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**S&P Global**

Commodity Insights

# The Evolving PVC Market Amid The Sustainability Imperative

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Director, Inorganics  
Chemical Insights

16 December 2024

# Agenda

## 1. PVC supply-demand balance and regional growth outlook

## 2. Additives and plasticizers landscape amid the sustainability movement

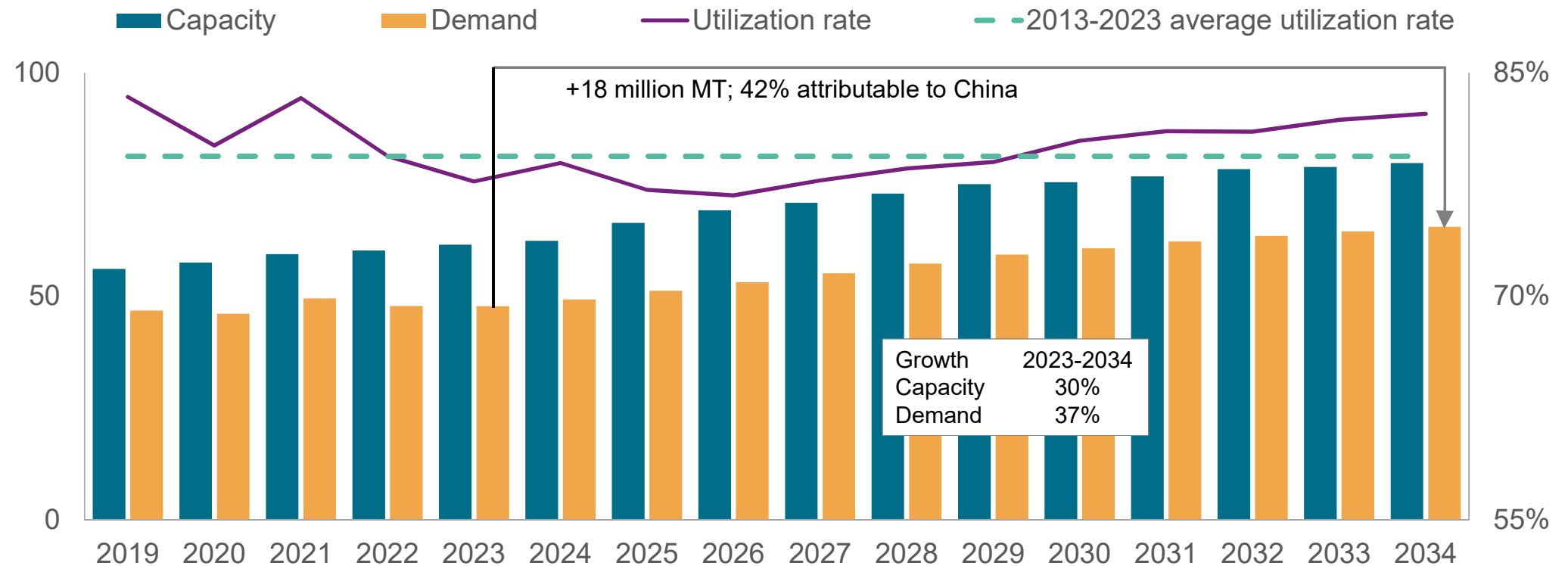
## 3. A green and integrated chlor-alkali to PVC setup

For discussion purpose only - generated using Microsoft Copilot with the prompt: A house interior with PVC window profiles, luxury vinyl tiles, a PVC pipe, PVC wall cladding, PVC cables, a vinyl mat, and a PVC synthetic leather sofa.



# PVC demand growth to exceed capacity adds, helping the operating rate to recover

Global PVC capacity & demand, million metric tons

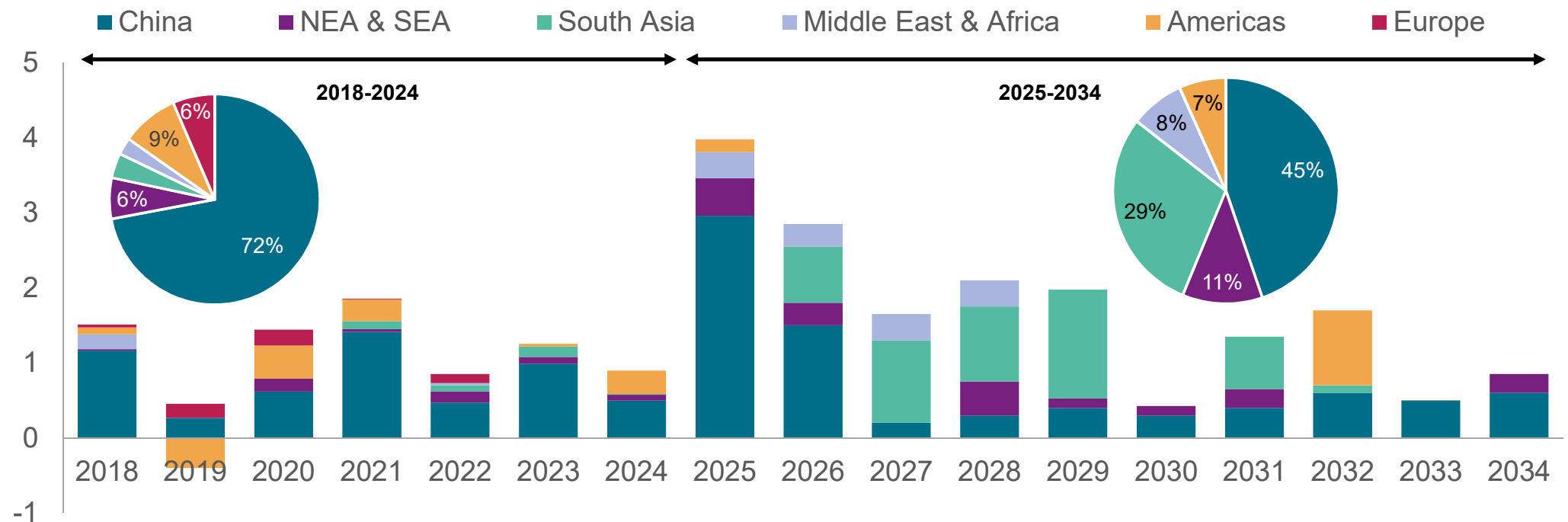


Source: S&P Global Commodity Insights.

# Global PVC capacity growth to shift from China to other regions

Pace of capacity adds to slow down in China after 2026

PVC capacity growth by region, million metric tons

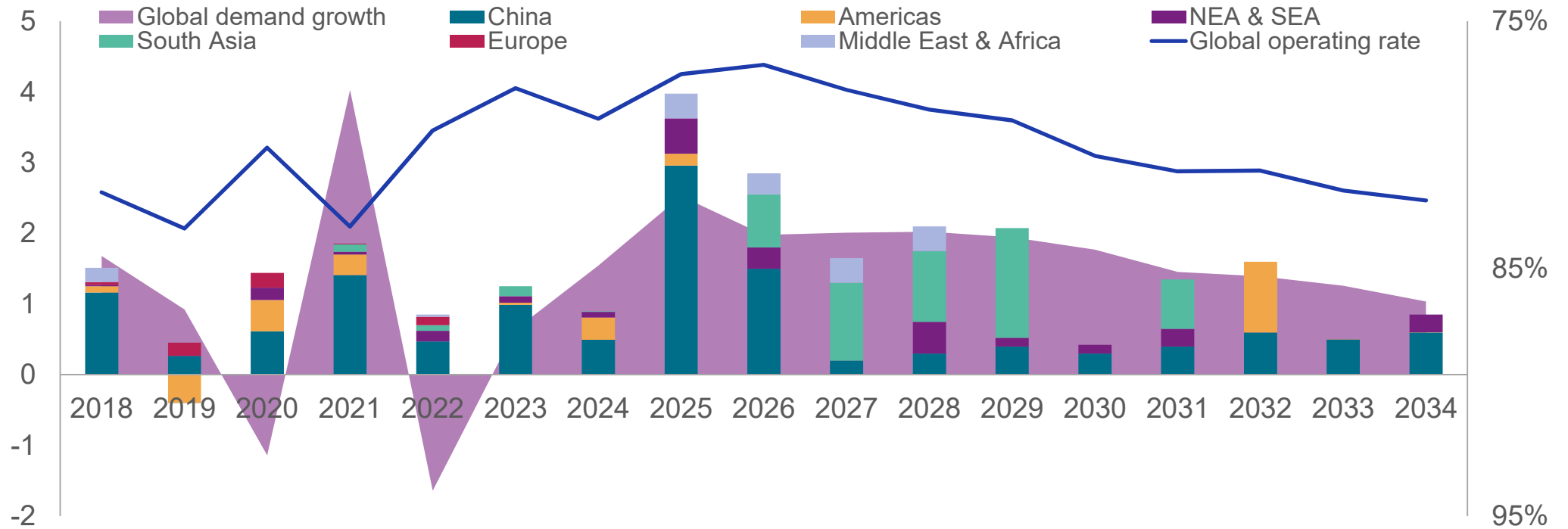


Source: S&P Global Commodity Insights.

# Global PVC consumption growth to surpass capacity additions from 2027

## Operating rate recovery to 82% by 2034

**PVC capacity build vs demand growth, million metric tons**

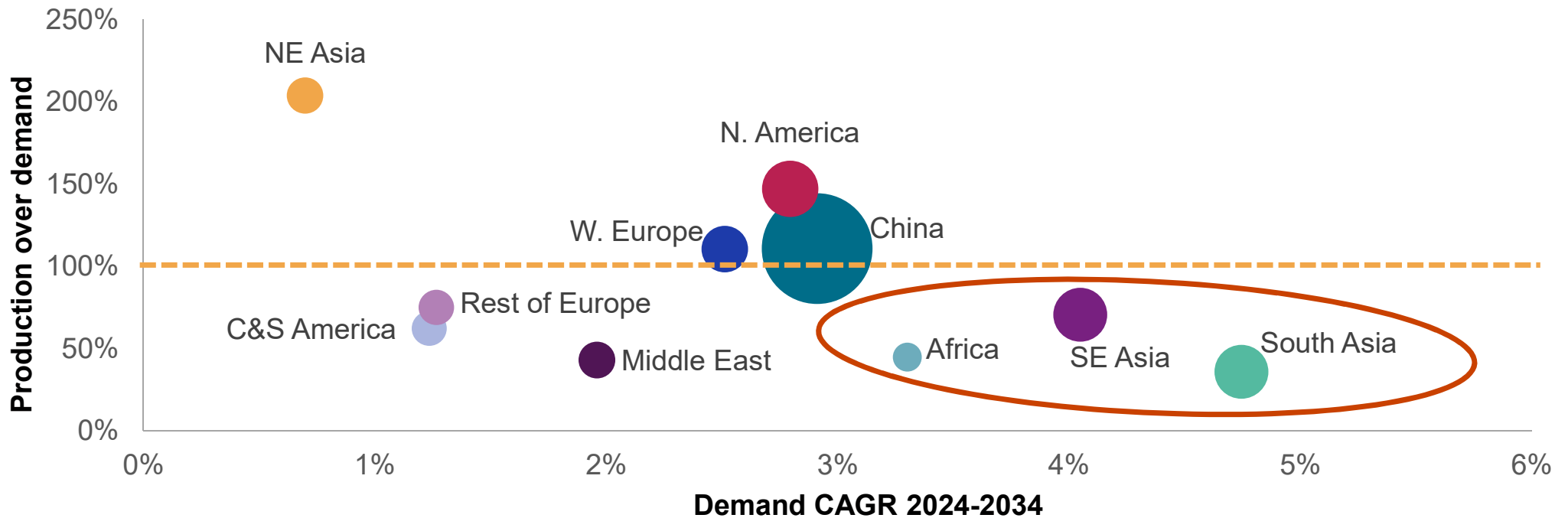


Source: S&P Global Commodity Insights.

