Carbon3

The Gulf is rebuilding its export business around *hydrogen and ammonia*

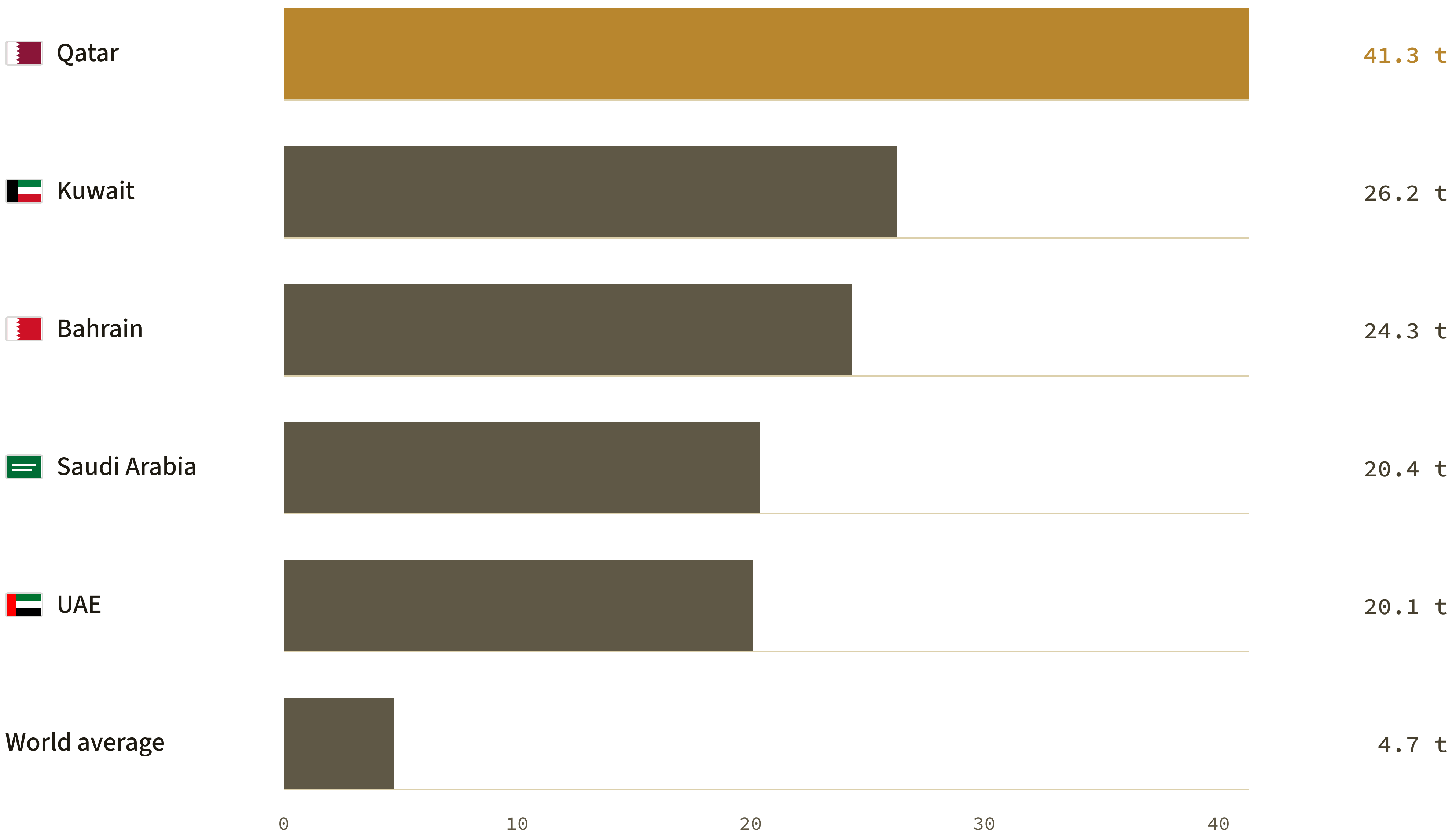
1.04 US cents per kWh

Al Shuaibah 1 in Saudi Arabia, the cheapest solar contract ever signed. Power at that price is what makes Gulf hydrogen and ammonia competitive.

PER-CAPITA EMISSIONS, 2024

Qatar records the world's highest per-capita emissions

Tonnes of CO_2 per person, 2024. Gulf states against the world average of 4.7 t.



