

# **Energy attribute certificates: Updates and outlooks**

**Kuching, Malaysia – May 2025**

**Justin Colley**

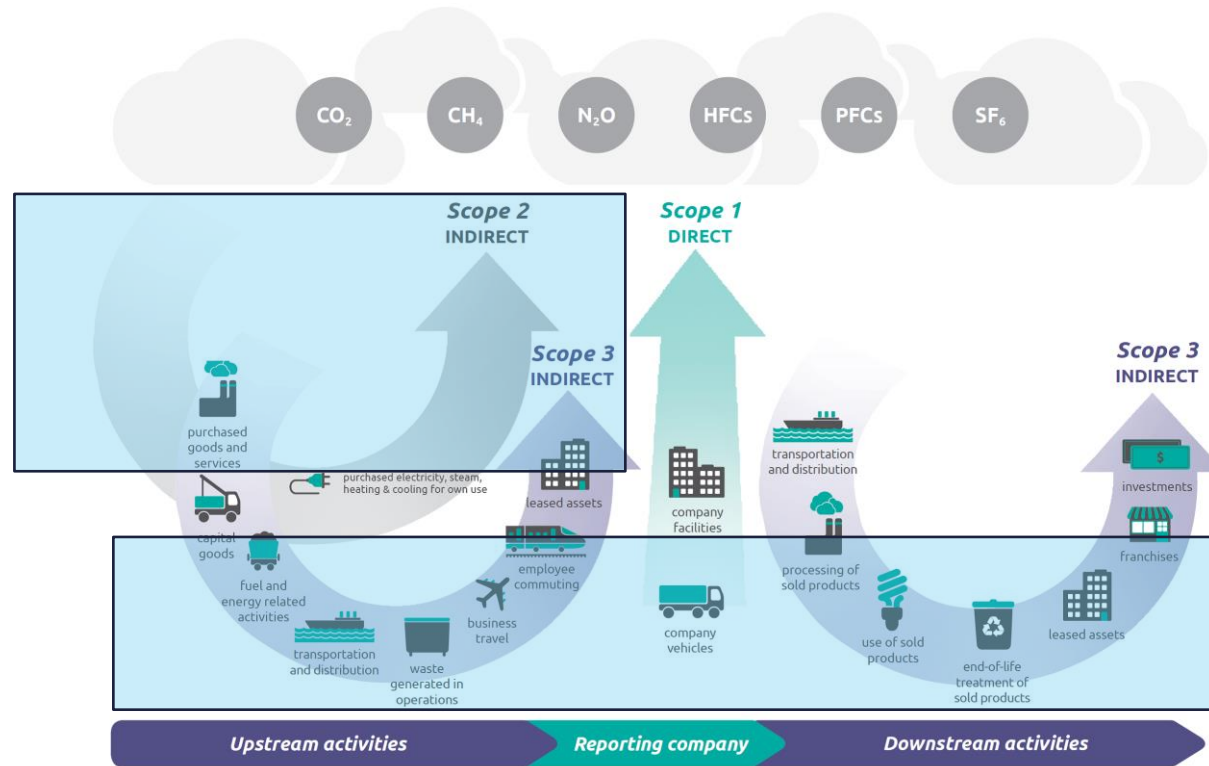
**Manager – Environmental and Electricity Markets**

# **Energy attribute certificates**

**Global prices and volumes  
Lessons from Europe**

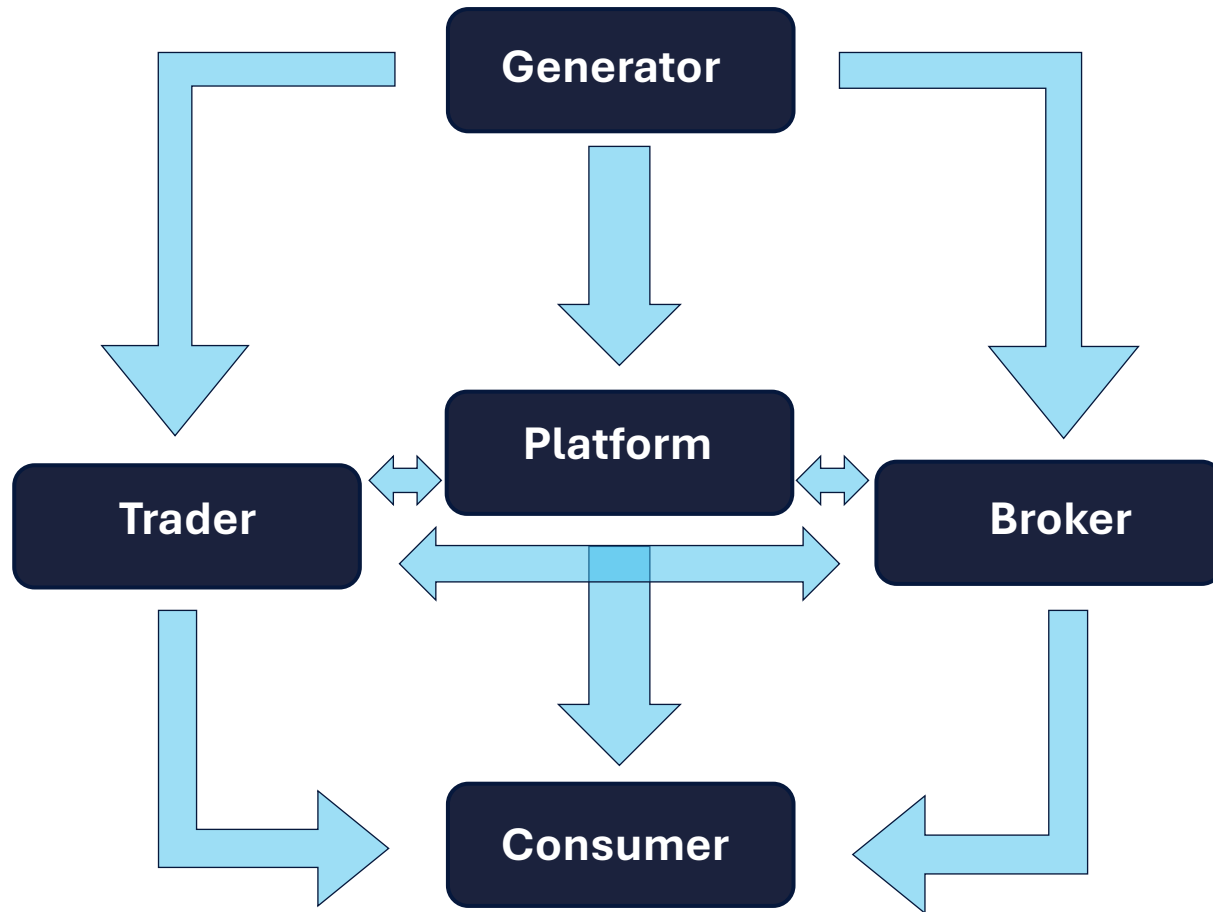
# EACs vs carbon credits

EACs are used to report emissions in scopes 2 and 3 — not to claim avoidance/reductions



