



CLEAN AIR
TASK FORCE

EU Chemicals in Transition

Structure, Trends, and Outlook for Europe's Basic Chemicals

16 July 2026, 10:00 – 10:45 CEST

CATF at a Glance

Founded in 1996.

A global nonprofit with offices in Boston, Washington, D.C., and Brussels with staff working virtually around the world.

Our Mission: Push the technology and policy changes needed to achieve a zero-emissions, high-energy planet at an affordable cost.

Our Vision: Meet the world's rising energy demand in a way that is financially, socially, and environmentally sustainable.



Today's Speakers



Alex Carr

Deputy Director, Industrial
Innovation, Europe, Clean Air
Task Force



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Director, Production, Industrial
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Force

An aerial photograph of a large industrial facility, likely a refinery or petrochemical plant. The image shows numerous large, cylindrical storage tanks of various colors (white, yellow, blue, and red) arranged in rows. A dense network of pipes and conduits crisscrosses the site, connecting the tanks and other industrial structures. The background shows some greenery and additional industrial buildings. The entire image has a blue tint, and the left side is partially obscured by a semi-transparent blue overlay where the text is located.

Building Blocks

Petrochemicals in the EU: Foundations and Pressures

WHAT IS AT STAKE

A **€635 billion** foundation beneath virtually every sector of the economy



€635bn

annual turnover, one of the EU's largest manufacturing sectors



1.2m

people employed across the bloc



31,000

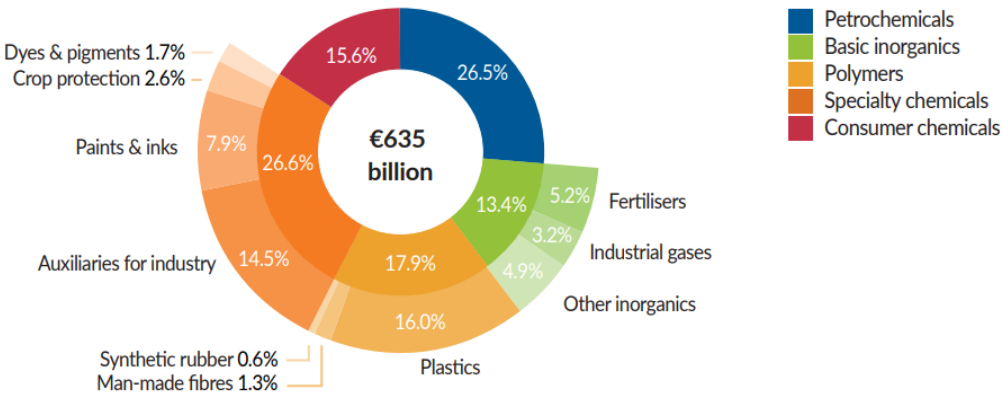
Companies, of which 97% are SMEs embedded in local economies



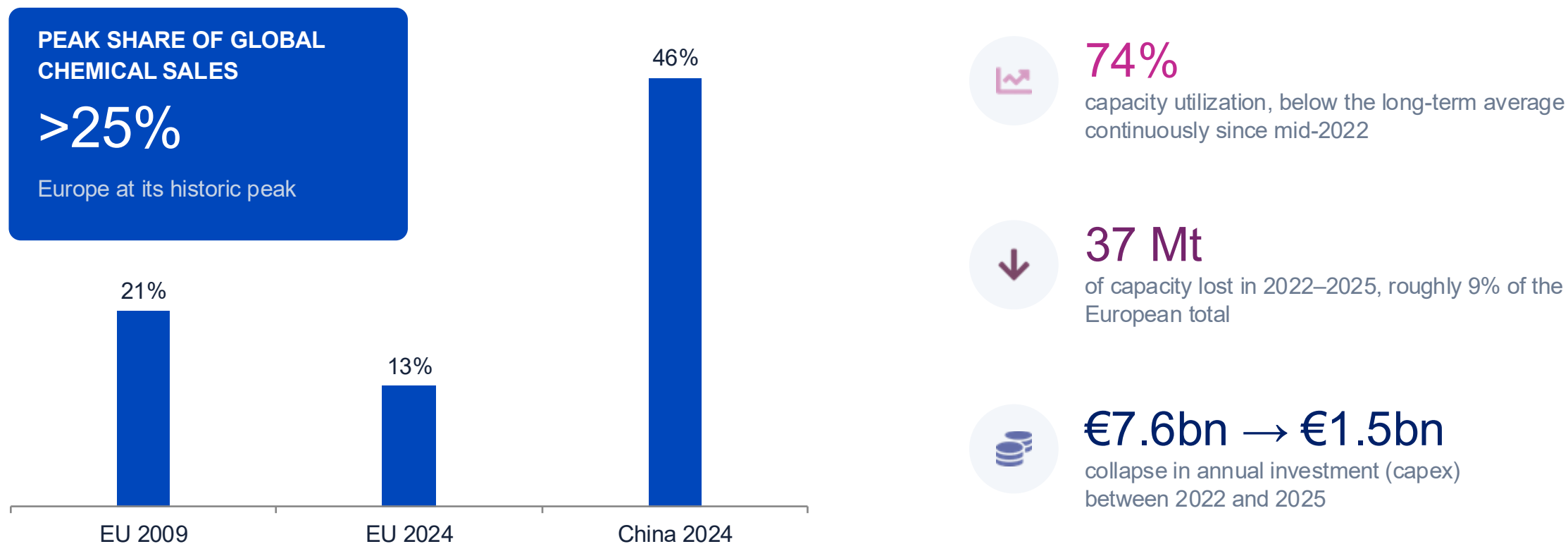
Primary petrochemicals sit at the centre of the web

