

R&I IN OFFSHORE WIND

Alexandra Bech Gjørsv, CEO, SINTEF

EERA DeepWind, Trondheim, Jan 17, 2018

One of Europe's largest independent research organisations



NOK 3.1 billion
Revenues

NOK 450 MILL
International sales

Applied research, technology and innovation

Expertise from ocean space to outer space:



Renewable energy



Ocean space



Industry



Buildings and
infrastructure



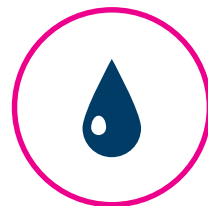
Materials



Micro-, nano- and
biotechnology



Climate and environment



Oil and gas



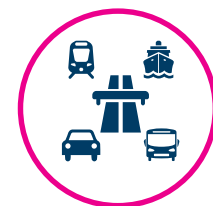
Health and welfare



Society



Digitalization



Transport



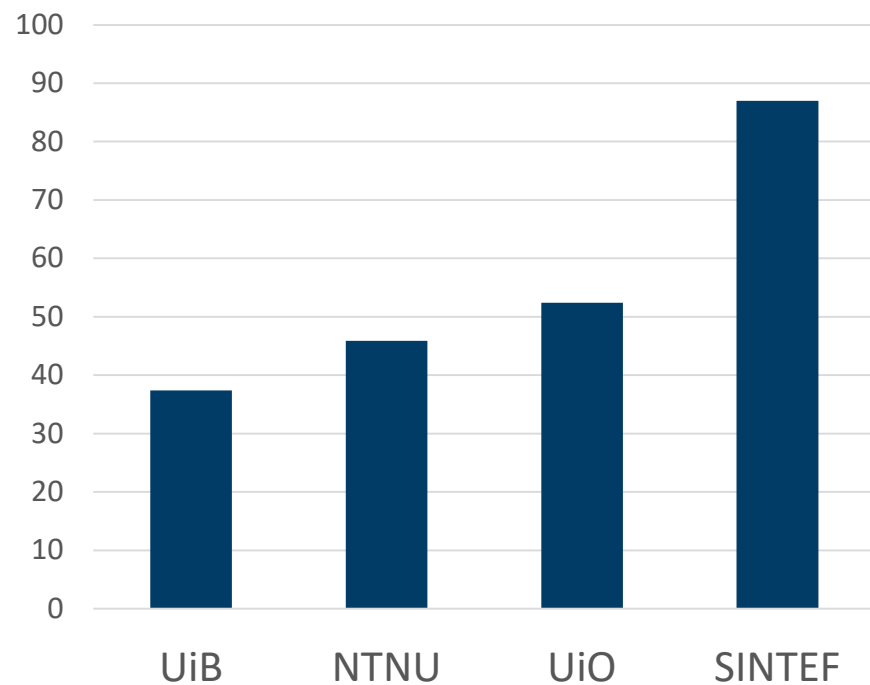
A world-leading research institute

Our main goal: **A world-leading research institute.**

We develop solutions to some of **society's grand challenges** by being at the forefront of our strategic focus areas.

Major participant in EU research programs

Mill. Euro



- Participate in 133 projects, with a project volume of € 1371 mill.
- Coordinate 37 projects with a project volume of € 201 mill.
- SINTEF research funding from EU: € 87 mill.