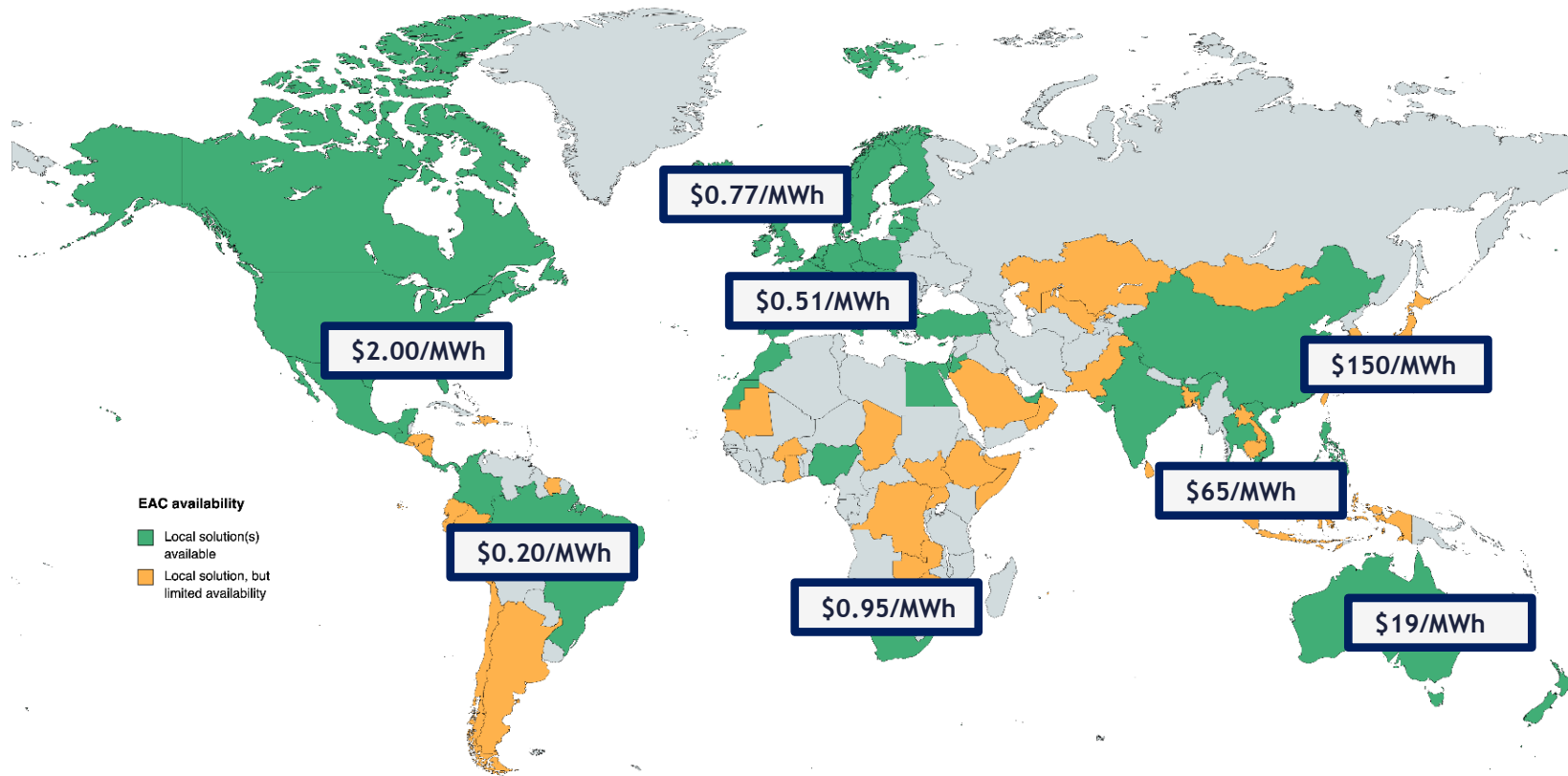
Carbon offsets are used to claim reductions/avoidance of overall emissions, regardless of scope

# Trade cycle of an EAC

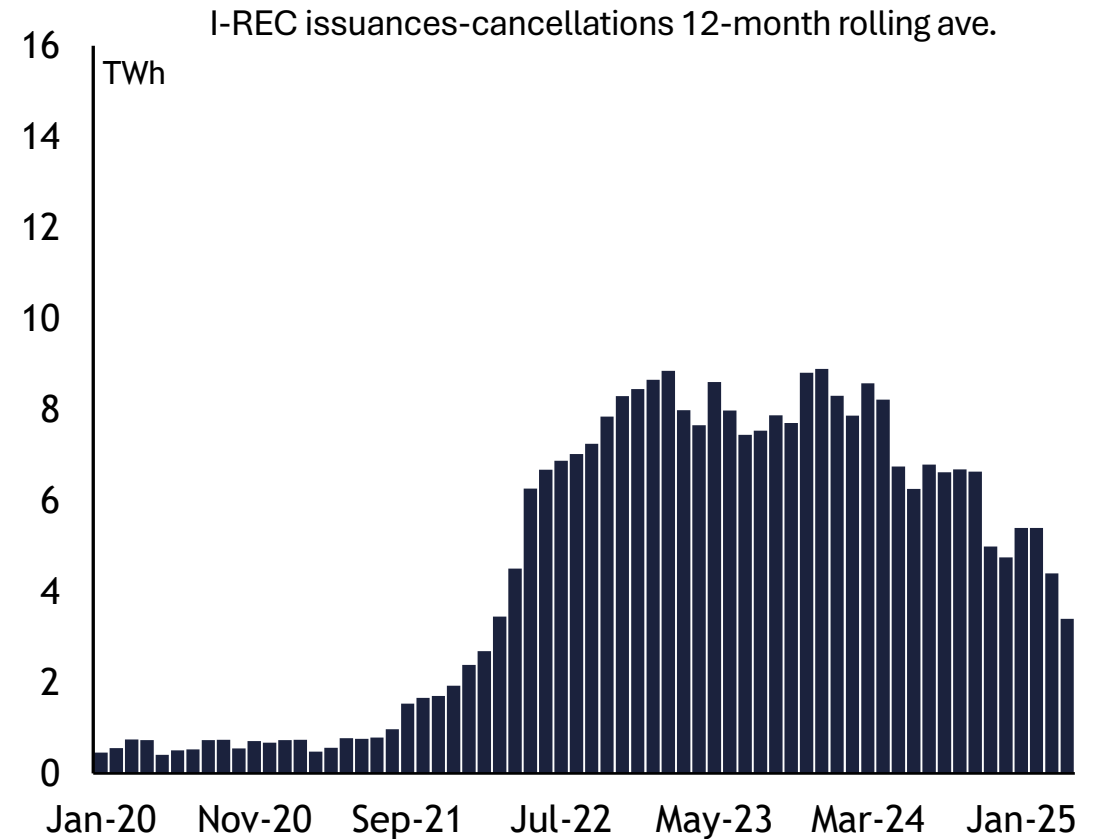
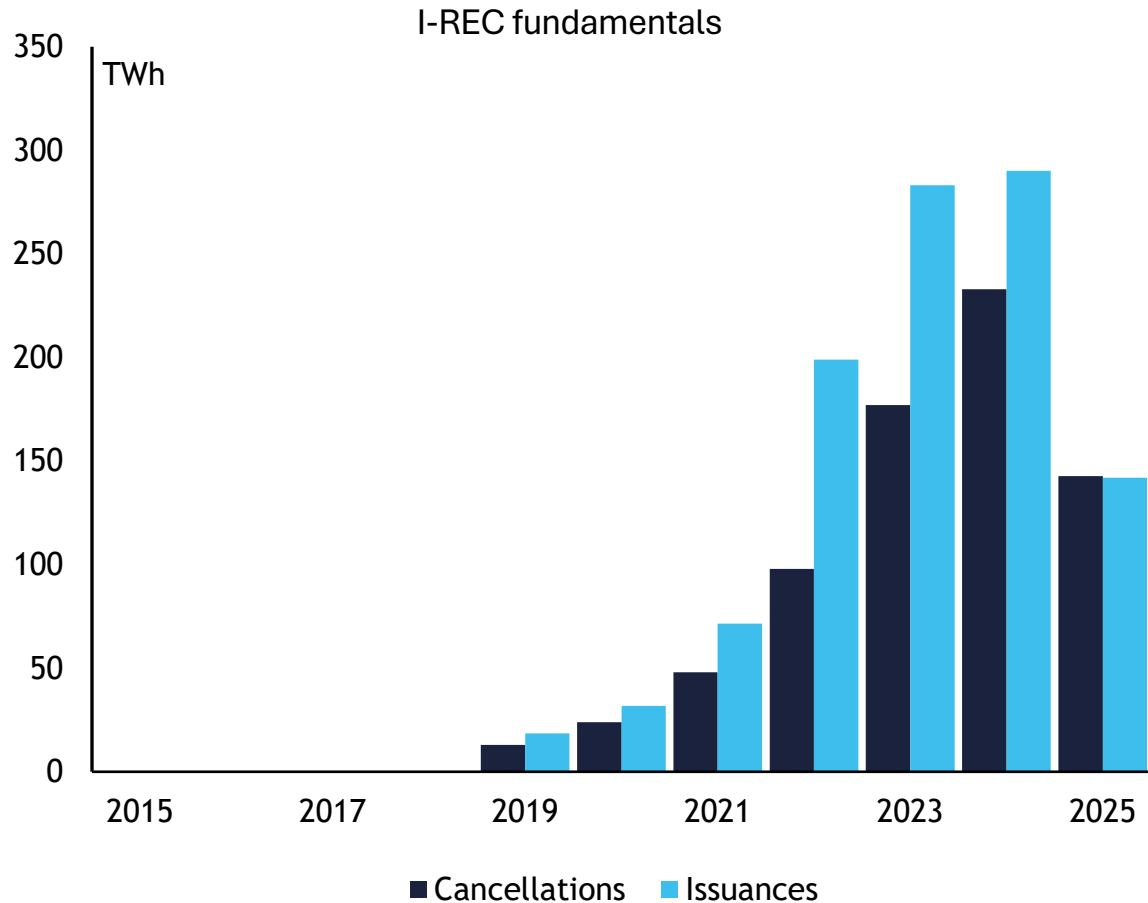


