

C-MACC

Chemical Market Analysis & Consulting Company

Daily Chemical Reaction

Dancing In The Dark – 2022 Specialty Profit Outlooks Too Positive, Growth Capex Becomes More Selective

March 3, 2022

Today's Commodities:

- Plastics (PVC, PP, PE, PU, PC, PET, etc.)
- Clean Energy Minerals
- Carbon Dioxide
- Hydrogen
- Natural Gas/NGLs
- Crude/Naphtha

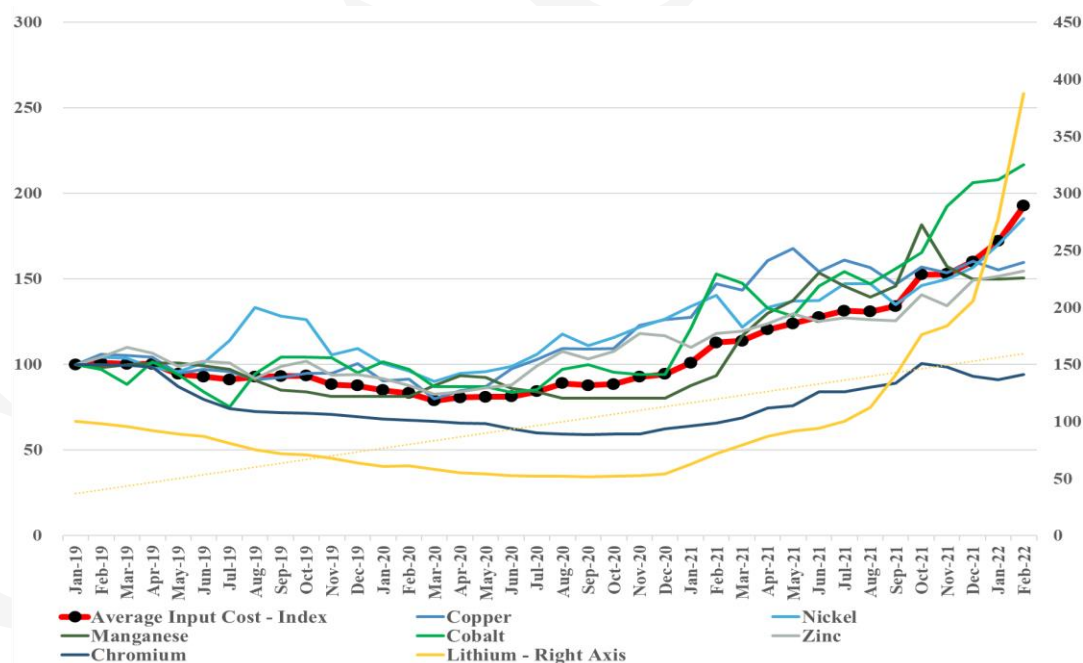
Today's Companies:

- Evonik
- Huntsman
- Koch
- Sumitomo Chemicals
- ExxonMobil
- Aramco
- Petronas
- Pioneer
- Engie
- Technip Energies
- Adnoc
- Covestro
- Elementis
- Westlake
- Piedmont Lithium
- LanzaTech
- Twelve
- Nutrien
- Brenntag
- GMS
- Lenzing
- Braskem
- SI Group
- Synthomer
- Celanese
- Ineos
- Keurig
- Macquarie
- Sika
- Neste
- Marathon Petroleum
- Maersk
- Republic Services
- Air Liquide
- Siemens Energy
- Aqua Metals
- Continental Resources
- MMEX Resources
- Johnson Matthey

Key Points:

- Strong consumer demand and moderating input costs are positive factors backing many 2022 specialty producer profit outlooks. We discuss mounting risk facing these views and considerations limiting sector growth Capex.
- We highlight pertinent energy, chemical, and other corporate updates (e.g., Evonik, Huntsman, Koch, Sumitomo Chemicals, Piedmont Lithium, others).
- We discuss relevant ESG items that range from Evonik using global CO2 values as a consideration with long-term projects to an EIA non-hydro energy outlook. We also highlight our latest ESG weekly research in [LINK](#).
- We discuss numerous other pertinent chemical sector items in this report.

Exhibit #1: We update our price index for February prices to show the movement in critical mineral values (see Exhibit #7) used in the energy transition. This price index has increased more than 90% since the start of 2021, supporting why inflation warnings are a significant highlight of many non-integrated specialty chemical sector 4Q result reports. We also note our research on lithium and Electric Vehicle (EV) market trends in [LINK](#).



Source: Bloomberg, C-MACC Analysis, March 2022

General thoughts. Commodity price inflation is anything but a “new” global development in early 2022, though it remains a significant issue. We continue to find specialty producers calling for moderation in input costs in 2022, and we add Evonik to this growing list, with the view being that 1Q22 will market the input cost peak. While we suspect commodity prices are likely to moderate in the medium term as global production improves, global supply chains normalize, and many logistical issues dissipate, we also find rising energy costs and a slower-than-expected dissipation of other cost pressures suggesting that input/commodity chemical prices for many non-integrated specialty producers could stay stronger for longer than most expectations. Today, we find little evidence of a commodity chemical price collapse. The other item that Evonik noted in its 4Q21 results presentation is that global CO2 prices are now a consideration when viewing

its large growth project Capex options. We view this as a limiting factor for many specialties but more so for new commodity chemical growth investments. We suspect that this trend supports a mid-decade global commodity chemical megacycle that will likely impact most downstream product chains. With this point in mind, we find corporate activity picking up to streamline operations and maneuver into markets with advantageous structures that allow producers to push for value over volume. In our view, these are specialty-linked producers that will likely win the battle with inflation over time, and we view Huntsman as an excellent example of where this should work well. We also see the recent Celanese/DuPont engineered materials combination as an M&A transaction with this general view in mind. We find Westlake and Olin in a good spot, though for slightly different reasons based on their entire product suites, on this basis in Chlor-Alkali. In our opinion, those that can push products based on value over time are the ones most likely to drive incremental returns higher over time. Other items within this report worth considering include the proposal for a Texas green hydrogen hub. We also highlight multiple downstream reports that support the case for strong current consumer demand. Downstream product demand holding up amid likely further inflation of prices is another question, and we highlight our recent thematic titled [Will Inflation Curb Early Year Demand Strength?](#).