Ethylene, propylene and the other building blocks are the invisible raw materials inside packaging, construction, vehicles, textiles, pharmaceuticals and more. When that centre is disturbed, the shock is felt across every downstream category.

EU27 chemical sales, 2024



Europe's share has halved as China built the position Europe once held



EU market share fell 8 points in 15 years while China rose to 46% of global sales.

Source: Cefic Chemdata International

HOW THE INDUSTRY IS ORGANISED

Five tiers of rising value and the building blocks sit at the hinge



Increasing complexity and value add



Primary petrochemicals comprise three classes of molecules



Olefins

Ethylene · Propylene · Butadiene

Unsaturated hydrocarbons for plastics and synthetic rubbers

Why it's exposed: The primary products of steam cracking. When cracker capacity closes, all three molecules are lost simultaneously, with no easy substitution route particularly for butadiene.



Aromatics

Benzene · Toluene · Xylenes

Cyclic compounds for polymers, solvents and fibres

Why it's exposed: Oil refining supplies large volumes. Refinery closures are a second, separate threat that compounds the cracker-closure wave.



Methanol

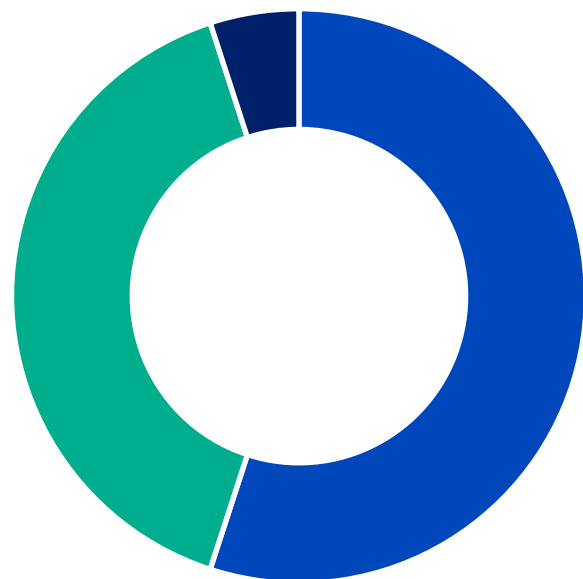
Methanol

Precursor to formaldehyde, fuels and olefins

Why it's exposed: Domestic output covers under 15% of consumption. Only two fossil-based plants remain in the EU, both reliant on refinery feedstock.

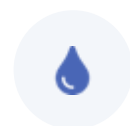
THE STARTING MATERIALS

Almost every petrochemical still begins as oil, gas or coal



■ Crude oil ■ Natural gas ■ Coal

Share of fossil feedstock for global chemical production (2013)



Crude oil ~55%

Refined into off gases, liquified petroleum gas (LPG) and naphtha for steam crackers; primary source of aromatics via catalytic reforming



Natural gas ~40%

Primary source of ethane steam crackers, methane (reforming into methanol and ammonia), and natural gas liquids (NGL) for lighter cracking



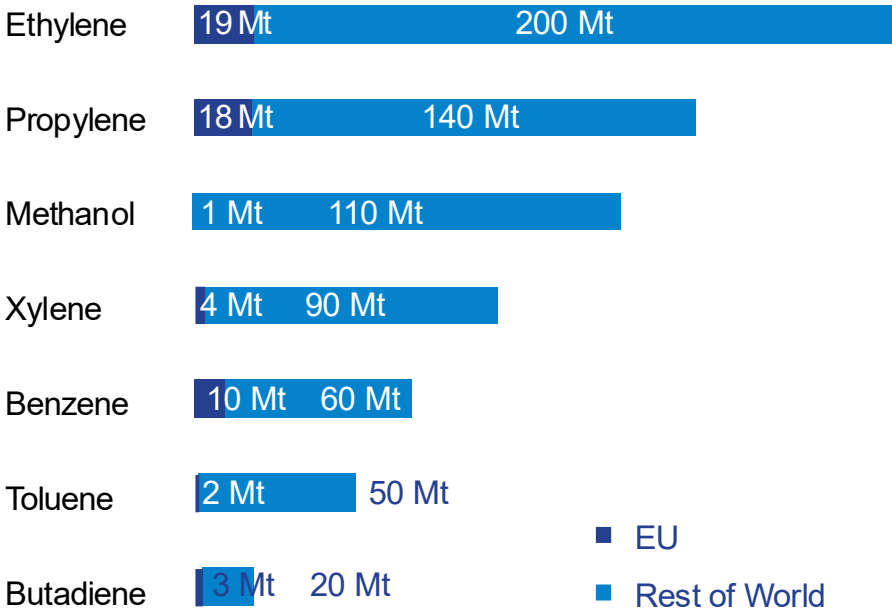
Coal ~5%

Gasification to syngas for methanol, ammonia, and olefins; predominantly used in China

The chemical industry consumes 14% of global oil demand and 8% of natural-gas demand and reliance on fossil feedstock is near-total.

