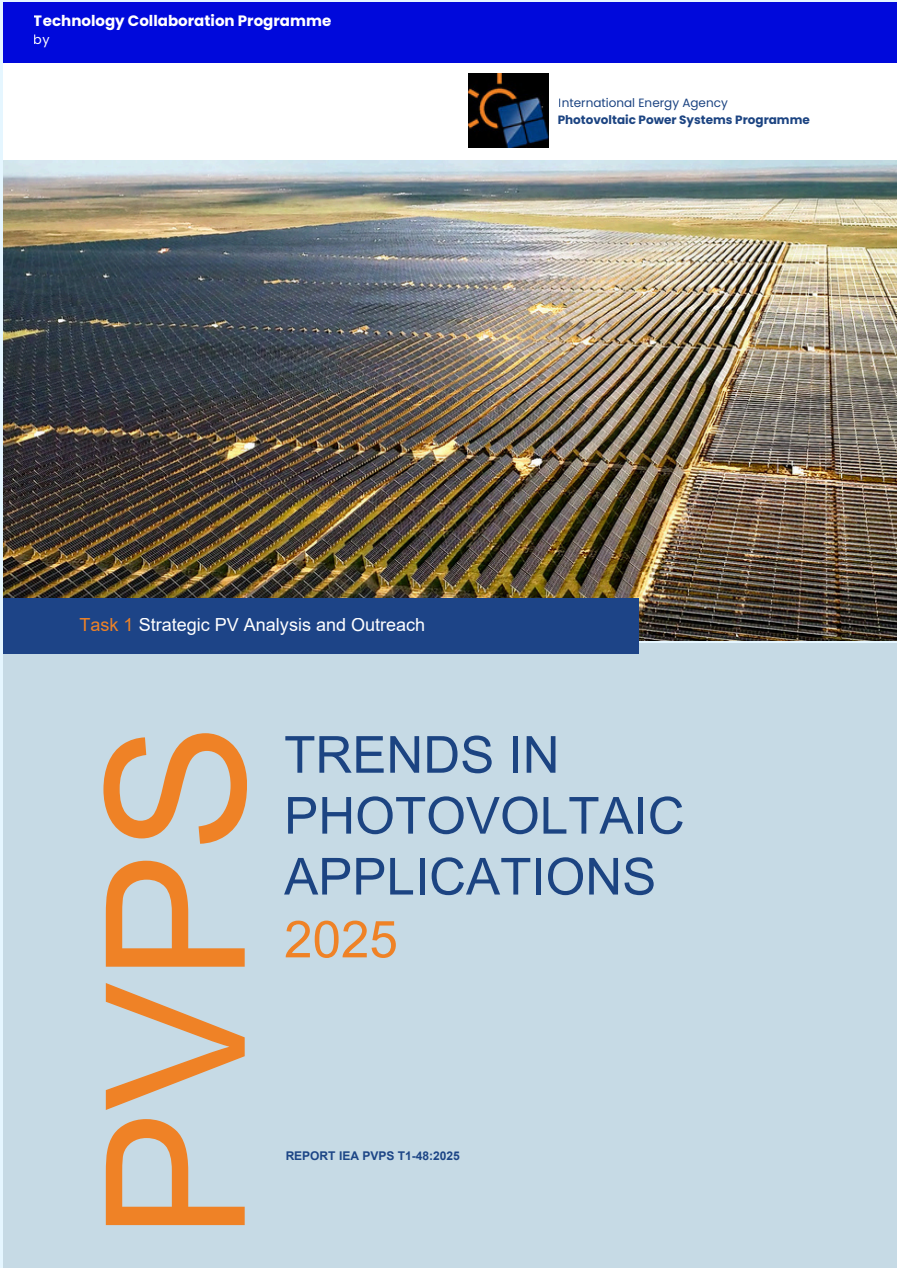


# When Energy Went Exponential



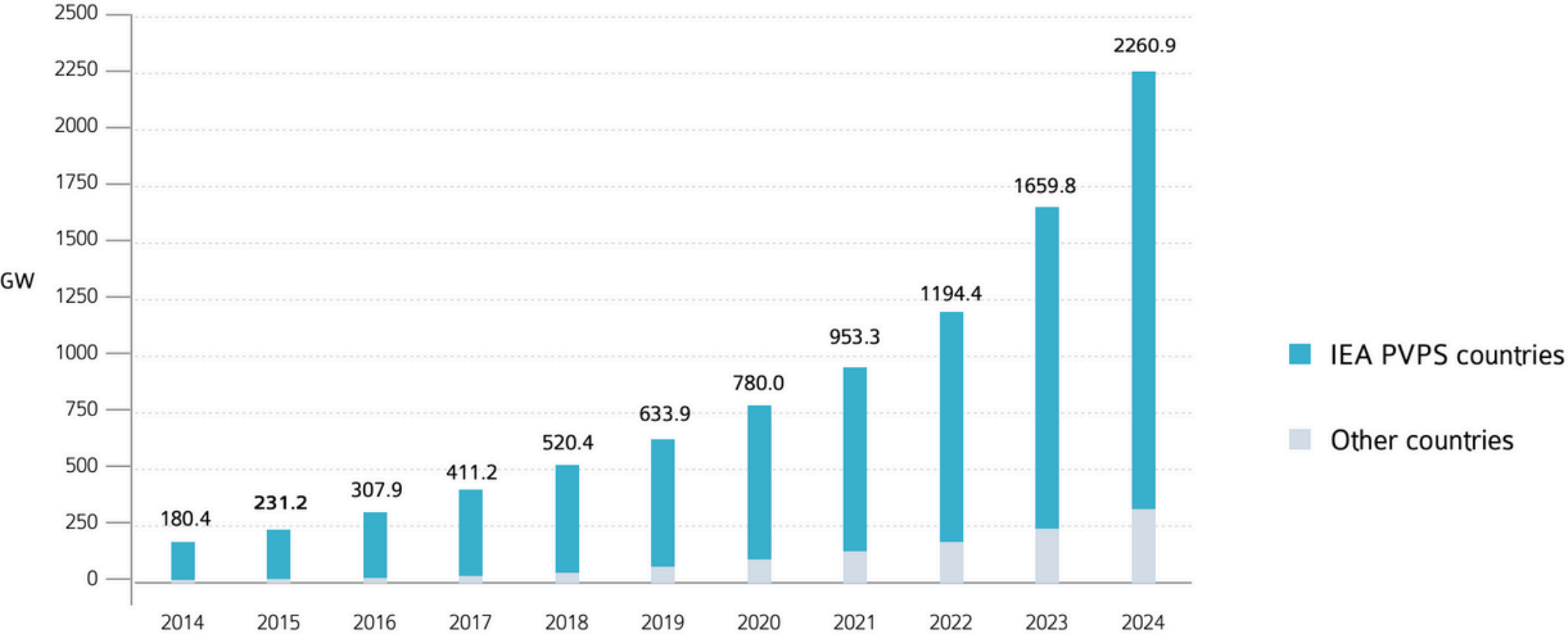
# Review of the IEA PVPS 2025 Report

The IEA PVPS “Trends 2025” report captures what may well be remembered as the tipping point of the energy transition — the year the world started building the Sun.