# High demand CAGR in SEA & South Asia but inadequate domestic production

Surplus production in NE Asia and North America to support global demand growth via exports

**PVC 2024 regional demand vs 2024 production/demand vs demand CAGR 2024-2034**

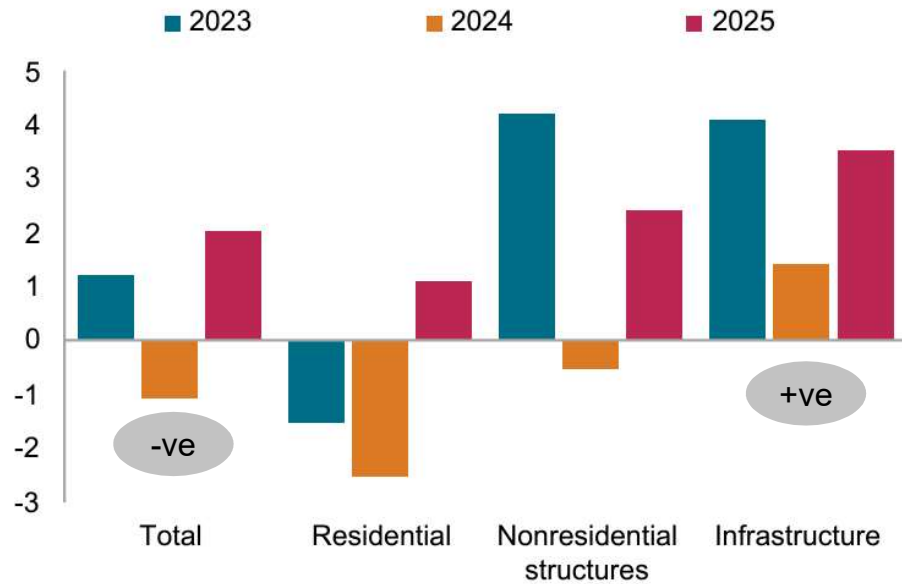


Source: S&P Global Commodity Insights.

# Western Europe construction is supported by infrastructure spending

## Western Europe: Total annual construction growth by segment

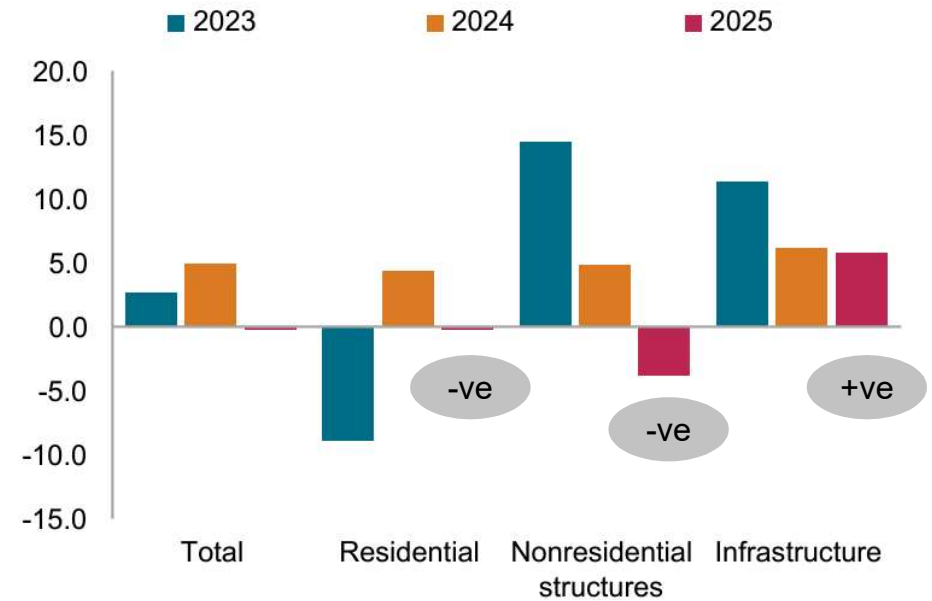
Percent change YOY, 2019 US dollars



Data compiled October 2024.  
 YOY = year over year.  
 Source: S&P Global Market Intelligence.

## North America: Total annual construction growth by segment

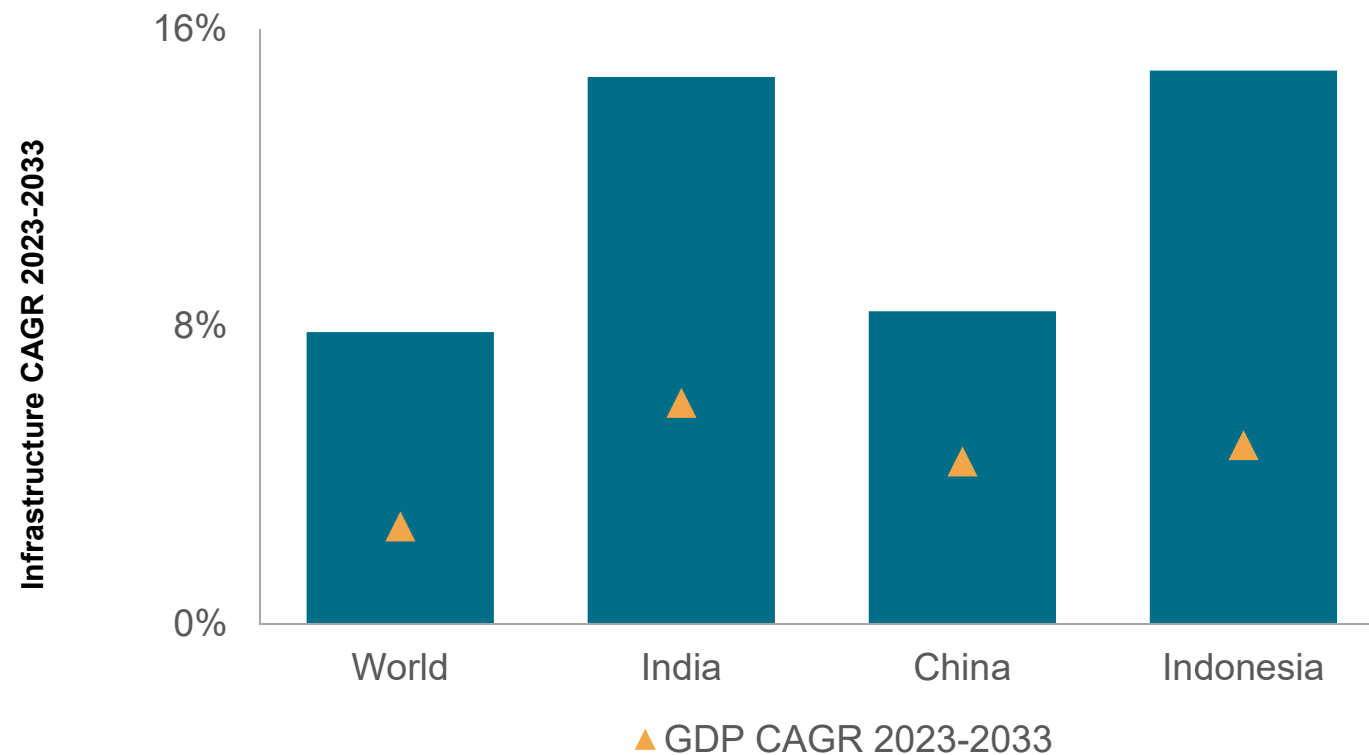
Percent change YOY, 2019 US dollars



Data compiled October 2024.  
 YOY = year over year.  
 Source: S&P Global Market Intelligence.

# PVC pipes benefit from higher than GDP growth in infrastructure spending

## Infrastructure spending on water and sewer



Source: S&P Global Market Intelligence.

PVC is the leading material in clean water access and sewage handling projects on low failure rate.

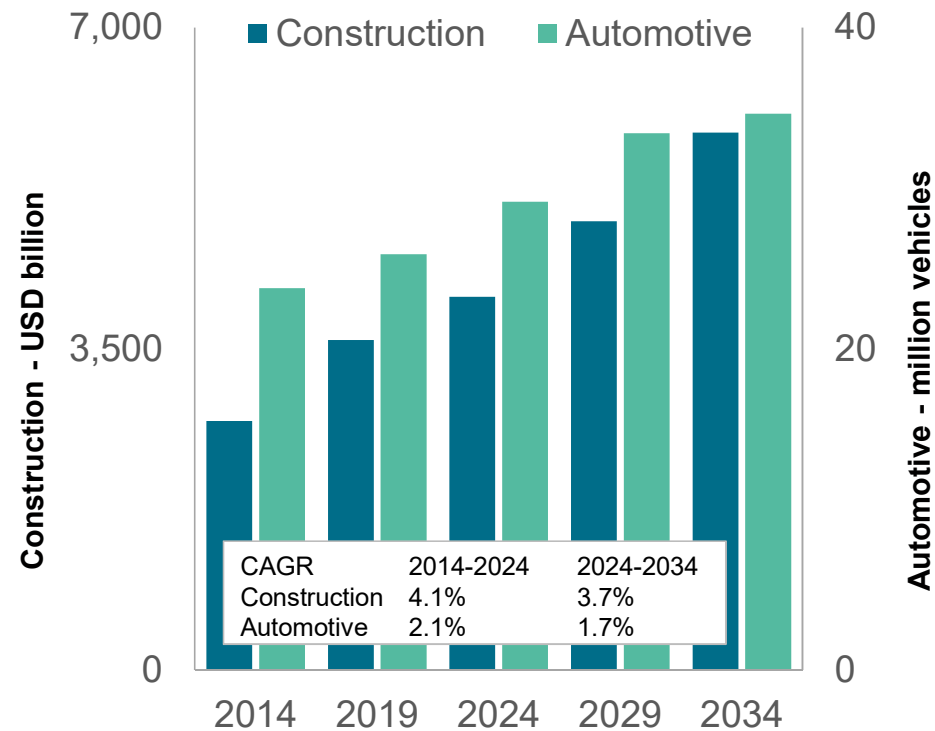
Substantial replacement demand for pipes made from asbestos cement and cast iron.

