



Agenda

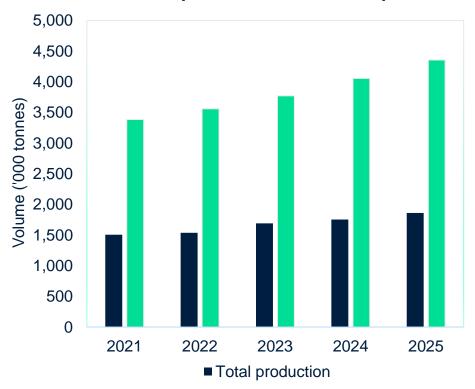
- O1 Key PVC markets Domestic demand and supply growth
- Increased chlor-alkali competitiveness and its effects on market trends
- What are PVC's post-pandemic opportunities in Asia?



India to remain import-centric in near term



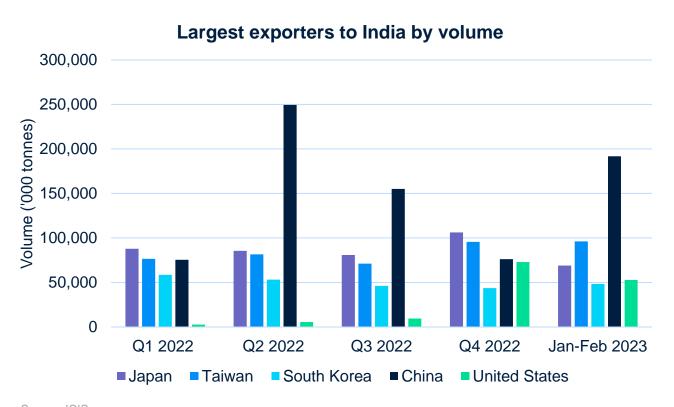
India PVC production vs consumption



- India to rely heavily on imports in the near term
 - Adani Group (Phase 1 of 1m tonnes/year by 2025)
 - Reliance Industries (1.5m tonnes/year by 2026)
- Policy matters, such as ongoing safeguard investigations, may affect trade flows in the near term
- India to see sustained PVC demand growth of 6-7% in the next decade

India sees increase in imports from China, US





- Imports rise in early 2022 on removal of ADDs on US and China cargoes
- India sees large influx of material from China in Q2-Q3 2022
- Imports from US also rise in Q4 2022, early 2023
- China, S Korea, Japan, Taiwan, US account for 80% of total imports into India

China's rise to prominence for PVC continues





- China's 2022 PVC production is large, yet op rates down 4% year on year to 74% (around 21m tonnes)
- China's 2022 apparent consumption down 2.6% year on year to around 19.3m tonnes
- China's 2022 PVC export volumes tripled from 2020
- Surge in China's exports due to capacity expansions, sluggish end-use during pandemic lockdown, deep-seated issues in real estate

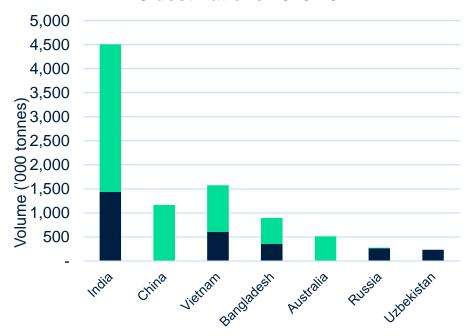
Source: ICIS

Source: CCAIA



China's PVC exports see increased diversification

China vs NE Asia (ex China) top export PVC destinations 2020-2022



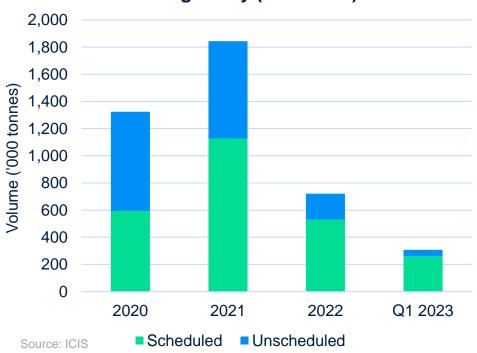
- NE Asia (ex China) total PVC exports
- China total PVC exports