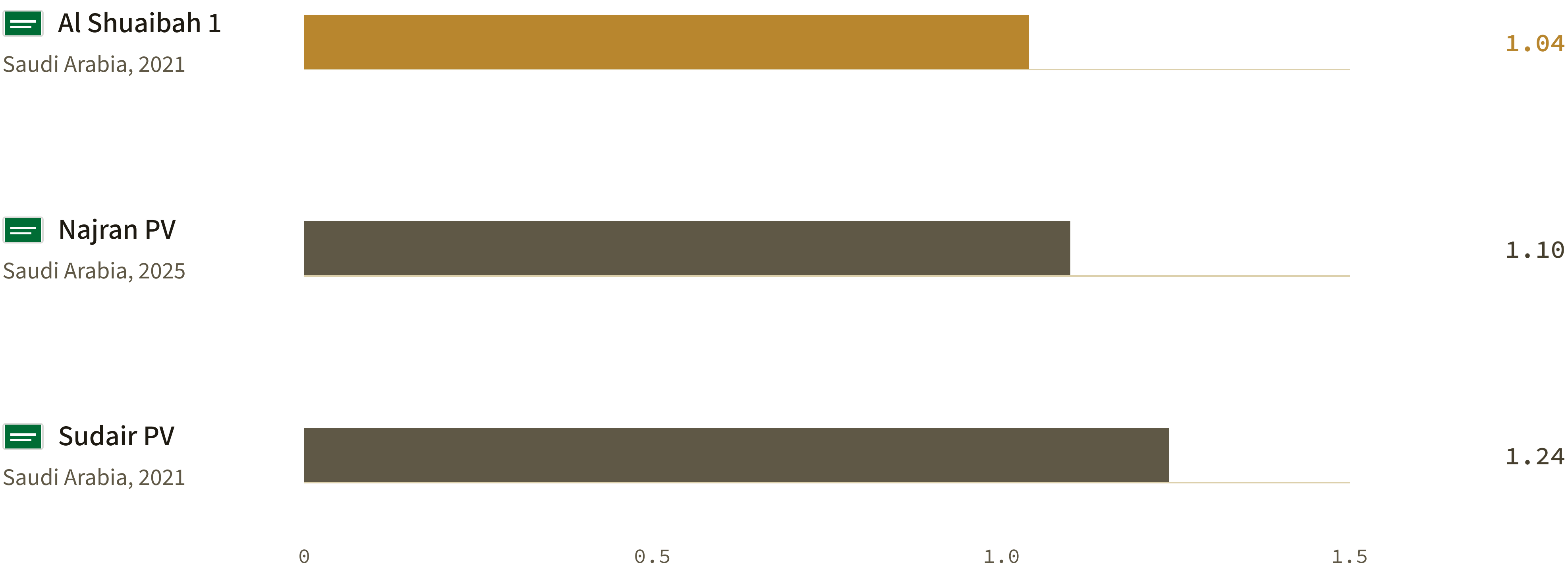
Qatar's figure is export-scale LNG and hydrocarbon production, plus gas-fired power, desalination and near-continuous cooling, divided by a small population.

Territorial fossil CO_2, data year 2024. Source: Global Carbon Budget 2025 (Friedlingstein et al.); Our World in Data.