~8% CAGR in China and the world, substantially above their respective GDP growth projections.



# China sees continued growth on a high base, NEA sees growth in construction

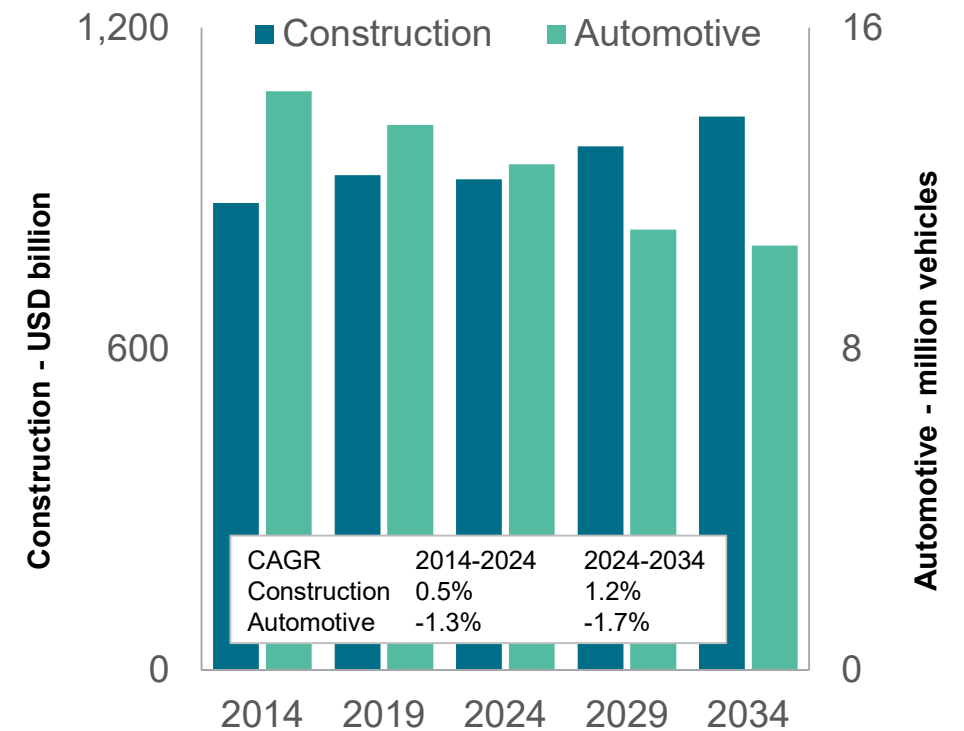
## China



Data compiled Oct 2024.

Source: S&P Global Market Intelligence.

## Northeast Asia

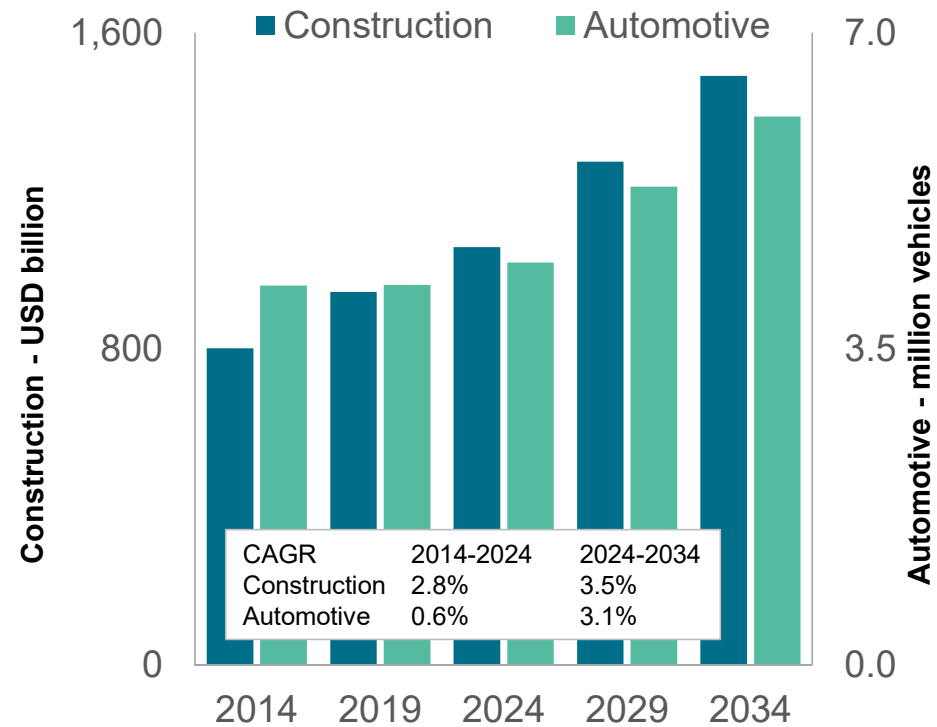


Data compiled Oct 2024.

Source: S&P Global Market Intelligence.

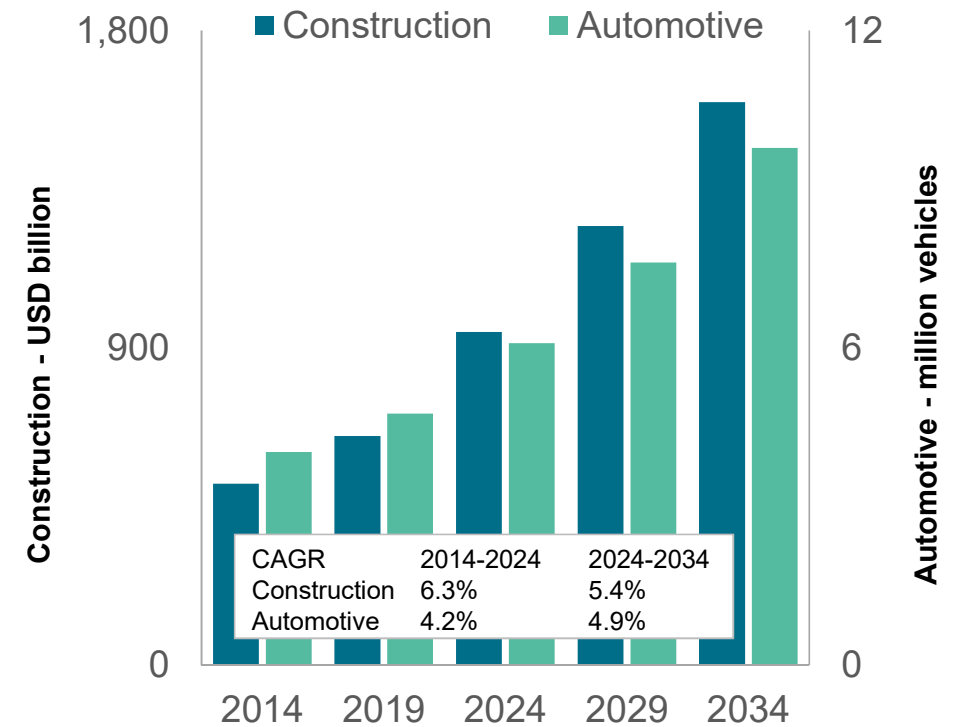
# SEA and South Asia to enjoy strong growth in construction and automotive output

## SEA



Data compiled Oct 2024.  
Source: S&P Global Market Intelligence.

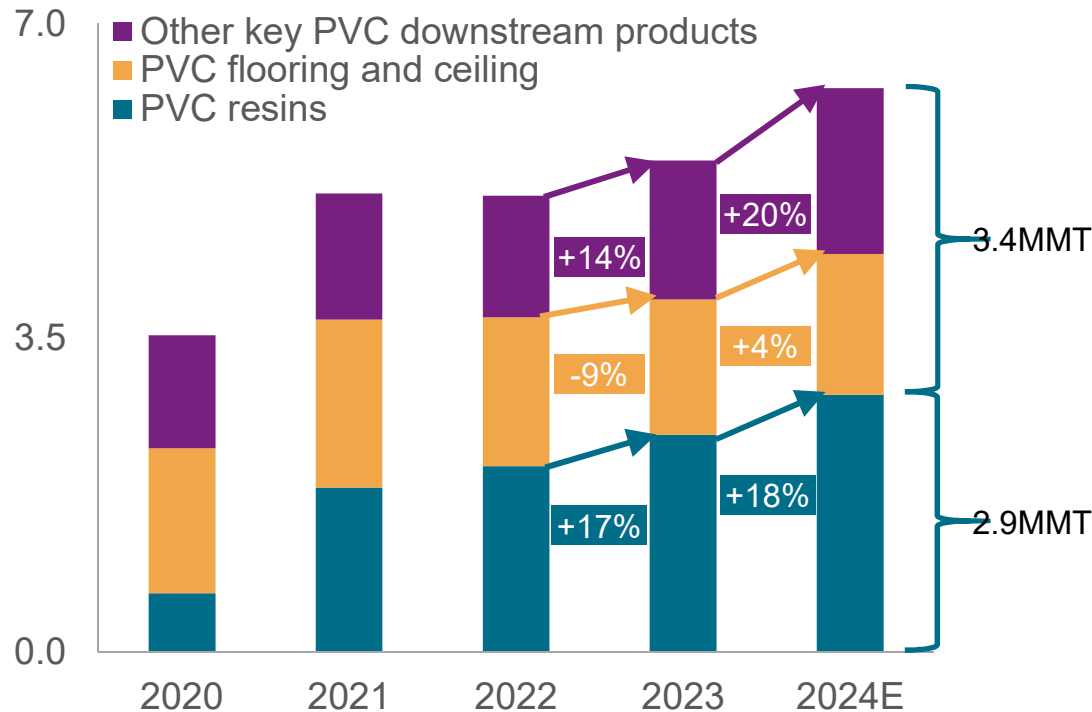
## South Asia



Data compiled Oct 2024.  
Source: S&P Global Market Intelligence.

