

— **70 years** — 1950-2020

#### QUANTIFYING THE ECONOMIC EFFECTS OF UPSCALING THE OFFSHORE WIND INDUSTRY

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## Background

- Wind energy can be a leading element on the path towards a low-carbon energy system.
- Increasing demand on electricity.
- Technological advances have led to cost reductions, larger turbines and new locations in deeper waters.
- Possible future synergies with other renewable sources such as green hydrogen production from offshore wind.



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Estimated cumulative capacity, investments and employment in wind, 2017,

Note: Investment in 2017 is annual, not cumulative.

Source: Based on IRENA, 2018a; IRENA, 2018b; Frankfurt School-UNEP Centre/BNEF, 2018.

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Background

Source: IRENA, 2018



- Offshore wind has several linkages with other industries
- Relative new sector
- Complex supply chain structure



• Evaluate the economic potential of exports of EPCI services to the global offshore wind sector up to 2030.





At SINTEF we build a dynamic macroeconometric model that allows to assess the potential of a new industry like the Offshore Wind.

- Allow to see synergies with other industries (indirect and linkage effects)
- Understand the possible development paths for a new industry

# Methodology





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### **Data and Scenarios**

CONTEXT	Scenario Name	Market share of the Norwegian EPCI sector in the global market
Current policies and regulations	Low	6%
	Medium	10%
	High	15%
1.5 C Goal	Low 1.5	6%
	Medium 1.5	10%
	High 1.5	15%

#### **Data and Scenarios**

Estimated EPCI exports to the global wind offshore market under Current climate policies



#### Estimated EPCI exports to the global wind offshore market under 1.5 $^\circ \rm C$ climate policy.



## **Results: Direct Effects**





## **Results: Indirect Effects**





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# Results: Indirect Effects - Employment



C = Construction and construction services; RT = Retail trade; WT = Wholesale trade; FS= Financial services; LAMCS = Legal, administrative, and management consulting services; OBSS = Other business services

#### **Results: Indirect Effects – Value Creation**



C = Construction and construction services; RT = Retail trade; WT = Wholesale trade; FS= Financial services; LAMCS = Legal, administrative, and management consulting services; OBSS = Other business services

# **Concluding Remarks**

- The sector has the potential to create between 1.400 and 9.950 new direct jobs per year if the international market grows as expected.
- Each additional direct job can incentivize, in average, to the creation of 0,6 new jobs in the rest of the economy with the biggest impact on crucial sectors such as construction, wholesale trade, and financial services.
- Exports of the Norwegian EPCI sector can generate, in average, 1.210 mill NOK in valueadded per year to the economy.





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#### Teknologi for et bedre samfunn