Source: Levi & Cullen (2018); IEA

The EU makes under a tenth of the world's primary petrochemicals



Global and EU production capacity of primary petrochemicals in million tonnes per year

Source: Petrochemicals Europe, BNEF, CATF analysis

A price-taker, not a price-maker

- Small share, high exposure
At under 10% of world capacity, the EU cannot set global prices as it competes against far larger, lower-cost producers.
- Consumption outruns production
Europe consumes slightly more of nearly every building block than it makes.
- Capacity is contracting
Domestic facilities are closing faster than new ones are built, deepening dependency with each closure.

BUILDING BLOCKS

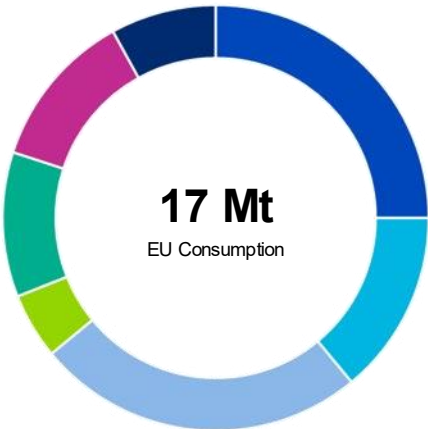
Ethylene: The industry benchmark



Top Producing Countries



Top Producing Companies



- LDPE: Plastic bags, bottles and film
- LLDPE: Plastic bags, food packaging, cable insulation
- HDPE: Pipes, rigid containers
- EB: Intermediate input for packaging (PS), tires (SBR)
- EO: Intermediate input for PET bottles, antifreeze (EG), detergents
- EDC: Intermediate input for pipes, flooring and cable insulation (PVC)
- Others: Others includes ethanol, acetaldehyde, EPDM, EVA, VAM and other derivatives

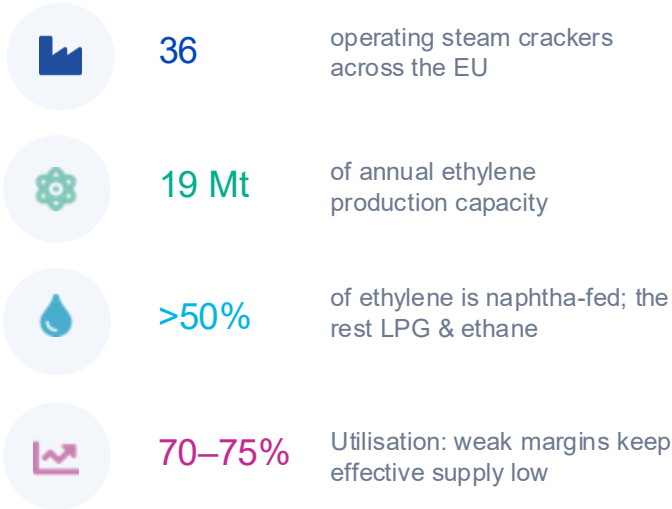


LDPE: Low-density polyethylene, LLDPE: Linear low-density polyethylene, HDPE: High-density polyethylene, EB: Ethylbenzene, EO: Ethylene Oxide, EDC: Ethylene dichloride, EPDM: Ethylene Propylene Diene Monomer, EVA: Ethyl Vinyl Acetate, VAM: Vinyl Acetate Monomer

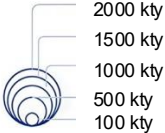
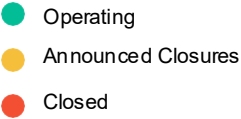
Source: [Petrochemicals Europe](#), CATF Analysis

