

Building a resilient EU

Market Pull and European Investments in Plastics Recycling

TU Bergakademie Freiberg

Potenziale von chemischem Recycling im Rahmen der Vordenkwerk-Exkursion

26.01.2026

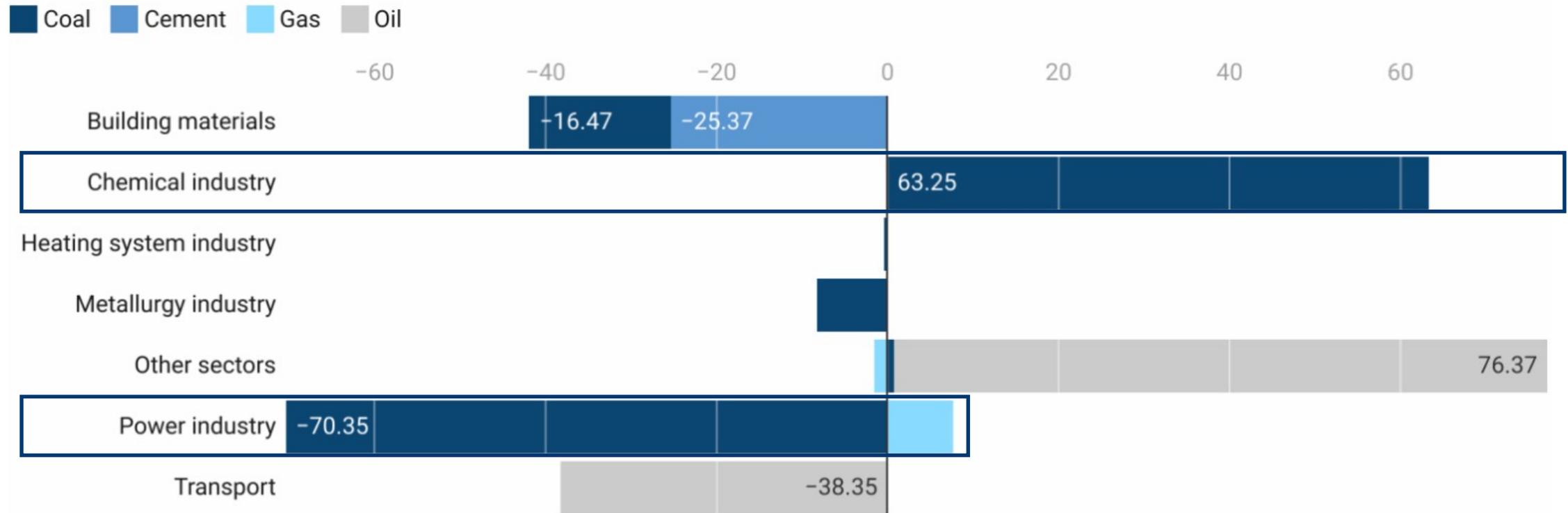
Dr. Jens Hamprecht

Vice President - Global Plastics Steering Committee Coordination

BASF SE

China: Chemicals as a focus topic of the 5 Year Plan 2026-30

Year-on-year change in emissions during three quarters of 2025, MtCO2

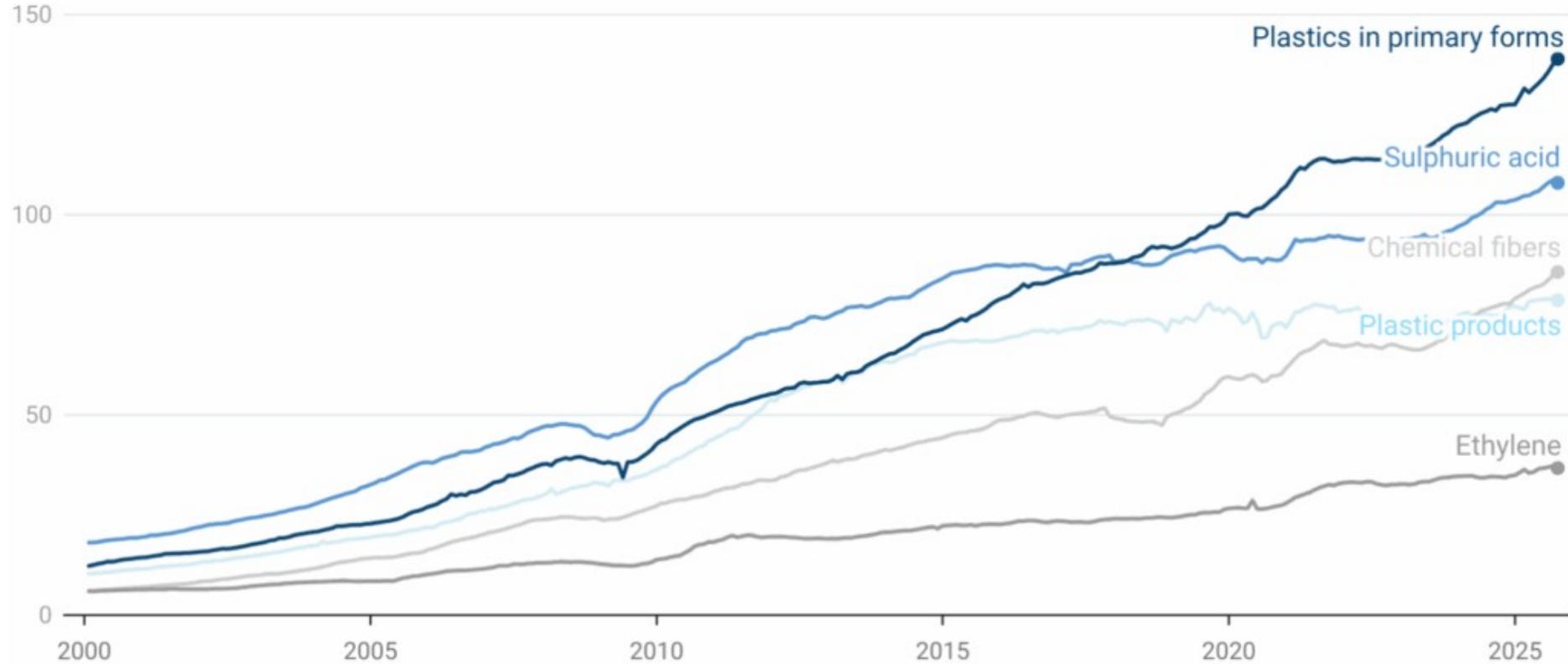


Source: Analysis for Carbon Brief by Lauri Myllyvirta

China: Petrochemicals will be subject to Chinese ETS by 2027

China's production of plastics and related chemicals is surging

Chemical industry output by product, million tonnes per year, 12-month rolling totals



Source: National Bureau of Statistics



[Source: State Council of PRC, 2025](#)

China: Implementing circular economy hubs in practice

Example of tire recycling

1 Qingdao, Shandong province
processing scale 50,000 tons tires



Tsingtao CE Park
World-class green and low-carbon high-end petrochemical industrial base
300km radius:
Shandong population (2nd): ~ 101 million > Germany + Netherlands population