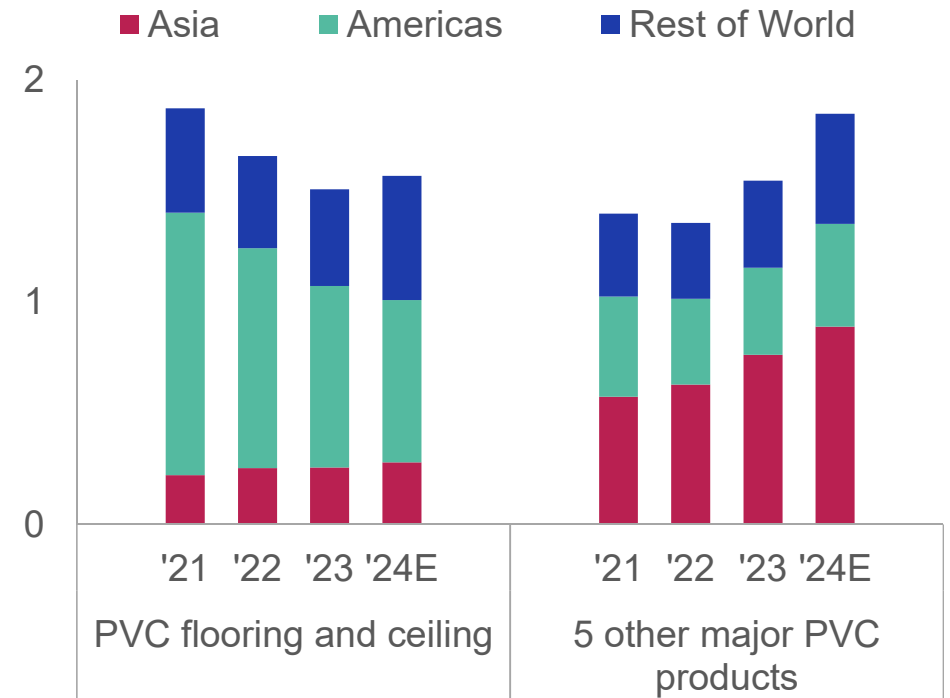
# China PVC production has been supported by the exports of resins and products

**China exports of PVC and key PVC downstream products, million MT PVC/equivalent PVC content**



Source: S&P Global Commodity Insights.

**China export of major PVC products by destination, MMT PVC content**



Source: S&P Global Commodity Insights.

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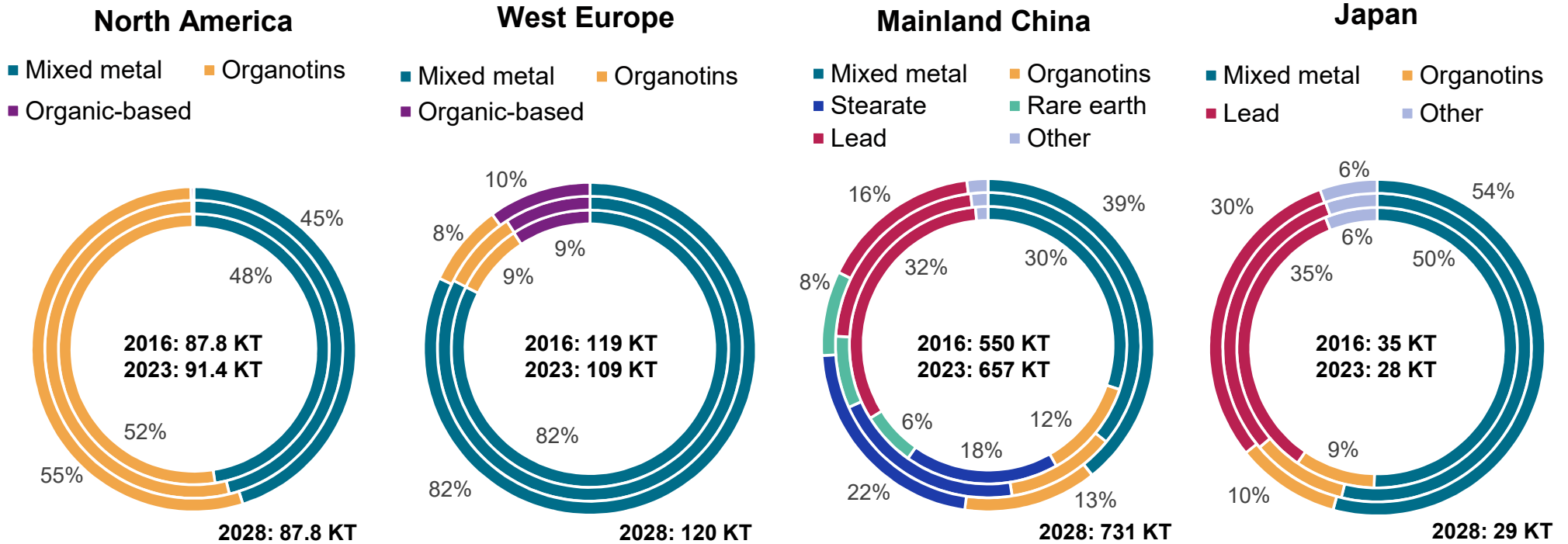
3. A green and integrated chlor-alkali to PVC setup

For discussion purpose only - generated using Microsoft Copilot with the prompt: someone wearing a PVC raincoat with an escape smoke hood, PVC boots and gloves, next to an entrance with PVC strip curtains and an activated CPVC fire sprinkler.



# Regional differences in the consumption of heat stabilizers by type

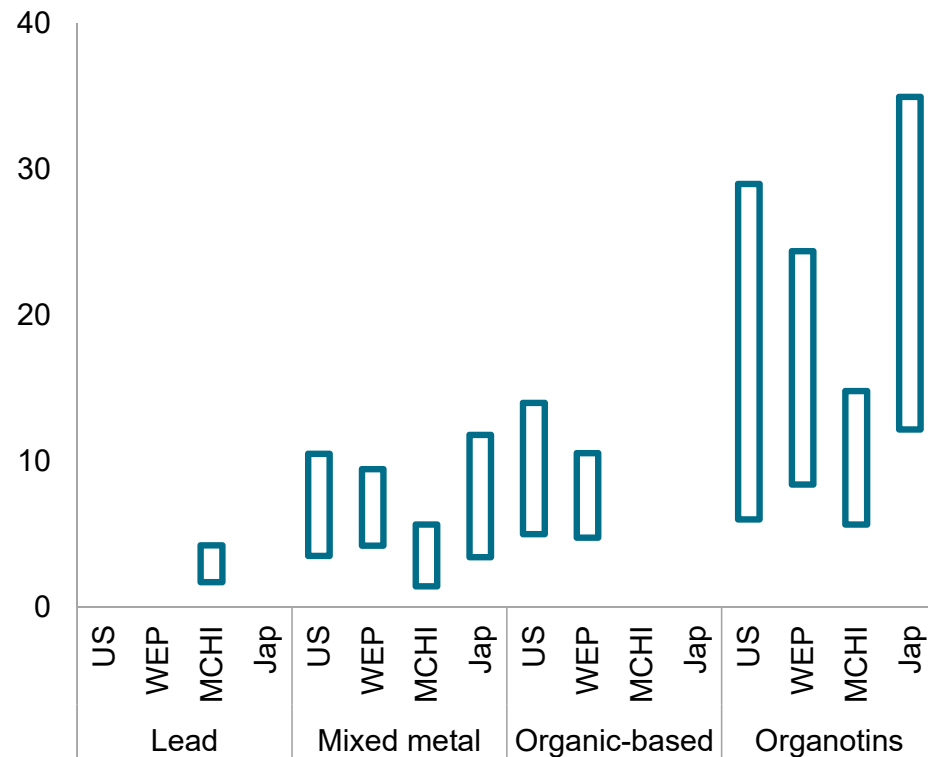
Lead remains dominant in China and Japan even as the West eliminated the use of lead



Source: S&P Global Commodity Insights.

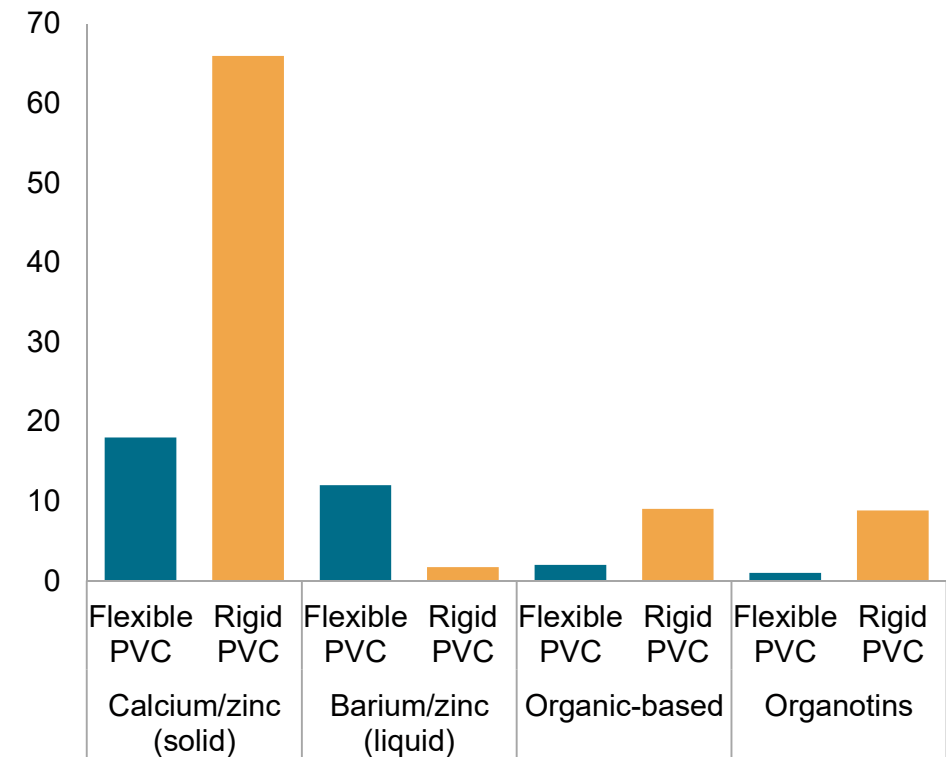
# Mixed metal heat stabilizers are cost-effective, overwhelmingly used in rigid PVC

Prices of primary PVC heat stabilizers, US\$/kg



Source: S&P Global Commodity Insights.