Energy/Upstream:

As we see oil and gas prices rise, we are starting to see more analysis around how much gas and oil exports could be cut back from Russia in a more organized rather than event-driven manner. There seems to be a continuous flow of gas that is under longer-term agreements with Gazprom, but as the IEA analysis below shows, there are levers that Europe can pull to limit demand going forward, but none of the moves are instant and some rely on renewable additions that we believe will be a challenge to meet in full this year – see our [ESG and Climate](#) work for more on this, and the chart of the day above shows some of the acute metals inflationary pressures that the renewable power companies are facing and we questioned the optimism in First Solar's negative guidance yesterday because of these cost increases.

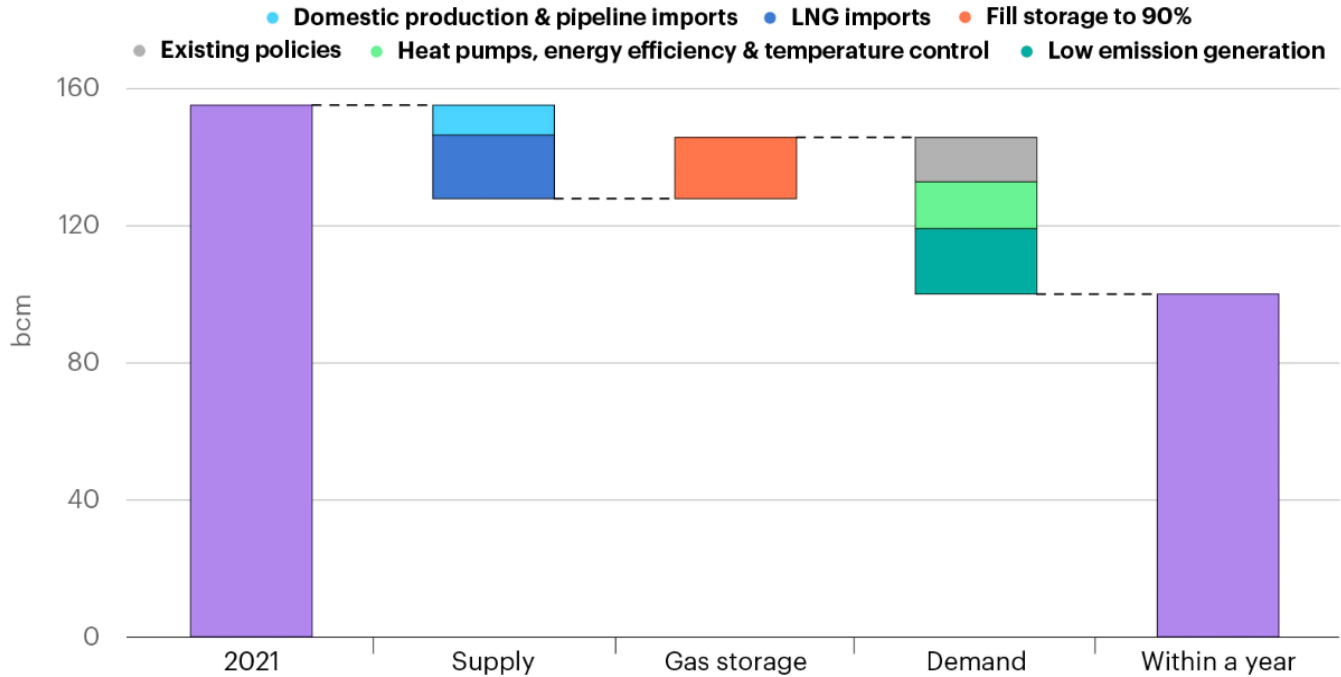
The EIA estimate that delivered energy demand will grow in the US through 2050 should not be a surprise, given expected underlying economic growth, but emphasizes the point that we made earlier this week, which is that we cannot afford to be too cute with energy policy and that the US needs to put security alongside climate change and not behind it. Again note that we do not believe that energy security and energy transition are mutually exclusive – see yesterday's [ESG and Climate Piece](#)