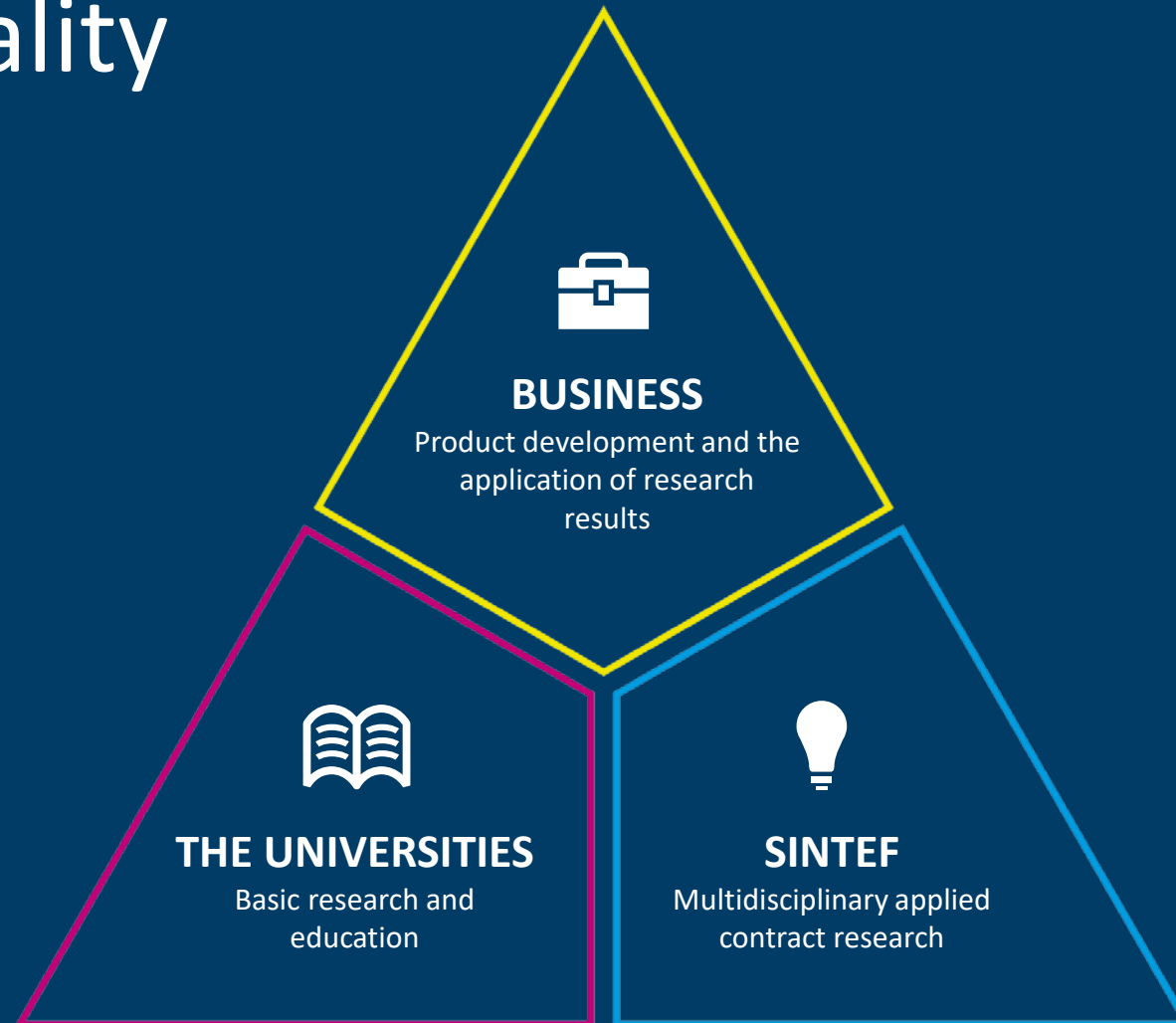
Participation in Horizon 2020, as of October 2017.
Source: RCN, EU's contract data base.



Partnership with NTNU

- Strategic and operational cooperation since 1950
- Joint use of laboratories and equipment
- Cooperation covers research projects, research centers and teaching

Close working relationships generate innovation and high quality





Laboratories and test facilities

- World-leading within a range of technology areas
- From nano and micro electronics to high voltage and ocean laboratories

