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Post-crisis status in Europe: Where does European onshore wind energy stand in a global context?

Dr. Marc Daube



We are a globally leading advisory business helping organisations navigate the energy transition

>800 energy experts

300+ clients

60 countries where we model the energy system

\$150bn of capital advised on into low carbon

WHAT WE DO



Analyse and design markets and policy



Identify new commercial opportunities and manage risk



All underpinned by a world leading energy market modelling capability



Determine strategy and investment decisions

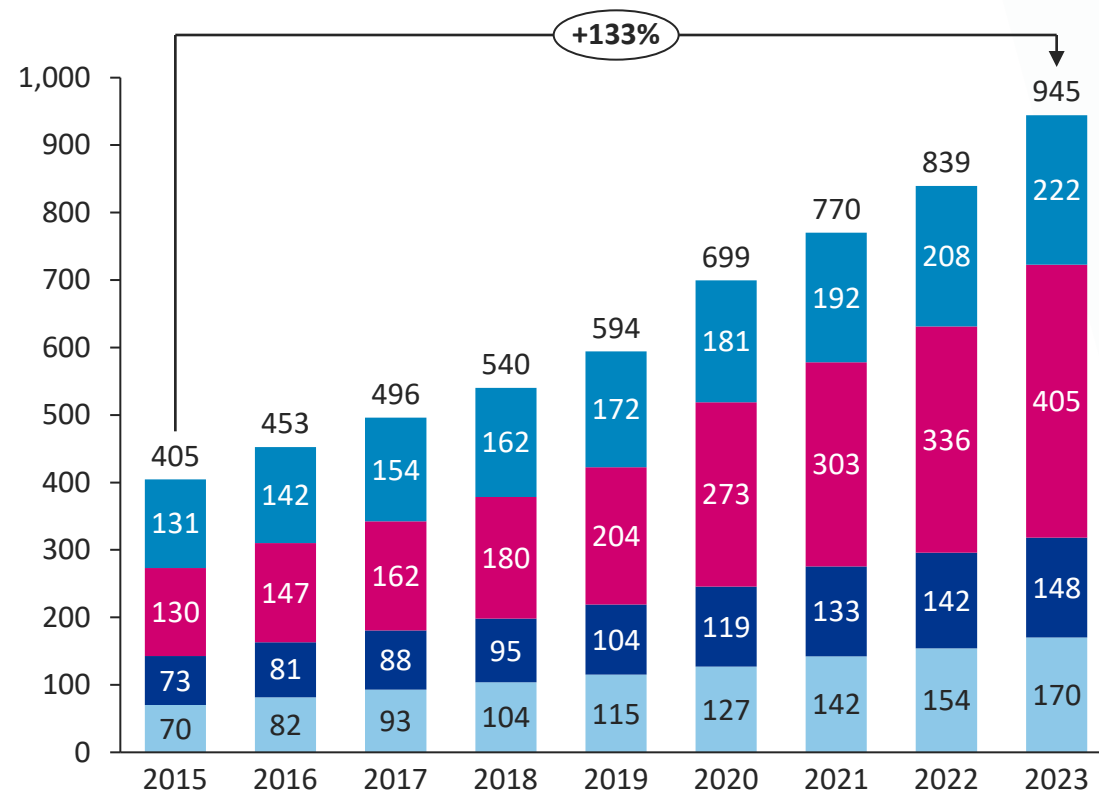