- Mostly spot trade
- Brokers and trading companies
- Increasing platform trade
- I&C procurement tenders

# Fragmented global prices

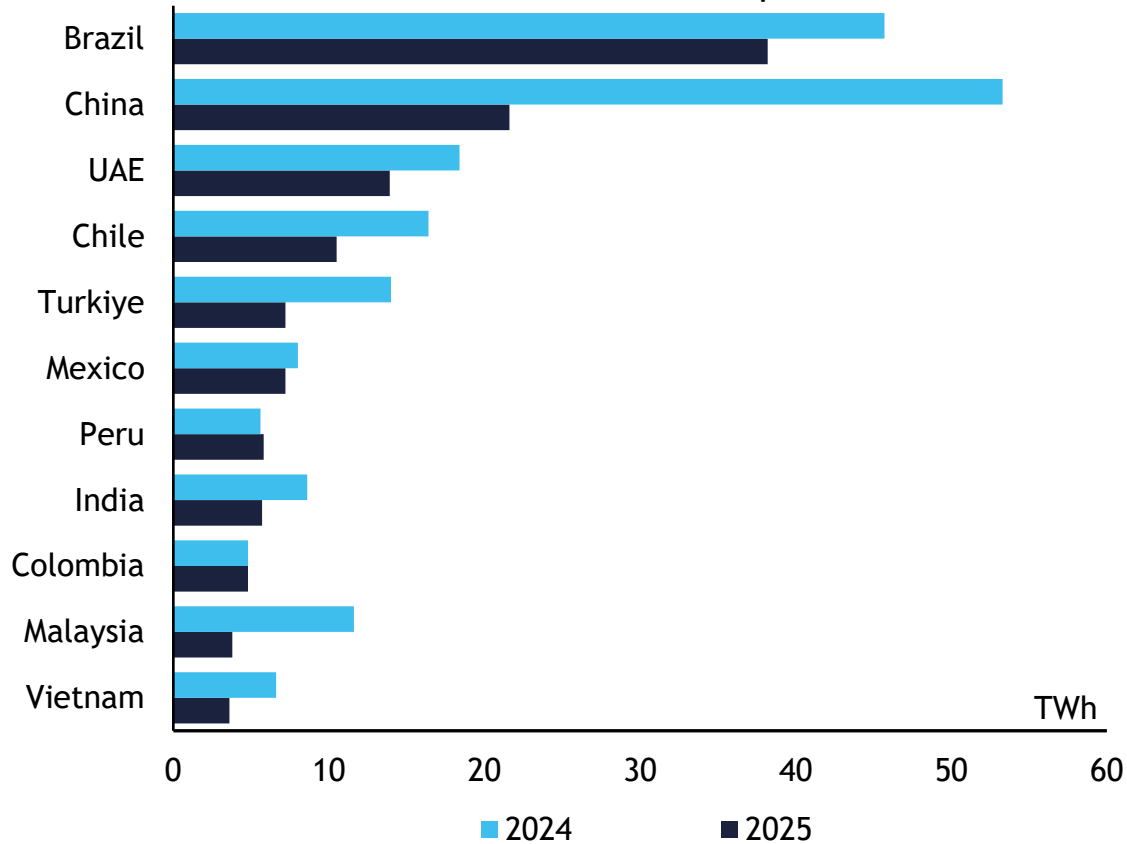


# I-REC market oversupply eases

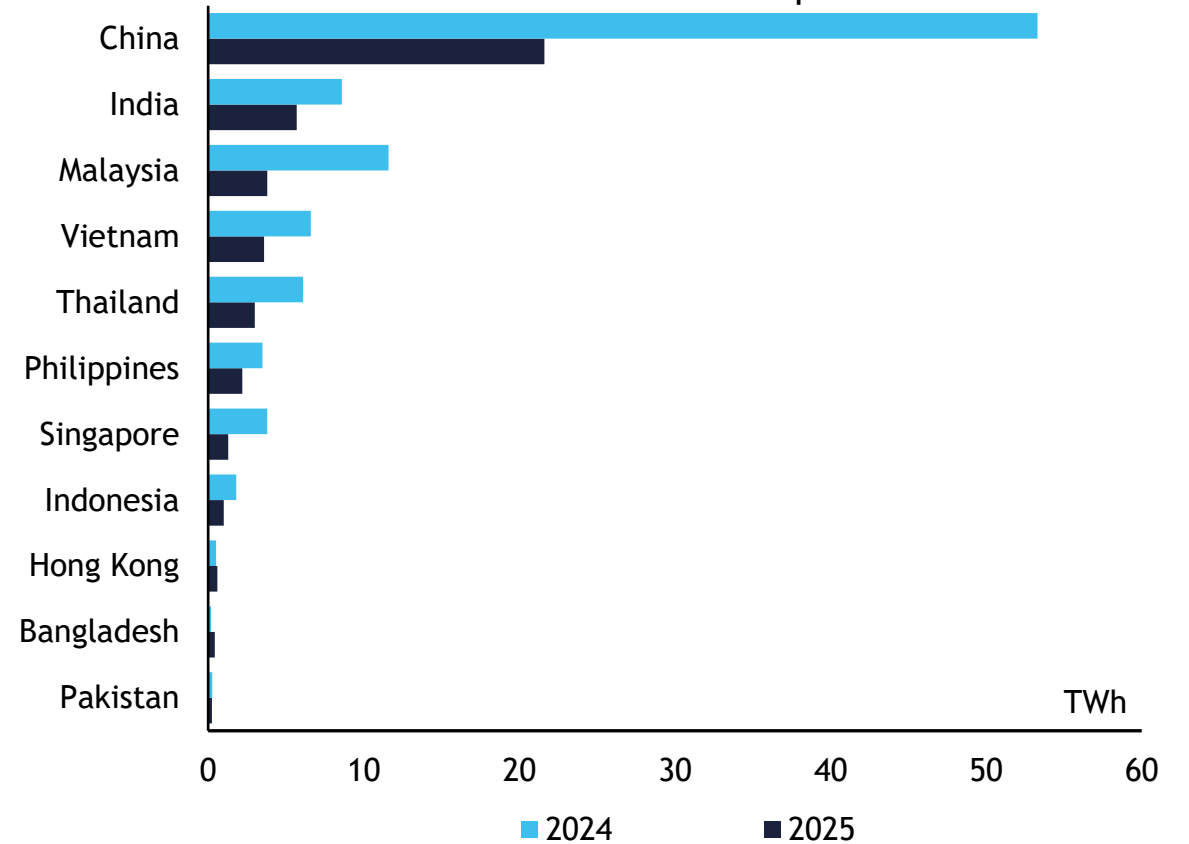


# 2025 demand due to overtake 2024

Global I-REC redemptions