# The Age of the 600 GW Year

FIGURE 2.1: EVOLUTION OF CUMULATIVE PV INSTALLATIONS



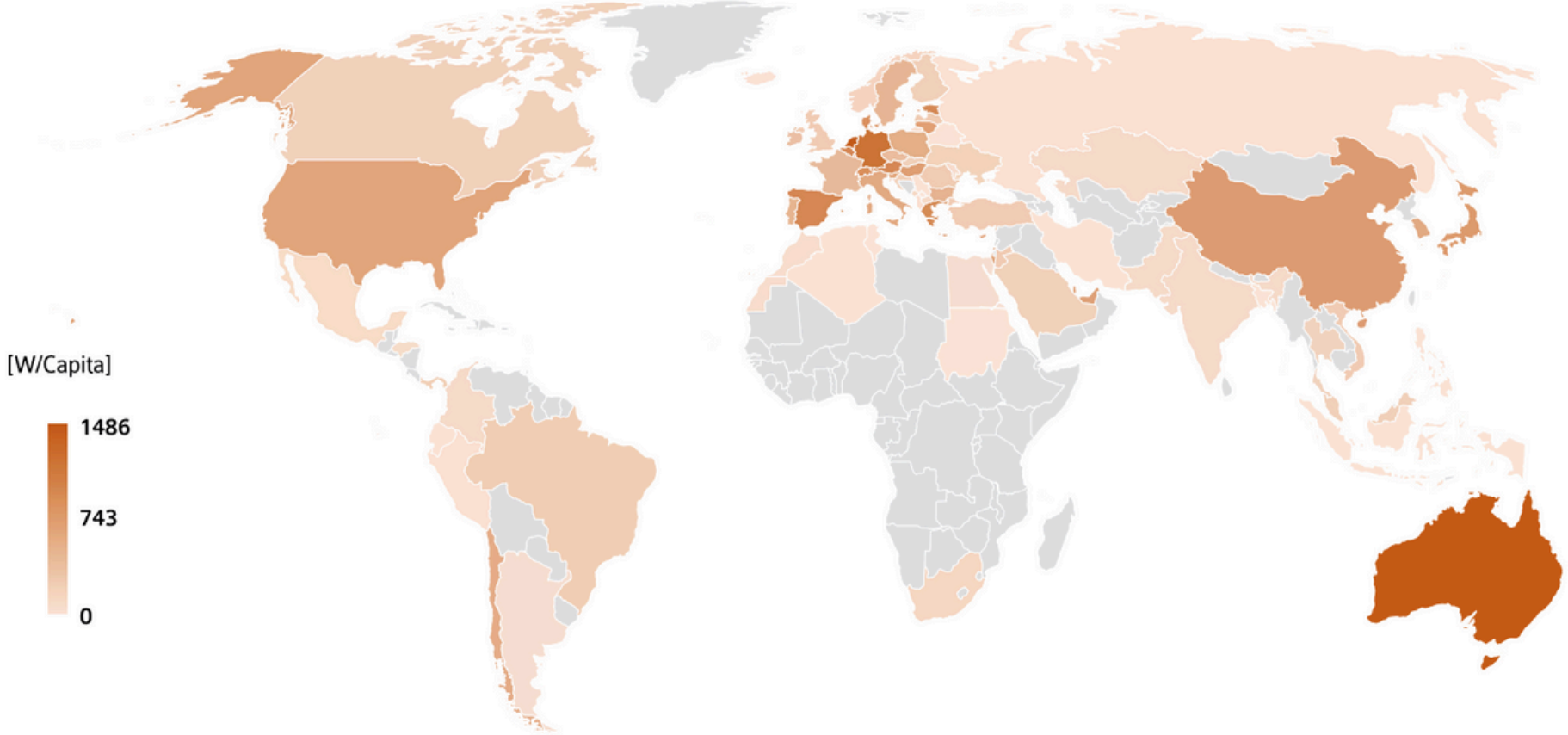
SOURCE: IEA PVPS & OTHERS

**Growth has detached from policy support – the new driver is industrial self-propulsion. Solar has achieved critical mass.**

2024 marked the first 600 GW solar year, with cumulative global installations touching 2.26 TW. China alone contributed nearly two-thirds, but India, the EU, and the US together formed the fastest-growing secondary wave. In ten years, PV added more capacity than all fossil fuels combined.