Structure and run more effective businesses

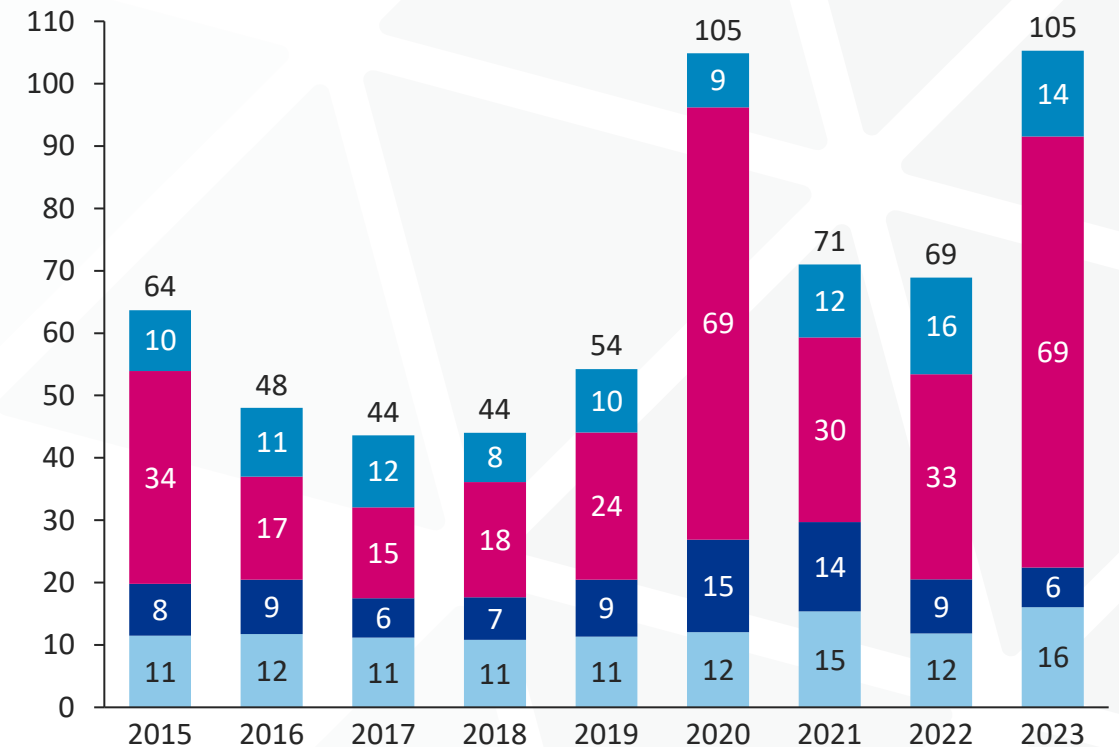
Although the EU still represents more than 20% of the global installed onshore wind capacity, it contributes to just over 10% of the newly installed volumes



Total installed onshore wind capacity (GW)



Annual onshore wind installed capacity (GW)



EU27 + NO + UK China USA Rest

Source: IRENA

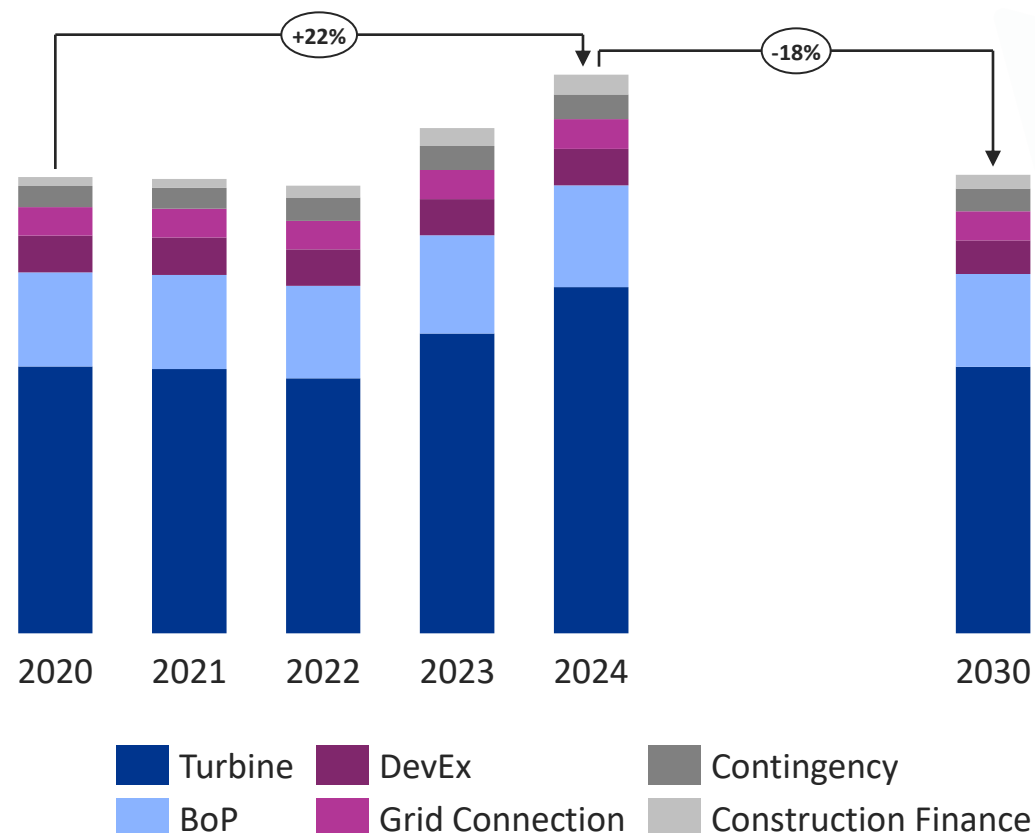
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We expect that the sharp cost increases following the COVID crisis and the war in Ukraine will gradually ease despite several lasting industry challenges