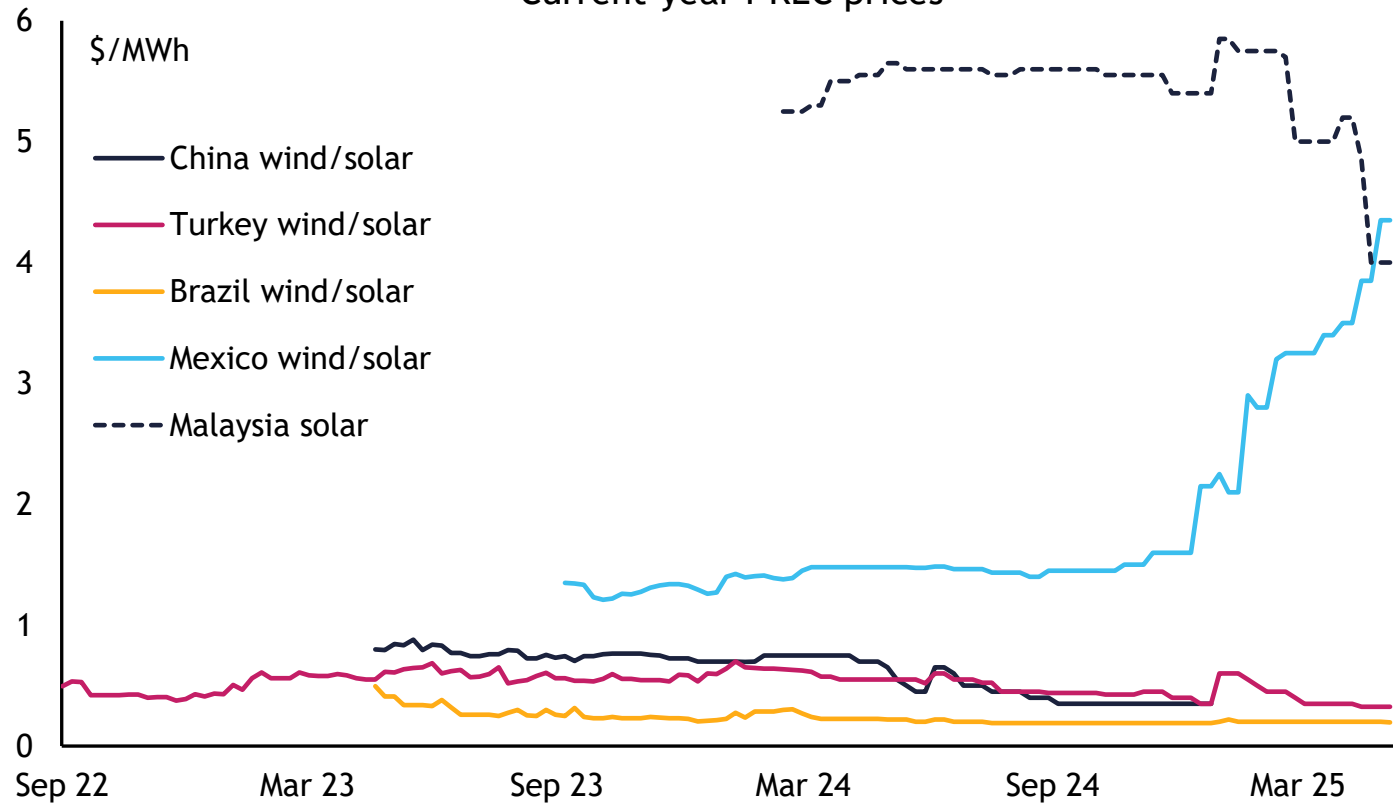


Asian I-REC redemptions



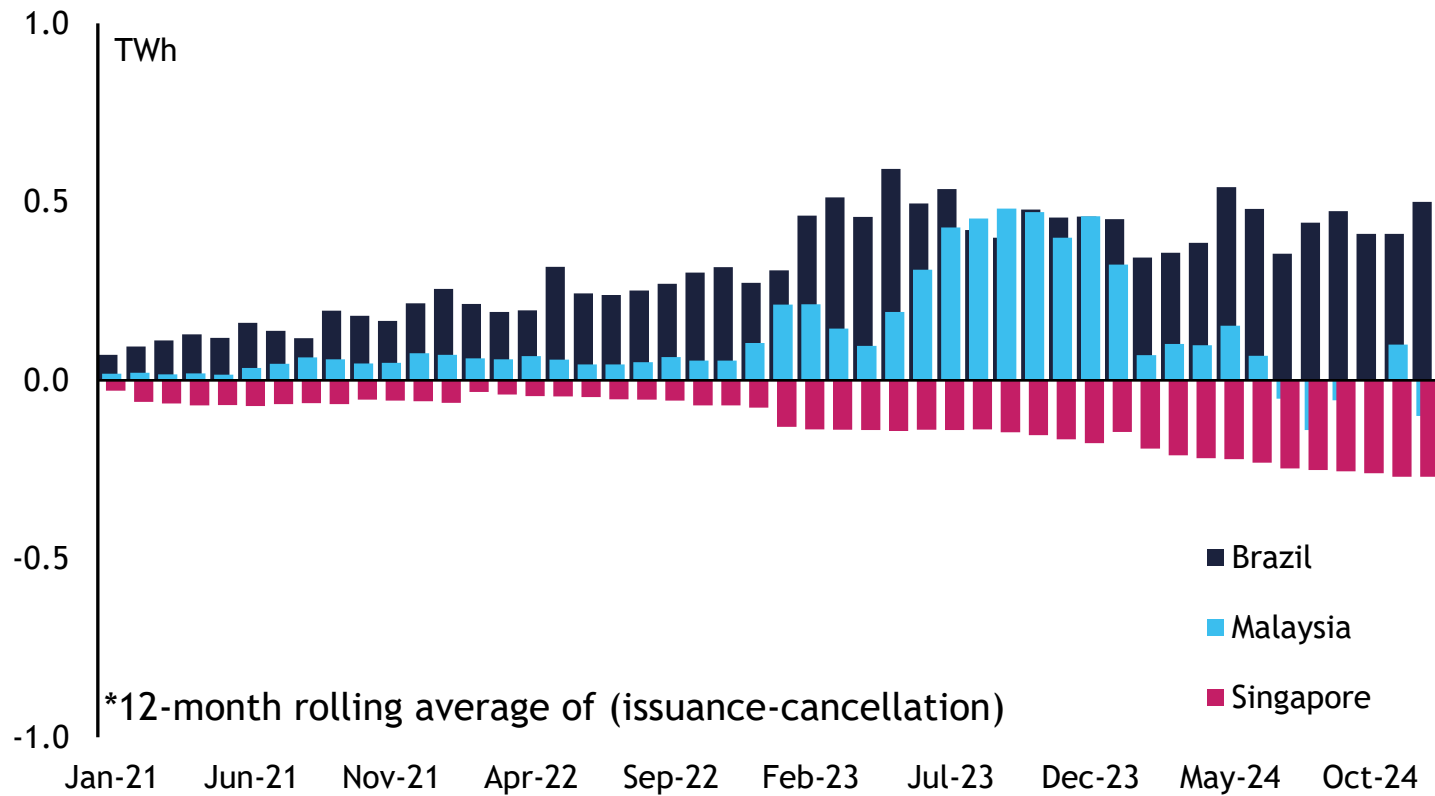
# I-REC prices mostly in decline

Current-year I-REC prices



- Wide price differentials between markets
- Slow price decline since late 2024
- Mexican supply shortfall