# Power Per Person

FIGURE 2.2: PV PENETRATION PER CAPITA IN 2024



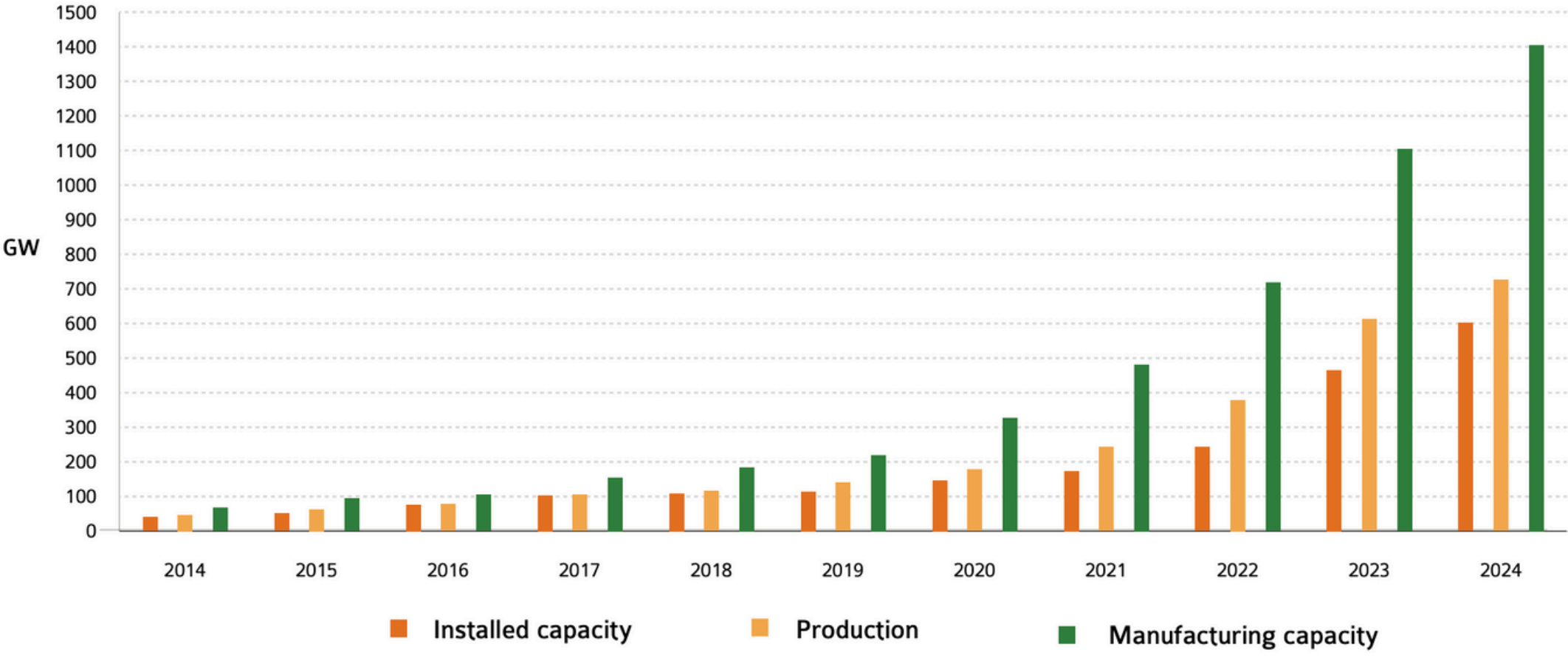
SOURCE: IEA PVPS & OTHERS

**Per-capita wattage is the new development index. Energy access is morphing into energy ownership.**

Australia now exceeds 1.4 kW of PV per person — a statistic that turns every household into a power plant. European nations are not far behind; India’s rapid rise signals a shift from megawatts to millions of prosumers.

# The Supply Curve Flipped

FIGURE 4.2: YEARLY PV INSTALLATION, PV PRODUCTION AND PRODUCTION CAPACITY 2014-2024 (GW)