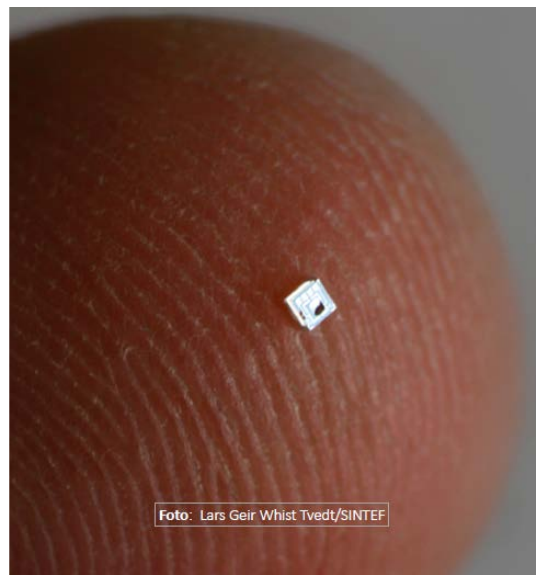
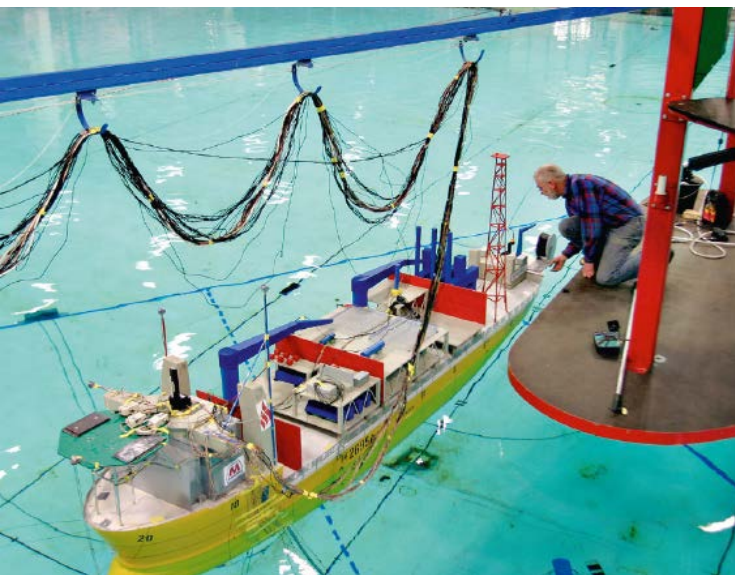