- [Benchmark C+F Japan naphtha price surpasses \\$1,000/mt mark to 9-year high](#)
- [Biden says 'nothing is off the table' when asked about banning Russian oil and gas](#)
- [China official distillates price cap may be imposed on further crude price surges](#)
- [China likely to lift March gasoline, gasoil outflows as export margins rise](#)
- [China's Russian crude import may fall in the wake of Ukraine conflict](#)
- [Climb That Hill - A Steeper Path to Gas-Project Certification Following New FERC Policies](#)
- [Companies Divesting From Russia Face Big Write-Downs](#)
- [Crude oil higher as traders avoid Russian Urals](#)
- [Dana took £45m hit in pull out of North Sea gas project](#)
- [EU considering SWIFT exclusion for Belarus banks - official](#)
- [European gas supply crisis amplifies US market debate on regulation, climate goals](#)
- [EU net gas injections to jump to meet commission target](#)
- [ExxonMobil plans further cost cuts to boost profit](#)
- [ExxonMobil leans on Permian, Guyana for major production growth](#)
- [ExxonMobil targets doubled earnings by 2027 in investor report](#)
- [France's Engie to continue Russian gas purchases on energy market 'tensions'](#)
- [IEA calls on EU not to renew Gazprom contracts](#)
- [Latin America slows oil product tendering as prices hit 9- to 13-year highs](#)
- [Oil continues to surge on supply concerns; Brent crude crosses \\$118/bbl](#)
- [Oil price surge amid Russia-Ukraine war poses dire global economic impact](#)
- [Opec+ brushes aside Russia concerns, sticks with plan](#)
- [Opec+ JMMC recommends 400,000 b/d quota hike for April](#)
- [OPEC+ stays the course, approving 400,000 b/d oil output increase for April](#)
- [Petronas returns to profit on oil, plans clean energy unit](#)
- [Pioneer CEO considers shift to higher oil supply growth amid Russia crisis](#)

- [Record VLSFO bunker price rise sparks credit concerns](#)

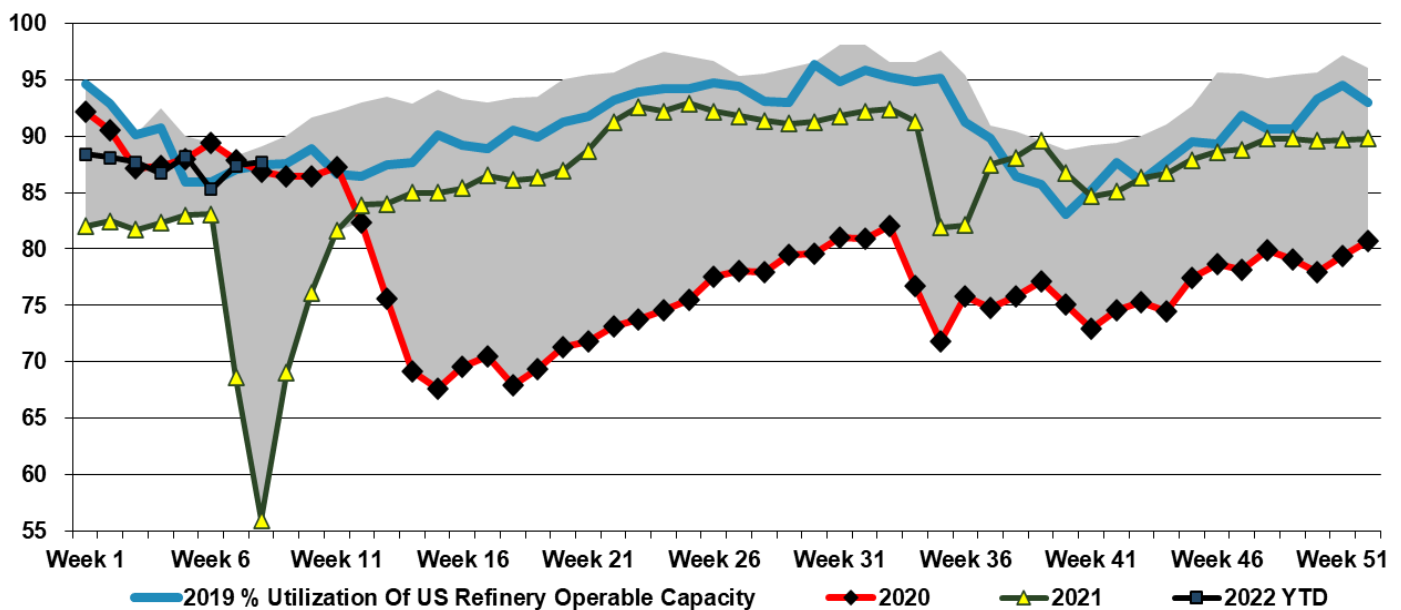
Exhibit #2: [Europe can cut natural gas imports from Russia by more than 30% within a year - IEA](#). We highlight this headline but also note that in 2021, the European Union imported 155 billion cubic metres of natural gas from Russia, accounting for around 45% of EU gas imports and close to 40% of its total gas consumption, per the IEA report.