RECORD-LOW SOLAR CONTRACTS

Saudi Arabia holds the three cheapest solar deals ever signed

US cents per kWh



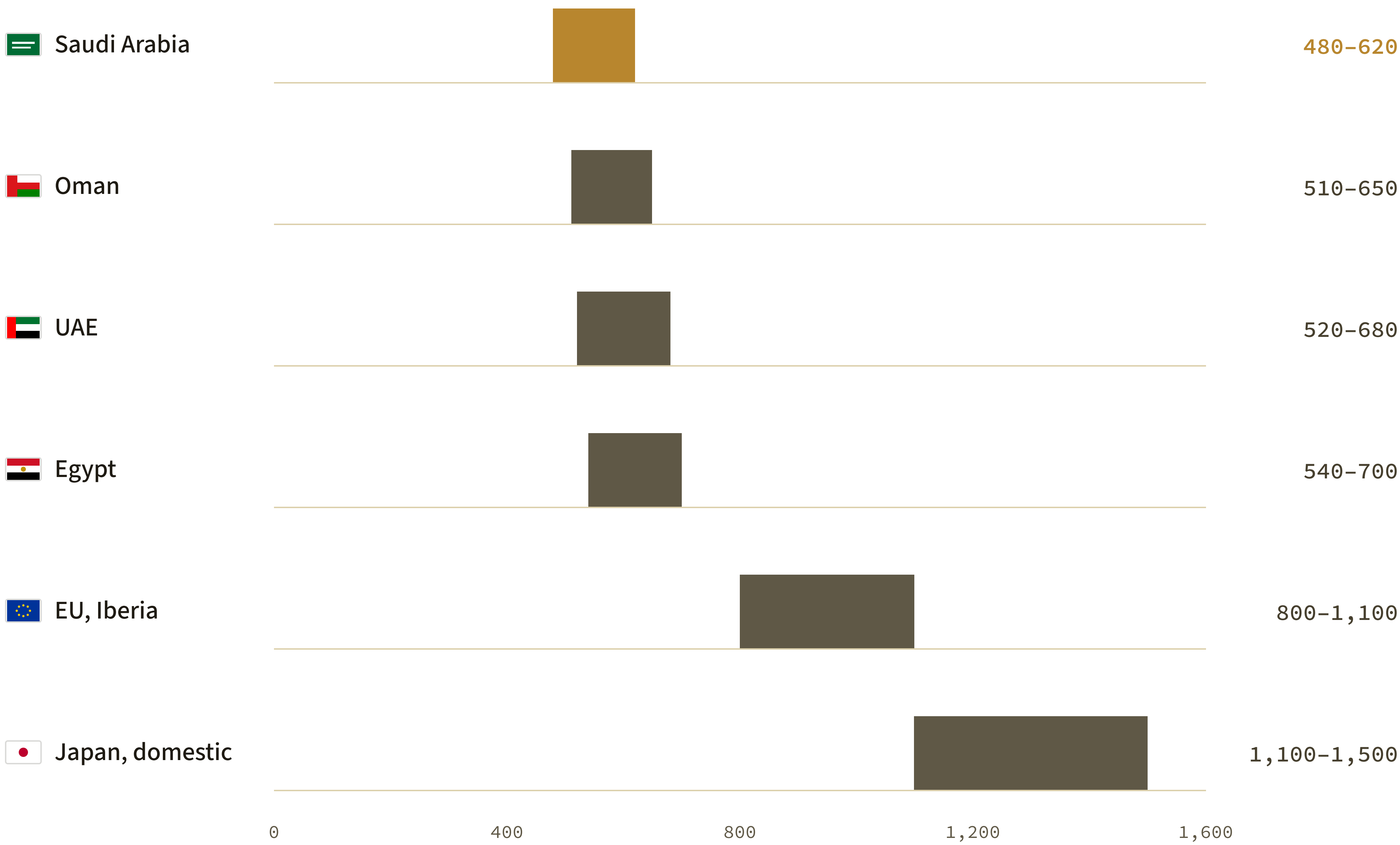
Gulf sunlight runs 2,200 to 2,400 kWh per square metre a year, among the highest on earth. That is what makes the power this cheap.

Al Shuaibah 1 and Sudair are 2021 PPA tariffs; Najran is a 2025 LCOE on Saudi Power Procurement Company methodology. Source: Saudi Ministry of Energy and SPPC award releases, 2021 and 2025; ACWA Power; IRENA, Renewable Power Generation Costs 2024.

GREEN AMMONIA COST BY ORIGIN

Green ammonia is cheapest in the Gulf and dearest in Japan

US dollars per tonne of ammonia, production cost at the plant gate, 2030 estimate. Freight is not included.



Japan imports the finished molecule because it cannot make it competitively at home. The Gulf makes it where the power is cheapest to begin with.

Source: BloombergNEF, Hydrogen Cost Outlook H2 2024; IRENA; IEA, Global Hydrogen Review 2024; Wood Mackenzie.

EU methane rules put Qatar's LNG numbers on the clock

27 year contracts

Shell, TotalEnergies and Eni hold Qatari LNG supply contracts of this length, delivering into Rotterdam, France and Italy.

