



HYDRO

## Offshore wind power – Moving from near shore to offshore

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## An experienced oil and energy company

- 100 years of experience in renewable energy
- Operating close to 1 million barrels of oil equivalents a day
- Strong position on Norwegian Continental Shelf
- Increased international business – one of the leading offshore oil and gas operators
- The world's third largest integrated aluminium supplier

# Developing Ormen Lange and Langeled

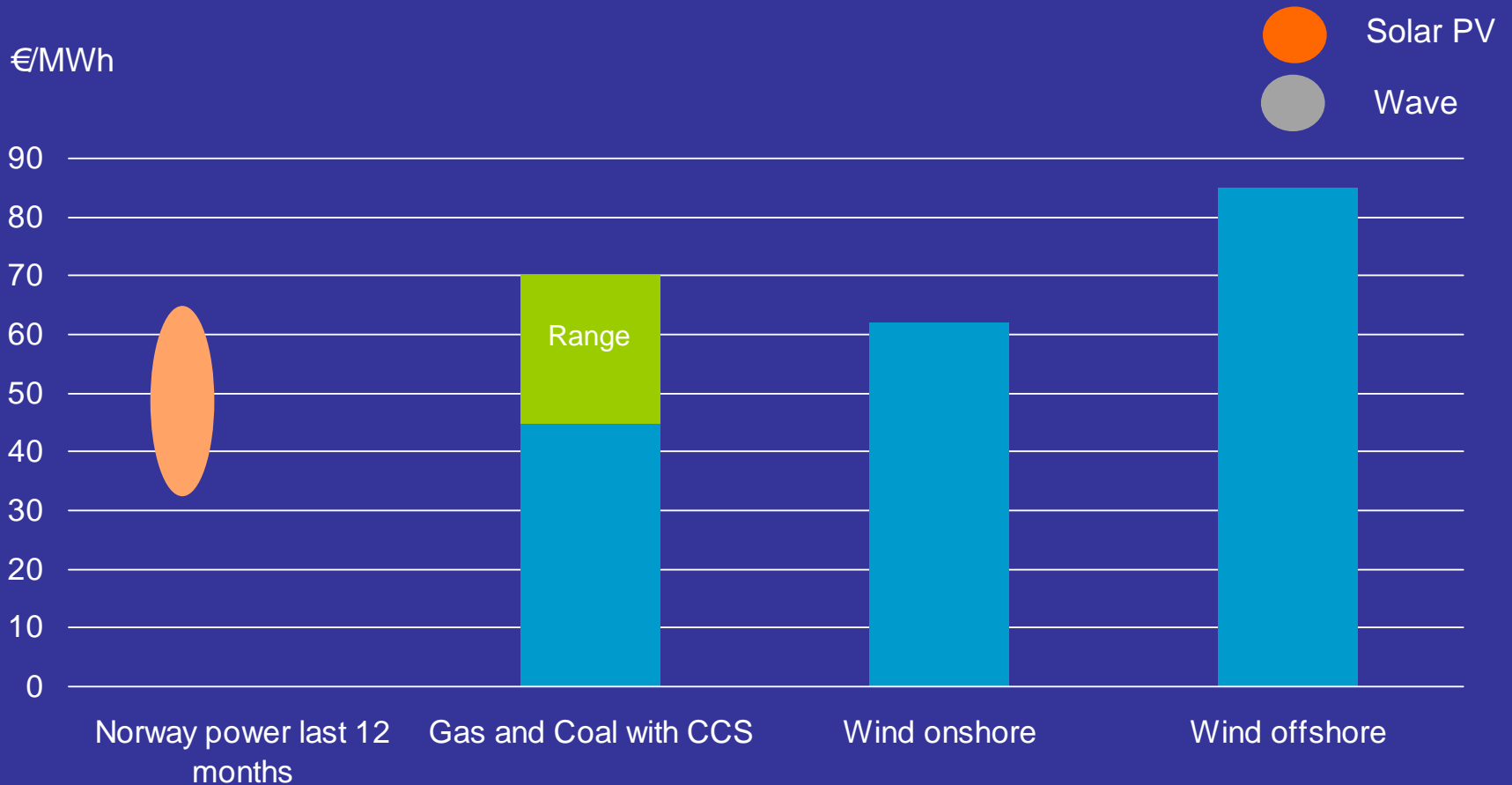
- Total field and pipeline investments: USD 11 billion
- Ormen Lange may supply 20% of the UK's gas demand
- Innovative subsea-to-shore concept
  - Production start October 2007
- The world's longest subsea pipeline
  - Official inauguration of southern section October 16<sup>th</sup> 2006



# Hydro is developing innovative energy solutions based on renewable resources



# CO<sub>2</sub> costs make renewables competitive



Sources: IEA, Dale Simbeck, ZEP, Hydro and others



Project execution in harsh environments is demanding





## Scira – our first position offshore UK

- A 315 MW Offshore Wind Power project north of Norfolk – Sheringham Shoal
- Submitted environmental statement in May 2006
- Wind farm covers 14 square miles with a minimum distance to shore of 9 nautical miles
- Partners: SLP Energy (25%) and Ecoventures (25%)
- Development of such a project requires substantial expertise, financial strength and the ability to handle risk



## Offshore wind projects are not straightforward

- Considerable uncertainty relating to grid connection options and grid tariffs
- Projects require thorough environmental impact assessments
- Frequently subject to difficult subsurface conditions
- Risk reduction is expensive
- Operationally demanding due to restricted accessibility and cost of repair