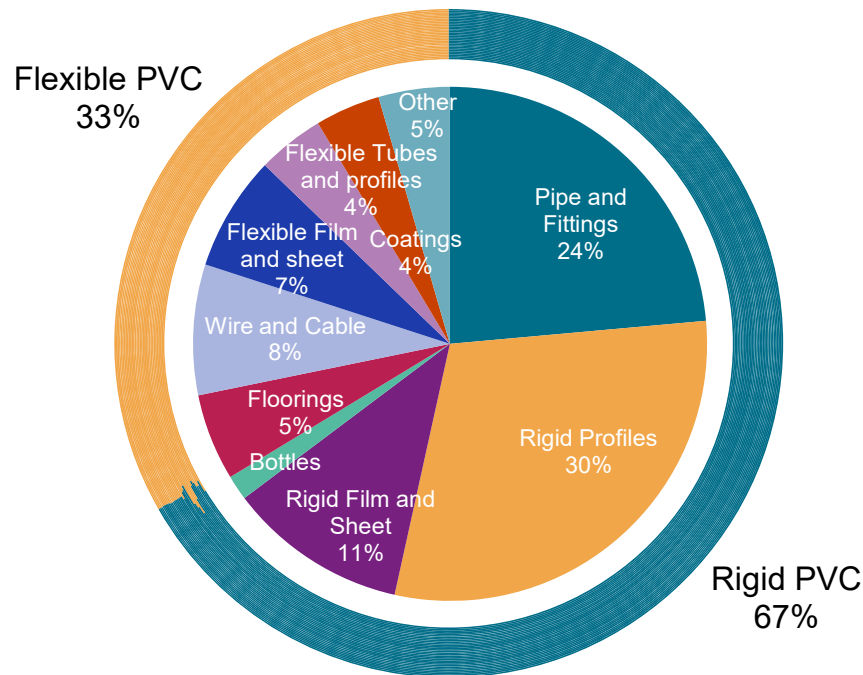
WEP heat stabilizer consumption by PVC type, KT



Source: S&P Global Commodity Insights.

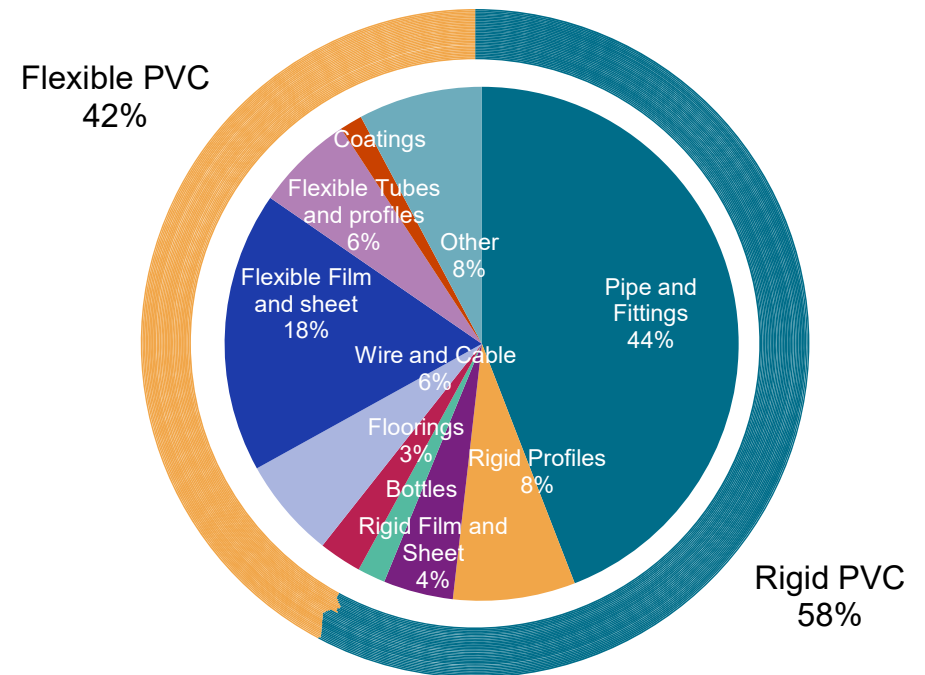
# Greater share of rigid PVC in West Europe on pioneering sustainability focus

2024 PVC demand by application, Western Europe



Source: S&P Global Commodity Insights.

2024 PVC demand by application, Mainland China



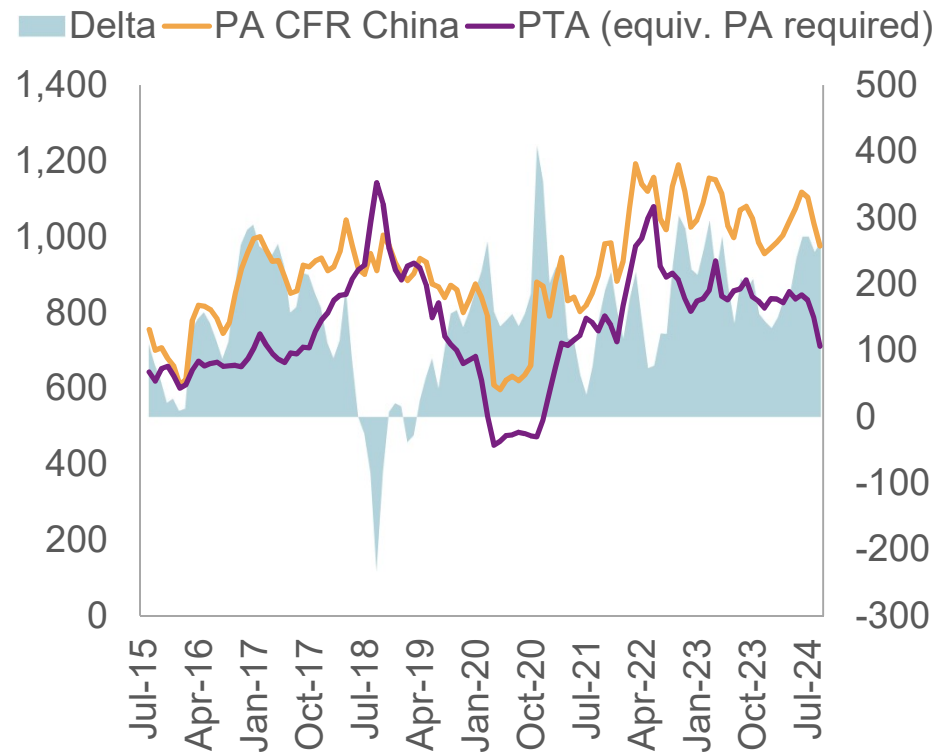
Source: S&P Global Commodity Insights.





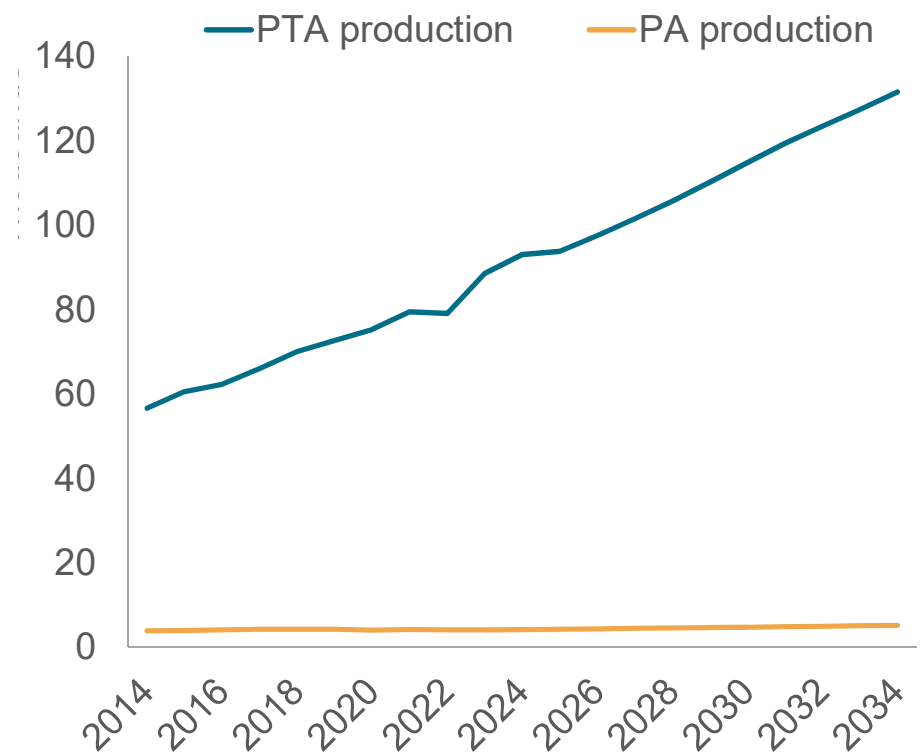
# Higher availability of PTA to provide for continued cost advantage of PTA over PA

**CFR China equivalent PTA per PA vs PA, USD/MT**



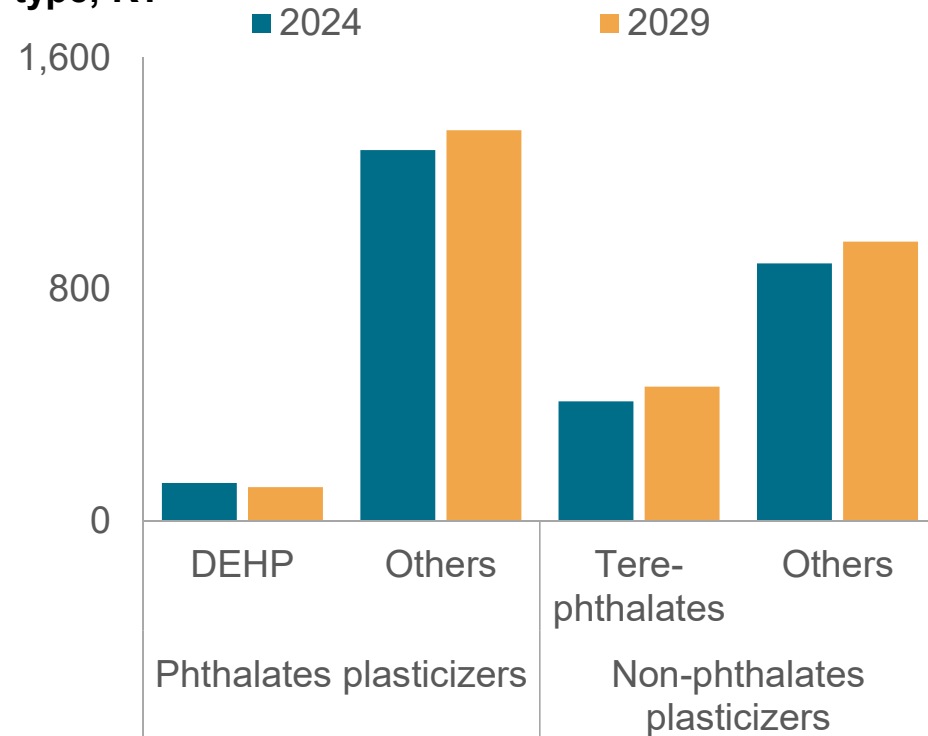
Source: S&P Global Commodity Insights.

