



RECOMMENDATIONS FOR BUILDING A NORWEGIAN VALUE CHAIN FOR FLOATING OFFSHORE WIND

High Wind 2020

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«The key objective is industrial development»

The goal:

- Realising large-scale floating offshore wind in a way that will facilitate technological developments and learning effects in the supply chain

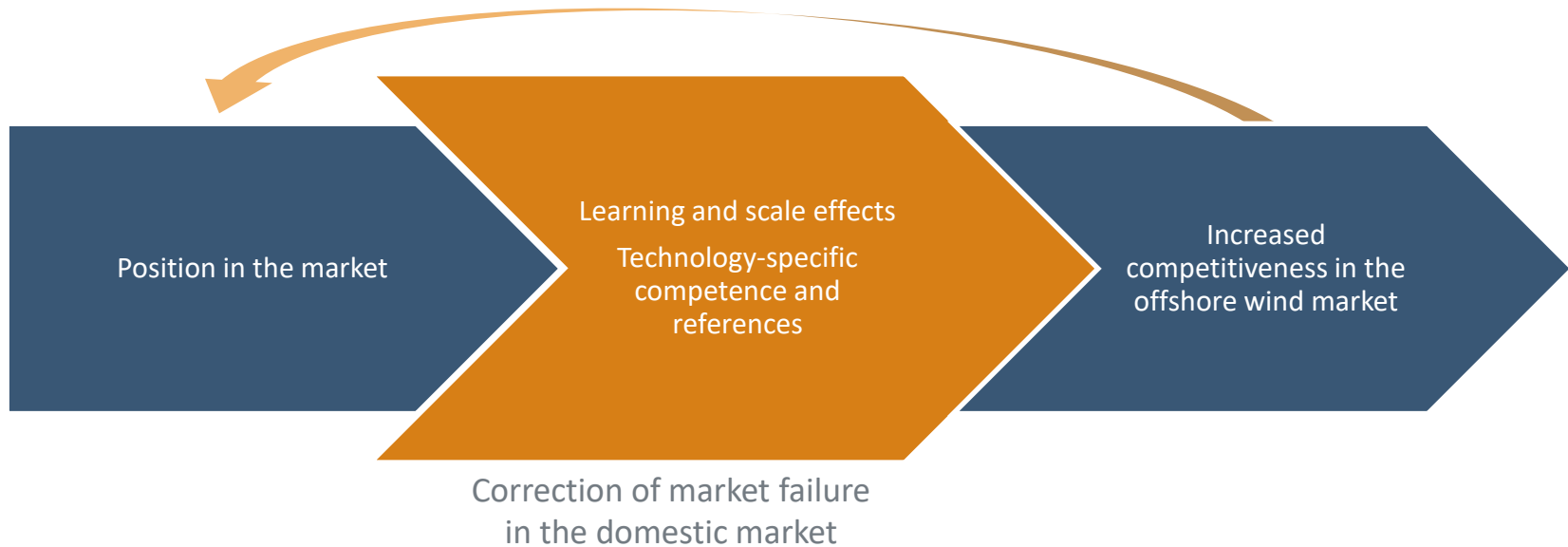
Our Analysis:

- A comparative analysis of various instruments from a socio-economic perspective

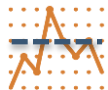
The starting point:

- A discrepancy between public and private profitability due to positive innovation-externalities
- Measures in the domestic market affects the industry's future competitiveness

“Competitiveness has a self-reinforcing effect”



“We have focused on five different policy instruments”



Contracts for difference



Investment subsidy



Requirements for electrification on the Norwegian continental shelf



Improved access to capital through public export financing



Temporary tax schemes within a resource rent tax regime



Synergies through combinations of instruments

Goal achievement

- The measure must have a **triggering effect**
- The measure should be **easy to implement**
- It must be possible to emphasize **scale effects and technology development in the value chain**

Cost-effectiveness (on a project basis)

- The measure should ensure goal achievement in a **socio-economically cost-effective** way
- The measure should facilitate the **maximization of revenues**
- The measure must provide **economic incentives** for efficient development and operation

Degree of adaptability

- The measure should allow the authorities to **scale** its scope over time
- The measure should be **flexible** with regards to design
- The measure should minimize **permanent distortionary effects** in the market

Administrative consequences

- The measure should require minimal resources in the **implementation phase**
- The measure should be **transparent and practical** to administrate
- The fewer periodizations, the less resources are needed to follow up the measure

Financing

- The measure should minimize **distortion effects through taxes and charges**

"Three instruments can realise investments in large scale floating wind"

	Investment subsidy	Access to credit	Contracts for difference	Regulation / requirements	Temporary tax schemes
Goal achievement	<ul style="list-style-type: none"> + Will realise projects + Simple to set up with regards to time (early mover) + Can be structured for tenders or prequalification in a way that emphasizes qualitative parameters 	<ul style="list-style-type: none"> - Will not realise projects on its own + No implementation cost 	<ul style="list-style-type: none"> + Will realise projects + Can be structured for tenders or prequalification in a way that emphasizes qualitative parameters + Relatively simple to set up, but requires some further consideration with regards to distribution of risk 	<ul style="list-style-type: none"> + Will probably realise project - Uncertainty regarding scale - Uncertainty regarding amount - Will not focus on design 	<ul style="list-style-type: none"> + Will realise projects + Prequalification / license allocation process can emphasize qualitative parameters + Relatively simple to set up, but requires some further consideration to determine the right level for the temporary schemes

