

Bepreisung von PPAs

Impuls von Aurora Energy Research am Klimaschutztag

Nicolas Leicht, 18. Mai 2022



Aurora provides data-driven intelligence for the global energy transformation

Power markets



Renewables



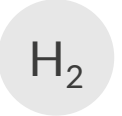
Storage



Electric vehicles



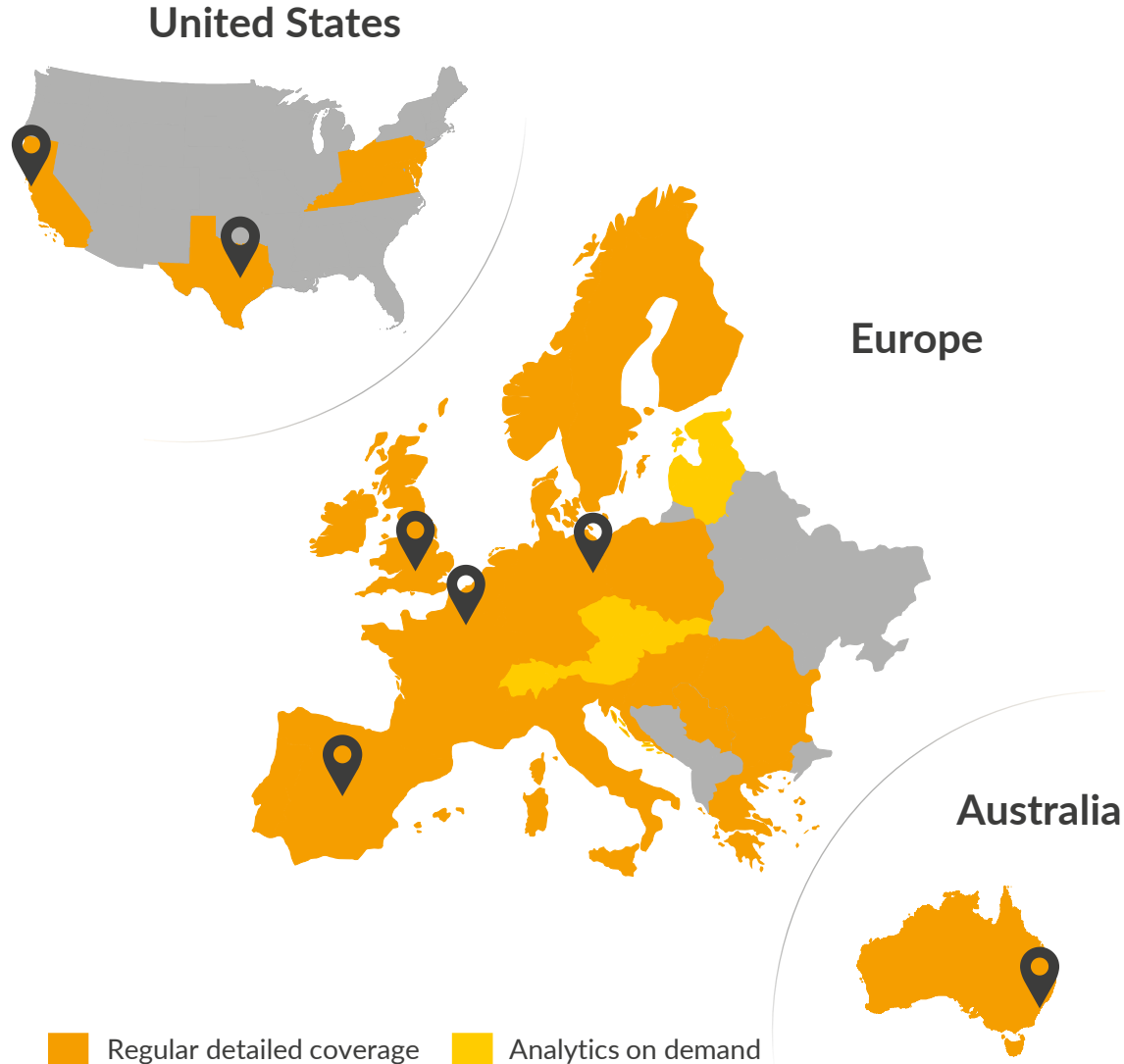
Hydrogen



Carbon



Natural gas



7 Offices

Oxford | Berlin | Madrid | Paris
Sydney | Austin | SF Bay Area



250+

market experts



550+

subscribing companies



120+

transactions supported in 2021

Aurora brings a sophisticated approach to the provision of analysis and insight to the energy industry