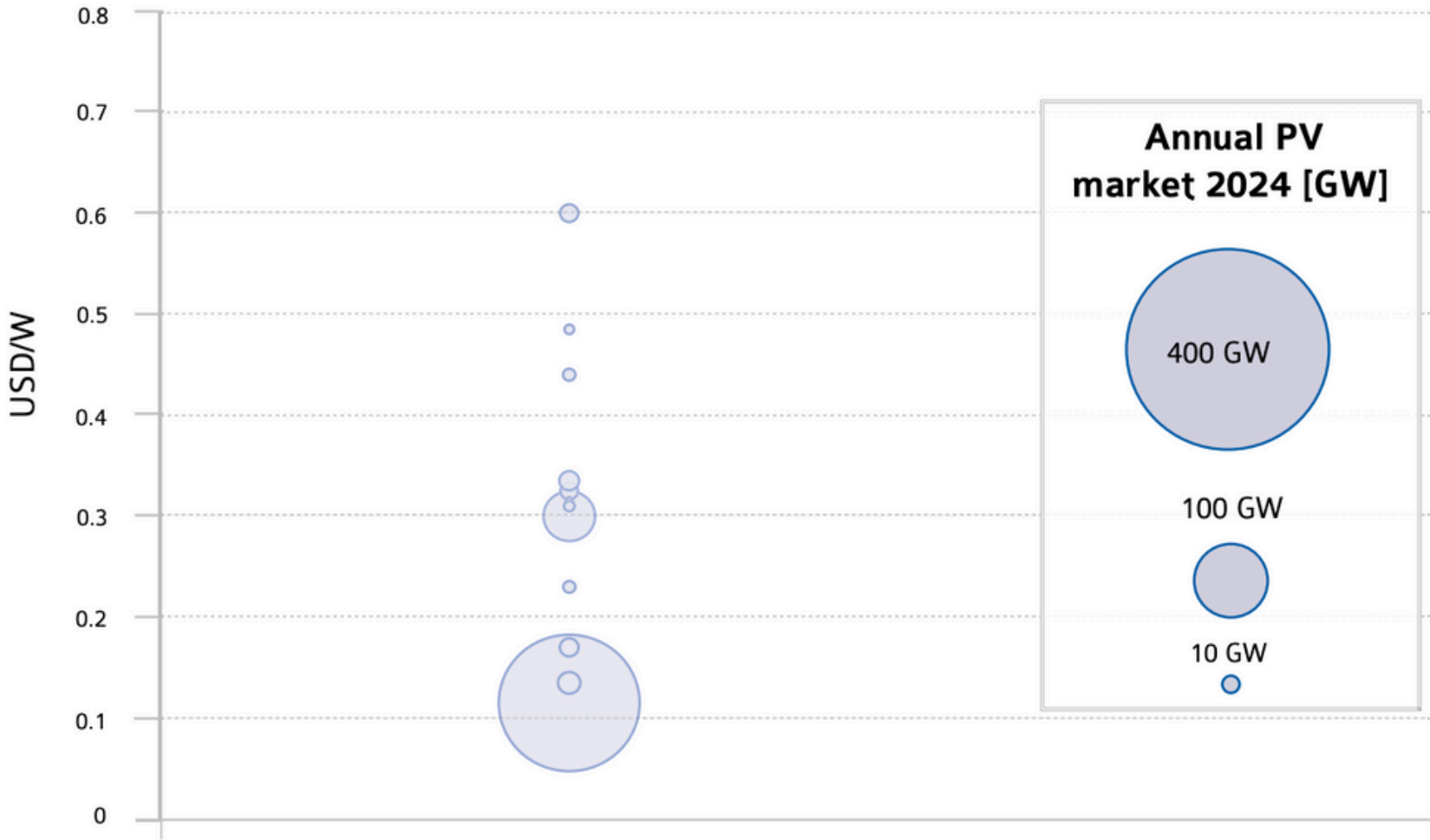
SOURCE : EA PVPS, RTS CORPORATION

**Overcapacity isn't a crash; it's abundance in motion. When technology becomes cheaper by the day, market power moves from scarcity to system integration.**

Manufacturing capacity now outpaces installations by almost 2:1.  
From polysilicon to modules, 2024 saw 1.4 TW of annual production capacity