Onshore Wind Capex, Baringa Reference Case (real 2025 €/kW)



A combination of global factors and pressures that are **common to the clean energy sector** and **unique to the wind supply chain** has driven the cost of onshore wind upwards since 2020

COVID-19 supply chain disruptions

Rising interest rates

Increased freight and rising commodity costs

Focus on quantity over quality causing performance issues

Race to produce larger turbines rendering facilities obsolete

Until the end of the decade, we expect **a gradual decline** in onshore wind CAPEX

High energy prices and steel prices with implementation of CBAM

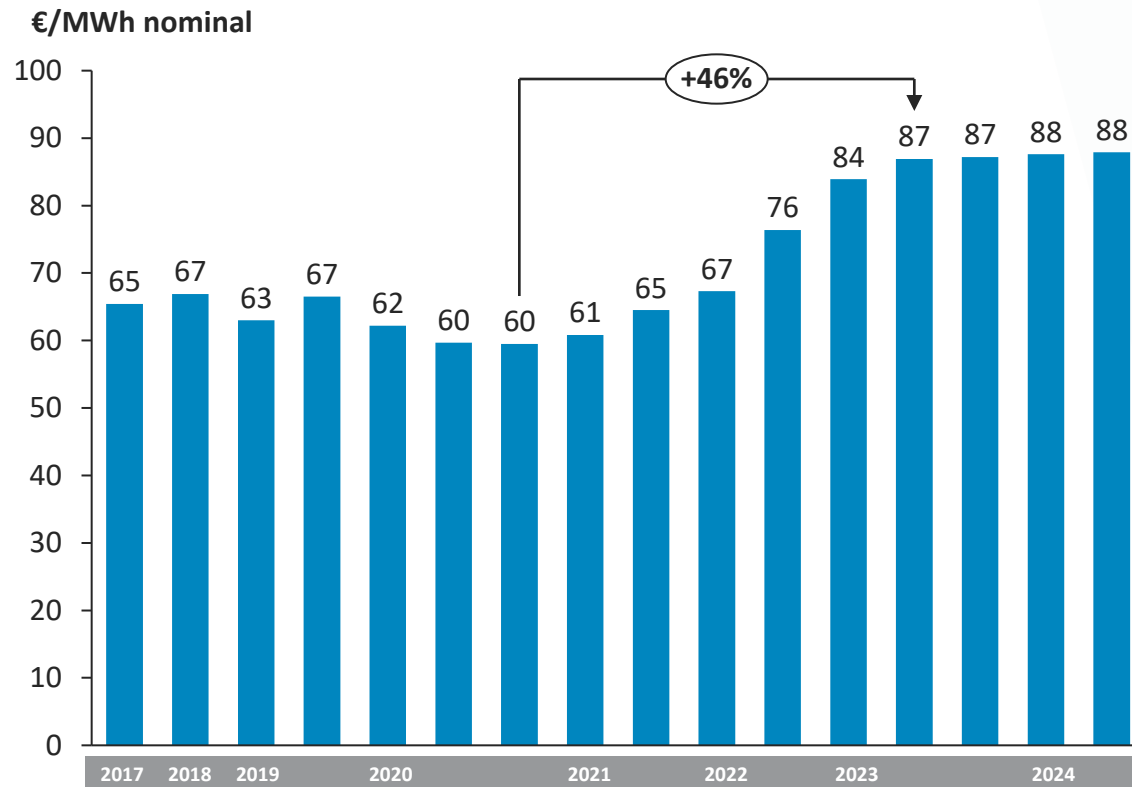
Fewer high wind speed sites with larger and costlier rotors per unit capacity