- China's top five export destinations see some differences from Japan, South Korea, Taiwan producers
- China and other NE Asian producers likely to compete in India, Vietnam, Bangladesh
- China in geographic advantage to prioritise central Asia (e.g. Uzbekistan), Russia amid ongoing initiatives like SCO, Belt and Road Initiative



Fewer hiccups in global production after "black swan" events

Scheduled vs unscheduled PVC production losses globally (2020-2023)

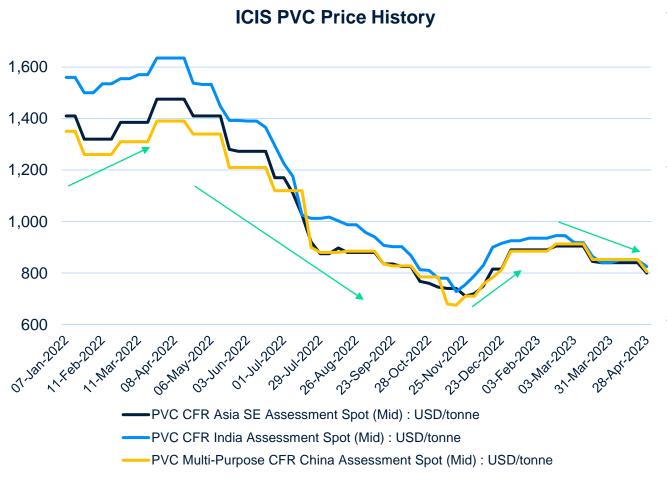


- 2020 outages caused by manpower issues as countries struggled with pandemic
- 2021 outages caused by FMs in Europe, US (deep-freeze and flooding)
- 2022 production losses taper as we move to the "new normal"
- 2023 likely to see minimal unscheduled outages





PVC prices across Asia increasingly competitive

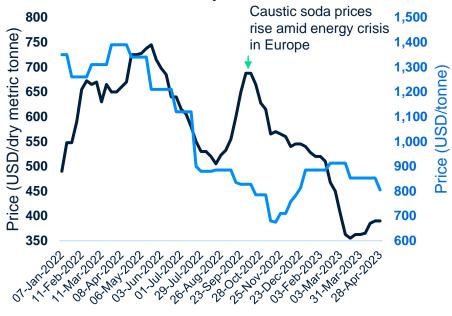


- lockdowns suppress domestic consumption, exports increase for much of 2022
- PVC prices rise in late 2022, supported by brisk restocking from India, relaxed restrictions in China
- Current PVC prices depressed amid healthy supply, underperforming consumption in China



Will inverse correlation between PVC/caustic soda continue?

Asia PVC and caustic soda price trend comparison



- Caustic Soda Liquid FOB Asia NE Assessment (Mid): USD/dmt
 - PVC Multi-Purpose CFR China (Mid): USD/tonne

- PVC and caustic soda are both products of the chlor-alkali process
 - Nevertheless, they see different end-usage applications
- H1 2022: Both PVC and caustic soda netbacks fell amid influx of spot material
- H2 2022: Asia's caustic soda prices rise on arbitrage trade to Europe, but soon falls on mild winter season
- While chlor-alkali margins are different for every producer, netbacks are relatively low at current PVC and caustic soda prices





India remains a bright spot despite slowing global growth

Structural demand

- Nature of India's economy ensures pipe demand growth for the next decade
- Main drivers:
 Agriculture,
 infrastructure sectors

Policy actions

- Schemes like Har Ghar Nal se Jal Yojana, AMRUT 2.0 to boost pipe demand
- Ongoing safeguard investigations may affect trade flows

Continuous uptake

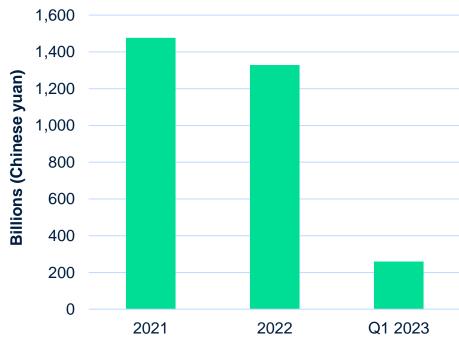
- Indian plastic pipe (PE, PP, PVC, etc) market to grow at 11% by FY2025
- Pipes to remain largest end-segment in India, accounting for 75% of all PVC demand
- Chlorinated PVC continues to be of interest in India

