



Energy Innovation Forum 2025

In support of Canada's G7 2025 Presidency



The State of Energy Innovation 2025

Co-Chair



Timur Gül
Chief Energy
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IEA



State of Energy Innovation

Dr. Timur Gül, Chief Energy Technology Officer, IEA

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Mass-market spillovers from energy R&D



Initial Li-ion battery R&D was for storing renewable power



Li-ion batteries for smartphones and electronics



Processing seismic data to find oil and gas



Processing musical data for auto-tune

Unconventional oil and gas technologies

2000: USA **imports** 46% of its oil & gas needs



2024: USA **exports** the equivalent of 10% of its needs



Battery, EV and manufacturing technologies

2024: Share of EVs in car sales in China reaches 50%



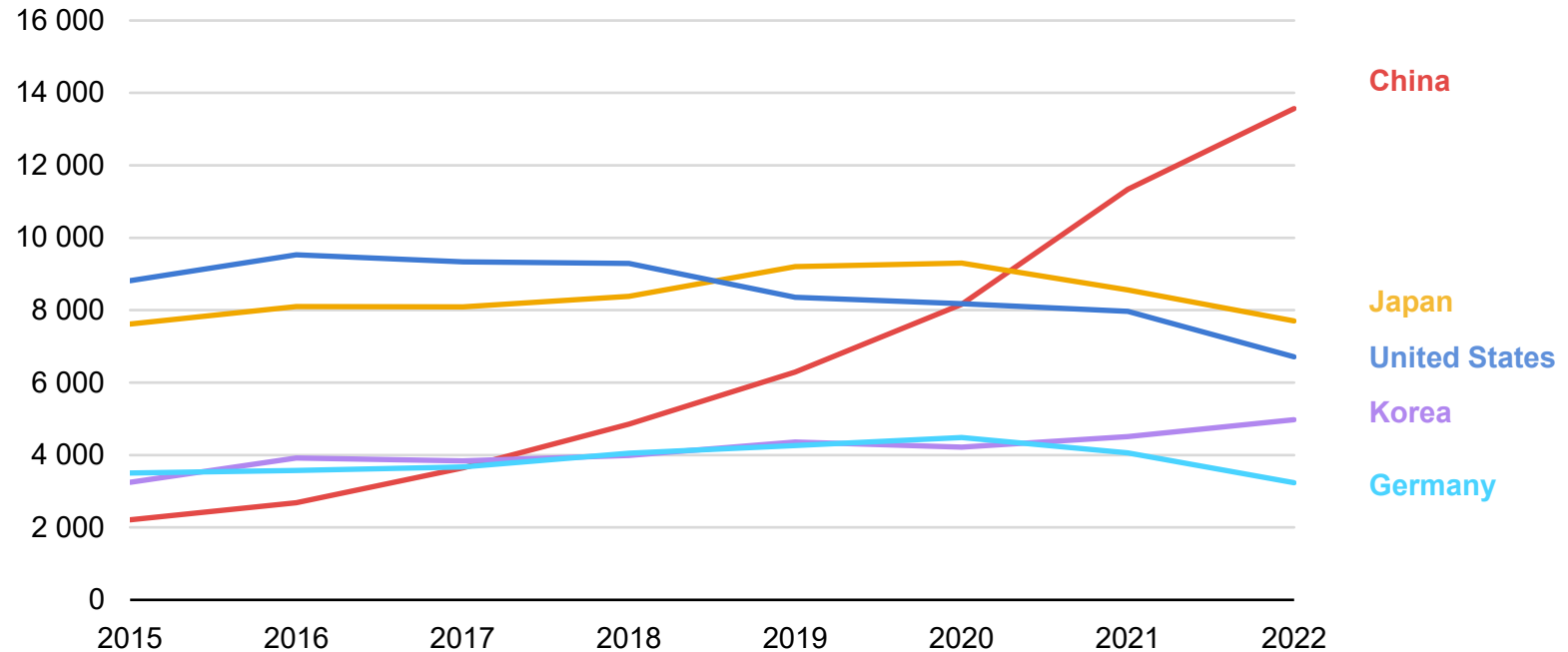
2024: China **imports** 8% **less** oil



The effects of energy R&D are felt far beyond the energy sector, with spillovers and trade impacts driving competitiveness and new industries.