Increase of the margins and warranties of turbine manufacturers

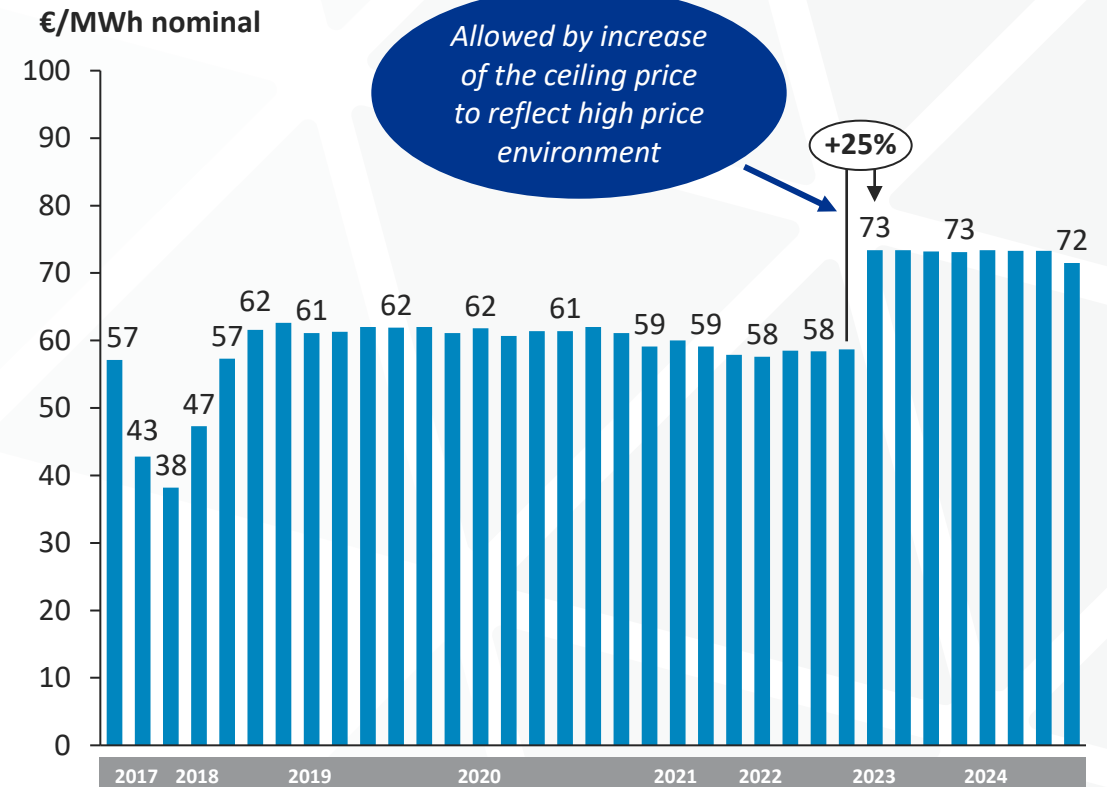
Onshore wind auction clearing prices have increased with the commodity and geopolitical crisis and have now stabilised for several auction rounds



Onshore wind average clearing prices in FR



Onshore wind average clearing prices in DE



Baringa has assessed the credibility and the durability of climate and energy policy worldwide and EU countries have emerged as the most stable and credible markets

Baringa's Credibility & Durability methodology evaluates national commitments on their deliverability, depth and breadth of political support. Our framework considers the **key following elements**.