THE CENTRAL UNIT

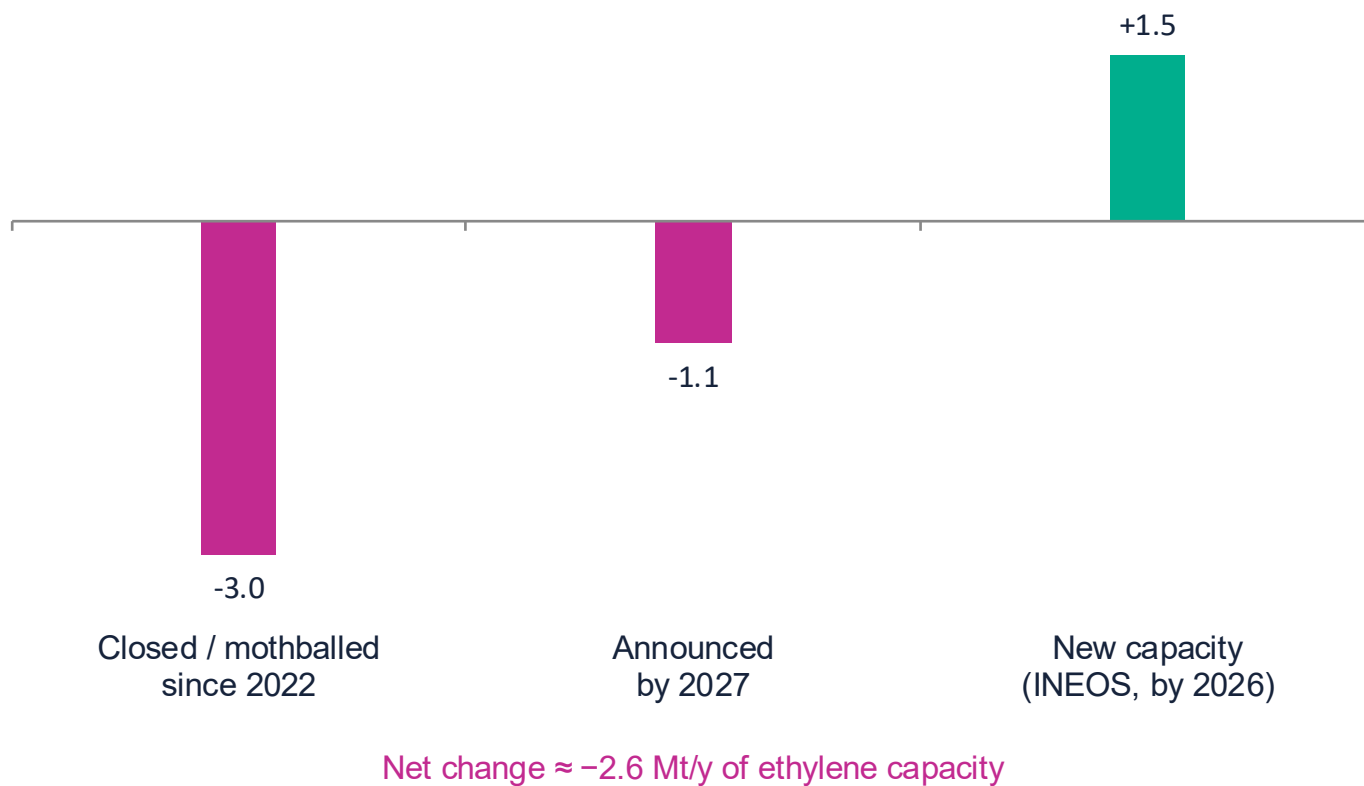
Steam crackers sit at the heart of the EU chemical industry



Steam Crackers



Capacity is shrinking now and closures outweigh the one addition



Italy falls to zero

With Brindisi and Priolo closing, Italy will have no domestic ethylene production, and its downstream polymer and chemical industry becomes dependent on imports.

What sits behind the bars

-3.0 Mt Versalis (IT), ExxonMobil (FR), Dow & SABIC (NL)

-1.1 Mt TotalEnergies (BE) and Dow (DE)

+1.5 Mt INEOS Project ONE (BE) — reliant on imported ethane

BUILDING BLOCKS

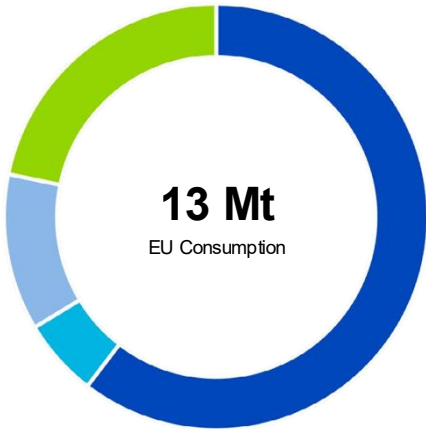
Propylene: Second largest olefin



Top Producing Countries



Top Producing Companies



- PP: Packaging, furniture, appliances, automotive, textiles
- PO: Intermediate input for foams and elastomers (polyurethanes), antifreeze (PG)
- Cumene: Intermediate input for polycarbonate plastics and epoxy resins (BPA) & industrial solvents (acetone)
- Others: Others includes IPA, ACN, 2EH, OXO alcohols

LP: Polypropylene, PO: Propylene Oxide, IPA: Isopropyl Alcohol, ACN: Acrylonitrile, EH: 2-ethyl hexanol, OXO: oxo alcohols, PG: Propylene Glycol, BPA: Bisphenol A

Source: [Petrochemicals Europe](#), CATF Analysis



A third of propylene in the EU is supplied by refineries and propane dehydrogenation