2 Zhumadian, Henan province
processing scale 100,000 tons tires



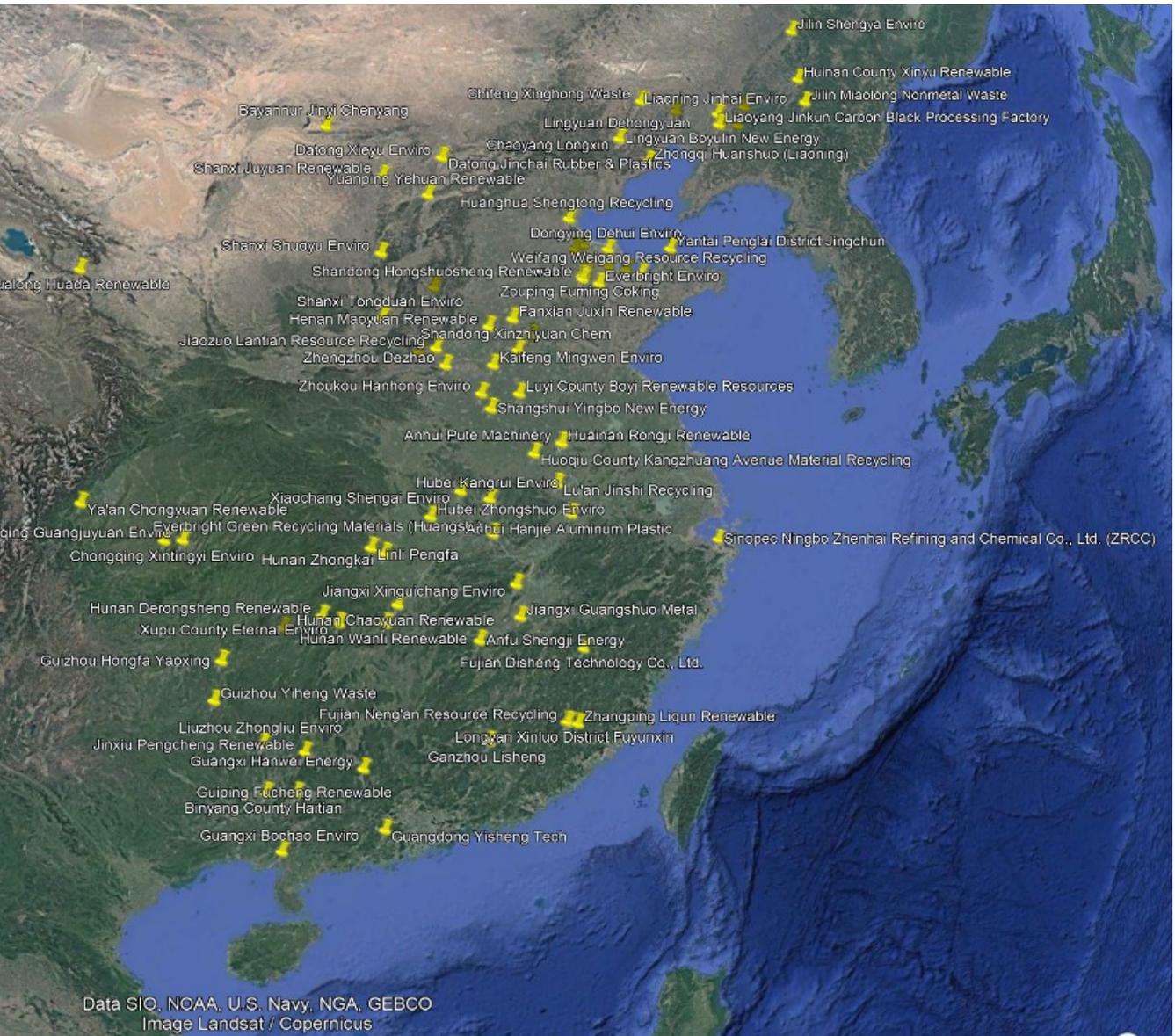
Zhumadian CE Park
Largest low-speed electric vehicle (e.g. Scooter & moped) production base
300km radius:
Henan population (3rd): ~ 98 million > Germany + Belgium population

3 ShiYan, Hubei province processing scale 100,000 tons tires



ShiYan CE Park (Vehicle City)
Expected goals for resource recycling industry: 9 billion euro
300 km radius:
~ 65 million = France population

China: 4.5m tons pyrolysis oil from tires across China



Highly decentralized network of pyrolysis oil plants

China: Financial support of circular economy hubs spans across investments, operational costs, and research & development

1

Government investment and subsidies

- National financial investment, maximum 15% of overall investment
- Subsidies for asset recovery and recycling centers, maximum €250K

2

Tax benefits

- 10% off tax reduction for environmental protection equipment and accelerated depreciation for fixed assets
- VAT reduction for recycled products (70% off for recycled plastics)

3

Partnerships in building the EPR Ecosystem

- Simplified licensing procedures for pilot enterprises

4

Technology

- Promoting industrial innovation, publishing technology catalogs, advancing clean production processes, and supporting the development of resource recycling and utilization equipment

