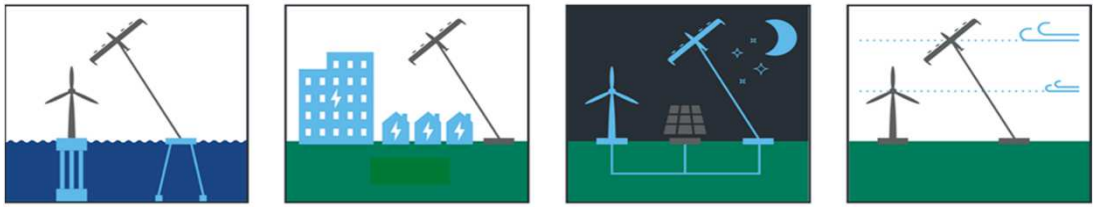
# iea wind

## Topical Expert Meeting TEM#102
## Airborne Wind Energy



# Session 8:
# Roadmapping

23-24 September 2020

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# A Roadmap for the European Airborne Wind Energy Sector

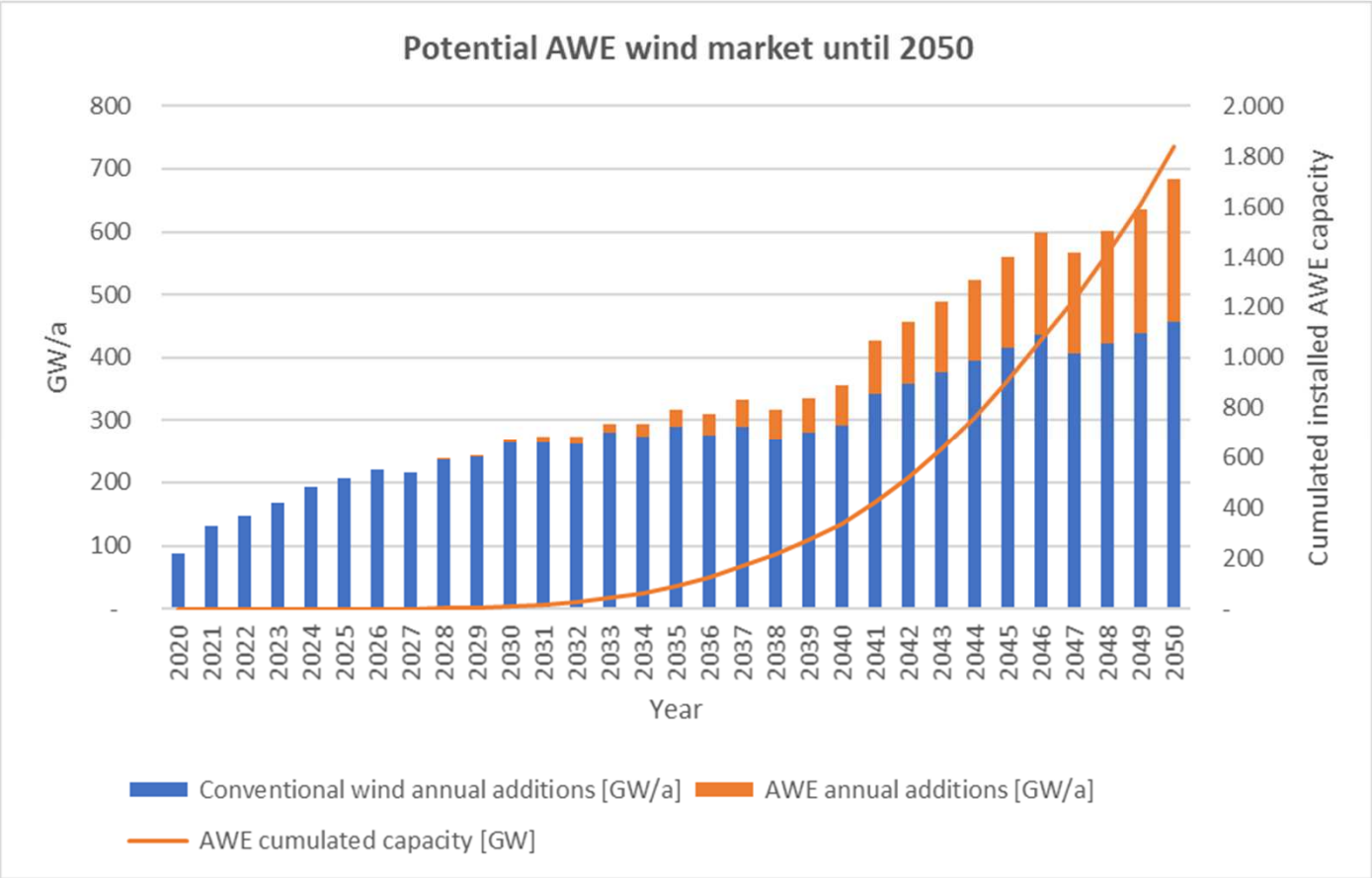
## Topics:

1. Roadmap and scenario definition
2. Setting targets for the sector (short, mid and long-term)
3. Definition of milestones
4. Policy and regulatory aspects: key barriers and challenges

# Vision towards 2050

| AWE 2030 | AWE 2040 | AWE 2050 |
|---|---|---|
| Several systems from OEMs Attain status as TRL 9, Commercial product<br><br>Public acceptance and regulations OK in most of the world | Enable Global market for Off Grid and Utility size AWE Systems<br>*-> see presentation Daniel Zywietz (Enerwhere)* | AWE becomes major energy source for new installed capacity, along with PV Solar and conventional wind energy. |

# A potential AWE scenario: Considerable global market volumes from 2040 onwards




Based on GWEC (2016) Advanced Scenario. AWE capacity assumed to be in addition to conventional wind.