5 plants

on-purpose PDH only — rare vs rapid U.S. & China build-out



RO · GR · IT · HR

rely exclusively on refinery sources



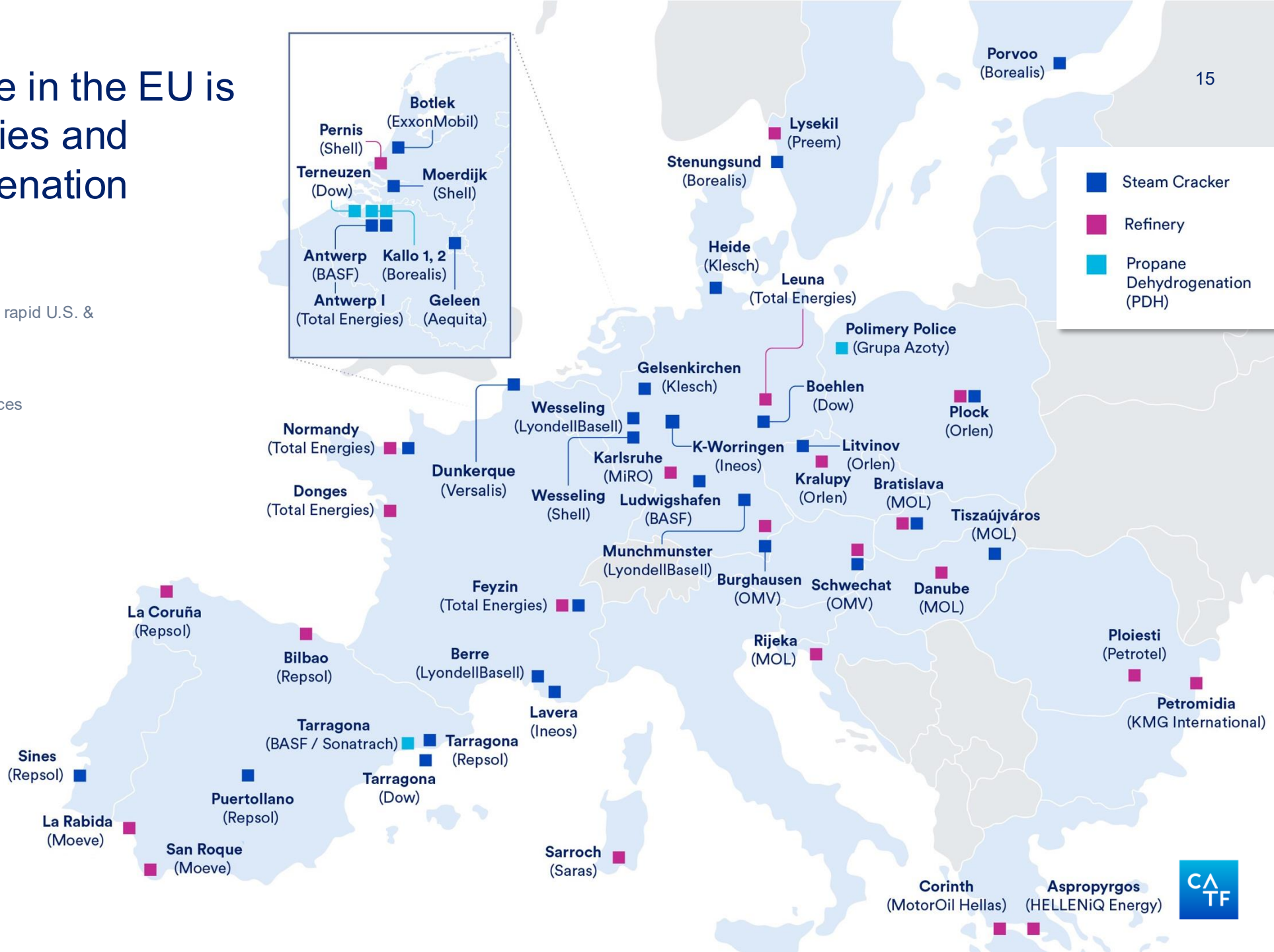
Supply contraction

FCC by-product falls as refining contracts



Supply ≠ demand

output spread across states;
demand in NW polymer hubs



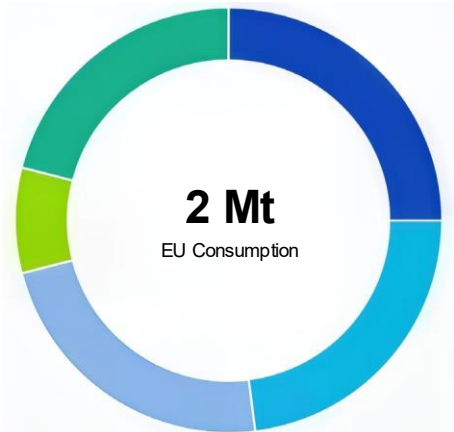
Butadiene: The rubber molecule



Top Producing Countries



Top Producing Companies



- PBR:** Raw material for tires, intermediate in the production of ABS resin used in electronics and car parts
- SBR:** Primarily used in tires and tire products, also used in adhesives, sealants, coatings for wires and cables
- Adiponitrile:** Intermediate chemical ultimately used in the production of Nylon 6,6 used in engineered plastics, furniture, carpets, clothing
- SB latex:** Foam rubber, adhesives, sealants and paper coatings
- Others:** Others includes thermoplastic elastomer, ABS resin, nitrile rubber, CR, MBS resins, styrenic block copolymers, nitrile barrier resins, K-Resin®, and specialty polybutadiene polymers

