TKI WIND OP ZEE

Kostenreductie update, actieplan en governance

Ernst van Zuijlen

17 februari 2016

Kostenreductie opties in Nederland

What is the goal of the study?

1. **Potential**
2. **Options** for cost reduction
3. **Further actions**

Belangrijkste kosten drivers

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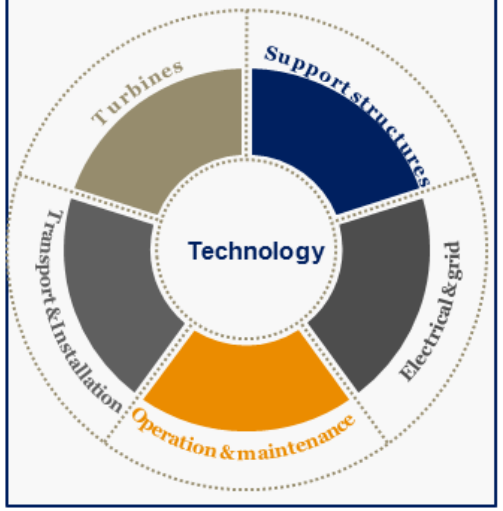
Cost reduction options – offshore wind

Technology

Technical innovations in five areas:



Market & Supply Chain

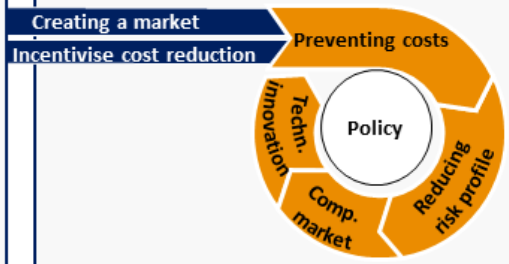
Four drivers are identified:

Finance

Covers cost of capital and insurance costs (for the grid as well as the wind farm) :

Policy

Acts mainly as a driver of cost reduction in Technology, Market & Supply Chain and Finance:



Potentieel voor 40% reductie

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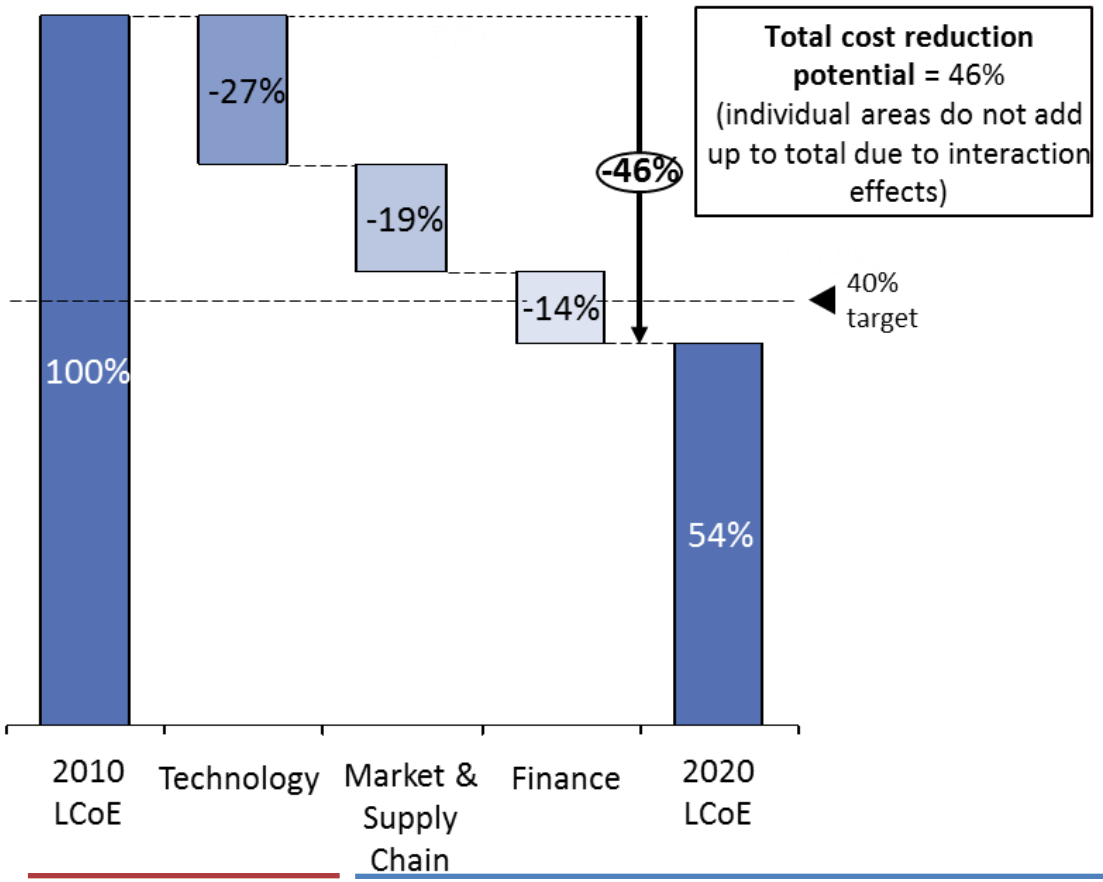
Cost reduction potential 2020 by category