**World PTA and PA production, million metric tons**



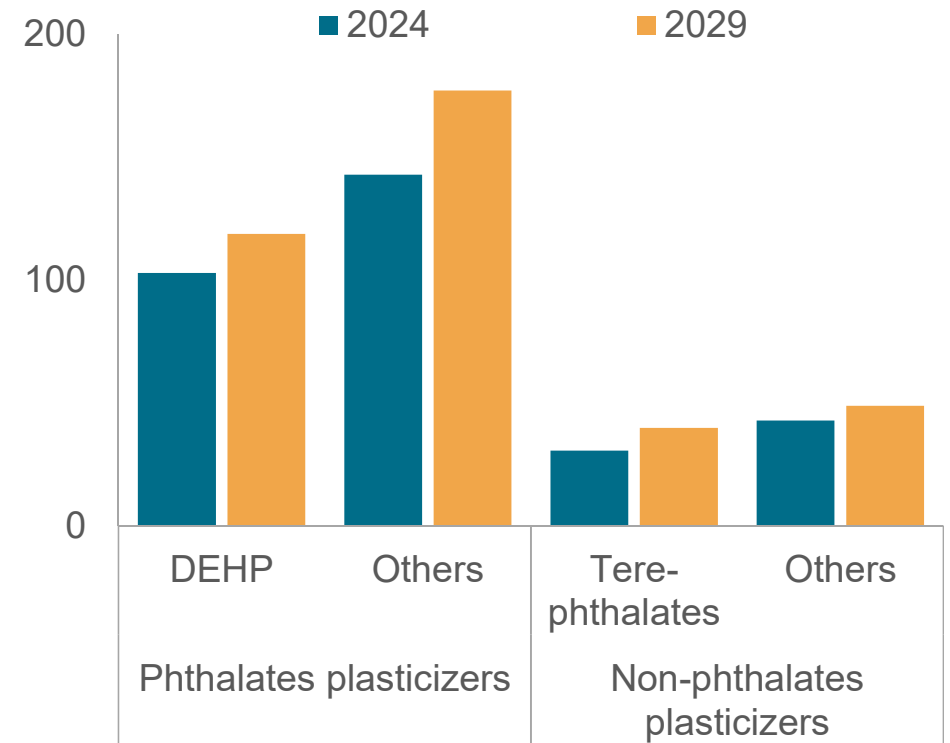
# Phthalate-based plasticizers continue to see domineering usage worldwide

**US + WE + NEA consumption of plasticizers by type, KT**



Source: S&P Global Commodity Insights.

**SEA consumption of plasticizers by type, KT**



Source: S&P Global Commodity Insights.

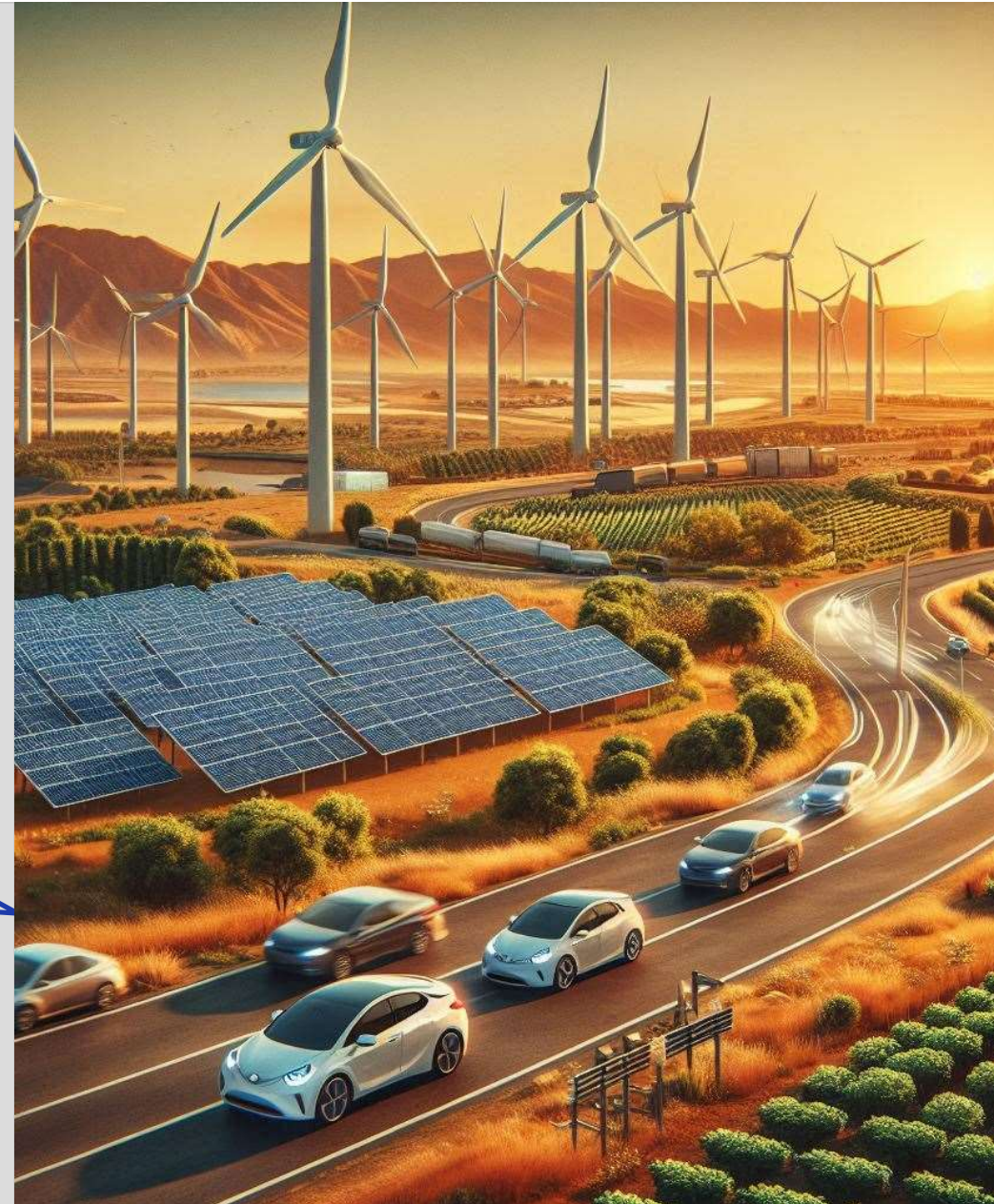
# Agenda

1. Chlor-alkali supply-demand balance and derivatives growth outlook

2. Additives and plasticizers landscape amid the sustainability movement

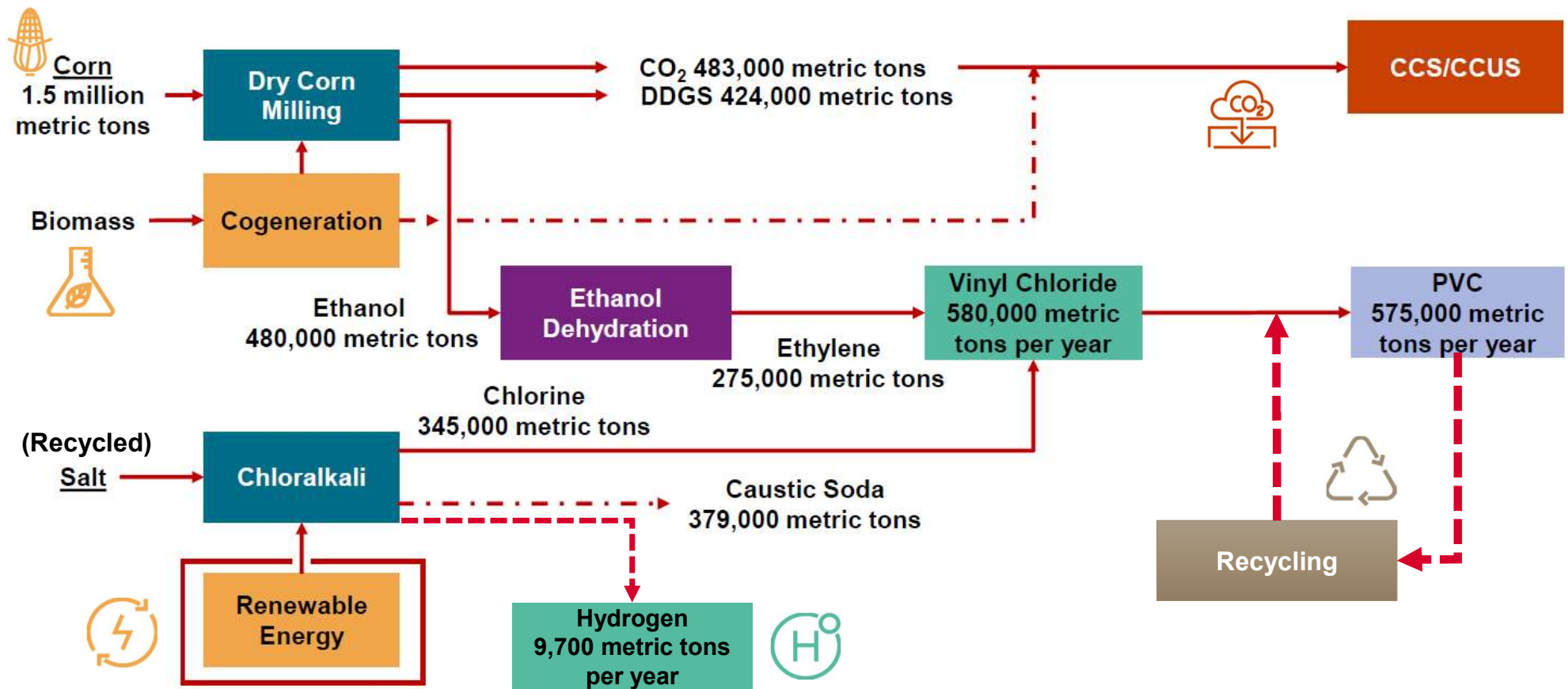
**3. A green and integrated chlor-alkali to PVC setup**

For discussion purpose only – generated using Microsoft Copilot with the prompt: A landscape with a wind farm, solar panels, and electric vehicles.

