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The role of corporate PPAs in industrial Decarbonisation – Outlook and Uncertainties

Presentation prepared for Montel German Energy Day

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While 2022 marked a slump of activity, the German PPA market is expected to grow in 2023 with big offshore deals showing the way

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I

RWE's Nordsee Ost and Amrumbank West offshore wind farms will supply **eleven German industrial customers** and one large municipal utility with green electricity.

II

Iberdrola and **Amazon** announced a **co-operation on new wind and solar** power in Europe, the US and APAC. As a start, they announced a PPA from two large German offshore wind farms.

Details	I	II
Start Year	2025 and 2026	2024 and 2026
Tenor	10 Years	N/A
Capacity	597 MW[1]	776 MW[2]
Developer	RWE	Iberdrola
Offtaker(s)	Vodafone, Freudenberg, Schott and others[3]	Amazon
Offtaker Industry	Telecomms, Utility, Glass, Chemicals, Steel, Services, Automotive,	Technology

1) Nordsee Ost (295 MW) and Amrumbank West (302 MW). 2) Baltic Eagle (476 MW) and Windanker (300 MW). 3) Badische Stahlwerke, Infraserv Höchst, Mainova, Messer, Schott, Telefónica, Verallia, Wacker and ZF.

Source: Aurora Energy Research

We want to display an outlook on the German PPA market as well as key uncertainties

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1. How will supply and demand in the German PPA market match up by 2030?