EU gas imports from Russia



Source: [IEA](#), March 2022

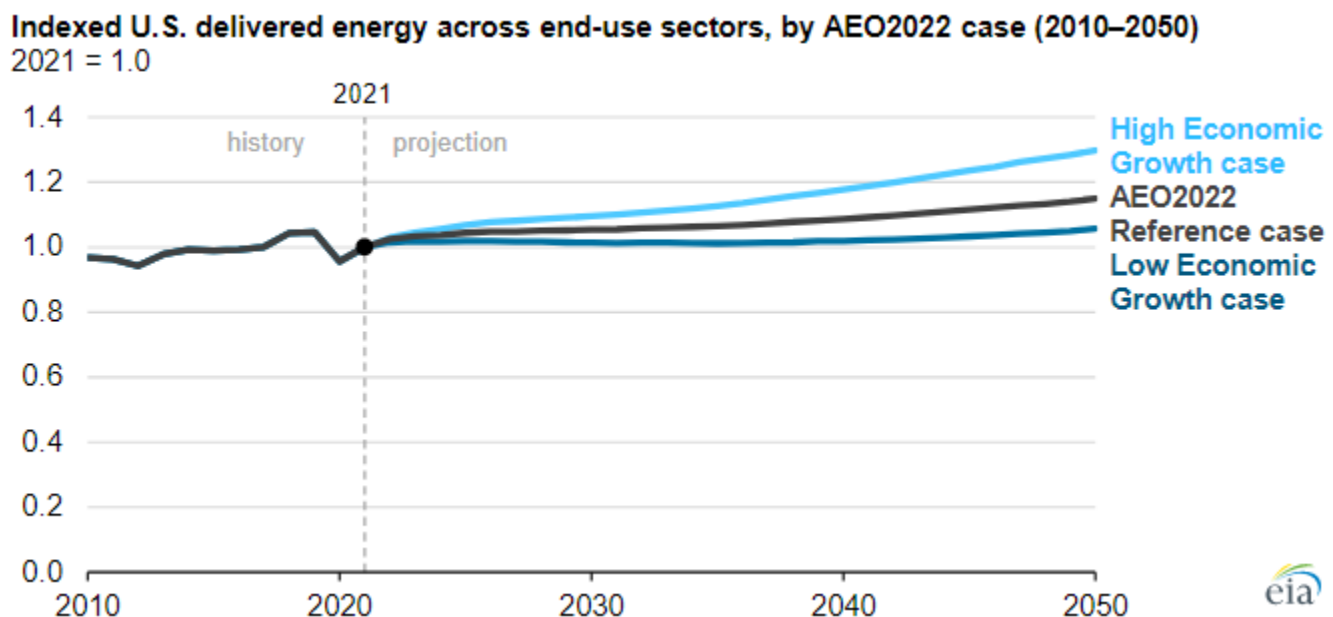
Exhibit #3: US average refinery operating rates increased WoW to 87.7%, which is roughly in line with the 2019 and 2020 levels for the time of year. US refineries, per our estimate, produce ~45% of US propylene and ~60% of US benzene.



Source: [EIA](#), [Bloomberg](#), C-MACC Analysis, March 2022

- [Renewed oil surge rattles markets as Ukraine conflict intensifies](#)
- [Robust European demand pushes Richards Bay 5,500 kcal/kg NAR coal to premium](#)
- [Russian Oil & Gas Giants Lose 95% of Their Market Cap On London Exchange](#)
- [Russia-Ukraine conflict aggravates oil supply worries for Asian buyers](#)
- [Russian invasion dents Ukraine's corn export, output prospects](#)
- [Russian steelmaker Severstal stops steel shipments to EU on sanctions against shareholder](#)
- [Technip Energies: \\$4.2 billion of Russia backlog impacted by Ukraine crisis](#)
- [The case against divestment from Russian oil](#)
- [The US Crude Export Chronicles: February 2022](#)
- [TTF extends influence on Northeast Asian LNG pricing](#)
- [UAE's ENEC may develop more nuclear power plants locally, internationally in future](#)
- [Ukraine grid operator site hit by airstrike, gas supply in Kharkiv region partially suspended](#)
- [UK's Johnson says we will not fight Russian forces in Ukraine](#)
- [US bans exports of oil refining technology to Russia, Belarus](#)
- [US gasoline, diesel stocks down as jet rise: EIA](#)
- [US hits Russian oil refining sector, slaps export curbs on Belarus](#)
- [US Treasury issues more details on permitted Russian energy transactions](#)
- [Western sanctions set to hamper Russia's refinery upgrades](#)
- [Why the EU should end Russian gas imports now](#)
- [Will the west place an embargo on Russian oil and gas supplies?](#)
- [Wintershall Dea writes off Nord Stream 2 financing, halts new Russia projects](#)
- [Wintershall DEA writes off €1bn Nord Stream 2 finance](#)
- [You Still Believe in Me - An Update on LNG Export Projects Along Canada's West Coast](#)

Exhibit #4: [US energy consumption will grow through 2050, driving by economic growth - EIA](#). We highlight the breakdown of the EIA forecast by fuel source in Exhibit #5, highlighting a rising share of non-hydro renewables.



Supply Chain, Commodity Chemicals, & Chemical Sector News:

The Huntsman activist defense presentation highlighted below does a very good job of explaining why Starboard is focused on a set of concerns that the company has already addressed and while we would generally not comment on something like this, we agree with Huntsman’s assessment that the proposed Board changes bring nothing to the table. Where the Starboard activity may help is improving Huntsman’s communications, as while the company has done a good job, in our view, of repositioning, it

has done a less good job, until now, of communicating what the changes mean. The presentation linked below does a much better job than anything we have seen from the company in the past. To be fairer to Huntsman, the chemical industry has always had trouble communicating strategy shifts and portfolio transformations to stakeholders and there have been several instances of good stories not turning into good businesses – Eastman had some false starts in the past but has not been alone with these problems. It often takes some time for investors to believe in a new business model and this is where good corporate communications strategies can help. This presentation is a good start for Huntsman

We talk about supply chain issues in other parts of this report and we will be more focused on some of the transactional moves we are seeing to combat supply chain challenges in our Sunday piece this week. The risk for Huntsman and others moving more downstream is that we run out of raw materials that are critical to the Huntsman’s operations. The company has already battled (successfully) higher raw material costs in 2021, but it has been decades since large sectors of the chemical industry have faced real shortages – causing companies to choose between what they make and what they do not make.