Credibility of interim and long-term targets

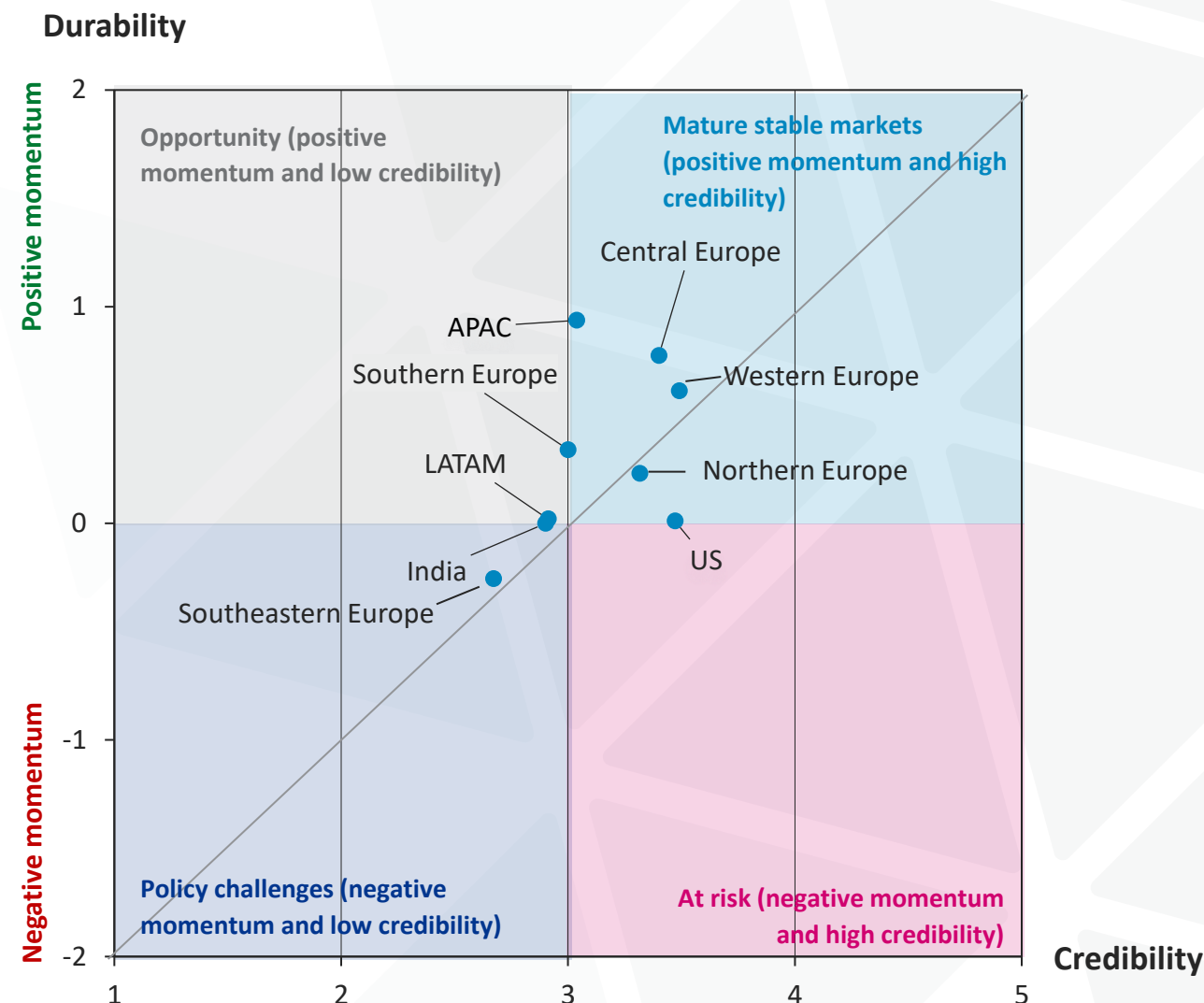
Existence of long-term plans

National Determined Contributions (NDCs)

Support across government and opposition parties

Large parts of Europe, especially **Western, Central and Northern Europe**, feature **high credibility and durability scores**. Germany has the highest score across all study cases.

On the other hand, **Southeastern Europe** faces certain policy challenges with countries such as **Hungary and Croatia are at risk of policy rollbacks** on renewable deployment and wider climate policy.



The geopolitical crisis has driven European policymakers to introduce permitting reform to boost onshore wind deployment with significant success in Germany



A turning point for EU Energy policy

The invasion of Ukraine by Russia has served as a wake-up-call for the EU's Energy policy and the importance of **energy security**.