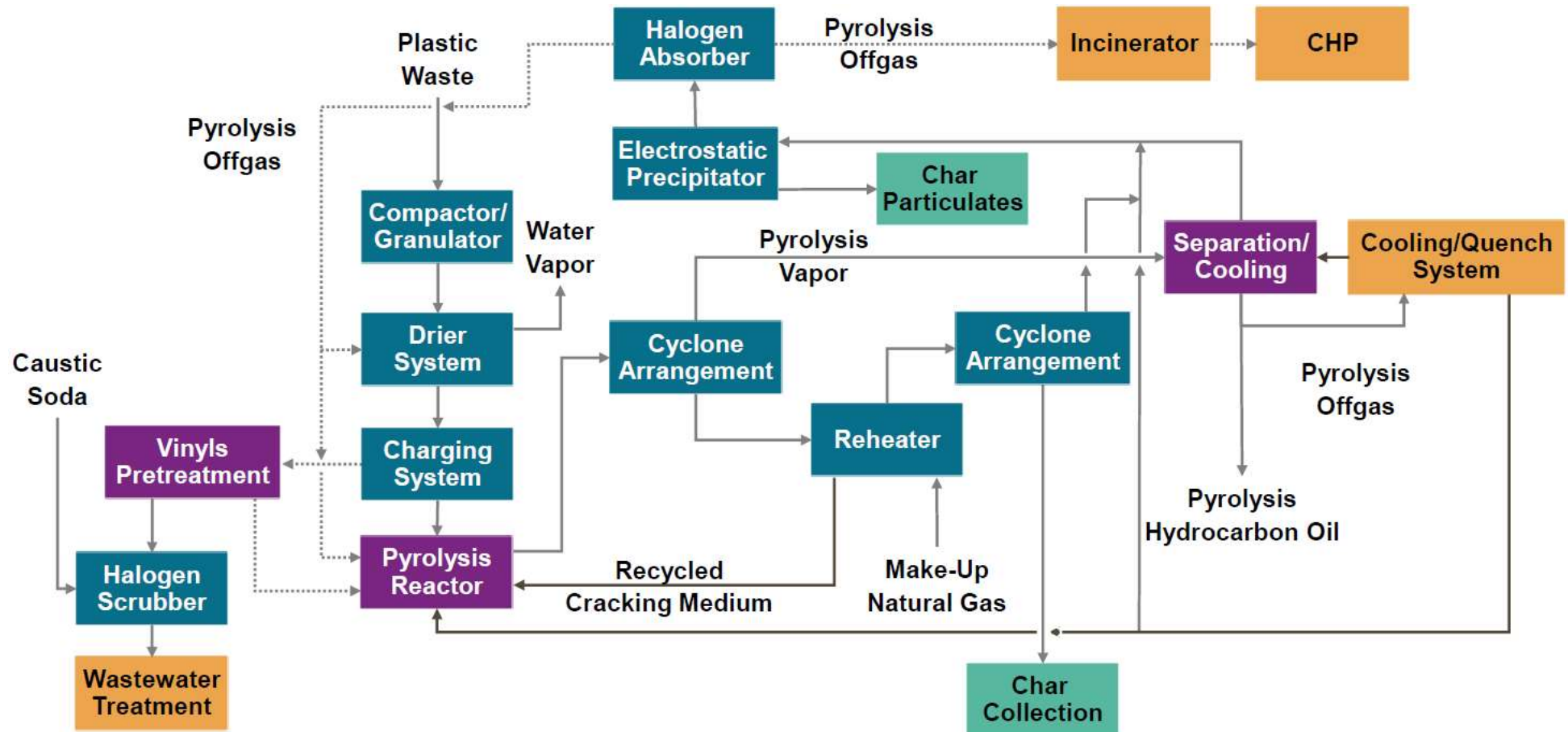


# Green PVC is not a myth

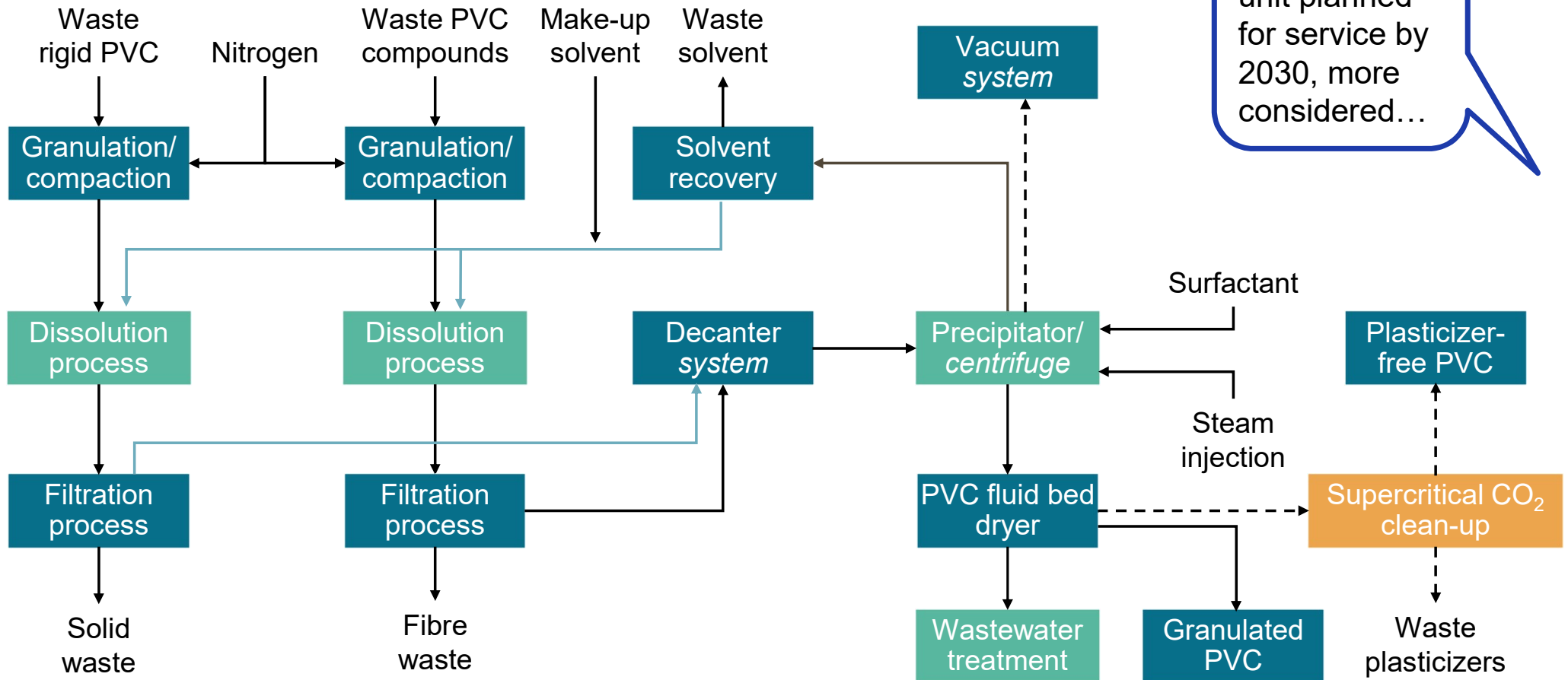
Integrated Chlor-alkali to PVC production can be constructed with sustainability in mind



# Taking care of the chlorine in the pyrolysis of waste plastics including PVC



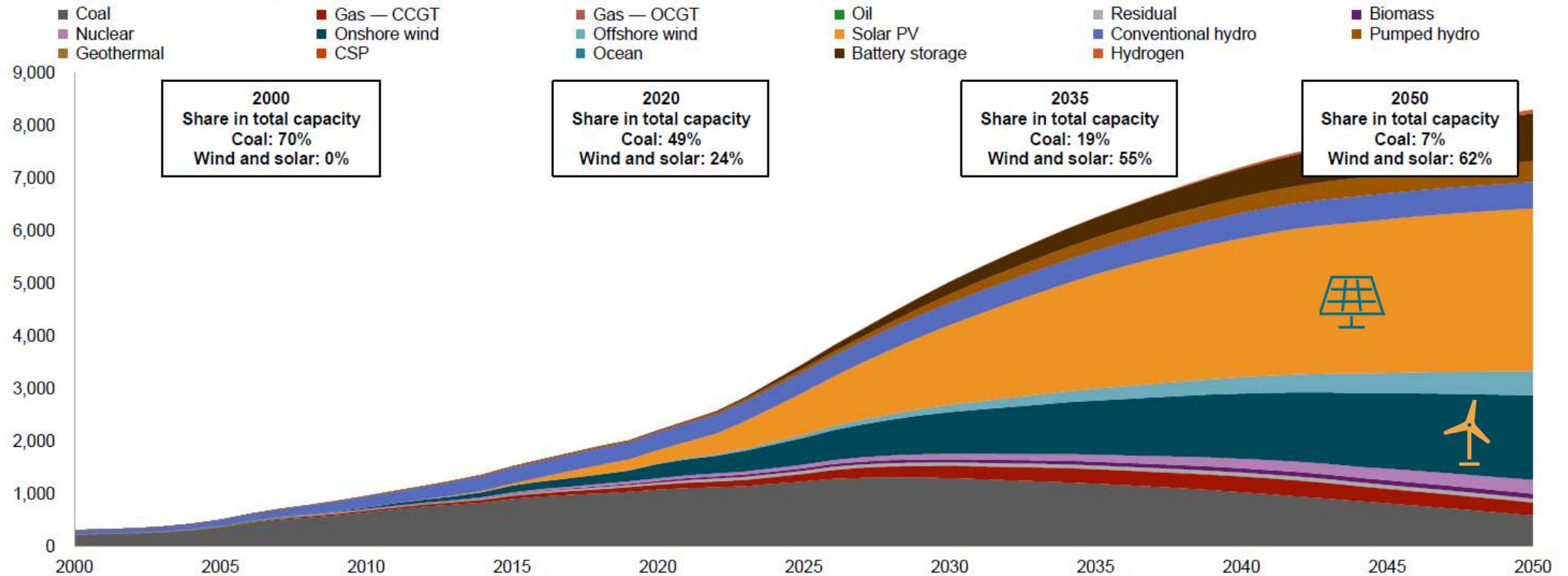
# Independent conceptual view of the VinyLoop<sup>®</sup> process



A first 40 KTA unit planned for service by 2030, more considered...