Research & Publications

- Industry-standard market outlook reports and bankable price forecasts for power, gas, carbon and hydrogen markets
- Strategic insights into major policy questions and new business models
- Read and constantly challenged by 550+ subscribers from all industry sectors

Commissioned Projects

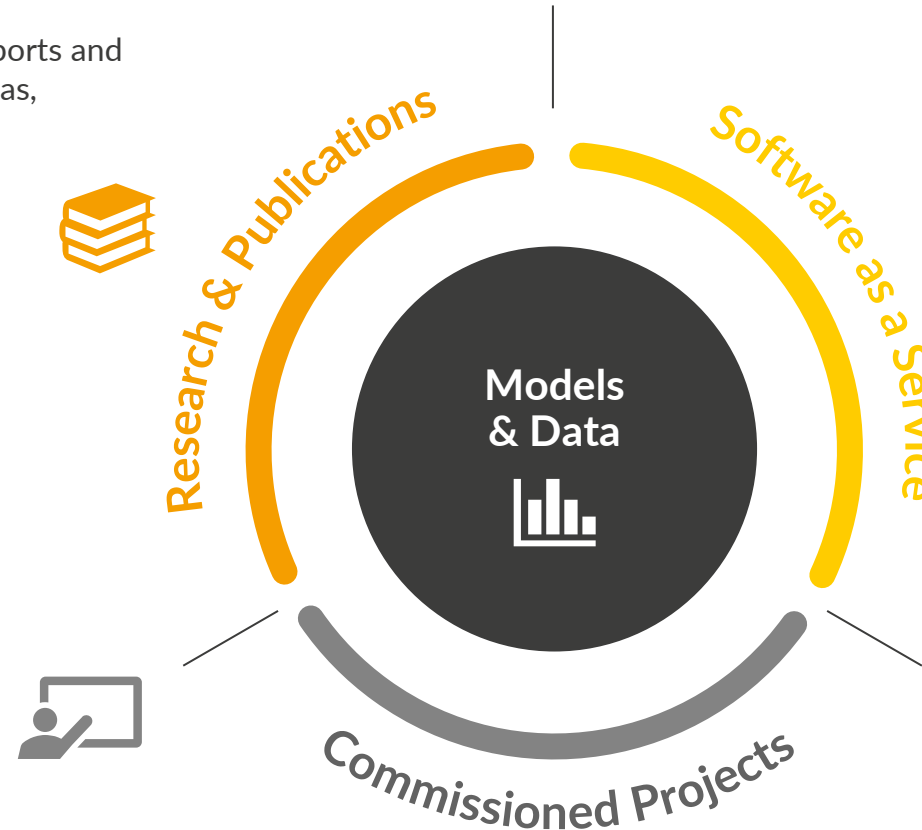
- Bespoke analysis, drawing upon our models and data
- Trusted advice for all major market participants proven in 600+ projects: transaction support, valuations, strategy & policy engagement

Software as a Service

- Out-of-the-box SaaS solutions, combining cutting-edge sophistication with unparalleled ease of use
- **Origin** provides cloud-based access to Aurora's market model, pre-populated with our data
- **Amun** automates asset-specific wind farm valuations for over 30 leading funds, developers and utilities

Models & Data

- Market-leading long-term models for power, gas, hydrogen carbon, oil and coal markets
- Continuous model improvements to reflect policy and market developments



The approach has succeeded – we are working with the industry’s biggest players

“Aurora Energy Research is, I think, one of the smartest energy modelling companies around, and helped us on this Energy Outlook and continue to help us”

Spencer Dale, Chief Economist, BP



“Aurora’s ability to forecast all the revenue streams relevant to UKPR’s business model in a joined-up way sets them apart from their peers and has been very helpful to us in investment and business planning”