We talked about overly optimistic guidance from a couple of companies during the week and we would put Evonik in the same boat as their energy pullback assumptions assume that the Russia/Ukraine conflict will be short and localized, but more important will have a limited post-invasion impact, which we believe is highly unlikely. The events of the last week will crystalize views about energy dependence and energy security and while the West will be forced to buy some hydrocarbons from Russia going forward, the risk premium is likely to stay on energy for a while. If the conflict lasts longer, Evonik’s assumptions will be very adrift – we would be advising clients to avoid guidance in the current environment or provide a range based on clearly defined different assumption sets.

- [Adnoc, Switzerland's Proman to build methanol plant in Ruwais industrial hub](#)
- [Asian buyers grapple for wheat supply amid Russia-Ukraine conflict](#)
- [Brenntag enters Israeli market with acquisition of specialties distributor](#)
- [Canada's Nutrien eyes prolonged global fertilizer disruption from invasion of Ukraine | Reuters](#)
- [Commodity prices soar to highest level since 2008 over Russia supply fears](#)
- [CFR China soybean flat price in rally mode on active demand coverage](#)
- [Evonik to Raise Prices of High-Performance Plastics](#)
- [Evonik’s earnings short of consensus on rising raw material costs, forecasts higher profits, sales in 2022](#)

Exhibit #5: We highlight Evonik’s expectation that raw materials and logistic headwinds will face throughout 2022, with 1Q22 seeing peak headwinds. In our view, there is considerable risk that these issues will not dissipate as fast as planned.

Q4 Highlights

Positive trends to be sustained, negatives fading throughout 2022

- 
- **Healthy volumes** in all businesses
 - **Price increases** in SP & SM ramping up (+10% Q4 after +6% Q3)
 - **Nutrition & Care** with a strong finish of a very successful year
 - Health Care: Ramp-up of lipid deliveries to BioNTech
 - Continued solid volume growth and successively higher prices in Animal Nutrition
 - **Performance Materials:** C4 chain with sustained positive spreads in Butene-1, Oxo products and Specialties (~70% of the C4 chain)

Positive trends expected to continue into Q1

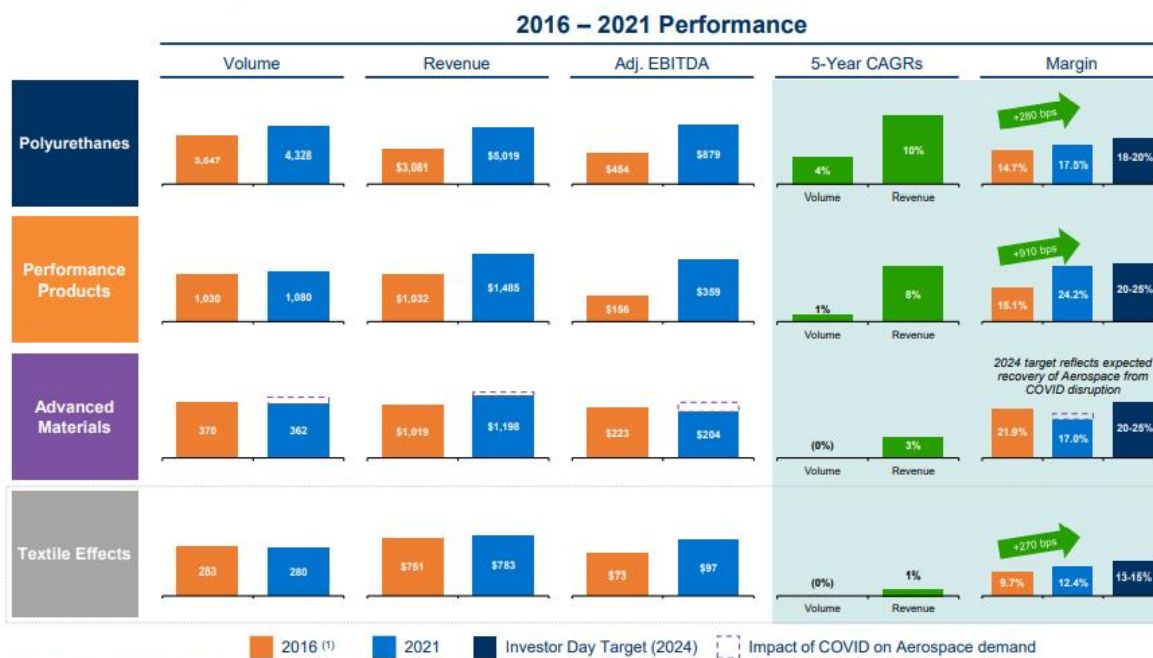
- 
- **Raw materials:** Further cost increases, especially in Specialty Additives (siloxanes) and Smart Materials (silicon metal); volumes in Specialty Additives limited by supply chain disruptions
 - **Logistics:** Commitment to supply security as reliable partner resulting in higher costs towards year-end
 - **Baby Care:** Last quarter of unfavourable contract prices
 - **T&I/Other:** Negative impact from unplanned power plant outage

Negatives fading from Q1 2022 onwards

- [Covestro starts PC compounding lines in India](#)
- [Elementis swings to profit on demand recovery, pricing actions](#)
- [Europe chemical prices to rise as Russia-Ukraine war pushes energy costs higher](#)
- [GMS Reports Third Quarter Fiscal 2022 Results](#)
- [How chemical markets are reacting to Russian invasion of Ukraine](#)
- [Huntsman Files Investor Presentation Highlighting Successfully Transformed Portfolio, Enhanced Financial Profile and Refreshed Board](#). See presentation in [LINK](#).