In this new policy paradigm, **renewables become a key lever to achieve energy independence** beside their key role for decarbonisation.

The EU Commission has presented the **RePowerEU plan** in 2022 and the **Net Zero Industry Act** was adopted in 2024 with key measures to boost renewable deployment limit the creation of new dependencies.

MS required to map acceleration zones for renewables

Max 1 year for onshore permitting in acceleration zones or 2 outside

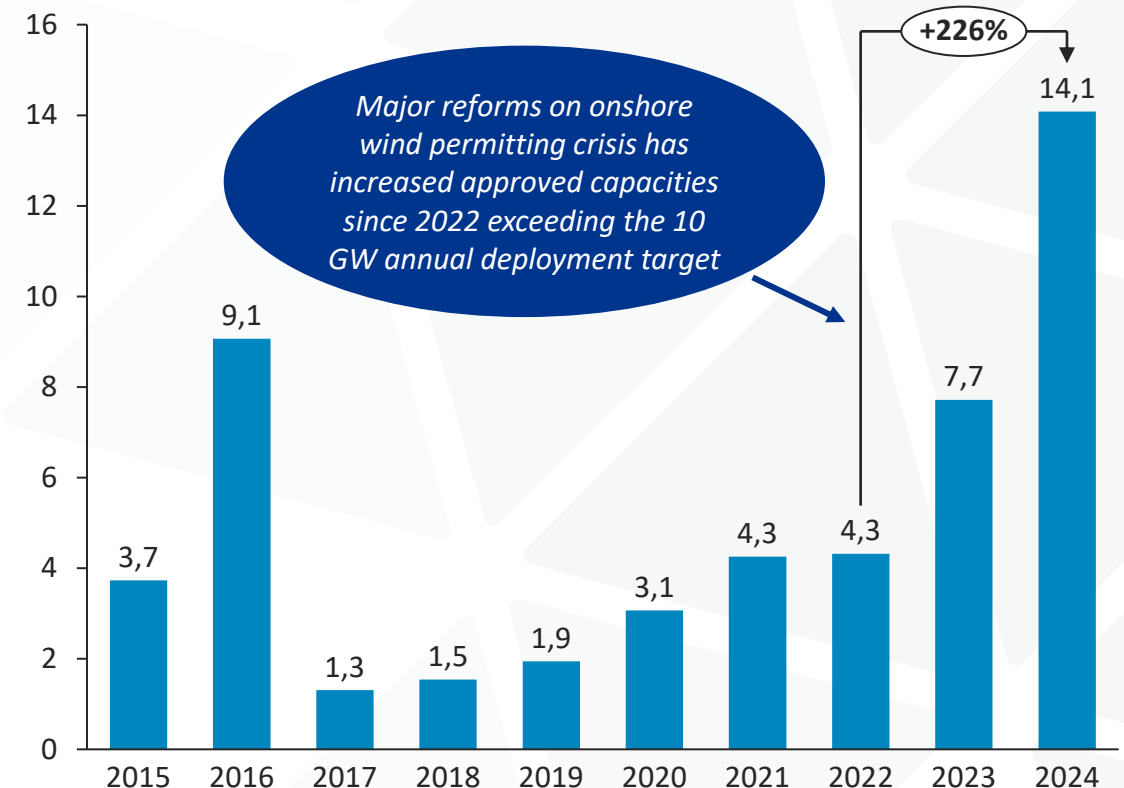
Principle of overriding public interest for renewable development

Mandatory auction criteria on cybersecurity, supply chain resilience, sustainability, innovation & system integration