2. Which uncertainties exist for the German PPA market and what might their impact be?

Source: Aurora Energy Research

1 In Aurora's Central scenario, we expect the German market to remain a seller's market with a demand surplus of 54 TWh

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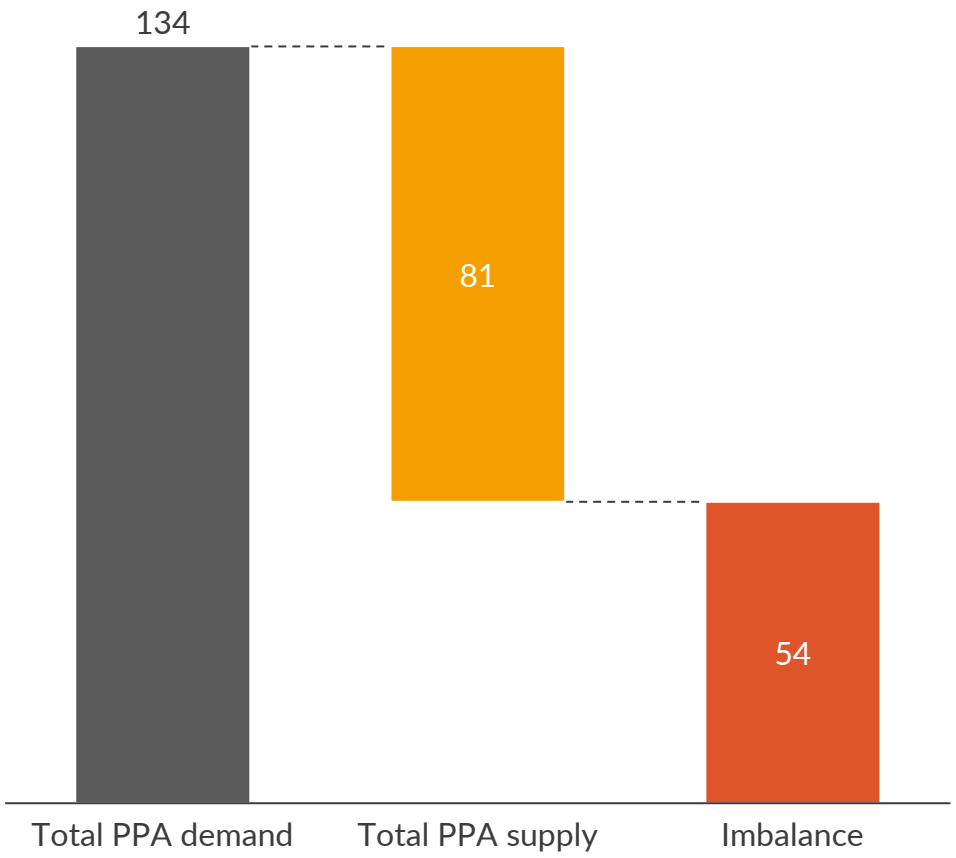
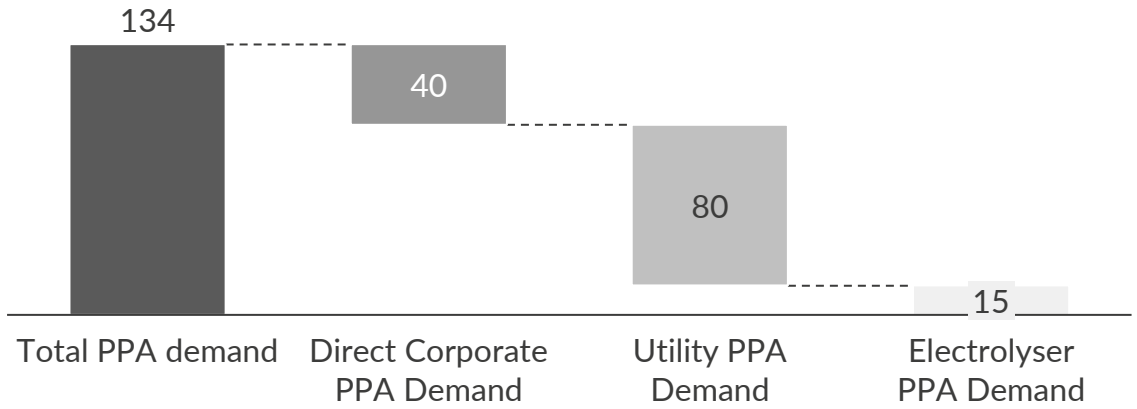
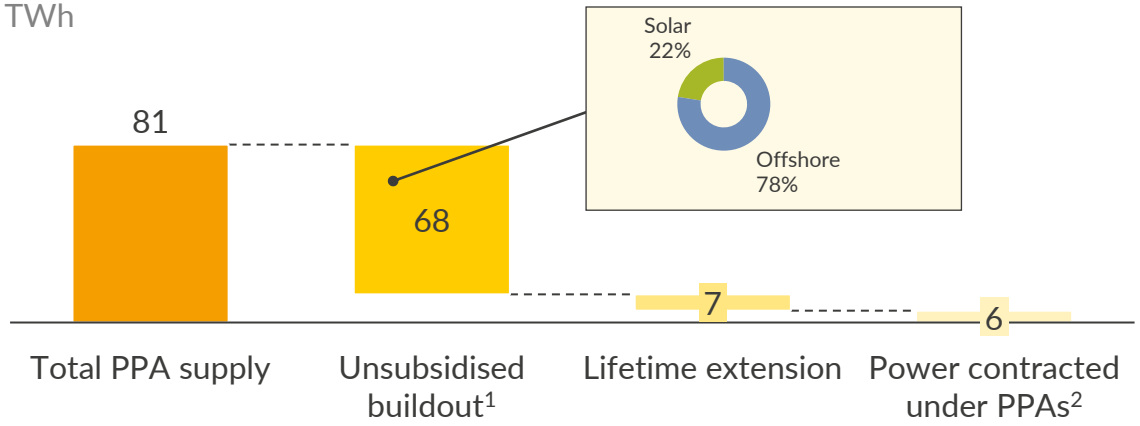
PPA demand and supply potential until 2030, Central
TWh



PPA demand potential until 2030, Central
TWh



PPA supply potential until 2030, Central
TWh



1) Onshore wind is only built through subsidies and therefore does not count towards the PPA supply potential. 2) Power already covered through existing PPAs.

Source: Aurora Energy Research

1 We expect up to 40 TWh of direct demand for PPAs stemming from corporate offtakers – green image seekers with highest demand