What has to happen, and by when

2025
QatarEnergy's target date for 0.2% methane intensity, reporting at OGMP 2.0 Level 4.

2027
EU importers must show monitoring equivalent to EU rules, on contracts signed after August 2024.

2028
Importers must report the methane intensity of production. No threshold to meet yet.

2030
The EU caps methane intensity on any supply contract signed or renewed from August 2030.

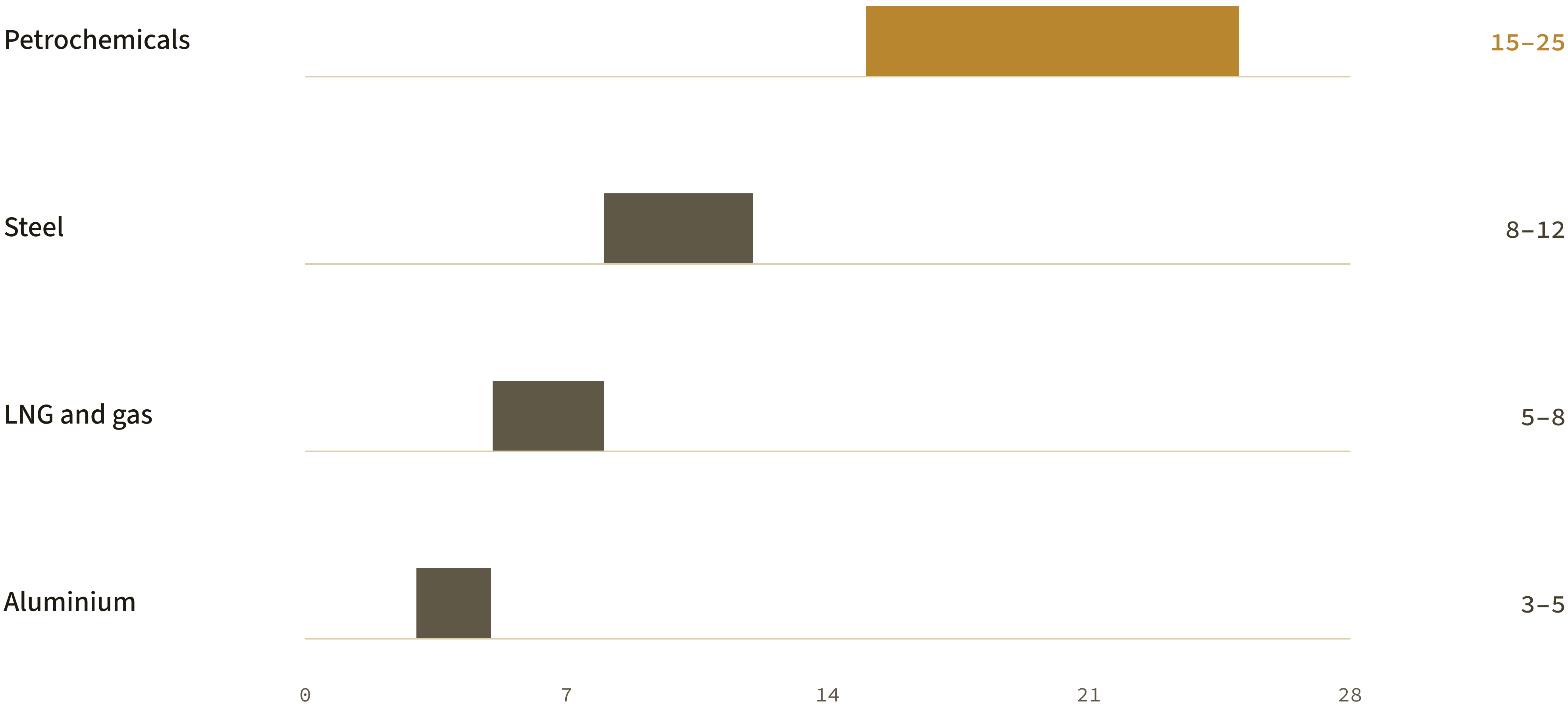
The 27-year contracts predate the August 2024 cut-off, so they carry a reasonable-efforts duty rather than the hard test. Renewals and new volumes face the full bar.

Source: QatarEnergy Sustainability Report 2024; UNEP IMEO, OGMP 2.0 Reporting Framework Year 4, 2024; Regulation (EU) 2024/1787.

INSET POTENTIAL BY SECTOR, 2030

Petrochemicals are the region's biggest inset opportunity

Million tonnes of CO_2e a year, 2030 estimate



An inset is a verified emissions cut inside the supply chain, sold with the cargo it belongs to. Across all eight sectors tracked, the 2030 total reaches roughly 38 to 65 Mt a year.




Carbon3 analytical estimate of addressable inset volume by sector; anchor producers include EGA, Alba, Ma'aden, SABIC, ADNOC and QatarEnergy. Global market context: BloombergNEF, Voluntary Carbon Markets Outlook 2024 to 2030.

Carbon3

The carbon claim has to travel with the cargo.

Carbon3 enables buyers to co-invest in abatement inside their own supply chains and claim the independently verified cut against Scope 3, bound to the cargo it belongs to. The producer earns a premium on the low-carbon tonne.

38–65 Mt CO_2e a year

What Middle East supply chains could carry in verified cuts by 2030. At observed willingness to pay, that is on the order of **USD 1 billion a year revenue*** to the region.

carbon3.net

* Value is a Carbon3 scenario, not a forecast; range USD 0.3 to 2 bn.
Sources: IEA · IRENA · BloombergNEF · Global Carbon Budget · QatarEnergy · UNEP IMEO