Tim Emrich, CEO, UKPR



Power & utilities



Oil & gas



Energy consumers



Project developers



Financial sector & investors



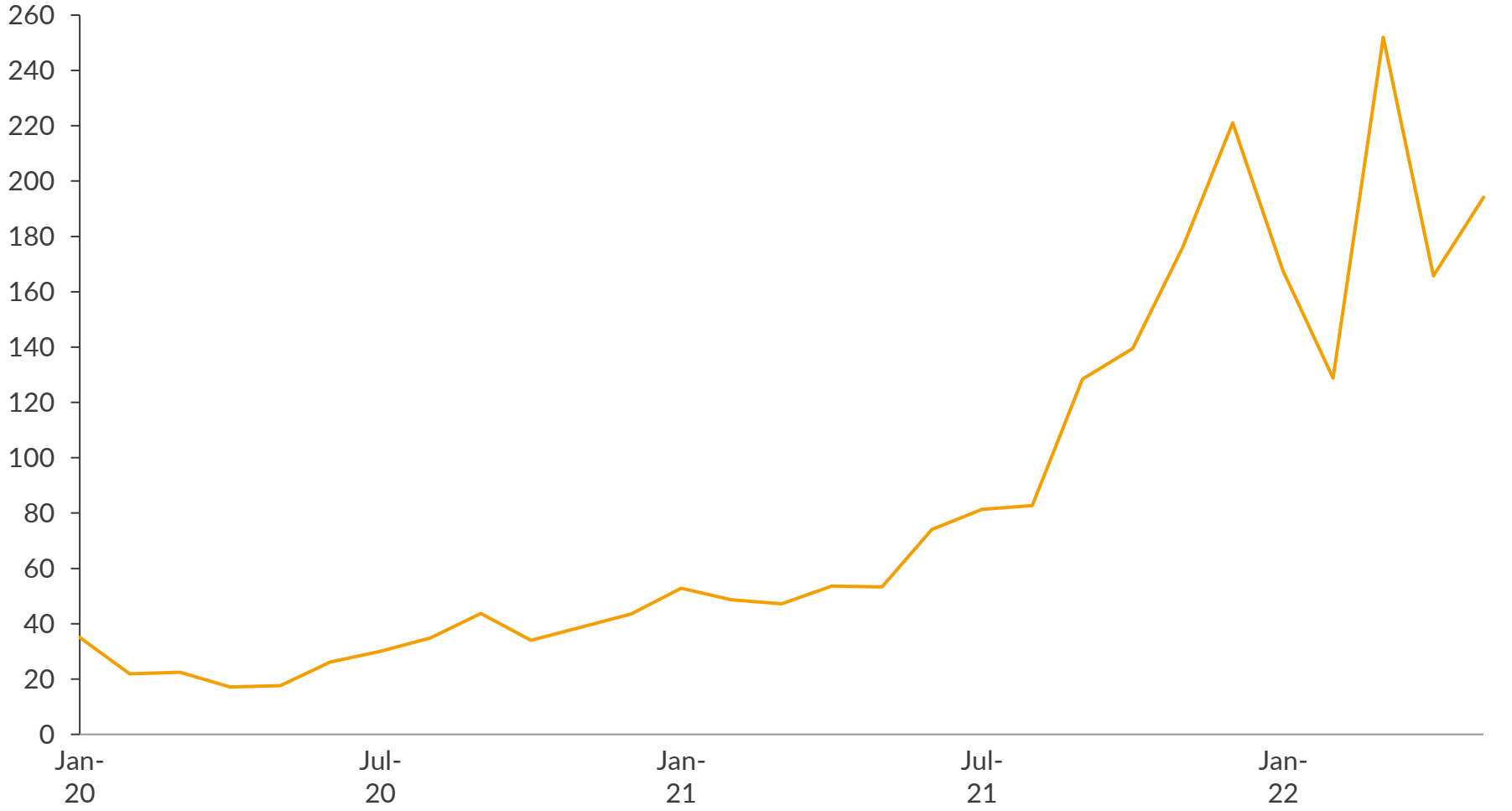
Policy & regulation



Der perfekte Sturm: Großhandelspreise in Deutschland und Europa erreichen angetrieben von Gaspreisen neue Höchststände

Monatliche Großhandelspreise Deutschland – Historisch (Jan 2020 – Mai 2022)