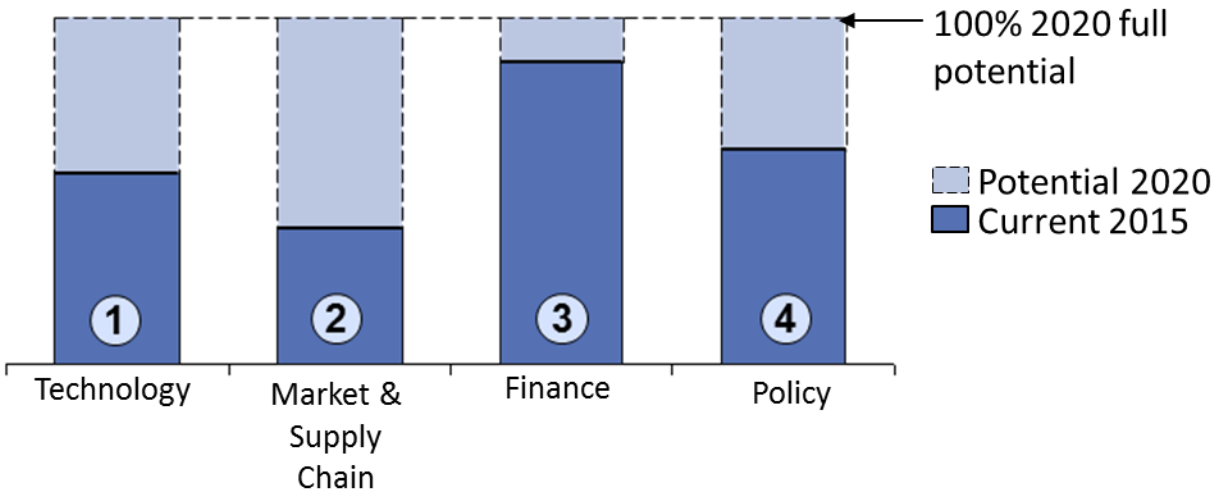


Offshore wind cost could be reduced by more than 40% by 2020

- Assessment of cost reduction potential across Technology, Market & Supply Chain and Finance from 2010 to 2020 (at final investment decision).
- It excludes aspects such as steel prices or changes in interest rates (non-controllable).
- This takes into account the main cost reduction items (>1% LCoE reduction per item). The cost reduction potential is possibly larger if smaller items are also included.

We zijn nog niet klaar

Part of the cost reduction potential in 2020 has already materialised…



1. Turbines size to 6 MW, orders for 8 MW, continued monopiles use
2. Progress expected through increased level of construction in next 5 years.
3. Risk premium decrease considered to be a structural as competition and offshore experience are expected to continue to grow.
4. Substantial steps have been taken (TenneT as OFTO, risk sharing, zones)

… but whether the 2020 target will be reached also depends on two factors:

A Development of external factors like steel prices and interest rates

B Continued effort of market participants and policymakers

Vertaling in SER-plan van aanpak

Technology

- Demonstrate technological innovations
- Share knowledge and cooperate to innovate in a holistic manner
- Increase financial support for innovations by connecting investors, launching customer and small innovative companies

Market & Supply Chain

- Stimulate vertical and horizontal collaboration. Create platforms (conferences, meetings and studies) to actively share increased experience
- Stimulate competition of new entrants and players from adjacent markets

Additional efforts

Finance

- Increase knowledge sharing with supply chain (technology) to assess risks appropriately
- Increase the knowledge of financial investors (such as pension funds) to stimulate investment

Policy

- Market outlook post 2020 to trigger supply chain investment
- Ensure regulatory certainty
- Analyse and implement lessons learned after Borssele tender
- Provide (clarity on) compensation for grid delays
- Support innovation by knowledge sharing and demonstration

Overall Results (priority)