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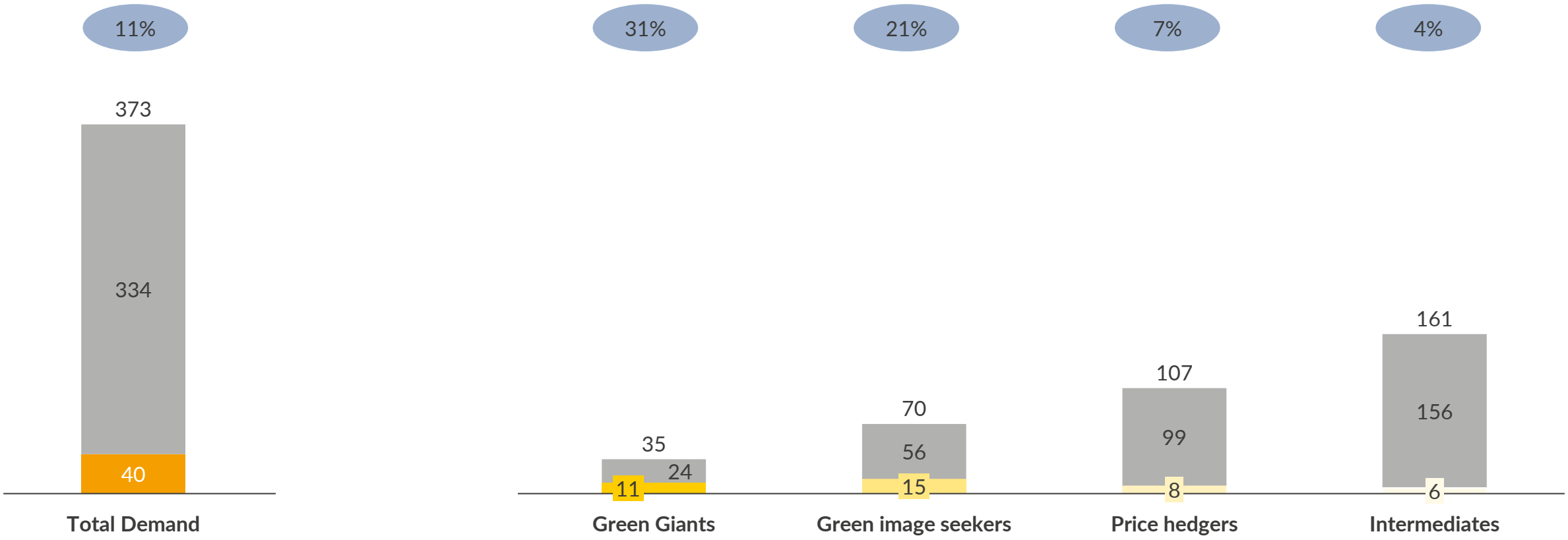
Net industry electricity and PPA demand (2030 estimate)
TWh



Sources: Aurora Energy Research; Eurostat

2 The outlook for the German PPA market might significantly be altered by changes in policy or market dynamics

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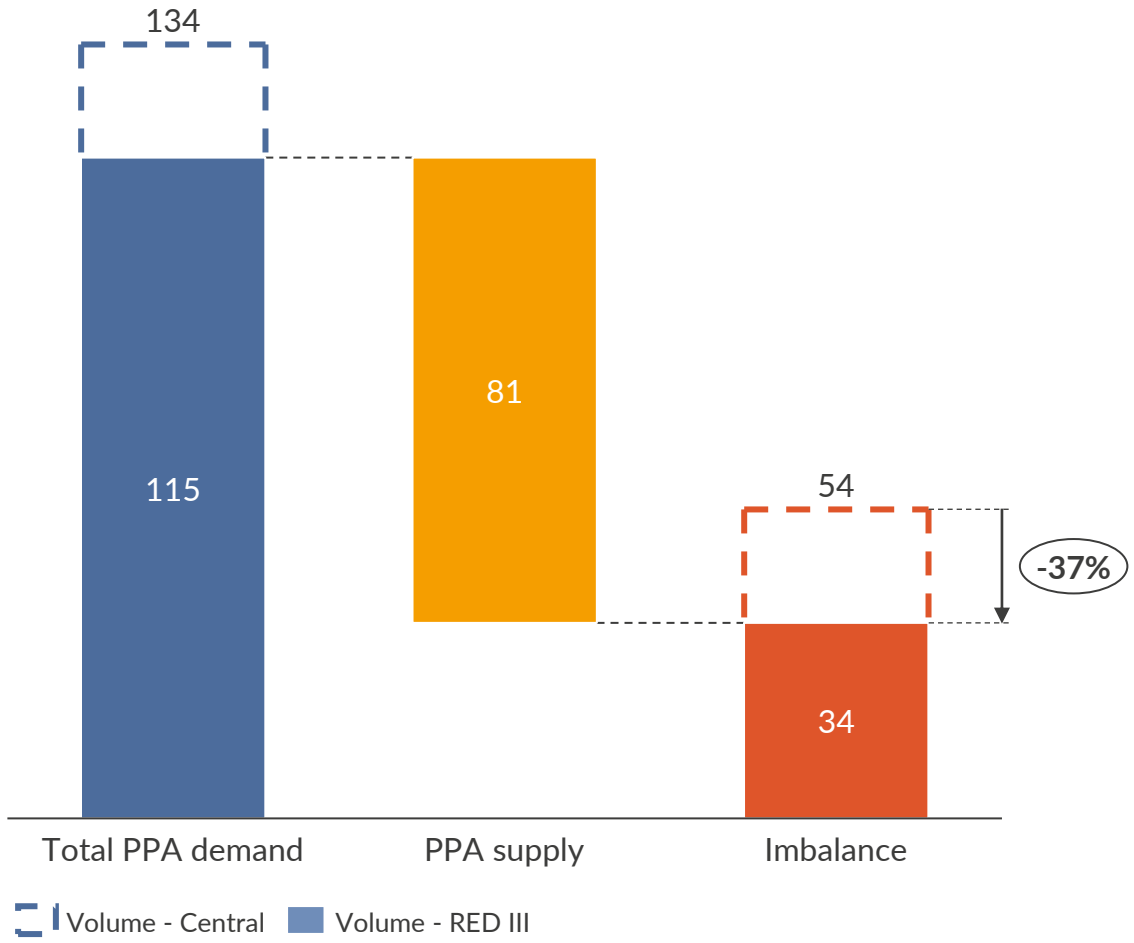
Uncertainty regarding…	PPA Demand	PPA Supply
2a RED III	✓	✗
2b Faster net zero path	✓	✓
2c Market Design Reform	✓	✓