PBR: Polybutadiene Rubber, SBR: Styrene Butadiene Rubber, SB latex: Styrene Butadiene Latex, ABS: Acrylonitrile-butadiene-styrene, CR: Polychloroprene (neoprene) rubber, MBS: methyl methacrylate-butadiene-styrene

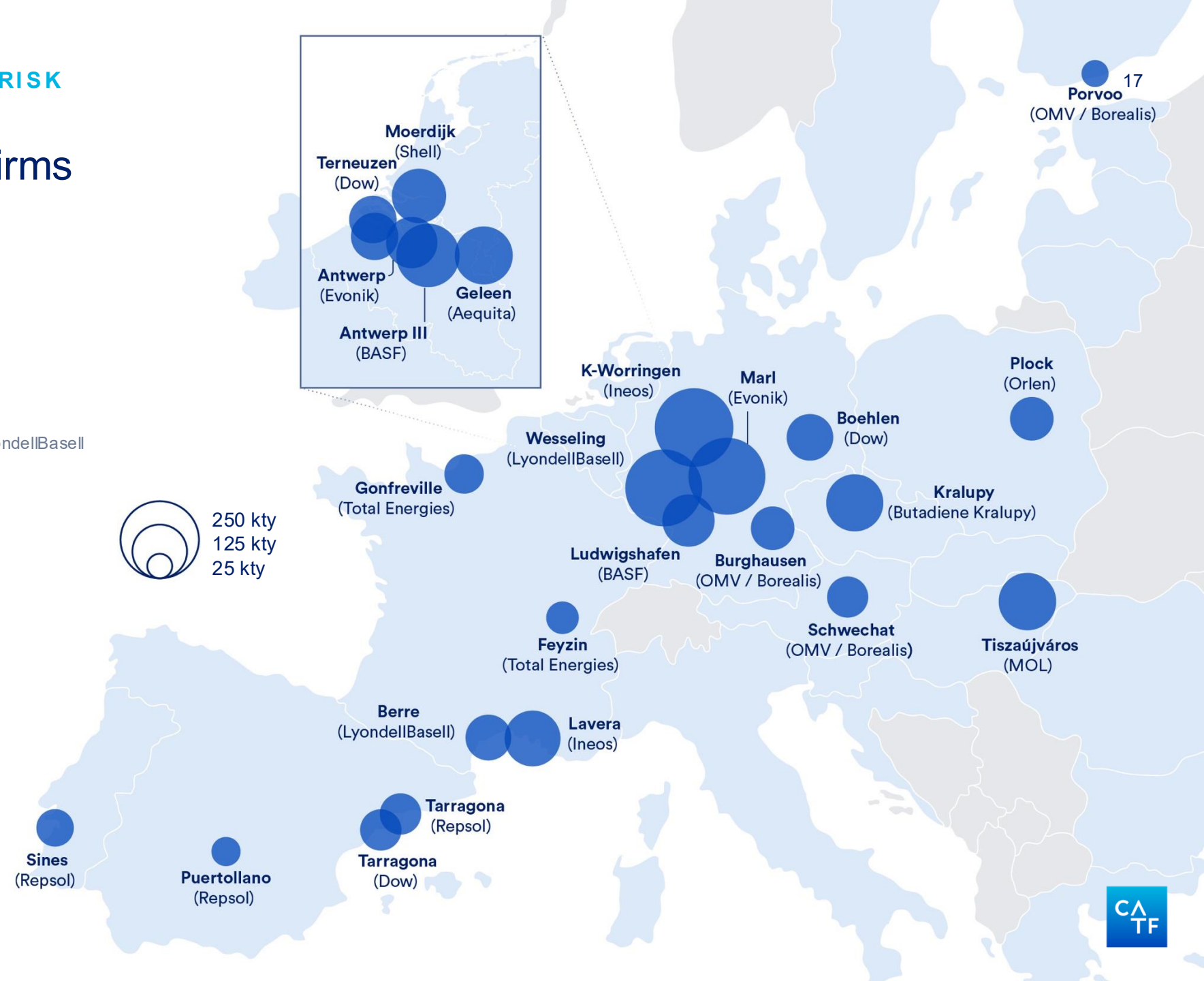
Source: [American Chemistry Council](https://www.americanchemistry.com)



CONCENTRATION AS SYSTEMIC RISK

Two countries and four firms hold most EU butadiene

-  **>50%**
of EU capacity in Germany + the Netherlands
-  **~55%**
held by the top four: INEOS, Dow, Evonik, LyondellBasell
-  **Pure C4**
Evonik (320 kt/y) & Kralupy (130 kt/y) —
no crackers of their own
-  **-105 kt/y**
Dow Böhlen scheduled to close by 2027
-  **+120 kt/y**
new unit under construction
(Orlen–Synthos, Dec 2025)



BUILDING BLOCKS

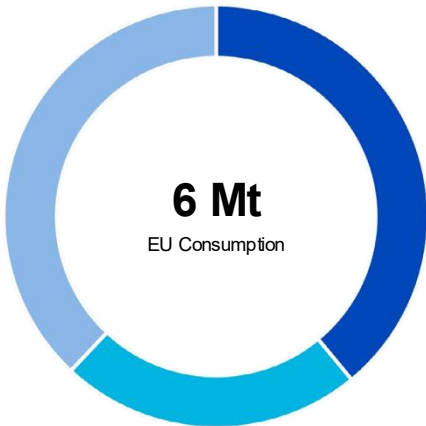
Benzene: Cornerstone of the aromatic value chain