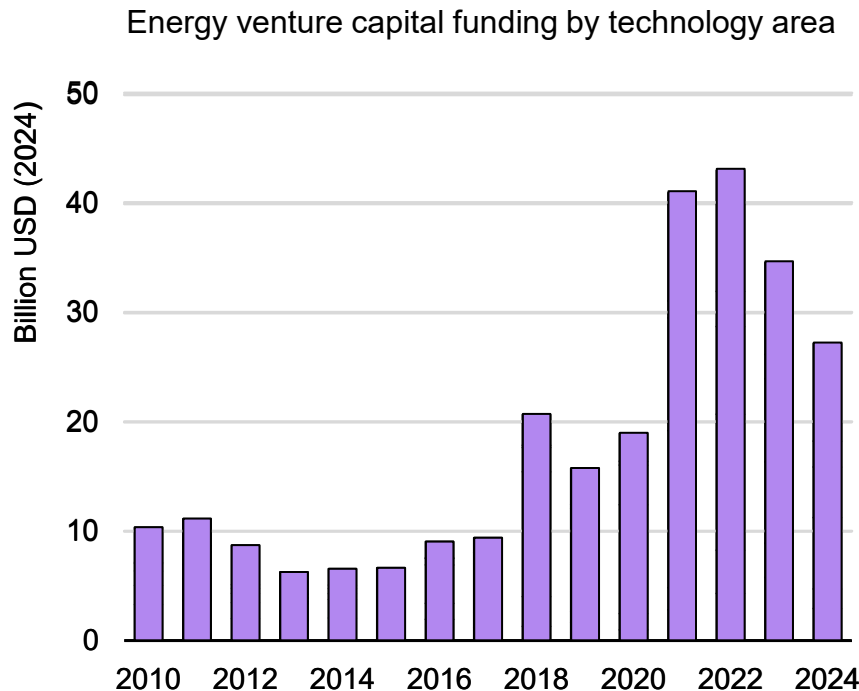
China has been the primary driver of rising energy patenting

Top 5 countries by energy technology patent counts, 2015-2022

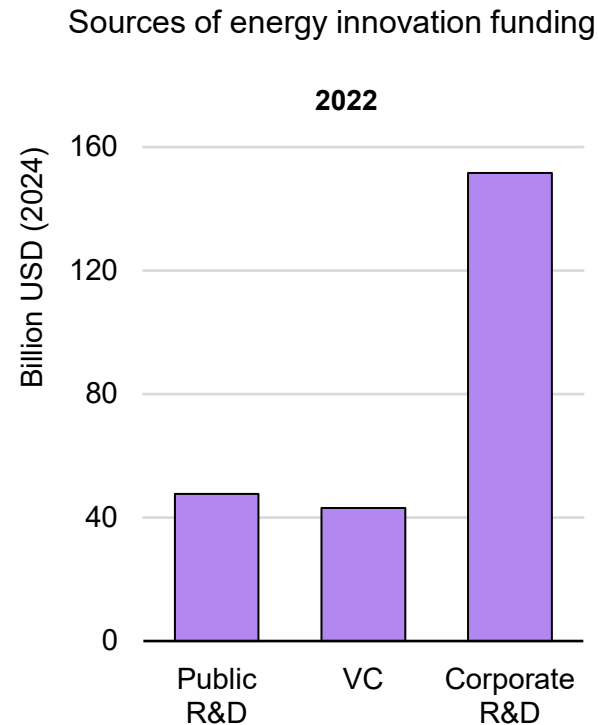


China files more energy technology patents than any other country, over 95% of which are for low-emissions energy. Globally, low-emissions energy patenting was 4.5x higher than other energy patenting in 2000-2022.