# Shifting global I-REC balances



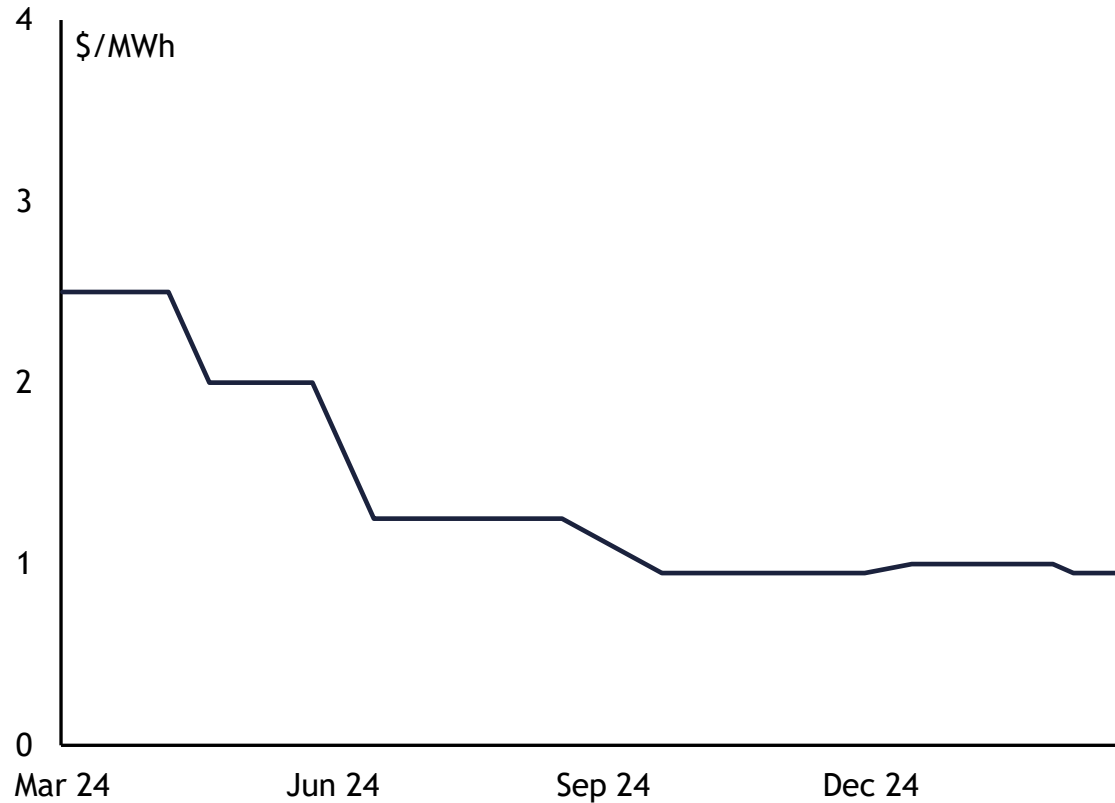
I-REC v2024 prices

\$/MWh

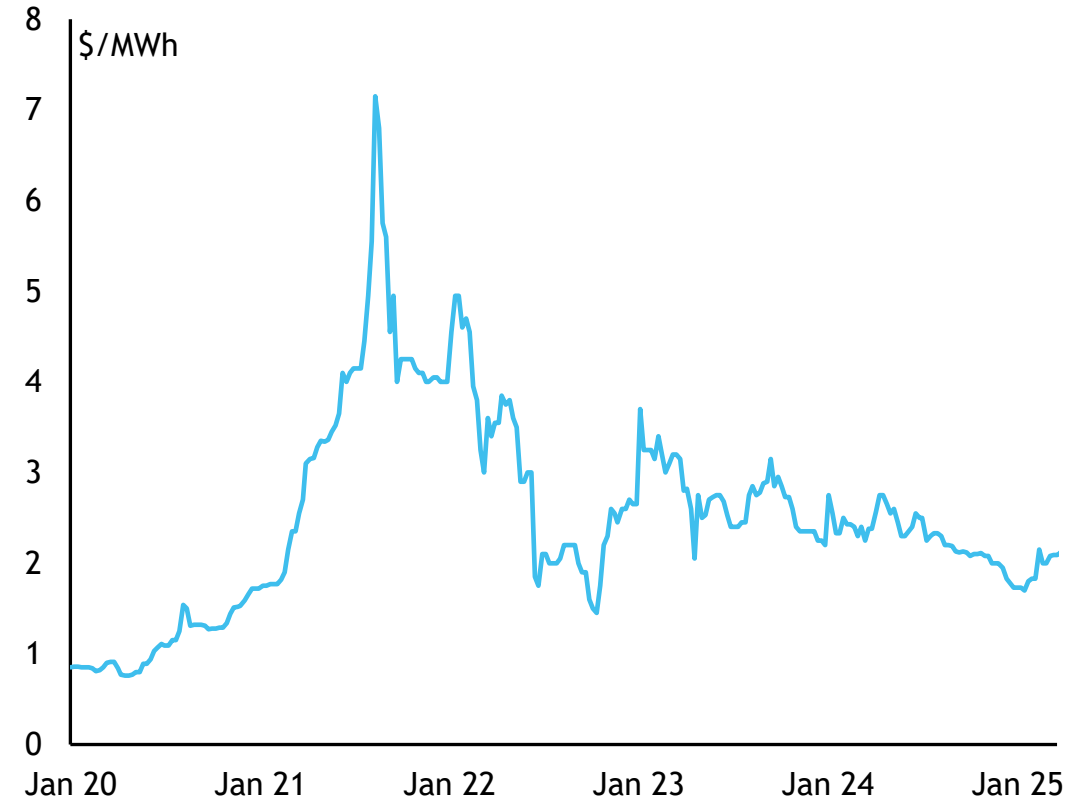
Brazil wind/solar	0.18
Malaysia solar	3.60
Singapore solar	55

# Chinese GECs and US RECs

Chinese wind/solar GECs



Texas Green-e wind



# Market price drivers

Country	Post-2009	Pre-2009	Total
Brazil	32,400	39,494	71,895
China	38,633	16,784	55,417
India	8,736	3,410	12,146
Chile	6,643	4,172	10,815
Vietnam	9,867	291	10,158
UAE	10,066		10,066
Turkiye	8,168	1,008	9,175
Thailand	3,614	1,742	5,356
Colombia	773	4,471	5,244
Australia		4,857	4,857
Mexico	3,580	92	3,672

