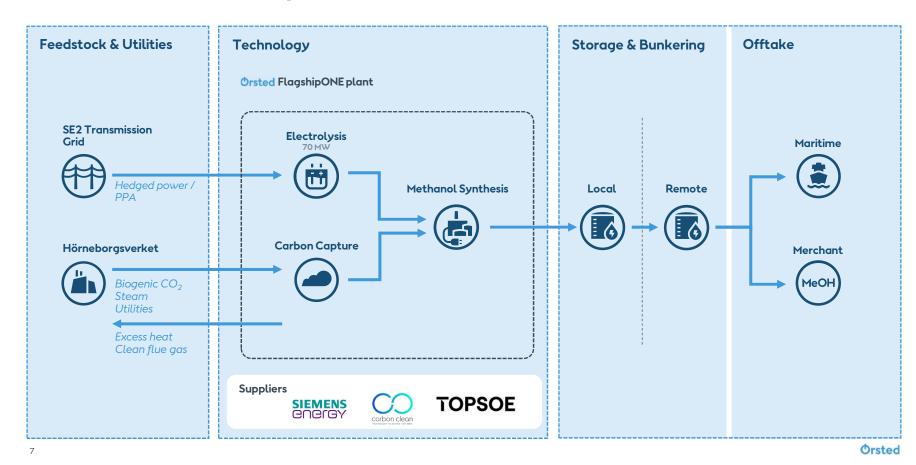
- Ørsted will act as integrator of technology packages
- The different elements of eMeOH production are relatively mature technologies and Ørsted has secured some of the largest available packages



• With expected COD in 2025, FS1 will be a first-mover project ready to address the anticipated ramp-up in eMeOH demand

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## FS1 Value Chain Map





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