Policy and technological change attract capital to energy innovation

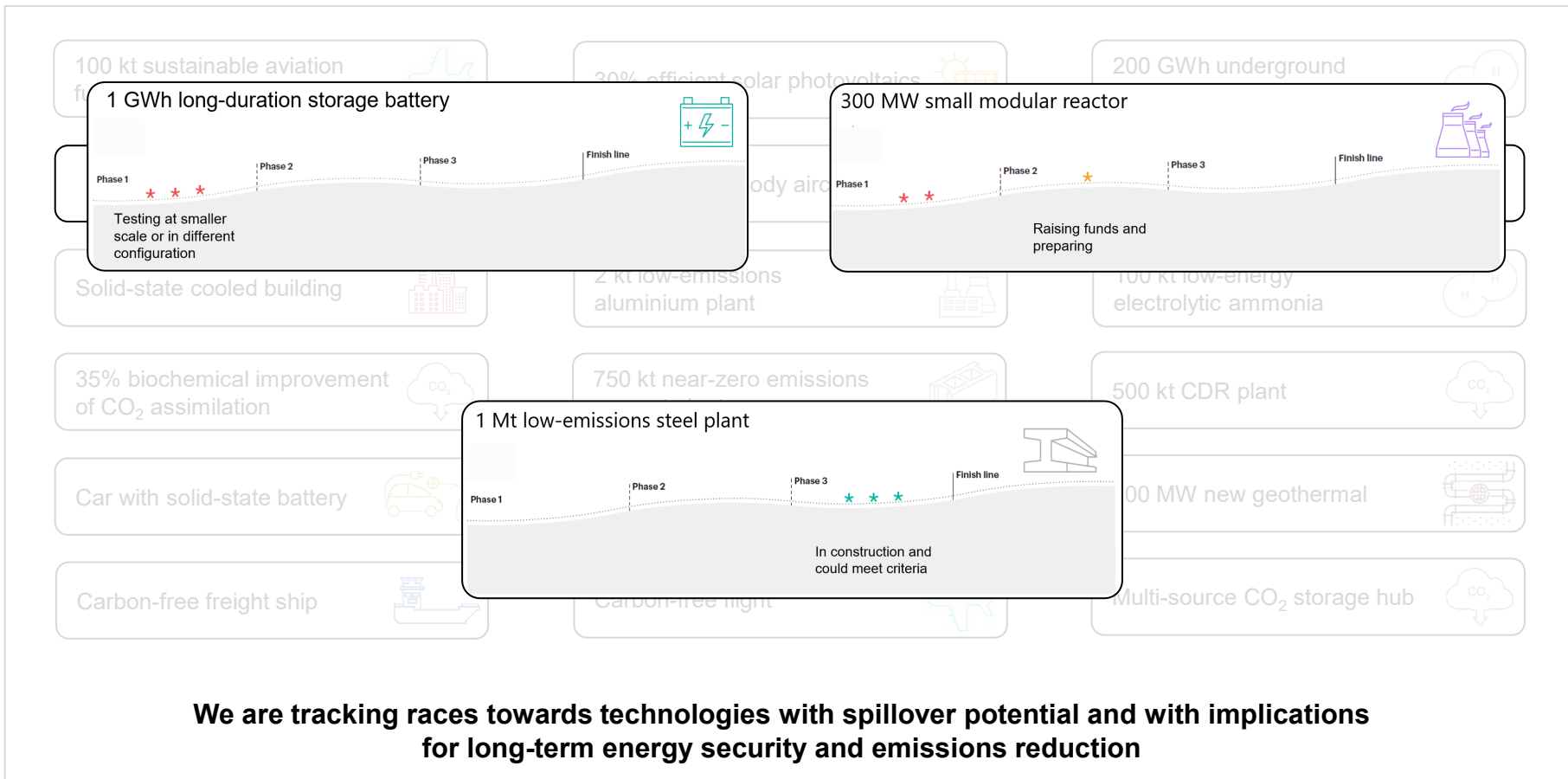


- Other
- Hydrogen
- Storage
- Mobility
- Efficiency & industry
- Renewables



Energy-related VC fundraising boomed from 2015 to 2022, spurred by low interest rates and policies that raised market expectations. But VC capital availability has fallen in the past two years, raising uncertainty for innovators.

IEA is tracking 18 “Races to Firsts” for key demonstration milestones



We are tracking races towards technologies with spillover potential and with implications for long-term energy security and emissions reduction



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Speakers



Rosalinde van der Vlies
Director, Just Transition,
Consumers, Energy Efficiency
and Innovation, DG Energy,
European Commission



Cristina Lopez
Managing Director, Canada
Growth Fund

Moderator



Akshat Rathi
Senior Reporter, Bloomberg News

Speaker



Rosalinde van der Vlies

Director, Just Transition, Consumers,
Energy Efficiency and Innovation, DG
Energy, European Commission

Speaker



Cristina Lopez
Managing Director,
Canada Growth Fund

Questions for discussion

Which are the brightest spots of technology progress in the past year

What technology areas are misunderstood or undervalued by investors and funders?

What risks do innovators face in the near term if critical barriers are not removed?

Where should G7 governments focus their efforts?



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