Foto: Lars Geir Whist Tvedt/SINTEF

Bringing digital strength into SINTEF's industrial domains



Connectivity



Big Data



Autonomy



Digital Twin



Service by
Design



Human
Factors



Sensors



Digital
Platforms



Cyber Security

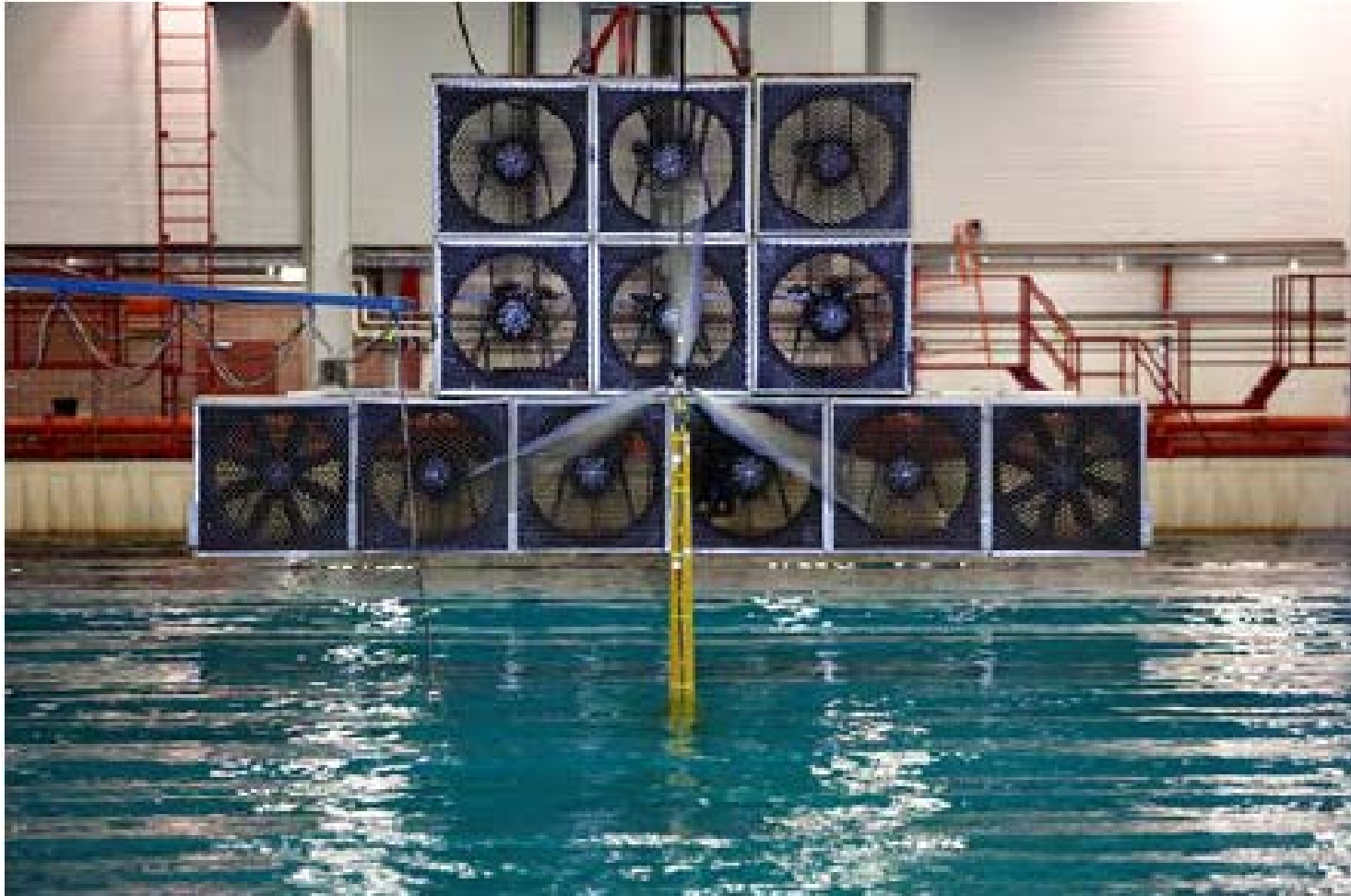


Artificial
Intelligence



Mixed Reality

Hywind model test (2005)



Bold visions – in 2006



125 TWh Hywind → ■

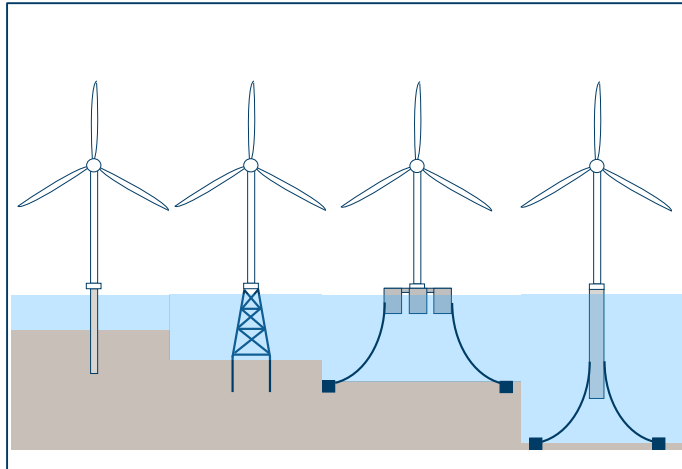
A large long term potential

- Natural gas from Ormen Lange will produce 125 TWh/year for 20 years
- The same amount can be produced from a Hywind windfarm with a size of 20 x 40 miles – for ever