“Contracts for difference is the most cost-efficient instrument”

	Investment subsidy	Access to credit	Contracts for difference	Regulation / requirements	Temporary tax schemes
Goal achievement					
Cost effectiveness (on a project basis)	<ul style="list-style-type: none"> + Possibility for project-specific tender processes + Strong incentives for optimization - Risk of overcompensation - No risk relief for the investor’s political risk 	<ul style="list-style-type: none"> + Can reduce capital cost + Project-based allocation + Incentives for optimization - No risk relief for the investor’s political risk 	<ul style="list-style-type: none"> + Possibility for project-specific tender processes + Can be structured to provide good incentives for optimization + Low risk for investor (ex ante) related to market development + Low risk of overcompensation 	<ul style="list-style-type: none"> - Difficult to set «level for measure» - Locks choice of locations - Weak incentives to maximize values of production - No risk relief for the investor’s political risk 	<ul style="list-style-type: none"> + Possibility for project-specific tender processes related to the level of subsidy + Strong incentives for optimization - Risk of overcompensation - No risk relief for the investor’s political risk

“We find a high degree of adaptability in all the policy instruments”

	Investment subsidy	Access to credit	Contracts for difference	Regulation / requirements	Temporary tax schemes
Goal achievement					
Cost effectiveness					
Degree of	<ul style="list-style-type: none"> + Scope can be scaled over time + Structure can be optimized + No permanent market changes 	<ul style="list-style-type: none"> + Will be done on a project basis + Temporary change of mandate may be adjusted + No permanent effect on market 	<ul style="list-style-type: none"> + Scope can be scaled over time + Structure can be optimized + No permanent market changes 	<ul style="list-style-type: none"> - Little flexibility as changes in framework conditions will have large consequences for adaptation 	<ul style="list-style-type: none"> + Scalable by making areas accessible as well as winding down temporary schemes + Structure can be optimized over time + No permanent market changes

“CfDs and tax schemes are more complex”

	Investment subsidy	Access to credit	Contracts for difference	Regulation / requirements	Temporary tax schemes
Goal achievement					
Cost effectiveness					
Adaptability					
Administrative consequences	<ul style="list-style-type: none"> + Easy to implement and broad experience with such schemes + One-time support has low costs for follow up 	<ul style="list-style-type: none"> + Already implemented + Little need for follow-up. Existing administrative apparatus can be used 	<ul style="list-style-type: none"> - Requires further consideration with regards to risk distribution - Somewhat more administrative work over time as this cannot be integrated into existing schemes 	<ul style="list-style-type: none"> + Easy to implement provided that this does not entail major political or juridical processes 	<ul style="list-style-type: none"> - Requires further consideration to reduce risk of overcompensation - Some administrative work over time, but very limited as transfers are done via the tax system

“Cost of finance has a limited impact”

	Investment subsidy	Access to credit	Contracts for difference	Regulation / requirements	Temporary tax schemes
Goal achievement					
Cost effectiveness					
Adaptability					
Financing	- Financing will result in tax distortions and/or distortions in the market that is charged	+ Assessed on a project basis against alternative use	- Financing will result in tax distortions and/or distortions in the market that is charged	+ Externalities, but already priced	- Financing will result in tax distortions

“Contracts for difference stand out as it lowers the cost of the scheme”

	Investment subsidy	Access to credit	Contracts for difference	Regulation / requirements	Temporary tax schemes
Goal achievement	HIGH	LOW	HIGH	MEDIUM	HIGH
Cost effectiveness	MEDIUM	MEDIUM	HIGH	LOW	MEDIUM
Adaptability	HIGH	HØY	HIGH	LOW	HIGH
Administrative consequences	LOW	LOW	MEDIUM	LOW	MEDIUM
Financing	MEDIUM	LOW	MEDIUM	LOW	MEDIUM

“We find that there is considerable political room for maneuver”

	Investment subsidy	Access to credit	Contracts for difference	Regulation / requirements	Temporary tax schemes
Investment subsidy					
Access to credit	<i>Neutral</i>				
Contracts for difference	<i>Neutral</i>	<i>Neutral</i>			
Regulation / requirements	<i>Neutral</i>	<i>Neutral</i>	<i>Neutral</i>		
Temporary tax schemes	<i>Neutral</i>	<i>Neutral</i>	<i>Neutral</i>	<i>Neutral</i>	

Main takeaways

- The benefits of developing a competitive Norwegian-based industry through measures in the domestic market is substantial.
- ...but the competition is growing with the market prospects.
- Measures in the domestic market will affect the future competitiveness.
- Considerable political room for maneuver in relation to how to structure a policy instrument, but a two-way CfD should be included.

Main takeaways

- The design of the solution in question is as important as the choice of instrument, especially the award criteria.

The focus:

“Cost reduction and learning effects - in the entire value chain”

Thank you!

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