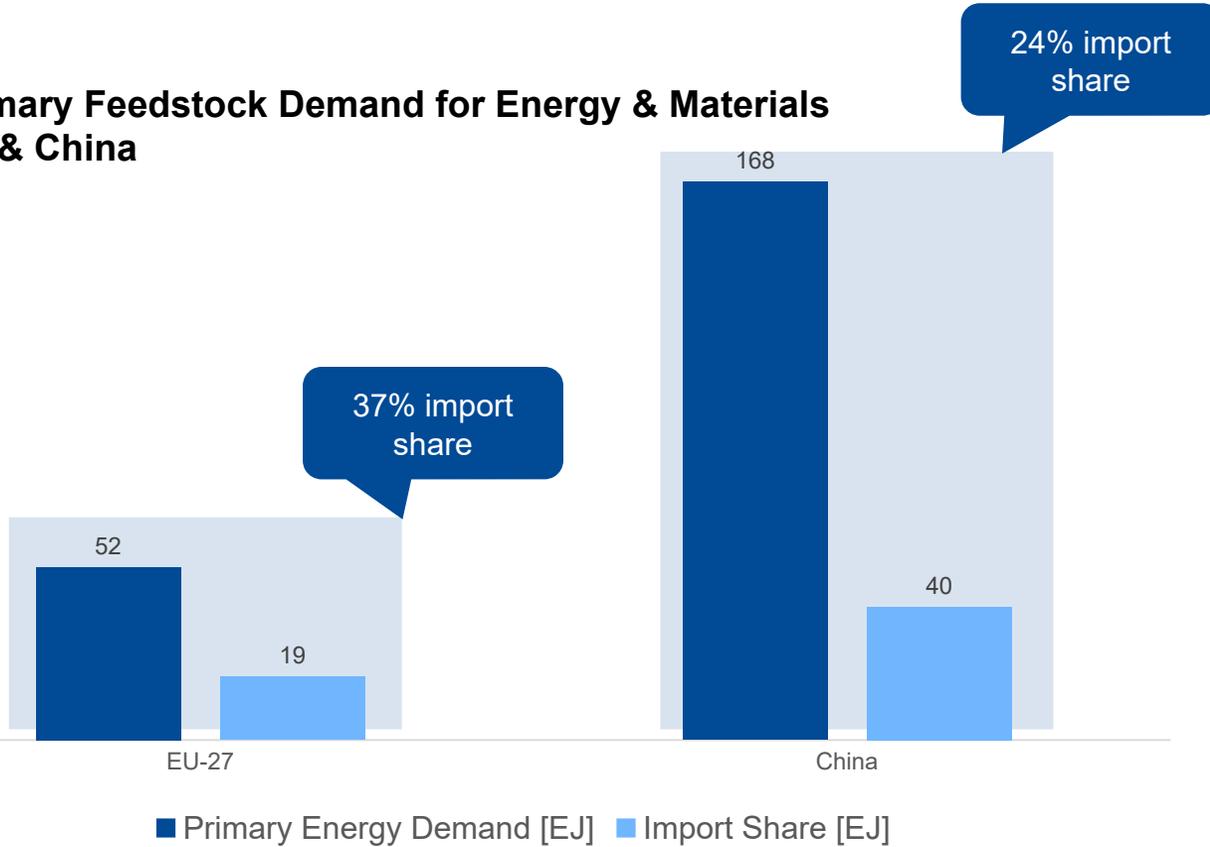
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New: Support of Oversea Investments

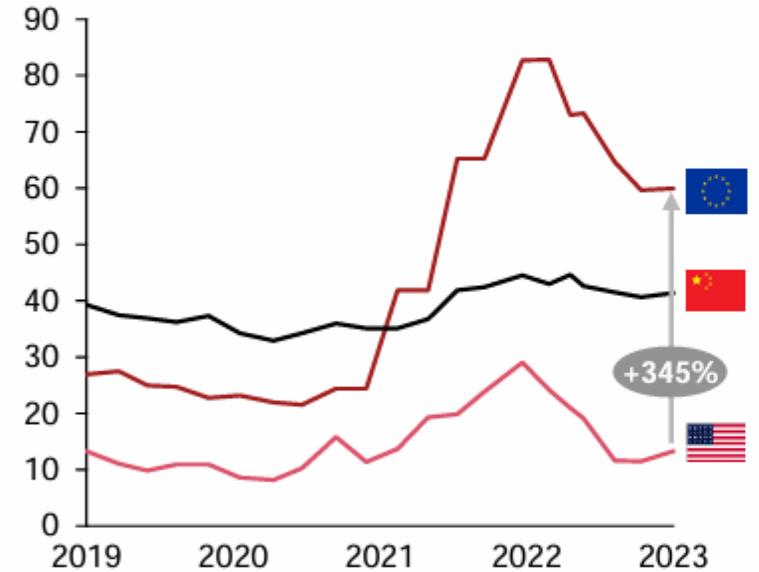
- Support Chinese companies to invest outside of China for recycling of resources