**Temporal matching**

**ESG scrutiny**

**Cross-border EAC acceptance**

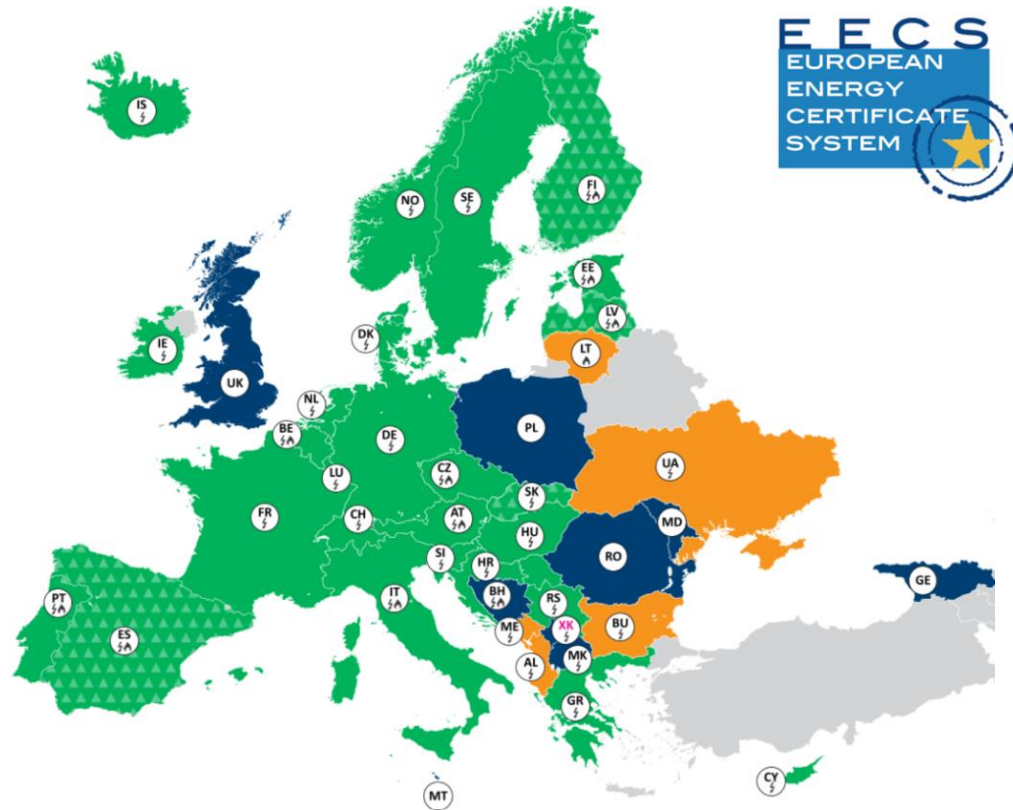
**RE100 guidelines**

**EACs vs VCM**

# **Energy attribute certificates**

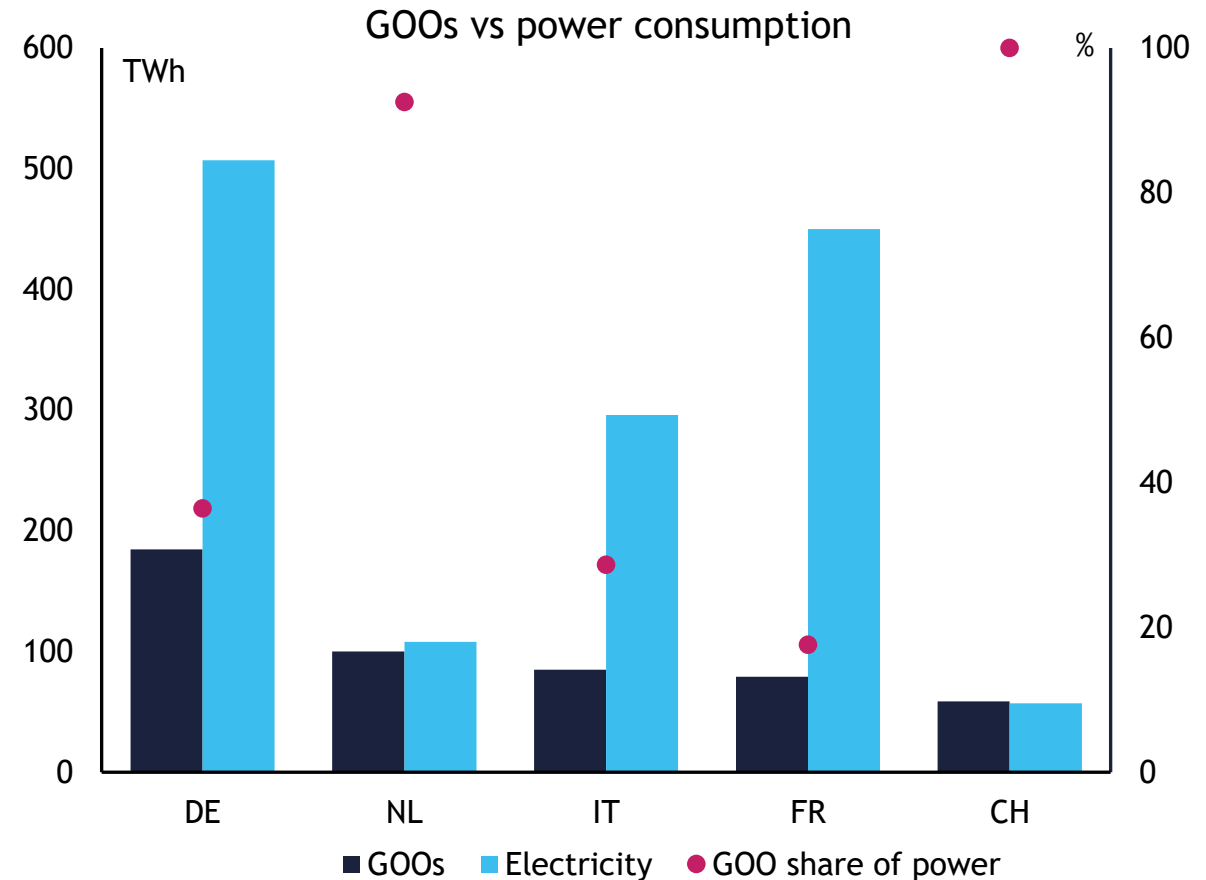
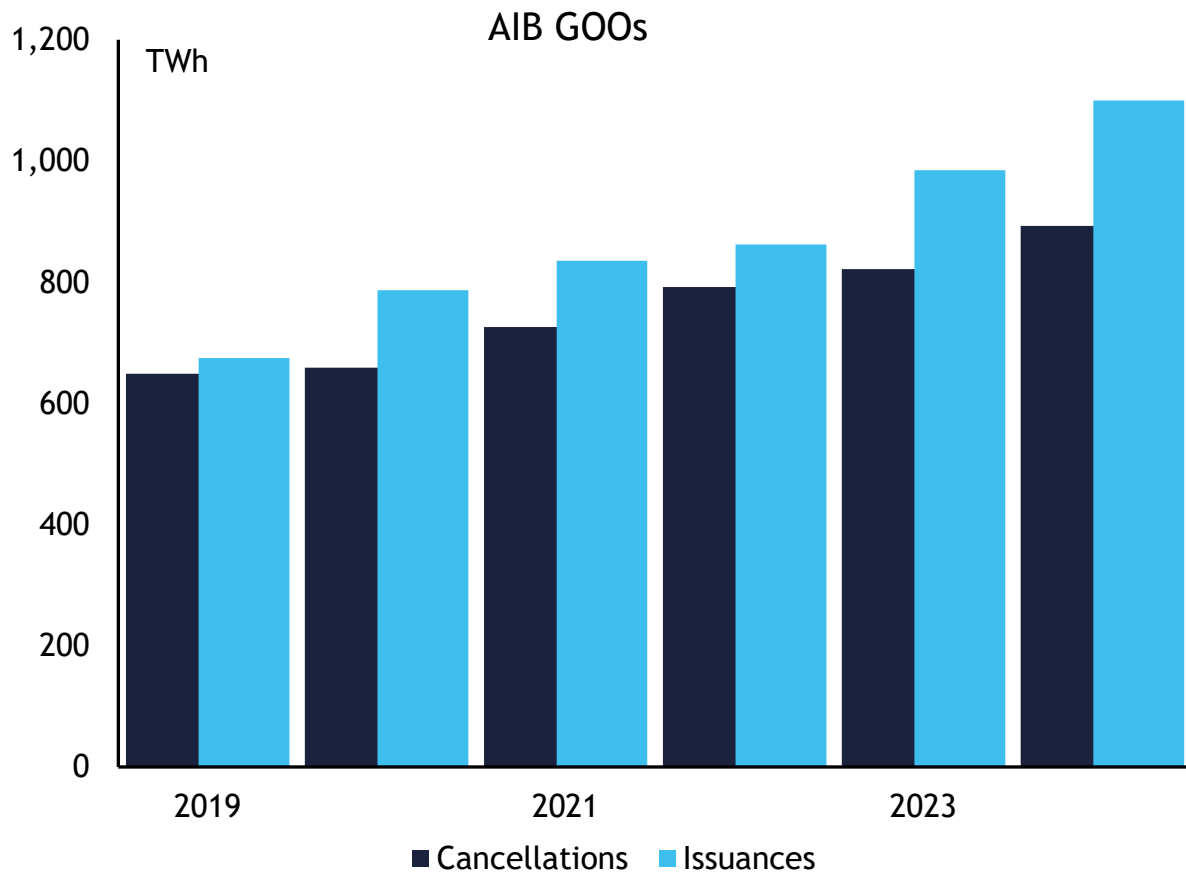
**Global prices and volumes  
Lessons from Europe**