Exhibit #6: Huntsman highlights its push for product value over volume, which we think is enabled by its participation in well-structured markets. We see this endeavor as a benefit to spurring incremental returns over time.

1.A Differentiated Portfolio Improves Margins By Focusing On Value Over Volume



HUNTSMAN
Enriching lives through innovation

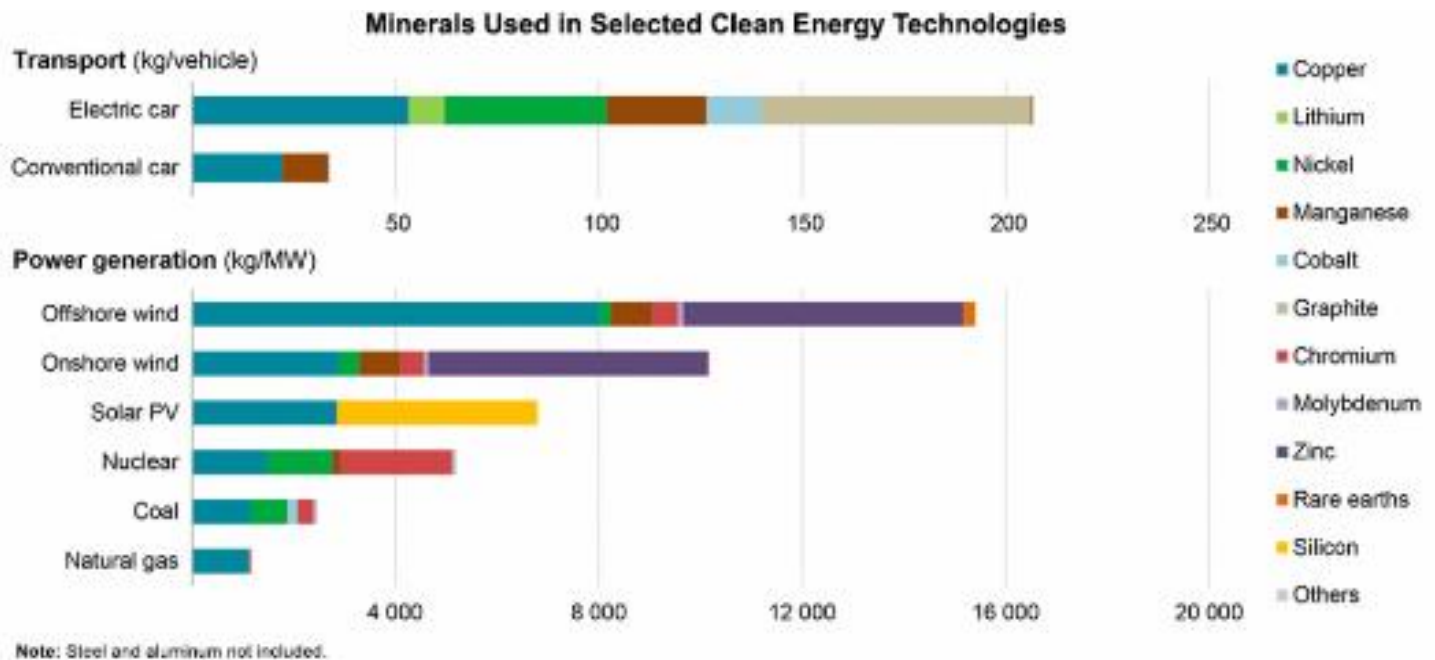
- Huntsman's differentiated portfolio focuses on maximizing value by providing innovation, technical services, and sustainable solutions—unlike a commodity chemical manufacturer's focus on maximizing volume.
- Focus on value over volume has driven significant gain in margins and grown Adj. EBITDA while shrinking volumes.
- Selective divestment and exit of lower-margin businesses was critical to this strategy's success.
- Expect significant improvement in Advanced Materials as aerospace market recovers to at least pre-COVID levels.

Source: [Huntsman – Annual Meeting of Stockholders Presentation, March 2022](#)

- [IMCD acquires UK-based food ingredients distributor](#)
- [Indian SiMn up as Ukraine crisis fuels fresh enquiries](#)
- [Japan's Fujimi recommences production after cyberattack](#)
- [Koch to acquire 50% interest in OCP's JFC III unit: companies](#)
- [Lenzing completes world-scale lyocell fiber plant in Thailand](#)
- [Major petrochemical plants in southern Taiwan shut after power cut](#)
- [Merck KGaA posts higher earnings on growth in all businesses](#)
- [Metal Movers: The outlook and geopolitics of lithium](#)
- [Perstorp to add isononanoic acid to its portfolio](#)
- [Petrochemical margins under pressure as costs soar and demand uncertainty spreads](#)
- [Piedmont Lithium Partner Sayona Mining Doubles Quebec Lithium Resource Estimate](#)
- [Polymers : Producers Slow-Walk Sales in Anticipation of More Price Hikes Ahead](#)
- [Q1 India phosphoric acid contract price increases, ammonia under pressure on limited supply](#)
- [Sibanye-Stillwater sees Ukraine crisis disrupting automotive supply chains](#)
- [Sanctions may interrupt Rosneft-led Nayara Energy's petchem projects in India](#)
- [SI Group expands antioxidants capacity in China](#)
- [Sika buys manufacturer of cementitious products, mortars in Canada](#)