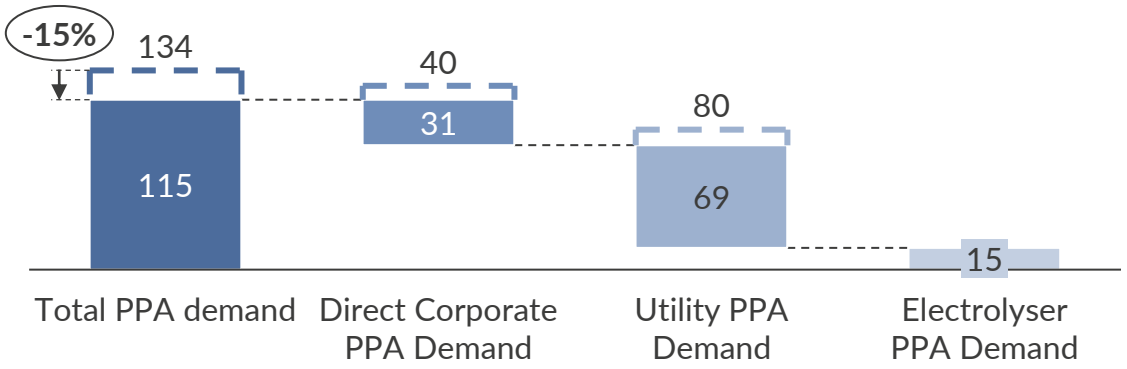
Source: Aurora Energy Research

2a Issuance of extra GoOs can decrease PPA demand by 19 TWh however the market remains undersupplied

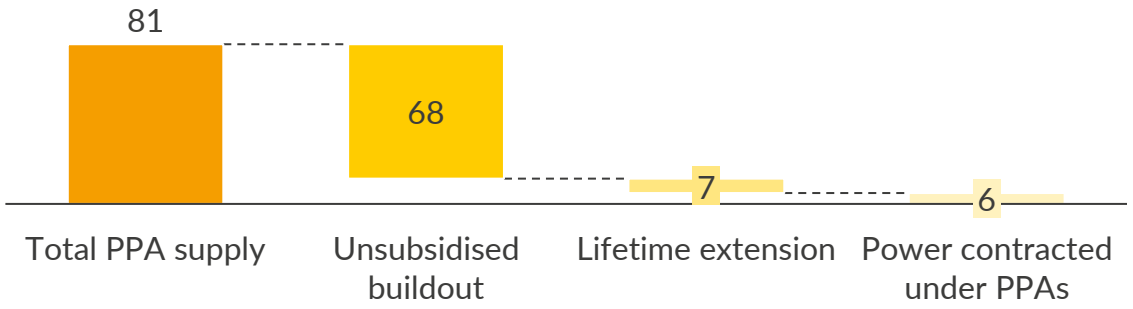
PPA demand and supply potential until 2030, RED III
TWh