Top Producing Countries



Top Producing Companies



- EB: Intermediate input for packaging (PS), tires (SBR)
- Cumene: Intermediate input for polycarbonate plastics & epoxy resins (BPA) and industrial solvents (acetone)
- Others: Others includes Alkylbenzene, Nitrobenzene and Cyclohexane

EB: Ethylbenzene, PS: Polystyrene, SBR: Styrene Butadiene Rubber

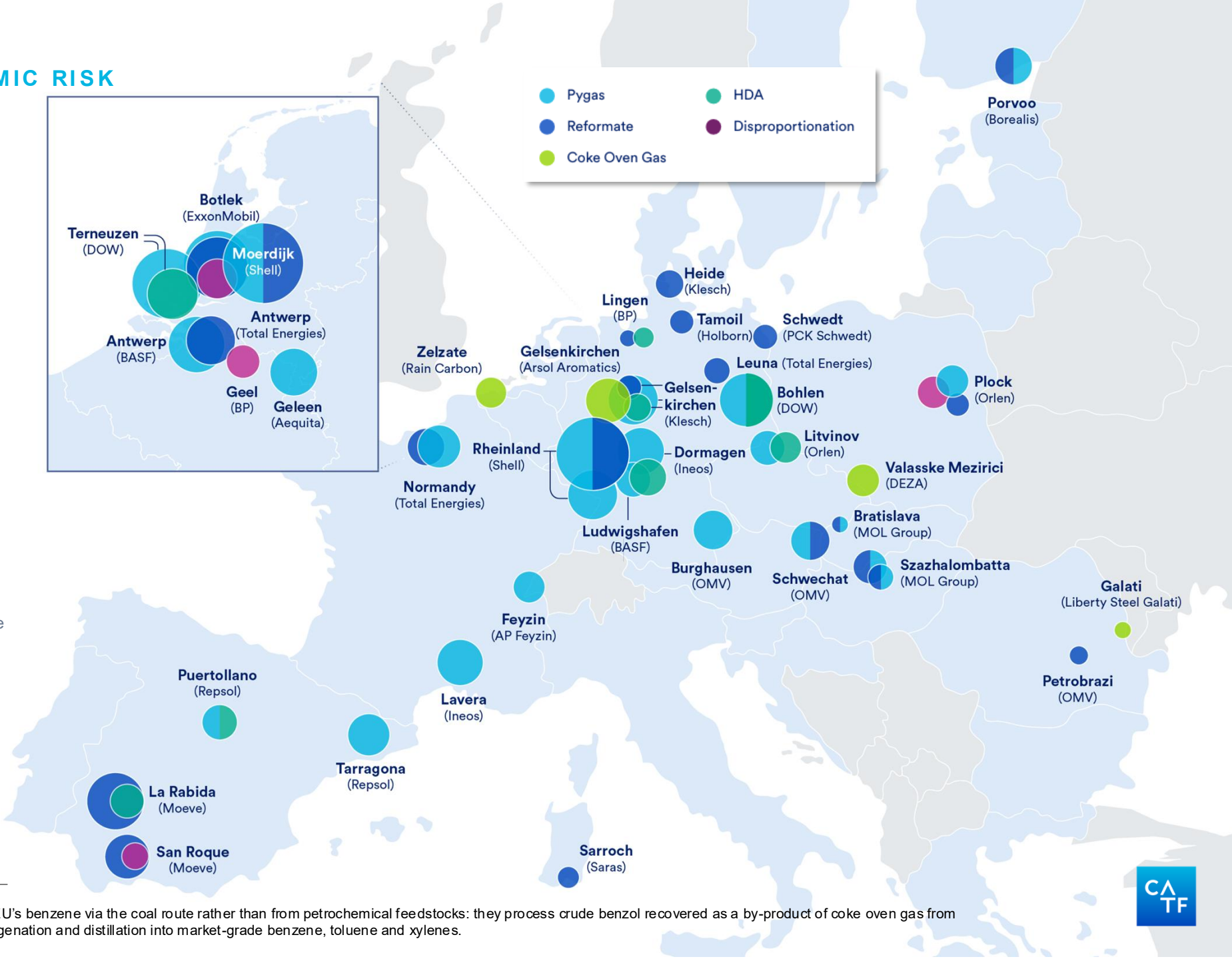
Source: [Petrochemicals Europe](#), CATF Analysis



CONCENTRATION AS SYSTEMIC RISK

Half of EU benzene capacity sits in two countries

-  **>50%**
of EU capacity in Germany + the Netherlands
-  **52 · 12**
52 producing sites; 12 make on-purpose benzene from toluene
-  **Dual squeeze**
cracker + refinery closures cut both feed streams
-  **-300 kt/y**
Dow Böhlen closure by 2027 hits the EU's largest producer



¹ There are four plants that collectively produce ~5% of the EU's benzene via the coal route rather than from petrochemical feedstocks: they process crude benzol recovered as a by-product of coke oven gas from steelmaking or coking operations and refine it through hydrogenation and distillation into market-grade benzene, toluene and xylenes.