EU has higher dependency on fossil fuel and pays higher prices for it

Primary Feedstock Demand for Energy & Materials
EU & China



Industrial gas prices €/MWh



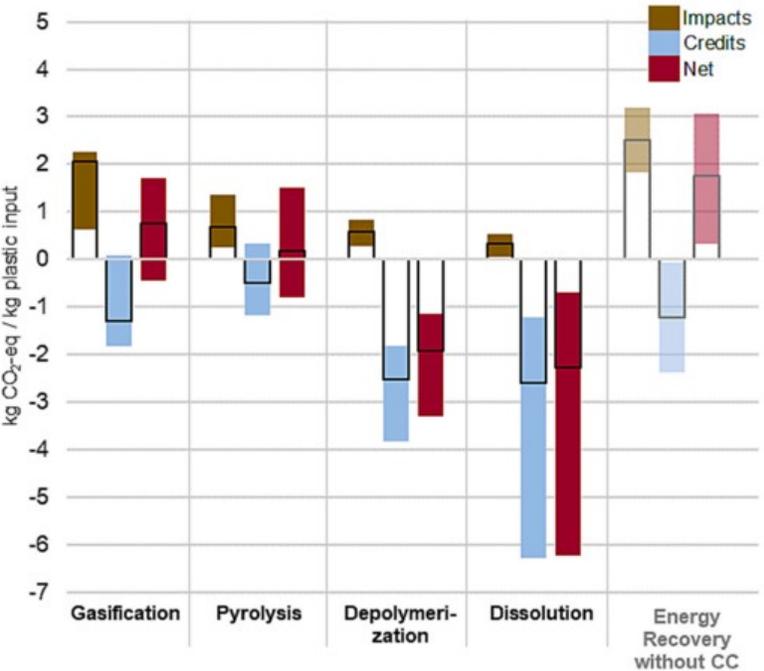
The price differential is amongst others driven by 1) the EU's **lack of natural resources**; 2) the EU's **limited bargaining power** despite being the world's largest buyer of natural gas; 3) the EU's **slow infrastructure investments**; 4) the EU's **higher energy taxation**; and 5) the EU's **stricter regulation**

But China aims for global cost leadership in Circular Economy

Sources: [EMBER 2026, Europe is highly vulnerable due to reliance on fossil imports](#);
[PWC 2024, Study on the Future of the Chemical Raw Material Value Chain and the role of alternative Waste Processing Technologies](#)

Internal

To minimize emissions, a combination of recycling technologies is needed



The waste stream at hand determines the recycling technology that fits best.

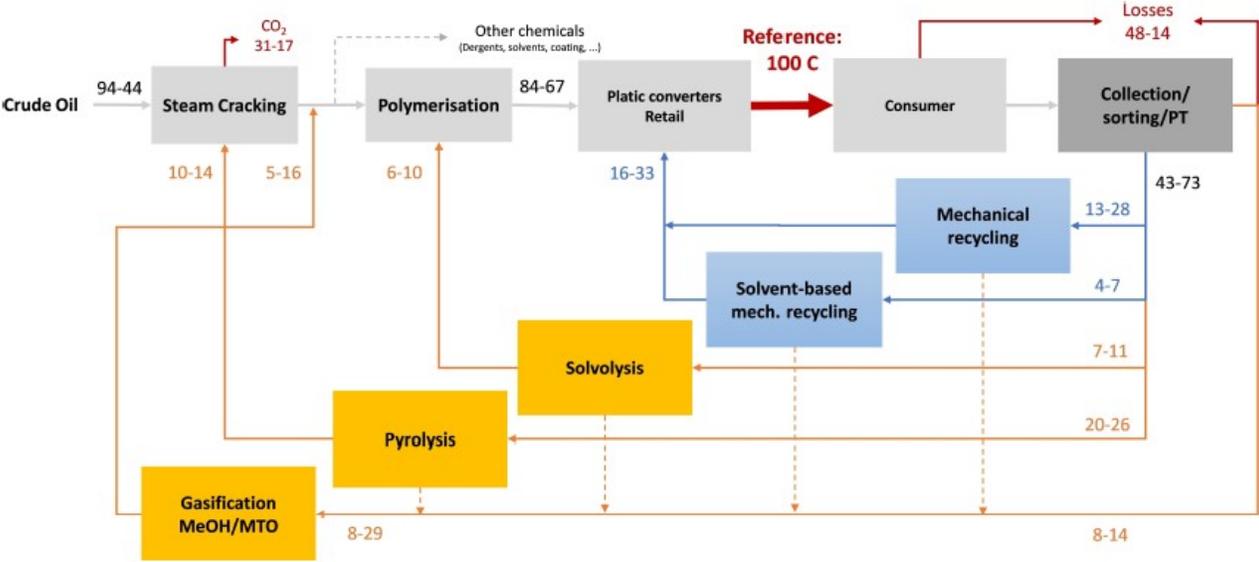
Source: Klotz, Magdalena, et al., Science of the Total Environment, 2024



