Agenda
1. Where are we vs SET Plan 2015 ”declaration of intent”?
2. The real problem for the Energy Transition: Our assessment
3. The booster for renewables
4. Conclusions
Agreed strategic targets for offshore wind energy

1. **Reduce the levelised cost of energy (LCoE)** at final investment decision (FID) for fixed offshore wind* by improvement of the performances of the entire value chain to
   - less than 10 ct€/kWh by 2020 and to
   - less than 7 ct€/kWh by 2030;

2. Develop cost competitive integrated wind energy systems including substructures which can be used in deeper waters (>50m) at a maximum distance of 50 km from shore with a LCoE* of
   - less than 12 ct€/kWh by 2025 and to
   - less than 9 ct€/kWh by 2030

* the costs for delivering the electricity to onshore substations are taken into account within the LCoE
Off-shore wind
2016 auctioned farms – A business reality

Figure 0.2 Anticipated impact of technology innovations for a wind farm using 8MW-Size Turbines with FID in 2025, compared with a wind farm with 4MW-Size Turbines with FID in 2014.

- LCOE for a wind farm with FID in 2014
- Increase in turbine power rating
- Improvements in jacket manufacturing
- Improvements in blade materials and manufacture
- Improvements in blade pitch control
- Improvement of working conditions and feeder for structure installation
- Introduction of multi-variable optimisation of array layouts
- Improvements in jacket design and design standards
- Improvements in blade aerodynamics
- 36 other innovations

LCOE for a wind farm with FID in 2025

70% 75% 80% 85% 90% 95% 100%

Flak will be EUR 1.1 - 1.3 billion, some say.

“This is exciting news. I’m very proud of our people in the Wind organisation who once again delivered a winning bid. Vattenfall has won the three latest offshore wind tenders in Denmark: Horns Rev 3, Danish Near Shore and Kriegers Flak, equivalent to the energy consumption of 55 percent of the Danish households”, says Gunnar Groebler, Head of Vattenfall Wind.
New Low Solar Price Record Set In Chile — 2.91¢ Per kWh!

August 18th, 2016 by Saurabh Mahapatra

Originally published on sister site Cleantechies.

A couple of companies managed to secure a huge share in the latest electricity auction held in Chile, and auction where a new record-low solar bid was set (globally) and wind projects took 40% of the auctioned power contracts.

According to media reports, Mainstream Renewable Power Ltd. and Empresa Nacional de Electricidad/Chile SA won more than two-thirds of the electricity supply auction in Chile.

Meanwhile, SunEdison set a new record-low solar bid at 2.91¢/kWh ($29.1/MWh). That beats the 2.99¢/kWh bid a project in Dubai earlier this year.

The solar projects won by any of the other technologies.
Solar PV
2016 – Distributed retail

2000

200

today

>1.6 Mio.

An opportunity 😊 in added value PV

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Proposed targets in ocean energy

Development of cost competitive ocean energy technologies with high market potential for Europe.

The LCoE for tidal stream energy should be reduced to at least 15 ct€/kWh in 2025 and 10 ct€/kWh in 2030. Wave energy technology should follow the same pathway and reach at least the same cost targets maximum 5 years later than tidal energy: 20 ct€/kWh in 2025, 15 ct€/kWh in 2030 and 10 ct€/kWh in 2035.

The costs for delivering the electricity to onshore substations are taken into account within the LCoE.
Energy Transition: A multidimensional challenge

Not only about technology

And EU is good at systemic problems
Who is going to invest the 177B€ required, annually?

Are the new business models as juicy as previously?

A new profile of investors
Grid Storage

Regulatory frameworks - Situation in Europe

Let’s converge QUICKLY towards a NON fragmented market so we create big demand
Behind the meter

Regulatory frameworks - Situation in Europe

Let’s converge QUICKLY towards a NON fragmented market so we create big demand
The tools to (continue) leading in renewables are in our hands

1. The debate is not the technology only, it is **business models and the systemic approach** *(and we are good at it)*

2. There is **value** to be harvested. Many business cases fly 😊

3. Let’s converge to **market homogeneity (rules) in Europe**
   ⇒ **Volume => Champions**