# China's power fleet is already the largest in the world and will almost triple in size by 2050; coal's share will steadily decline

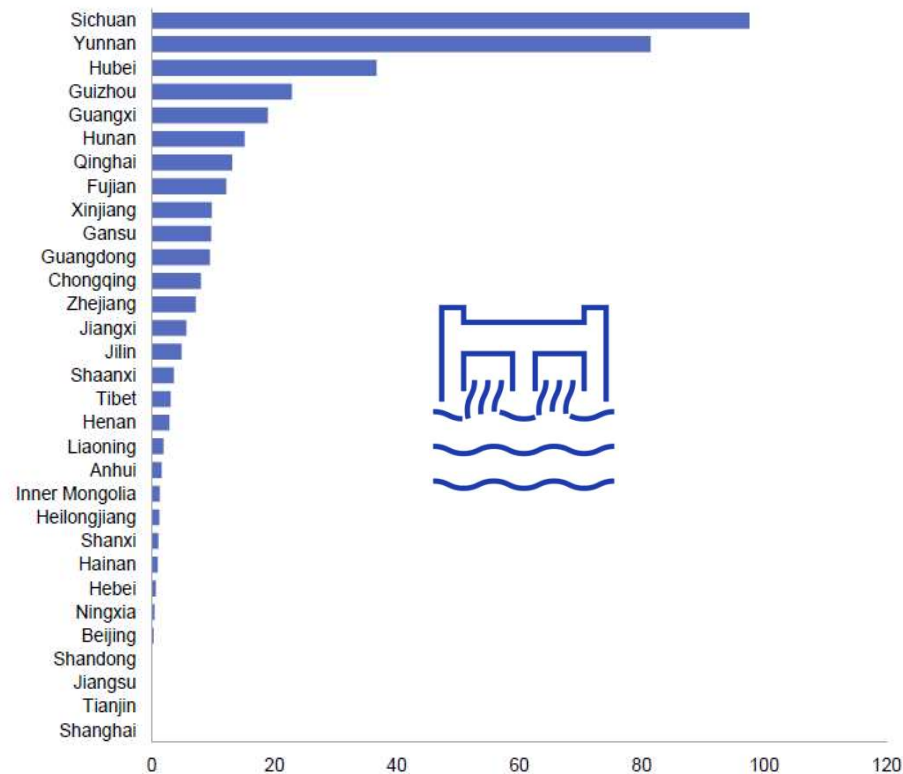
Power installed capacity by fuel type (GW)



Source: S&P Global Commodity Insights.

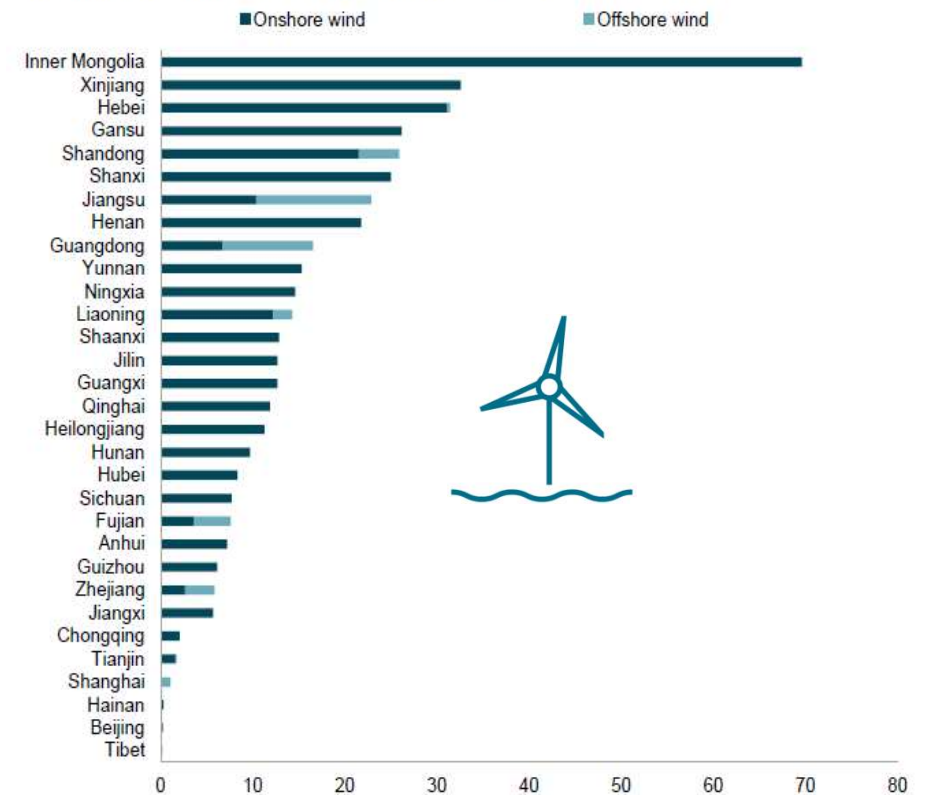
# Renewable energy is already in abundance in certain locations

Provincial hydroelectric capacity by end-2023 (GW)



Source: S&P Global Commodity Insights, CEC.

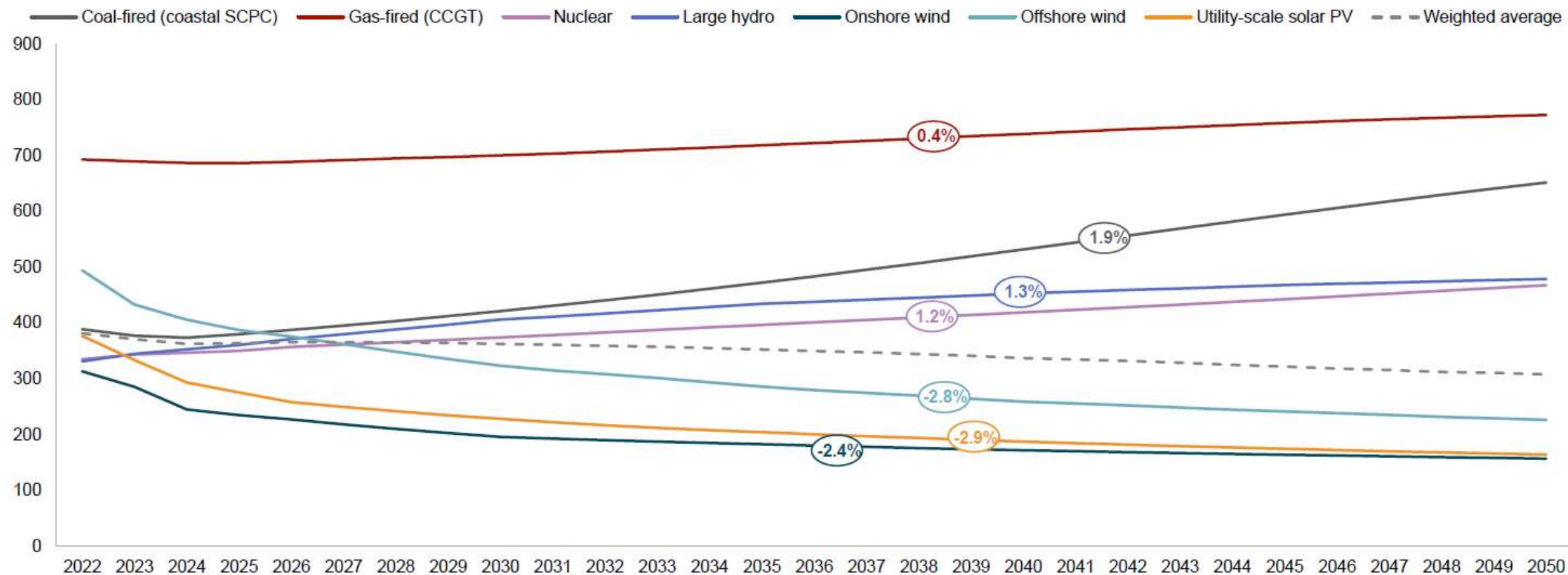
Provincial wind power capacity by end-2023 (GW)





# Declining LCOE and capacity growth of renewable power will drive down weighted-average generation cost, despite the uptick in conventional power

China LCOE outlook, 2022–50 (yuan/MWh)



LCOE = levelized cost of electricity.  
Source: S&P Global Commodity Insights.

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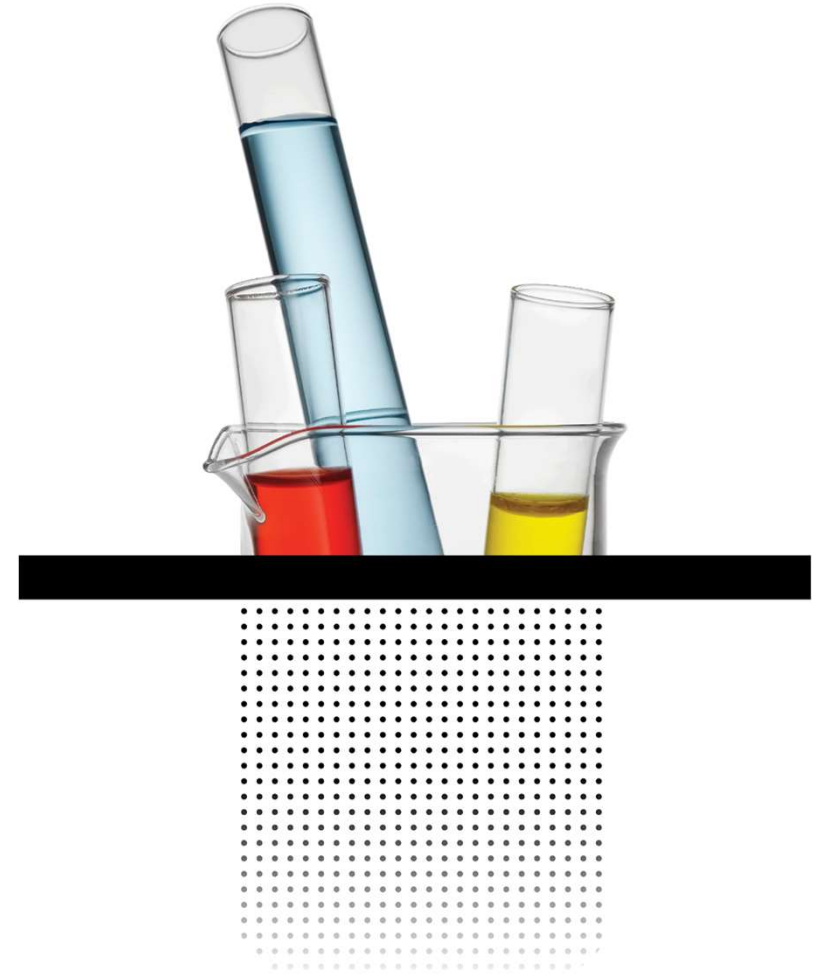
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