EUR/MWh



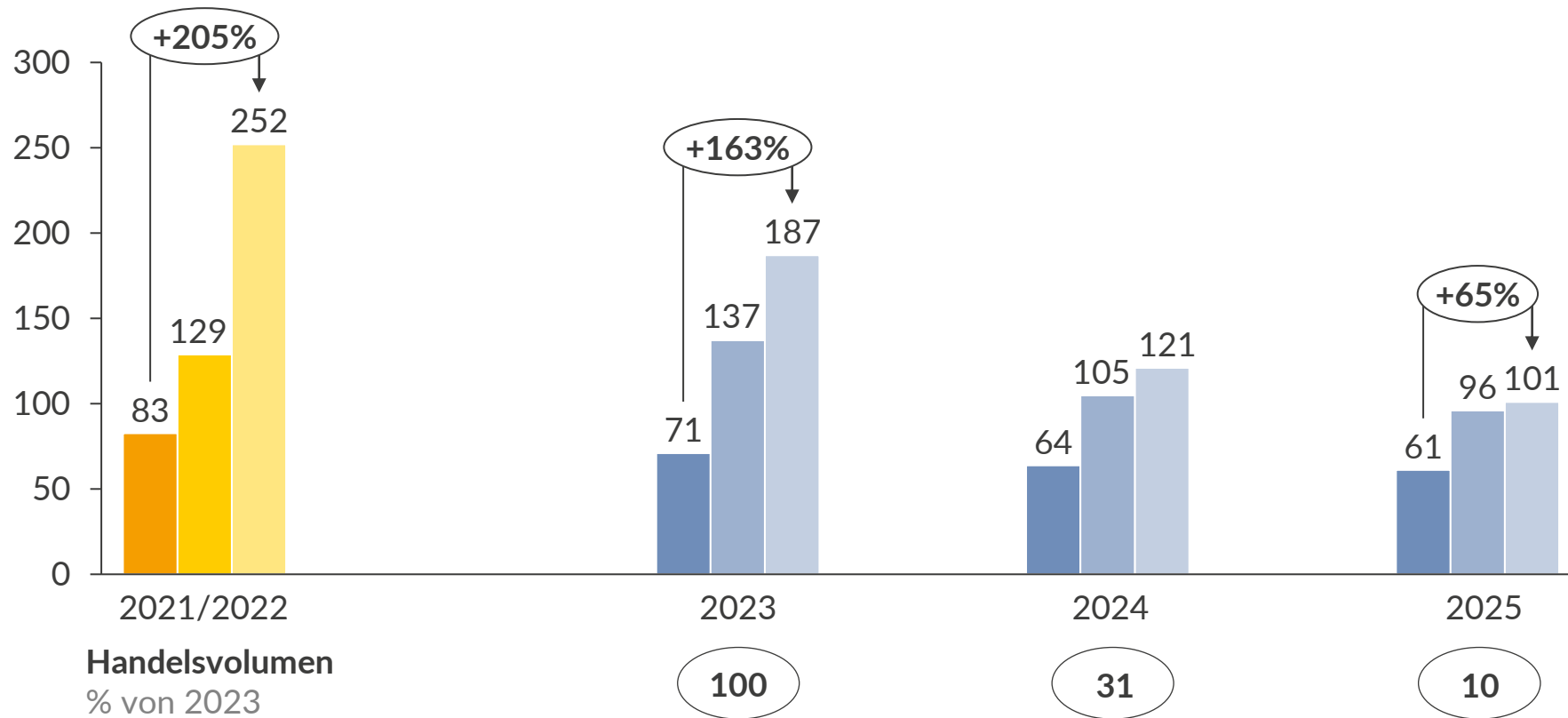
Kommentar

- Anstieg der Preise am Großhandelsmarkt ab Sommer 2021, u.a. durch Nachfrageerholung, hohe Gaspreise und niedrige Windproduktion in Nordwest-Europa
- Europäische Gaspreise erreichen neue Spitzen im Frühjahr mit Ausbruch des Krieges bei niedrigen Speicherständen und einem drohenden Importstopp

Terminmärkte sind kein guter Indikator für PPAs mit Laufzeiten von mehr als 3 Jahren, da Volatilität hoch und Liquidität gering ist

Preise am Großhandels- und Terminmarkt
EUR/MWh

■ Spotmarkt, Ø Aug 21 ■ Futures (Aug 21)
■ Spotmarkt, Ø Feb 22 ■ Futures (Feb 22)
■ Spotmarkt, Ø Mar 22 ■ Futures (Mar 22)