- [Sumitomo Chemical sets \\$11.2-billion capex for fiscal 2022–24, outlines growth plans](#)
- [Supply resiliency takes center stage at Socma specialty and custom chemicals show](#)
- [SWIFT sanctions against Russia exempt energy payments](#)
- [Synthomer earnings jump on strong elastomers performance, higher margins](#)
- [Taiwan mostly resumes power supply at areas hit by blackout](#)
- [US The Fertilizer Institute expresses concerns over Russia-Ukraine conflict](#)
- [Vinyl acetate monomer \(VAM\) supply to remain tight on plants shutdown, output cuts](#)
- We highlight the latest commentary on the PP and PE markets from the PlasticsExchange in [LINK](#).
- [Tell It Like It Is - Unseen Costs of the Energy Transition: Minerals, Metals, and Construction Materials.](#)

Exhibit #7: [Energy Transition Likely to Skyrocket Demand for Critical Minerals, says IEA.](#) We also highlight the report titled, [Metals Shaping the Energy Transition](#), providing a more detailed breakdown and projections, and an infographic titled, [Visualizing China’s Dominance in Clean Energy Metals](#) that shows significant processing capacity in the country.



Source: [IEA, Natural Gas Intel](#), March 2022

Sustainability, Clean Energy, Recycling & ESG:

The Evonik discussion around CO2 prices is both relevant and important as CO2 values will be a critical component of investment decisions for many industries going forward. Those waiting for explicit guidance on CO2 prices are likely to be disappointed as we are not seeing much global coordination today and as we discussed yesterday, the European market, which had been the better indicator in our view over the last 18 months, has collapsed in the wake of the Russia/Ukraine conflict as some countries ask for it be suspended, while speculators are assuming that lower gas supplies into Europe will lead to lower emissions and less demand for credits. One of the options here is to take the bp approach and assume a carbon price in investment decisions. Early last year, bp indicated that it would fix on a carbon price of \$100 per ton in its longer-term planning. We believe that this is a ballpark steady-state for CO2 pricing but that traded prices could be quite volatile around that level, depending on the mechanisms used. But even if we have a consistent carbon price, we will see significant changes in industry costs and competitive cost curves based on the various costs of carbon abatement. We have written in the past that we could see huge benefits to the US manufacturing base because of the combination of relatively low-cost hydrocarbons and relatively low-cost CCS opportunities. By contrast, we see costs rising steeply in places like central West Europe, where the local CCS opportunity is off the table. Even if Europe can produce cost-effective blue hydrogen on the coast, getting it to central Europe will be an issue. The landscape is less clear in Asia, but we expect to see some competitive edge for countries with low-cost CCS options – Malaysia, Indonesia, Thailand, and parts of China.

The issue with the non-hydro renewables forecast that we see in the EIA chart below is that it assumes the supply chain for parts and materials for the wind and solar industry will not only not be interrupted, but that component capacity can be added at a rate

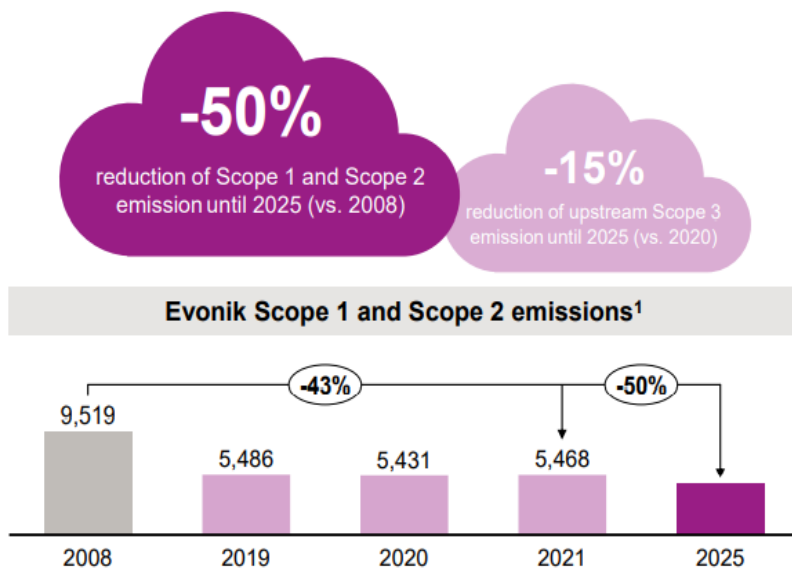
to meet demand growth without contributing to more cost inflation. These are industries with true global supply chains – China makes roughly 80% of the World’s solar modules, for example. In the same way that we have seen the auto industry under severe pressure because of a lack of semiconductors over the last year, we could see the same issue with solar modules as demand grows and especially if China accelerates its solar installations and if trade routes remain congested. Exhibit 1 would suggest that the challenges to meeting near-term renewable power predictions are acute.

- [Air Liquide to open RNG hydrogen plant](#)
- [Almost all climate-related corporate disclosures are inadequate, CDP says](#)
- [Aqua Metals produces lithium hydroxide from lithium-ion battery black mass](#)
- [Australia’s Qenos partners with Plastic Energy and Axens on PE recycling](#)
- [Biden inflation plan promotes clean energy, quiet on oil](#)
- [Biesterfeld Plastic: distribution of new DuPont™ Delrin® Renewable Attributed grades](#)
- [Braskem Grows Circular Polymer Portfolio with Food-Grade PCR PP](#)
- [Clean Hydrogen collaboration between Johnson Matthey and 8 Rivers to accelerate global decarbonisation](#)
- [Continental Resources invests in CCS project](#)
- [Electric-Vehicle Startup Rivian Walks Back Price Increase, Apologizes](#)
- [Energy storage and emissions abatement prices key to decarbonization](#)
- [Eni, the Republic of Mozambique partner to produce agro-feedstock for biofuels](#)

Exhibit #8: Evonik highlights that global CO2 prices will be used as a parameter for large investment decisions.. Given a lack of certainty regarding the outlook for global CO2 values, we think this suggests a conservative approach to Capex.