BUILDING BLOCKS

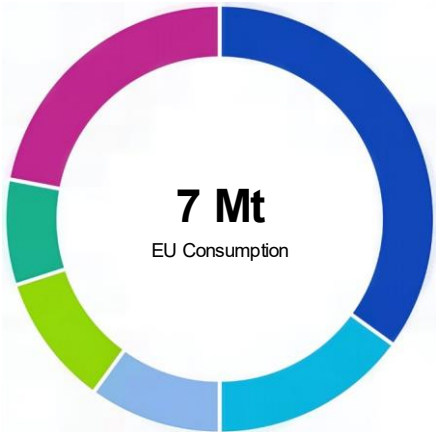
Methanol: The unsung building block behind everyday life



Top Producing Countries



Top Producing Companies



- Formaldehyde: Resins, adhesives, wood panels and construction materials
- MTBE: Gasoline octane booster and oxygenate additive
- Acetic Acid: Paints, adhesives, synthetic fibers and PET packaging
- Biodiesel (FAME): Renewable diesel blend stock via vegetable oil transesterification
- Solvents: Industrial cleaning, coatings, antifreeze and direct process solvent
- Others: Includes DME, methylamines, MMA and agrochemicals

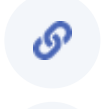
MTBE: Methyl tert-butyl ether, PET: Polyethylene terephthalate, FAME: Fatty Acid Methyl Ester, DME: Dimethyl Ether, MMA: Methyl methacrylate

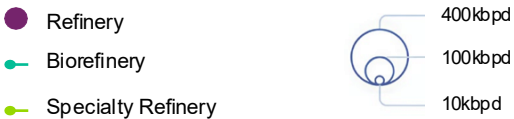
Source: Methanol Institute, BNEF, CATF Analysis



THE SECOND, QUIETER SUPPLY LOSS

Refineries are a hidden petrochemical supplier and they're closing too

-  22 refineries produce aromatics from reformat
-  22 + 2 produce propylene (FCC units, plus 2 via metathesis)
-  15 integrated refining + petrochemical sites
-  8 specialty refiners (bitumen, solvents, heavy fuels)



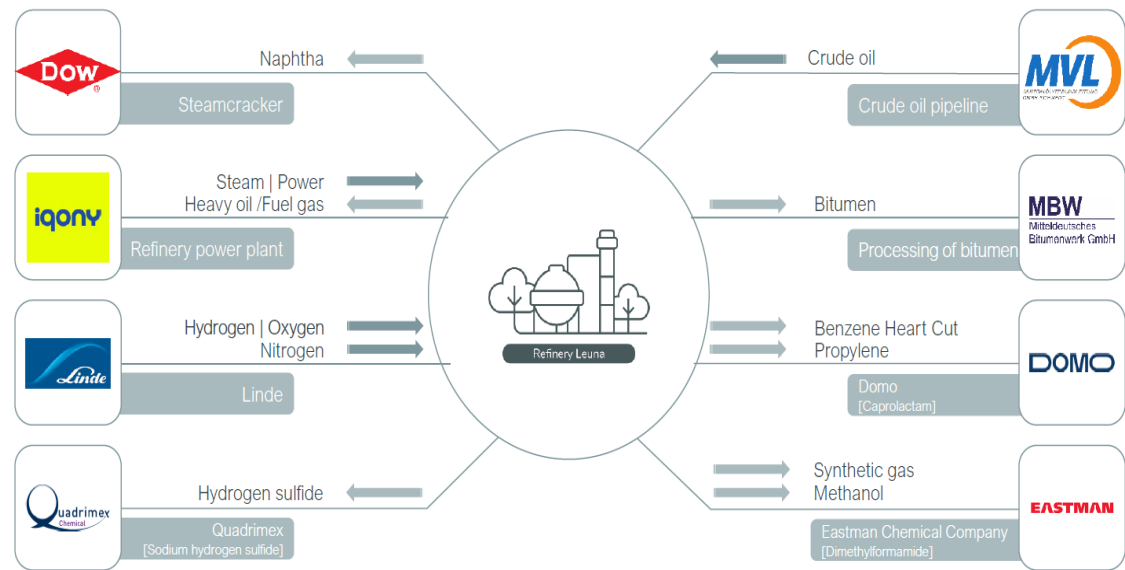
¹ Orlen's Plock and OMV's Burghausen refineries

Map source: Public company records, Concawe, CATF Analysis



THE SHAPE OF THE ASSET BASE

Integration made Europe efficient and now makes it fragile

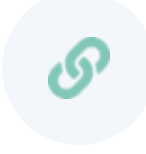




Concentrated
~150 chemical parks, but output is weighted to a few large, deeply integrated clusters.



Fragile
One closure can undermine the viability of an entire cluster around it.



Interdependent
Refineries, crackers, parks and pipelines function as a single cross-border system sharing utilities, logistics and by-product streams, an ecosystem.

Thank you



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