Source: Market



China's real estate sector sees deep-seated issues

China infrastructure spending 2021-Q1 2023



Source: National Bureau of Statistics of China

- Deep-seated issues persist, despite several stimulus measures by China's authorities
- China's real estate investment growth in 2022 down 10% year on year
- Q1 2023 continues deceleration, growth down by 5.8%, compared to Q1 2022
- Current policy focus on completing existing real estate/construction projects. Upside, if any, likely to remain capped



China's PVC outlook remains cloudy

Downstream shifts

- China's exports of finished products (e.g. vinyl flooring) to western countries may be suppressed due to inflation
- Converters' gradual move out of China may taper domestic consumption

Cost concerns

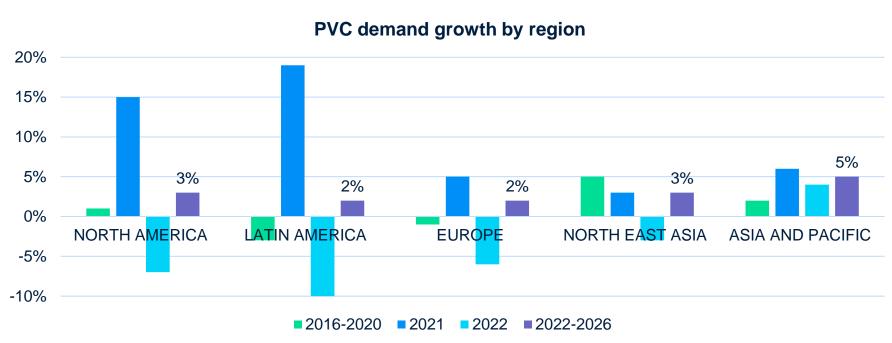
 Carbide-based PVC producers in China to face heightened costs, fluctuating export demand

Cautious economic projections

- China authorities' target
 GDP growth of 5% for 2023
 - But Q1 2023 GDP growth rate at 4.5% year on year
 - Turbulent outlook for 2023 likely
- China's official April 2023 PMI in contraction at 49.2 (lowest since January)
 - Slowdown after brief period of expansion in Q1



Despite challenges, Asia Pacific to drive future PVC demand growth

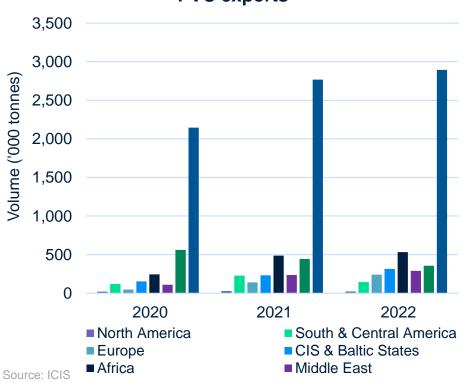


Source: ICIS Analytics

What could happen to PVC international trade flows over the next few years?







- Regional trade flows may shift amid increased PVC capacities and competition
 - China to see around 1m tonnes of PVC capacity in 2023, majority via ethylene-based route
- Increased domestic capacities in India may taper imports by 2025-2026
- Asia Pacific to remain bulk of regional producers' focus, but more attention may be given to:
 - Europe (mostly Turkey)
 - CIS & Baltic states (Russia, central Asia)
 - Africa (Egypt, Nigeria, Kenya)
 - Middle East

PVC global production to rise while demand may see headwinds



Increase in production

- PVC global supply increased since 2022, but uptake capped amid slow macroeconomic recovery
- China likely to look towards export markets if domestic uptake underperforms

India to see sustained PVC consumption

- India's PVC consumption to be sustained
- Imports may readjust amid potential rising domestic capacities, policy actions such as ongoing safeguard investigations

Asia Pacific PVC growth supported

- Asia Pacific to see majority of PVC growth
- But Asian producers may give more attention to other regions amid rising regional competition

Chlor-alkali competitiveness

 Balancing of caustic soda,
 PVC may prove to be a challenge for integrated chlor-alkali producers

Thank you!

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