Area	Action	Lead and supporting partners	Start – finish	Priority
Technology	• More cooperation between businesses in technology development in the Netherlands and International	**TKI** and Government	2015 and beyond	High
	• Increase knowledge sharing and cooperation early on in the design phase to innovate in holistic manner by supporting R&D projects	**TKI** and Supply chain	2016 - 2020	Medium
Supply Chain	• Data sharing and operational benchmarking	**TKI** and Supply chain, government	2016 and beyond	High
	• Sufficient knowledge on offshore wind project management through education or training on the job.	**Developers**, education institutes	2015 and beyond	High
Finance	• Mitigate policy risk	**Government**, knowledge institutes, developers	2016 and beyond	High
	• Knowledge and experience sharing	**TKI**, technical advisors, financers, certification bodies	2016 and beyond	High
Policy	• Policy for offshore wind development beyond 2020 / 2023	**Government**	2016 and beyond	High
	• Optimisation of the tender model	**Government** and developers	2016 – 2019	High
Demonstration	• Match making for demonstration projects also on international scale	**TKI**	2016 and beyond	High
	• Innovation Sites in Hollandse Kust	**Government**	2016	High

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Cooperation

Knowledge sharing

Knowledge sharing

Long term policy

Cooperation

Actions – Market & Supply chain 1-2

Desired effect	Actions	Lead and supporting partners	Start – finish	Priority
Increase the level of vertical and horizontal collaboration	• Stimulate knowledge sharing through sector events like lessons learned sessions (such as TKI CoP), developer days, offshore wind conferences, (Q-) meetings.	**TKI and Supply chain**, (incl. developers)	2015 and beyond	Low
	• Stimulate knowledge sharing in the supply chain through initiating and sharing studies on main topics of interest.	TKI, NWEA, supply chain parties	2015 and beyond	Low
	• Smoothen processes by spending time with contracting parties on team building: 'dry' runs or simulations to identify issues and find solutions, agree on decision making processes and timing, etc.	Supply chain (contracting partners)	2016 and beyond	Low
	• Share technical monitoring data and define operational benchmarks.	TKI and Supply chain, government	2016 and beyond	High

Ensure sufficient competition	• Lower the entry barriers for new entrants:
	  • Ensure transparency by creating a Dutch offshore wind tender/market report that can be shared with potential new entrants .
	  • create a networking vehicle for international new entrants to get in touch with launching customers in this geographical scope.
		TKI and government	2015 and beyond	Low

	• Create a project pipeline to provide a concrete market outlook and timing (and stimulate asset sweating).	**Developers**	2016 and beyond	High
	• Increase awareness of developers and investors of new entrants (e.g. supply chain overview or monitor study, stimulate presentations of these parties at conferences and meetings, and trade missions).	TKI, government and Supply chain	2015 and beyond	Low

Actions – Demonstration

Desired effect	Actions	Lead and supporting partners	Start – finish	Priority
Realised Leeghwater test site at Borssele	• Create a scientific research programme for Leeghwater.	TKI	2015 – 2020	Low
	• Organise a Match making event for Borssele test site tender.	TKI	2016 – 2017	Medium
	• Organise the tendering process for innovations at the Borssele innovation site.	TKI	2017	Low
Extension of current demonstration facilities	• Explore the possibilities for off-grid facilities	**TKI** and Supply chain	2016 and beyond	Low
	• Explore the possibilities for onshore test site facilities, for instance for offshore wind turbines.	**TKI** and Supply chain	2016 and beyond	Medium
	• Explore the possibilities for demonstration of innovations at current wind farms	**TKI and Operators**	2016 and beyond	Low
	• Explore the possibilities for testing of grid innovations related to the substations and interconnections between substations	**TKI and TenneT**	2016 and beyond	Low
	• Create international cooperation base for demonstration sites in European coordination, e.g. Demowind. Synchronisation with European demonstration facilities.	**TKI**	2016 and beyond	High
	• Reserve space in Hollandse Kust Zuid and Noord	**Government**	2016	High
Long term support for continued innovation	• Ensure a pipeline for RD&D funds by increasing the TKI platform	TKI and government	2016	Medium

Governance van plan van aanpak (1)

Benoemde actiehouders zijn:

- TKI
- Eigenaren, investeerders, ontwikkelaars, energiebedrijven (NWEA; EnergieNederland)
- Supply chain (NWEA)
- Overheid (EZ, RVO, I&M)
- Financiers (NII, VPM, NVB)
- TenneT
- Certificeerders

Governance van plan van aanpak (2)

Mogelijke samenwerkingsvorm:

Onder SER Energie Akkoord Borgingscommissie

- Kostenreductietafel, bestuurlijk niveau, 2 keer per jaar
- Kostenreductiewerkgroep; 4 tot 6 keer per jaar; trekkers / deelactiehouders rapporteren

TKI voert secretariaat?