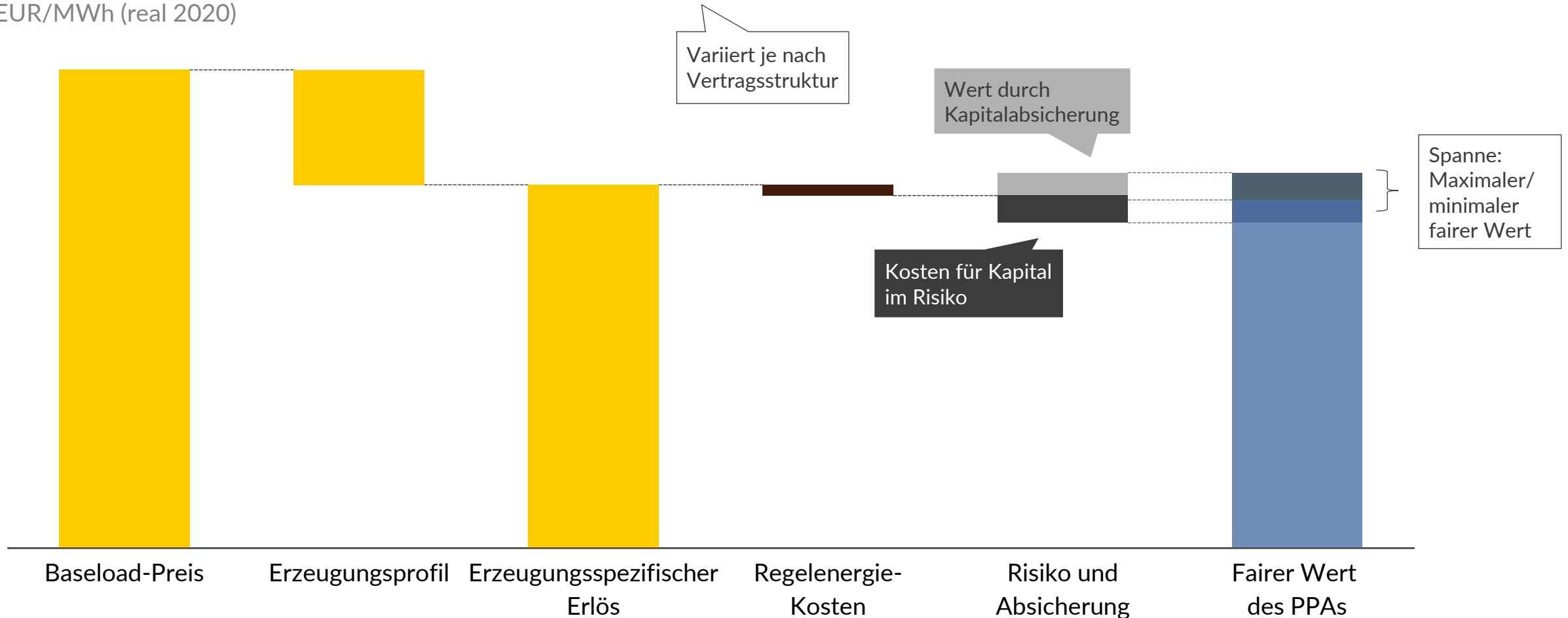


Kommentar

- Terminkontrakte sind meist nur über einen kurzen Horizont von 2-3 Jahren liquide und reflektieren damit nicht längerfristige Entwicklungen auf dem Strommarkt (Ausbau Erneuerbare, Nachfrage, ...)
- Die Preise von Futures / Forwards folgen eng den volatilen Preisen am Spotmarkt und haben sich entsprechend stark über die letzten Monate erhöht

Der faire Wert eines PPAs hängt von den erzeugungsspezifischen Markterlösen sowie dem Preisrisiko am Strommarkt ab

Quantifizierung des "fairen Werts" eines as-produced PPAs - Ansatz EUR/MWh (real 2020)



Notiz: Zusätzlich muss der Wert von Herkunftsnachweisen (HKNs) berücksichtigt werden

Zur Bepreisung von langfristigen PPAs sind die fundamentalen Entwicklungen am deutschen und europäischen Strommarkt wichtig

- 1** Aktuell hohe Preise für PPAs sind durch kurzfristige Entwicklungen am Strom- und Gasmarkt getrieben, welche sich auf die Terminmärkte übertragen
- 2** Mittel- bis langfristig erholen sich die Großhandelspreise. Der Zubau von Erneuerbaren trägt zur Entspannung bei, gleichzeitig steigt hierdurch der Discount von Erneuerbaren („Kannibalisierung“)
- 3** Zur Ermittlung des fairen Werts eines langfristigen PPAs sollten die fundamentalen Marktentwicklungen einbezogen werden, um den Wert des Stroms sowie Risiken und Absicherung richtig zu quantifizieren

Wir unterstützen Sie gerne rund um die Themen PPAs und Dekarbonisierung – treten Sie in Kontakt



Thekla von Bülow
Prinzipalin

- Frau von Bülow berät Investoren, Versorger und Abnehmer zu strategischen Fragestellungen im Strommarkt
- Sie leitet europaweit das PPA-Geschäft von Aurora



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- Herr Leicht ist Teil des Beratungsteams von Aurora und Experte für PPAs und Grünstrombeschaffung
- Schwerpunkte liegen u.a. in der Bepreisung von PPAs sowie in der Analyse von PPA Marktpotentialen



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