

# WG5 Wind Market & Economics

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## WG 5: Targets & Context

- q The objective is to scrutinize the economics and market instruments related to wind energy, both onshore and offshore.
- q Market structure and operation are deeply impacted by policies. This WG provides policy recommendations, as well as a list of priority areas for research.
- q The overall objective is to pinpoint steps to become a major modern energy source , reliable and cost competitive market  
Context: concern over the impacts of climate change, oil and gas depletion and focus on sustainability.

## 2030 objective: European industry leading the global market

q 23% wind penetration target by 2030 (300 GW):

1. A stable and reliable policy framework enabling an efficient market deployment and operation,
2. Continue decreasing costs,: securing revenue reliability, decreasing investment costs, operational costs, and cost of capital,
3. Parallel priorities are grid and trading: *resource, integration and offshore.*

q Policy Framework: lack of leveled playing field, planning procedures, grid infrastructure, European electricity market

# Income optimization

q Ambitious binding targets and certain support schemes:

q Other recommendations:

1. Optimisation of the potential for revenue benefit from ancillary services from wind farms (e.g. voltage control and reactive power management).
2. Optimising the reliability of short term forecasting models for trading and balancing purposes,.

## Investment Cost: industry's bottleneck

- q Challenges and costs drivers: raw materials, tight supply chain, more challenging, logistics and service suppliers
- q Recommendation: knowledge, scrutinize the influence of supply and demand on the costs identify supply chain bottlenecks,
- q Once identified, improvements can be proposed, through involvement of manufacturers and sub-suppliers to find common solutions, such as further standardisation of components, deliver economies of scale.

## Current costs: O&M, Capital

- q O&M account for a significant portion of costs, impacting competitiveness.
  - § Improvements: site use, maintenance, grid charges, insurances and local taxes.
  
- q Cost of capital is linked to certainty perceived by the financial sector in the sector: technology, revenue and market sustainability.
  - § Study. Reduce risk exposure: regulation, technology

## Grid: the other large single issue

- Grid not adapted to the distributed nature of wind. Infrastructure investment is insufficient to cope with the challenge to come.
  1. Find technical solutions to improve grid penetration (e.g. storage, interconnections, and grid management strategies). Research priority *"System operation"*.
  2. Offshore, find location for offshore grid connections.
  3. Analysis is needed to assess on large wind penetration levels. Scrutinize consequences in terms of costs and benefits for the system.

## Trading & revenue

- q Sophisticated trading structures have not fully developed in the wind market. Pricing efficiency can be improved through enhanced wind forecasting tools:
  1. Forecasting methods are a key area of enhancing the value of wind.
  2. Analysis is needed on how different electricity market structures will affect the ability of wind energy to be sold in the market and revenue optimisation.
  3. Analysis is needed on the potential for complimentary trading mechanisms (e.g. derivatives) for wind power .