Dato: 2006-05-24 • Side: 16 • Oil & Energy



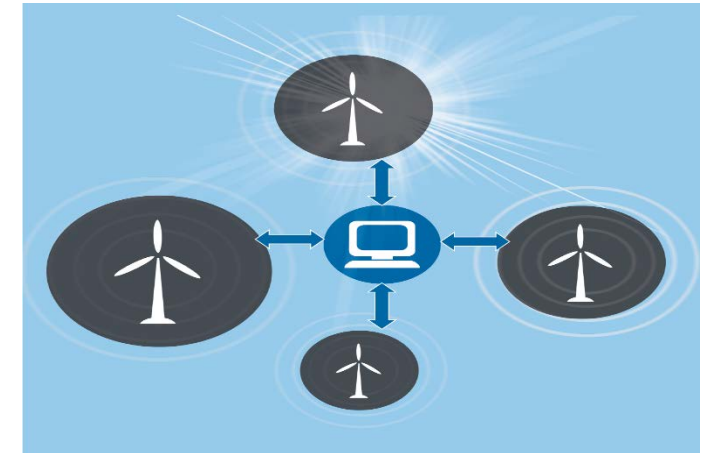
Offshore wind research priorities



- Support structures
- Marine operations
- Materials

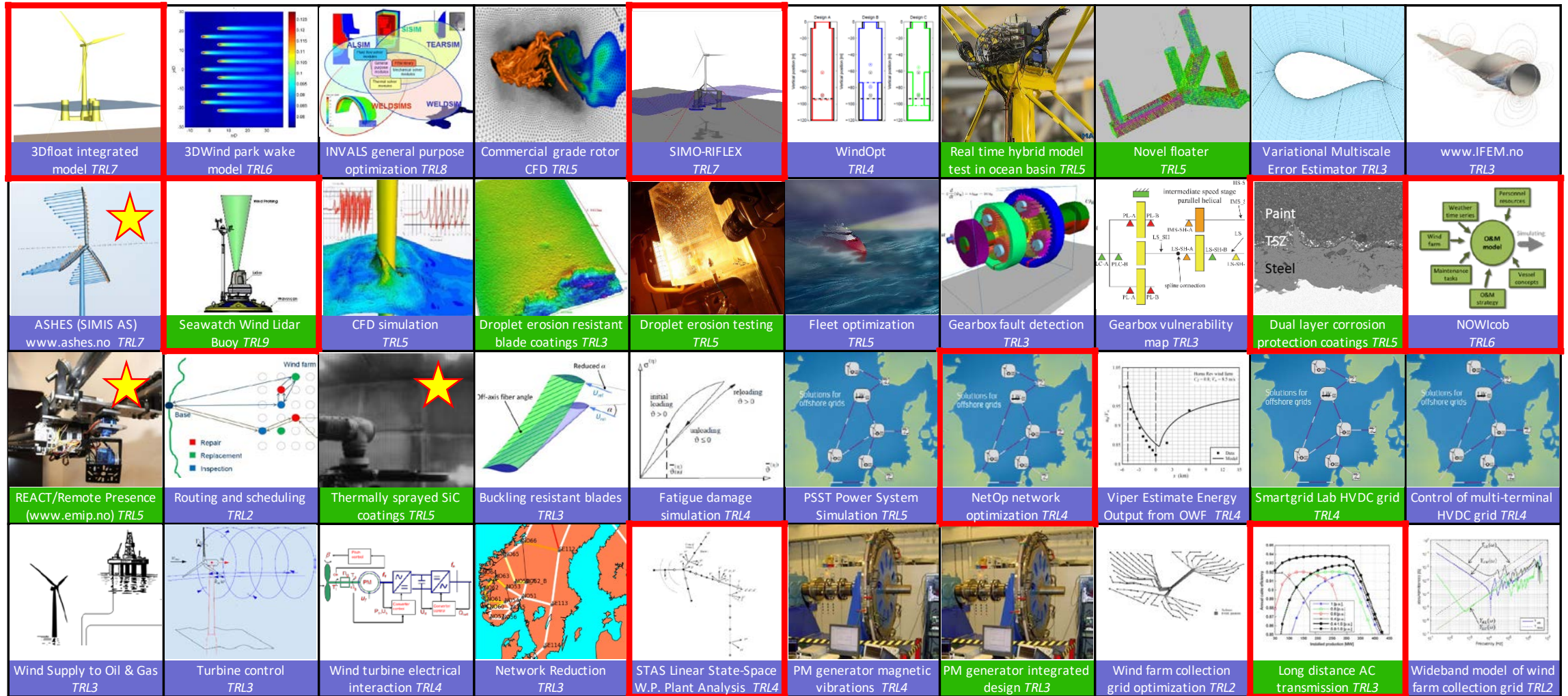


- Grid connection
- System integration
- Energy storage



- Asset management
- Wind farm control
- Digitalization

NOWITECH has 40 innovations in progress



Potential value of innovations