# European harmonised EAC market



- Fungible European market
- Mostly grid connected
- Ex-domain cancellation

# EAC market oversupply increases

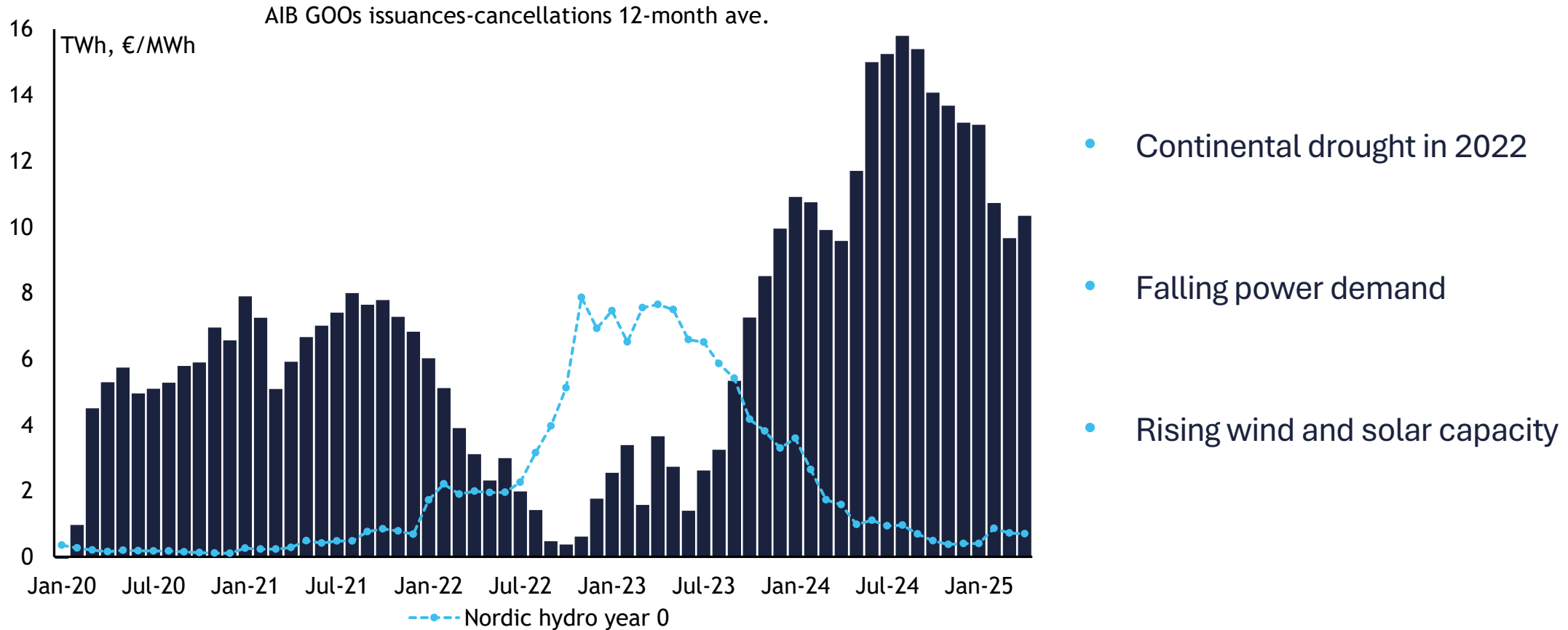


# Continental European GOOs in decline



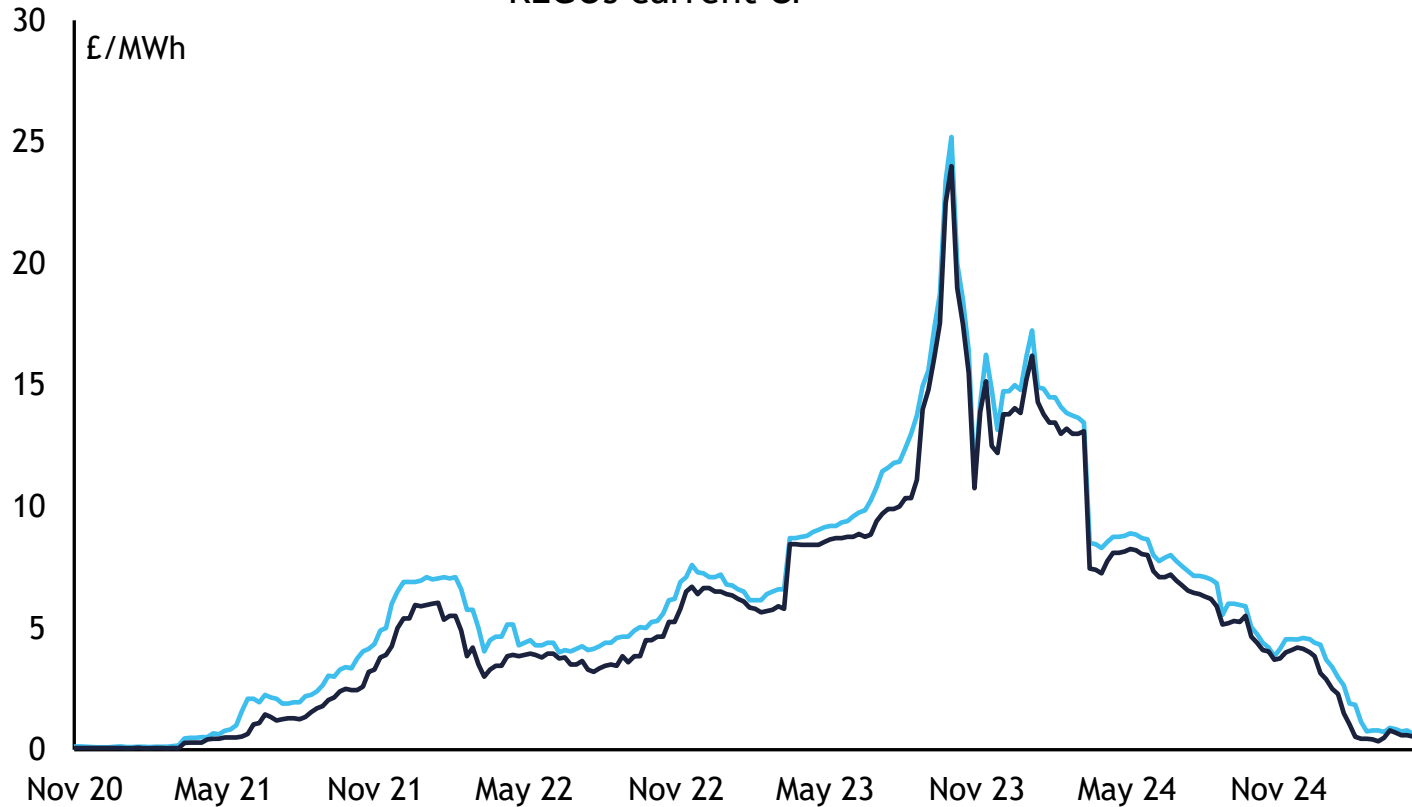
- Current-year AIB GOOs at €0.50/MWh
- Record high of €10/MWh in summer 2022
- Steady decline since 2024

# Rising AIB renewables oversupply



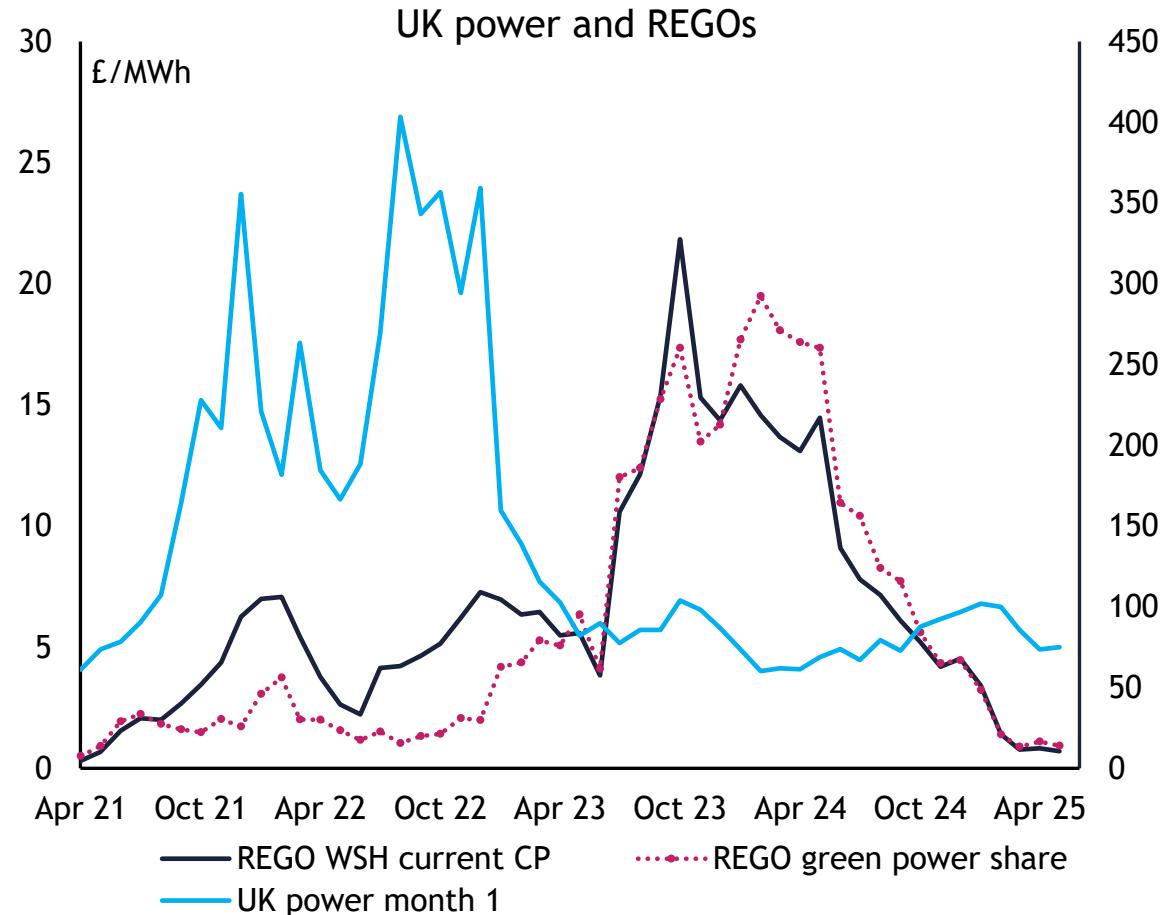
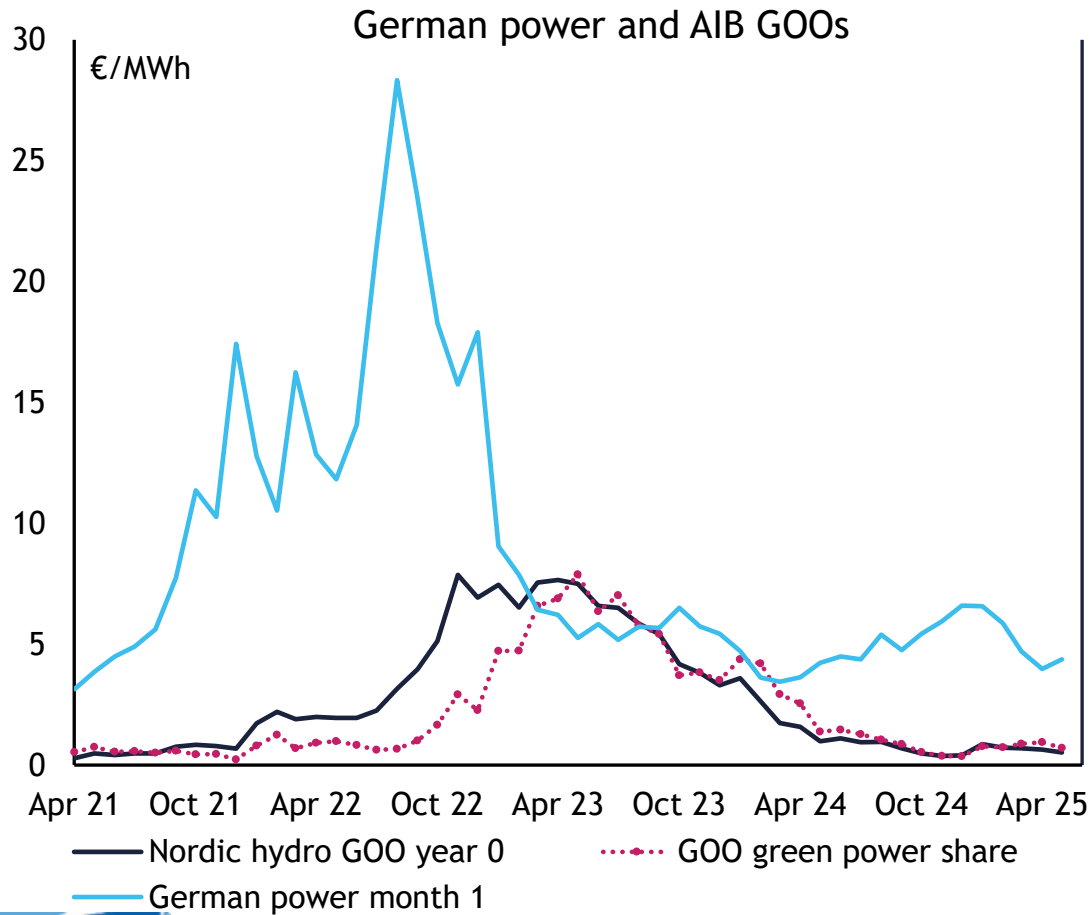
# UK REGOs – prices also in decline