# The Silicon Shock

FIGURE 6.3: INDICATIVE MODULE PRICES IN SELECTED REPORTING COUNTRIES



SOURCE IEA PVPS & OTHERS

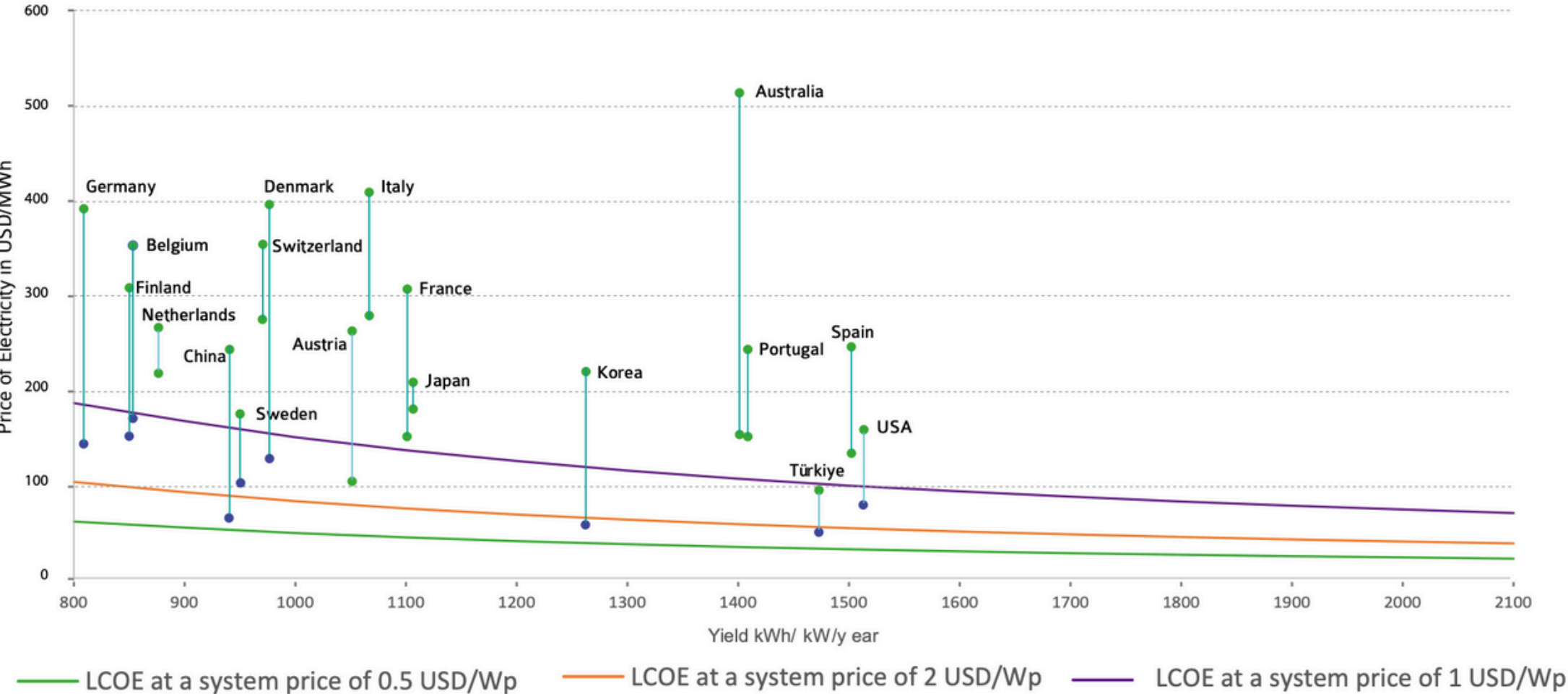
**At sub-USD 0.10/Wp, solar is now priced like steel or cement — not as an energy product, but as a commodity input for every industry.**

Modules trading near USD 0.10 per Watt signify a structural reset. Price declines of 40 % in a single year broke all cost-curve precedents.

# The End of the Grid Monopoly

**Electricity is decentralising itself. The grid is no longer the market; it's the balancing tool.**

**FIGURE 6.7: LCOE OF PV ELECTRICITY AS A FUNCTION OF SOLAR IRRADIANCE & RETAIL PRICES IN KEY MARKETS\***



\*NOTE: THE COUNTRY YIELD (SOLAR IRRADIANCE) HERE SHOWN MUST BE CONSIDERED AS AN AVERAGE

SOURCE IEA PVPS 8 OTHERS

From Sweden to Türkiye, the Levelised Cost of Electricity (LCOE) for PV now undercuts retail prices. Even in low-irradiance countries, solar competes head-to-head with fossil retail tariffs.

# Solar Unbound

Technology Collaboration Programme  
by

**Firstgreen Consulting reads these trends not as milestones but as signals.**

**Signals that storage, digitalisation, and decentralisation are the next frontiers; that India's policy window is open to lead the 10 TW world; and that the economics of sunlight will define global competitiveness in the 2030s.**

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**Project Value**

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**Clients Served**

Across public and private sectors

**14**

**Years Experience**

Leading India's energy transition

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