# Mid-term milestones – details still to be defined

**Pilot systems**

### AWES feeding into the grid

2020 SkySails Power – 200 kW (planned)
2022 – x kWh produced during x hours

### Validated Power Curve

2020 SkySails Power: 200 kW (planned)
2022 – x Companies – x kW

### Operational hours

2022 –x h by x companies
2025 – x h by whole AWE sector

**2020 2021 2022 2023 2024 2025**

**Commercial systems**

### Commercial systems in operation

2021 – 1 company (SkySails)
2023 – x companies

### Countries with AWE-specific revenue-support scheme

2022 – first country
2025 – at least 7 major countries

### Capacity installed and energy produced

2022 – x MW and x MWh produced

# Mid to long-term milestones – targets still tbd!

**Markets where AWE is competitive**

2025/30 – AWE competitive in major markets

**Capacity installed**

2026: 1.5 GW
2030: 10 GW
2040: x hundred GW
2050: xx hundred GW

**2026 - 2030** | **2031 - 2035** | **2036 - 2040** | **2041 - 2045** | **2046 - 2050**

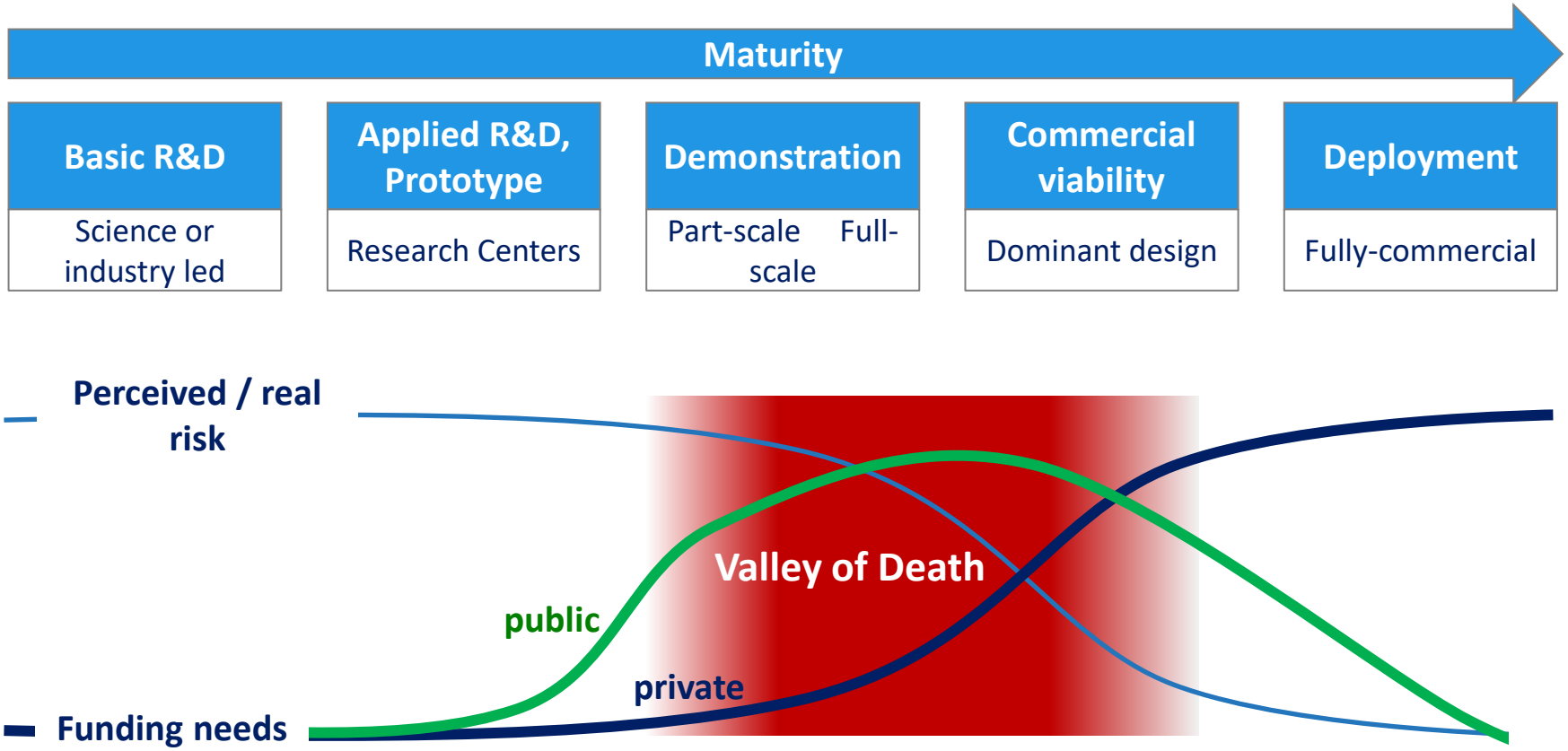
**Multi-system wind parks**

2028 – x MW at x sites
20xx – first offshore wind park

**Contribution to RE targets**

2050 – AWE contributes at least 10% to global RE generation

# AWE companies will face "Valley of Death": Still high risk and high funding needs (especially public funding)



## Cooperation versus competition

Solve shared challenges together

Exchange existing results and ongoing work packages.

**Wish for fruitful IEA Wind Task on AWE**

## Thank you for your attention!

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