Proposal for Scaling Plastic Circularity Hubs in Europe

Rationale

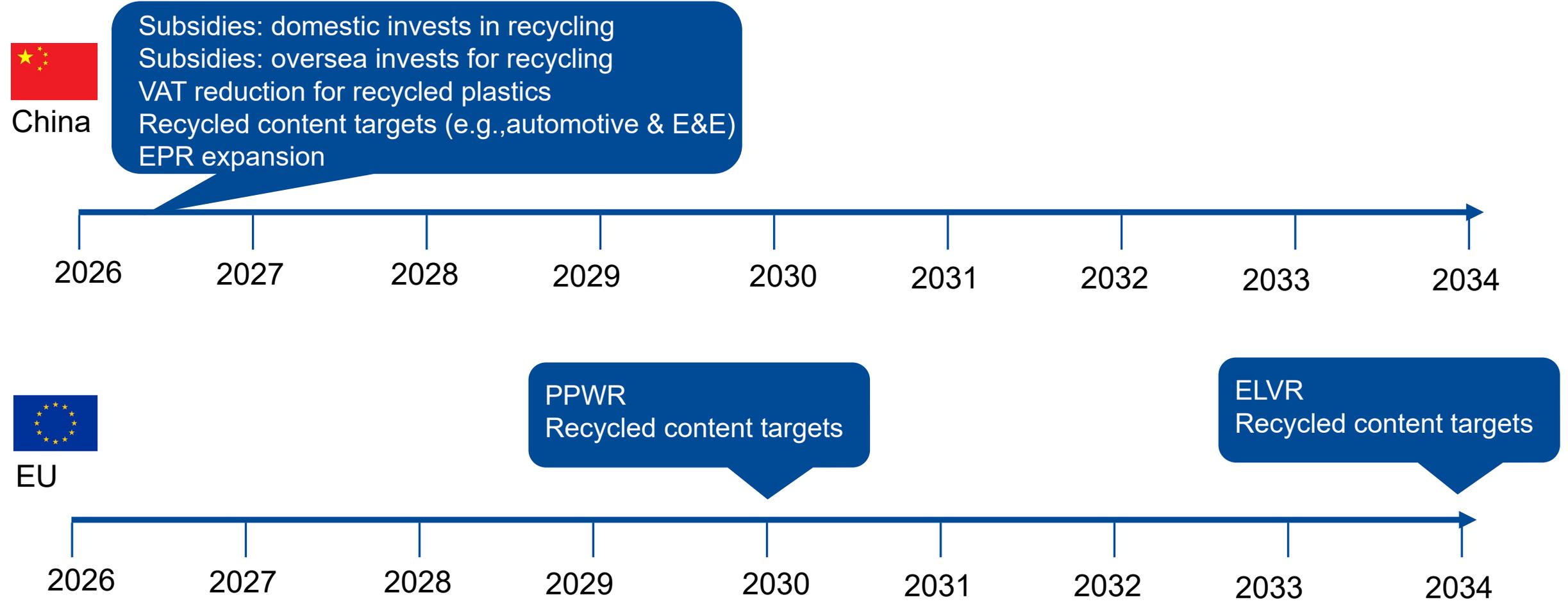
- Double challenge of chemical value chain:
 - ▶ Emissions of feedstock
 - ▶ Costs of feedstock (also policy-driven)
- How China addresses the challenge: CRRG and supportive policies
- Pan-European recycling cascade needed to:
 - ▶ optimize utilisation of waste streams and recycling plants
 - ▶ minimize emissions of recycling



Normalized carbon flow of a cascade of recycling technologies based on mechanical recycling (blue) and chemical recycling (orange) technologies. The numbers represent normalized C-flows, based on a realistic (2030) – futuristic (2050) sorting scenario. (The naphtha intake is scaled to deliver 100 unit of C plastics on the market, excl. the additional non-plastics chemicals).

Source: Lange, J.-P. et. Al., ChemSusChem 2024, 17, e202301320

Market Pull Measures in China become effective several years earlier



Opportunities to speed up & strengthen market pull measures in EU



Microsoft purchases green steel certificates

Book & Claim of High Quality Environmental Certificates with clear guardrails for dedicated value chain

Watchout for price fluctuations when certificates get traded



EPR – based approach

EPR system
A producer responsibility organization collects and assigns funds

Ensure EPR is ongoing, transparent and sufficient

Contact

For questions, suggestions or comments, get in touch via

Jens.Hamprecht@basf.com or

<https://www.linkedin.com/in/jens-hamprecht/>

More information on plastic recycling projects at BASF: [Link](#)



We create chemistry