## Offshore wind projects demand the ability to handle risk efficiently

- Capital intensive, resource-demanding and time consuming
- Substantial contracting risk due to multi-contracting
- High construction risk related to weather and complex installation
- Relatively recently developed multi-megawatt wind turbine technology



## Hywind – deep water floating wind power

- Concrete or steel cylinder with ballast
- 120 m deep (base case)
- Three anchor lines
- Depths 100 – 700 m
- Power output 3 – 5 MW
- Power generation ~ 22 GWh/year

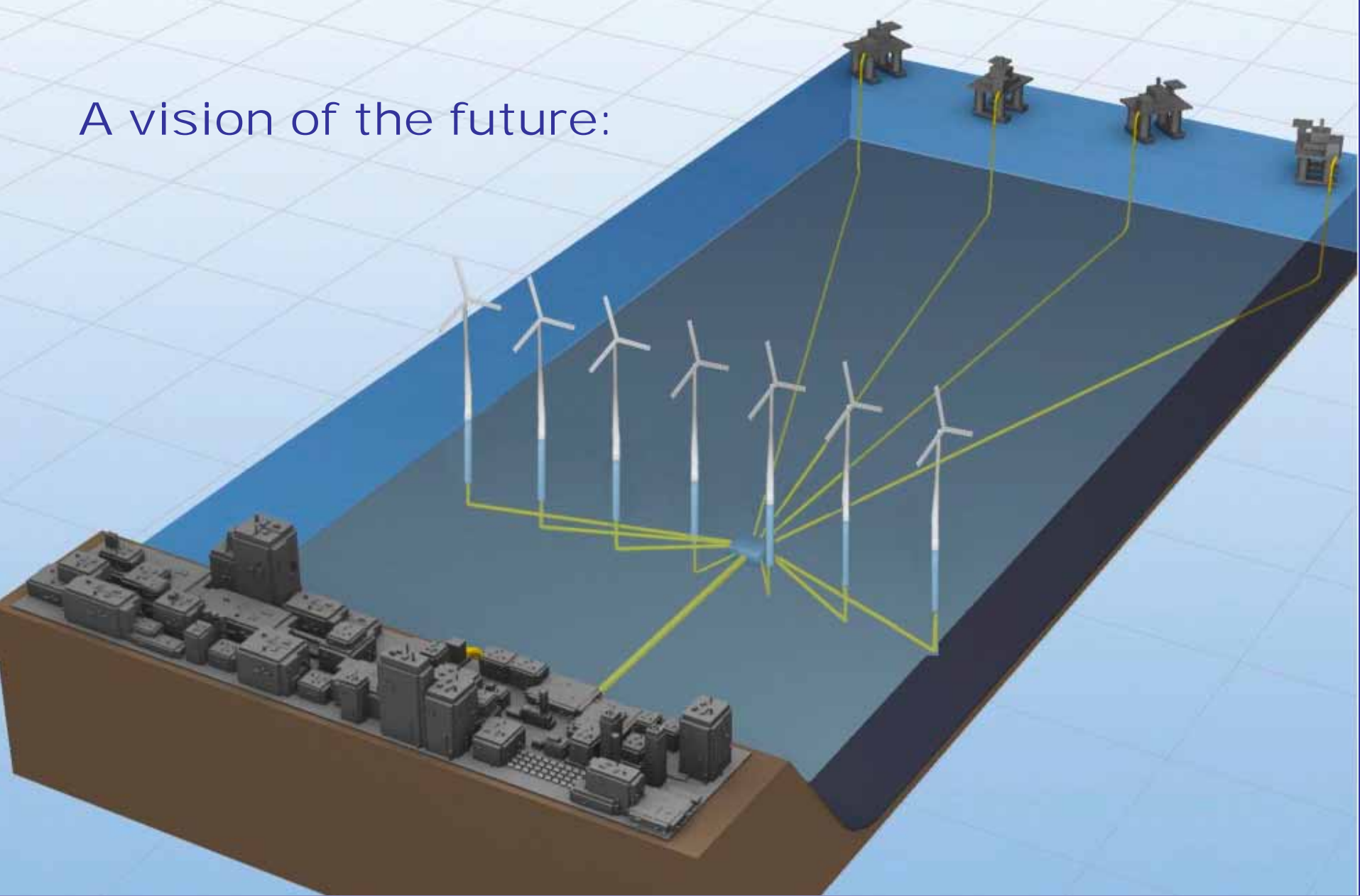




## Many advantages compared to near shore wind

- Stronger winds further offshore
- Relatively robust and cost efficient design
- Minimal offshore work
- Independent of location, fewer conflicts
- Flexibility with regard to grid connection

A vision of the future:





125 TWh Hywind → ■

## Compared with the biggest...

- The Ormen Lange gas field can produce 125 TWh/yr for 20 years
- Two offshore blocks of Hywind give the same annual production – for ever!

# Forward-looking statements/ use of non-GAAP financial measures

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Hydro is a Fortune 500 energy and aluminium supplier with 33,000 employees in 40 countries. We are a leading offshore producer of oil and gas, the world's third largest aluminium supplier and a leader in the development of renewable energy sources. Our mission is to strengthen the viability of the customers and communities we serve.

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**HYDRO**

Progress of a different nature