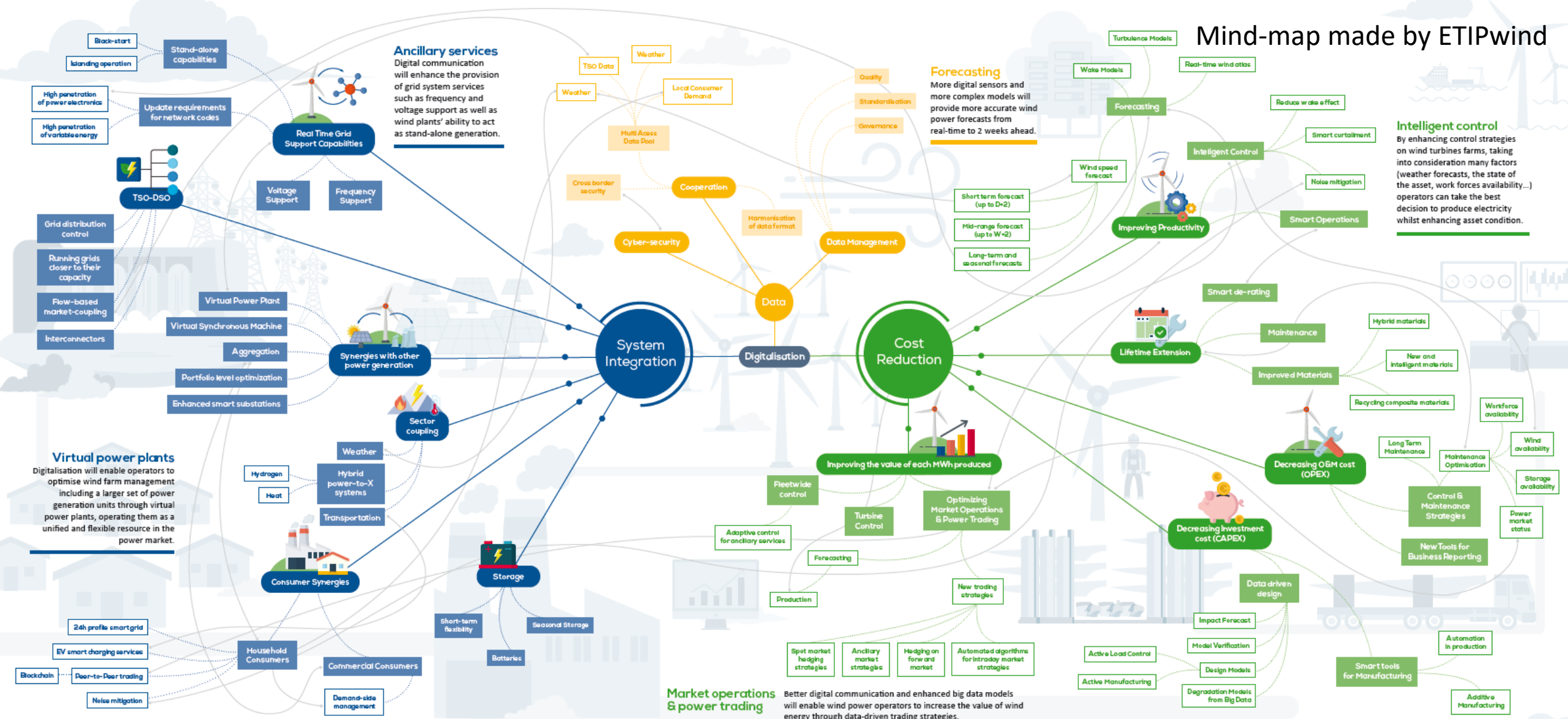
NPV: > 5000 MEUR*

IMPELLO

* Result from analysis carried out by Impello Management AS for a subset of innovations by NOWITECH. NPV is calculated as socio-economic value of applying the innovations to a share of new offshore wind farms expected in Europe until 2030.

Wind goes digital

Mind-map made by ETIPwind





Technology for a better society