Increased approved onshore wind capacity

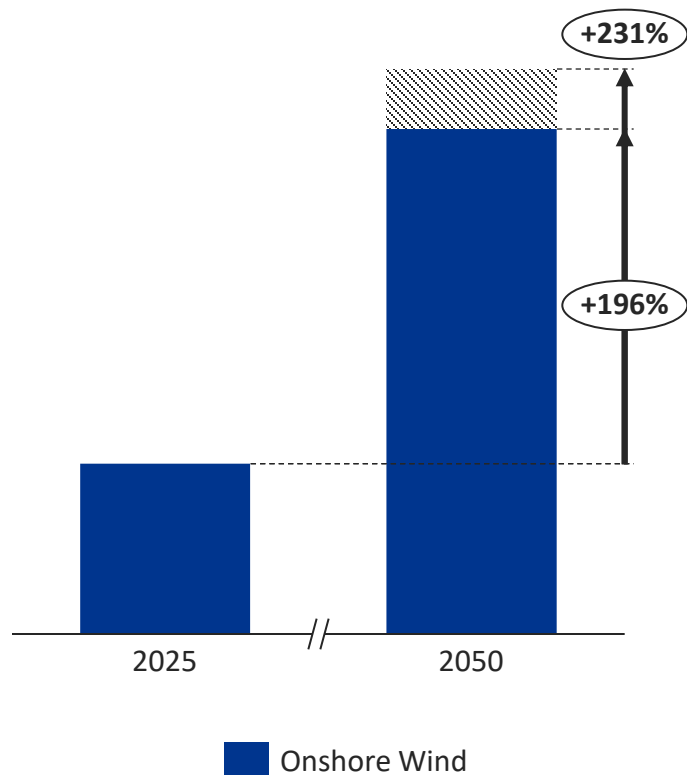
Approved annual capacity by approval year (GW)



Onshore wind remains a core technology for the energy transition in Europe, but there are various policy and market factors that will drive its future deployment

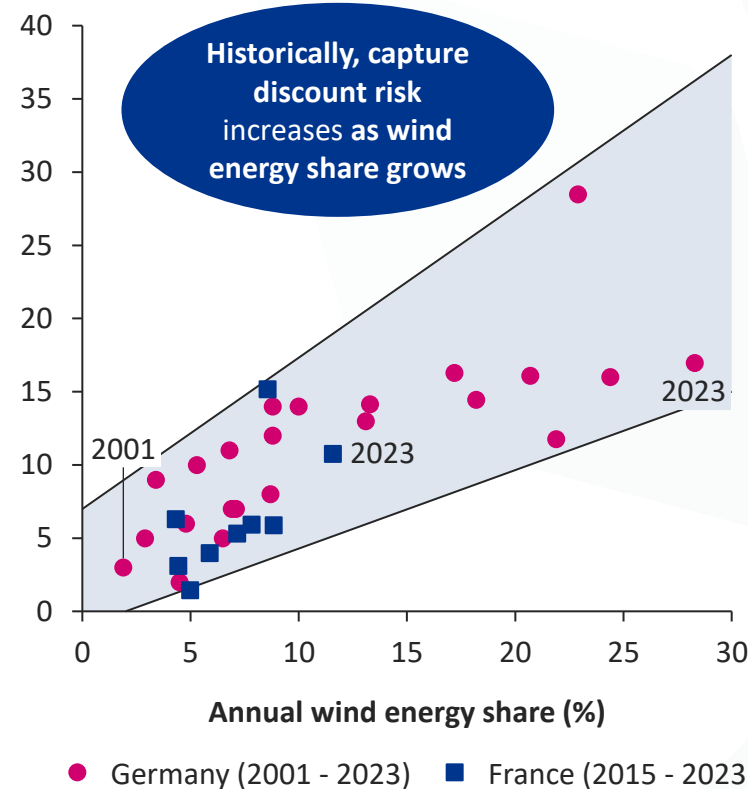
Pillar for energy transition in Europe

Onshore Wind capacity EU27+UK+NO (GW)



Challenge of revenue cannibalisation

Annual onshore wind capture price discount (%)





Thank you
for your
attention!

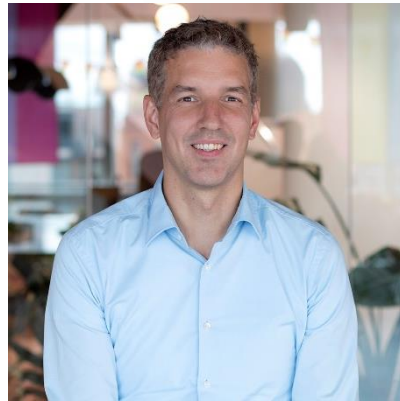


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