PPA demand potential until 2030, RED III[1]
TWh



PPA supply potential until 2030, RED III
TWh



1) Reduction in the level of ambition from 60% to 50% for green giants and from 60% to 30% for green image seekers

Source: Aurora Energy Research

2b Due to lower price levels in a Net Zero pathway, we anticipate that the PPA imbalance will be 2% higher than in Central

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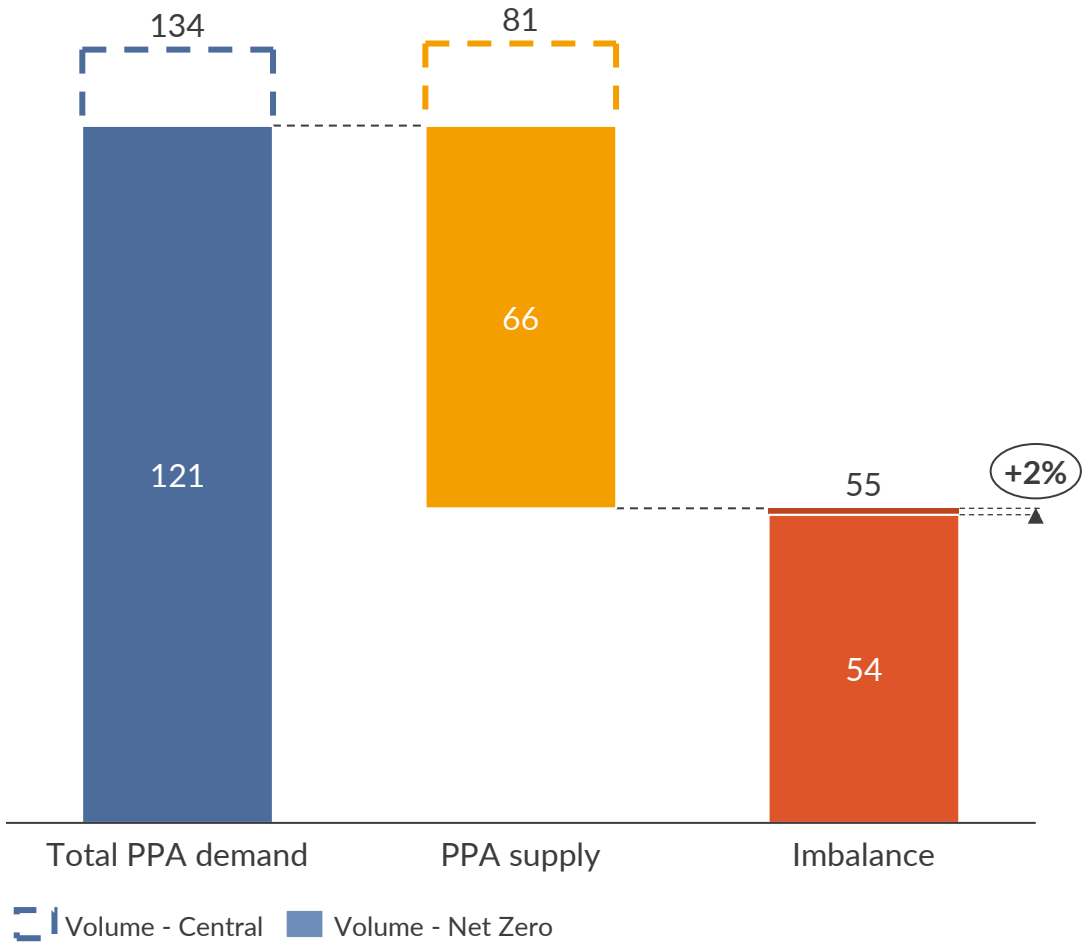
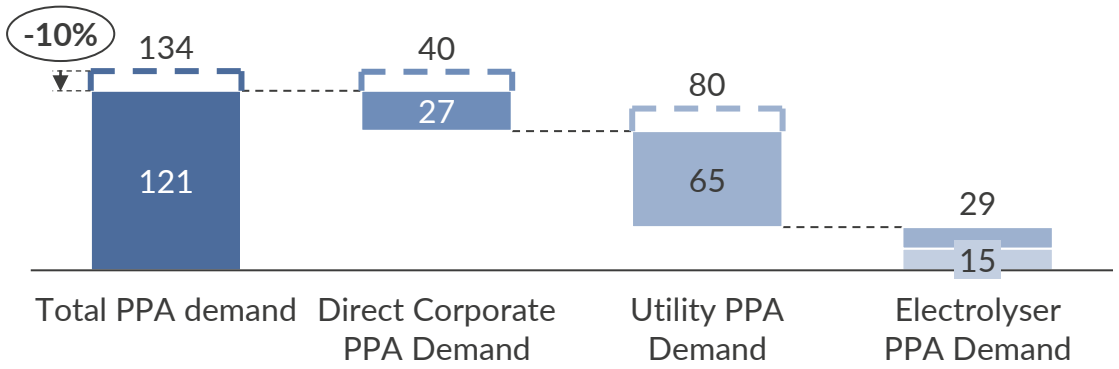
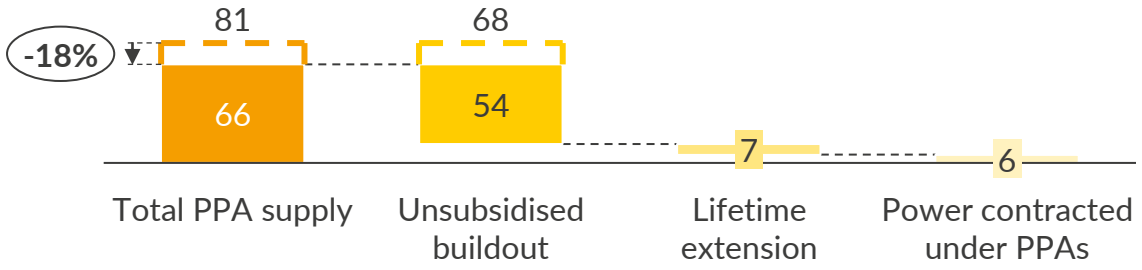
PPA demand and supply potential until 2030, Net Zero
TWh