REGOs current CP



- Current CP wind/solar/hydro at £0.75/MWh
- Prices reach high of £25/MWh in October 2023
- Steady decline since 2024

# EAC pricing vs electricity



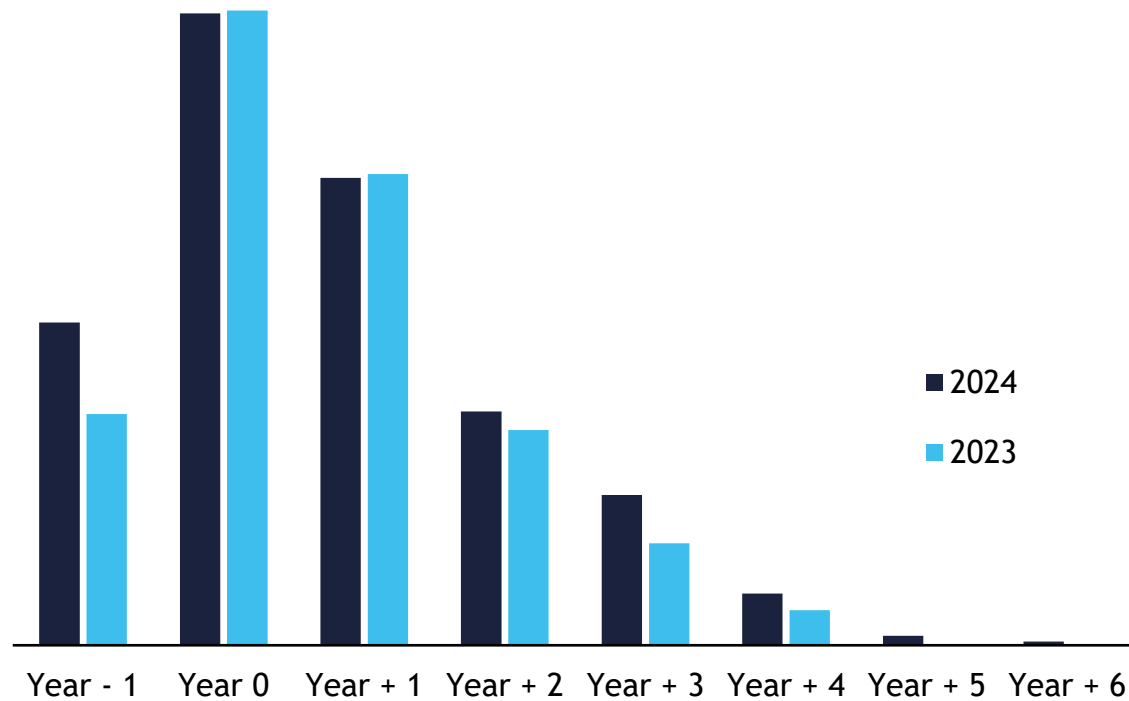
# EAC curves in contango

AIB hydro GOOs		€/MWh
Vintage	Price	
2024	0.08	
2025	0.54	
2026	0.95	
2027	1.13	
2028	1.19	
2029	1.23	

UK REGOs			£/MWh
Compliance period	Non-biomass	Biomass	
CP23	0.30	0.18	
CP24	0.80	0.60	
CP25	0.98	0.80	
CP26	1.55	1.35	

- Rising electricity demand
- Greater focus on ESG
- Tighter reporting standards

# More forwards, more standardisation



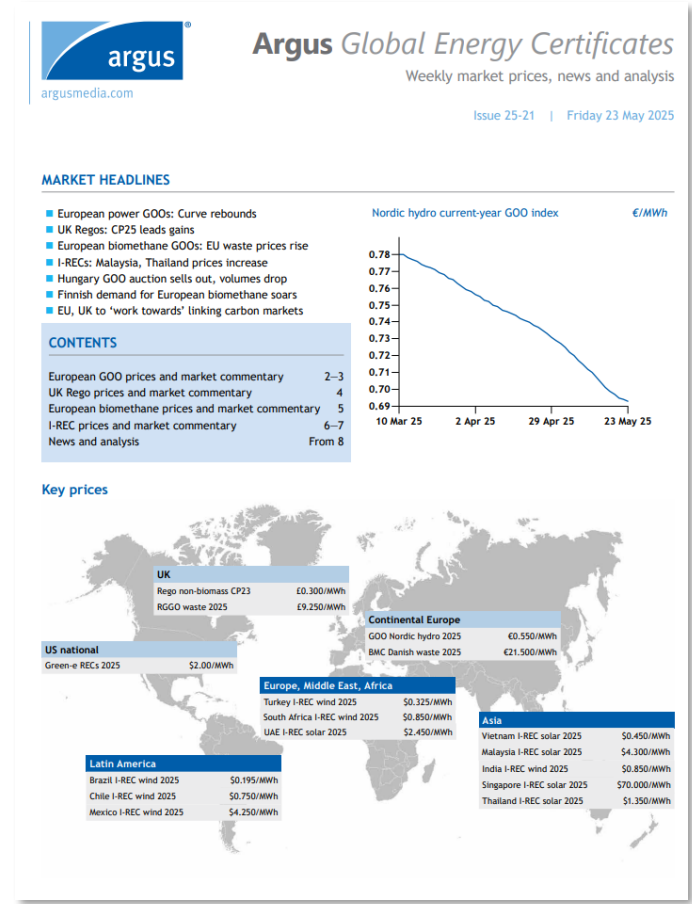
Most liquid OTC contracts		
2024	2023	2022
Europe W/S/H	Europe hydro	Nordic hydro
Europe hydro	Europe renewable	Europe renewable
Europe renewable	Nordic hydro	Europe hydro
Nordic hydro	Europe W/S/H	Norwegian hydro
Europe wind	Europe wind	Europe wind

# Argus Global Energy Certificates

- **Independent price benchmarks**  
 European Guarantees of Origin  
 UK Renewable Energy Guarantees of Origin  
 International Renewable Energy Certificates  
 European Renewable Gas Guarantees of Origin
- **Market commentary, news, analysis**
- **OTC market deals database**



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Issue 25-21 | Friday 23 May 2025

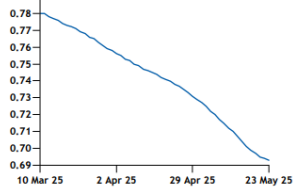
**MARKET HEADLINES**

- European power GOOs: Curve rebounds
- UK Regos: CP25 leads gains
- European biomethane GOOs: EU waste prices rise
- I-RECs: Malaysia, Thailand prices increase
- Hungary GOO auction sells out, volumes drop
- Finnish demand for European biomethane soars
- EU, UK to 'work towards' linking carbon markets

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**Nordic hydro current-year GOO index** €/MWh



**Key prices**

<b>UK</b>	Rego non-biomass CP23	€0.300/MWh
	RGGO waste 2025	€9.250/MWh
<b>US national</b>	Green-e REC-s 2025	\$2.00/MWh
<b>Latin America</b>	Brazil I-REC wind 2025	\$0.195/MWh
	Chile I-REC wind 2025	\$0.750/MWh
	Mexico I-REC wind 2025	\$4.250/MWh
<b>Europe, Middle East, Africa</b>	Turkey I-REC wind 2025	\$0.325/MWh
	South Africa I-REC wind 2025	\$0.850/MWh
	UAE I-REC solar 2025	\$2.450/MWh
<b>Continental Europe</b>	GOO Nordic hydro 2025	€0.550/MWh
	BMC Danish waste 2025	€21.500/MWh
<b>Asia</b>	Vietnam I-REC solar 2025	\$0.450/MWh
	Malaysia I-REC solar 2025	\$4.300/MWh
	India I-REC wind 2025	\$0.850/MWh
	Singapore I-REC solar 2025	\$70.000/MWh
	Thailand I-REC solar 2025	\$1.350/MWh

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