PPA demand potential until 2030, Net Zero[1]
TWh



PPA supply potential until 2030, Net Zero[2]
TWh



1) Reduction in the level of ambition from 10% to 0% for intermediate sector and from 60% to 30% for green image seekers. 2) Assuming installed capacity in offshore wind of 30 GW in 2030 and 60% of assets signing PPAs (all pre-examined areas

Source: Aurora Energy Research

2c The Commission wants to boost PPA uptake, with most proposed measures aiming at increasing PPA demand

Topic	European Commission's proposal on boosting PPA uptake	Impact on PPA demand: Corporate	Impact on PPA demand: Utility	Impact on PPA supply
Risk exposure	▪ **Proposal:** Member States should design policies to address PPA offtaker default risk, including a guarantee scheme for companies that face market entry barriers to the PPA market. ▪ **Potential implication**: Rollout of new guarantee scheme at market prices.	↑		
Support scheme	▪ **Proposal**: Renewable developers should be allowed to reserve a share of the generation for sale through a PPA in a public auction scheme. ▪ **Potential implication**: New CfD support scheme, allowing for a combination with PPAs.			? [1]
	▪ **Proposal**: Member States should consider introducing new tender criteria to incentivise PPA uptake of companies that face entry barriers, such as Small and Medium-sized Enterprises (SMEs). ▪ **Potential implications**: Qualitative auction criteria incentivising PPA signing with SMEs, share of tender volume reserved for projects presenting a PPA with SME.	↑		↑
Supplier hedging	▪ **Proposal:** National Regulatory Authorities shall ensure that suppliers have in place and implement appropriate hedging strategies, where PPAs could or potentially should be used as part of the hedging strategy. ▪ **Potential implication:** Hedging obligation for utilities, with PPAs as an optional or mandatory fulfilment option.		↑	↑

↑ Positive impact ↓ Negative impact

1) Impact on PPA supply will strongly depend on the design and remuneration of CfD scheme.

Sources: Aurora Energy Research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