Sustainability – Environmental targets

Ambitious greenhouse gas emission reduction targets



- Strong commitment to “**Paris Agreement on Climate Change**” reflected in implementation and execution on environmental targets
- Global **CO₂ pricing** used as additional parameter for large investment decisions
- In 2020, decline in Scope 1 emissions due to lower production volumes, however Scope 2 impacted by the acquisition of PeroxyChem
- In 2021, stable emissions despite increase in production volumes of 7%

1. in thousand metric tons CO₂eq, values for 2020 corrected due to fast-close process

Source: [Evonik – 4Q21 Investor Presentation](#), March 2022

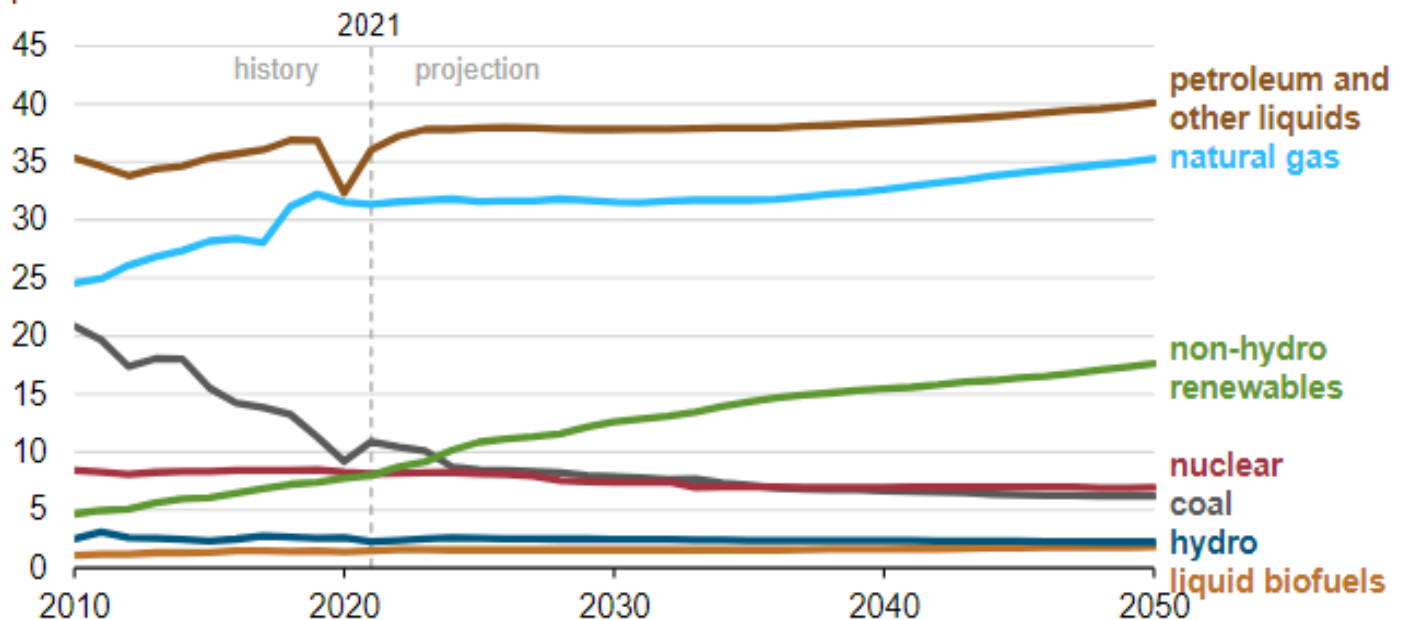
- [Ethanol producers, oil refiners challenge EPA U.S. vehicle rules](#)
- [Here’s why Ford didn’t spin off its electric-vehicle business](#)
- [Explainer: Why \\$100 oil could hurt the energy transition more than it helps](#)
- [H2U raises \\$11 million for tech aimed at replacing precious metals in electrolyzers](#)
- [INEOS Aromatics reduces CO2 emissions and increases capacity with \\$70 million modernization of PTA facility in Merak, Indonesia](#)

- [Japan's Chubu starts building new biomass power plant](#)
- [Japan's Mol to launch a LNG-fuelled ferry in 2023](#)
- [Keurig agrees to \\$10 million settlement, recycling disclaimer - Plastics Recycling Update \(resource-recycling.com\)](#)
- [LanzaTech, Twelve partner to produce ethanol from CO2](#)
- [Macquarie's GIG to launch offshore wind business](#)
- [Mixed bale processor adds facility in western Canada](#)
- [MMEX Resources acquires additional sites for ultra clean refinery projects](#)
- [Nations commit to developing a legally binding global plastics pollution agreement](#)
- [Neste, Marathon Petroleum to establish JV for production of renewable fuels](#)
- [Nola DAP jumps on tight supply](#)
- [Nola MOP jumps again amid uncertainty](#)

Exhibit #9: Non-hydro renewables will play a greater role in meeting US energy consumption through 2050 - EIA.

U.S. energy consumption by fuel source, AEO2022 Reference case (2010–2050)

quadrillion British thermal units

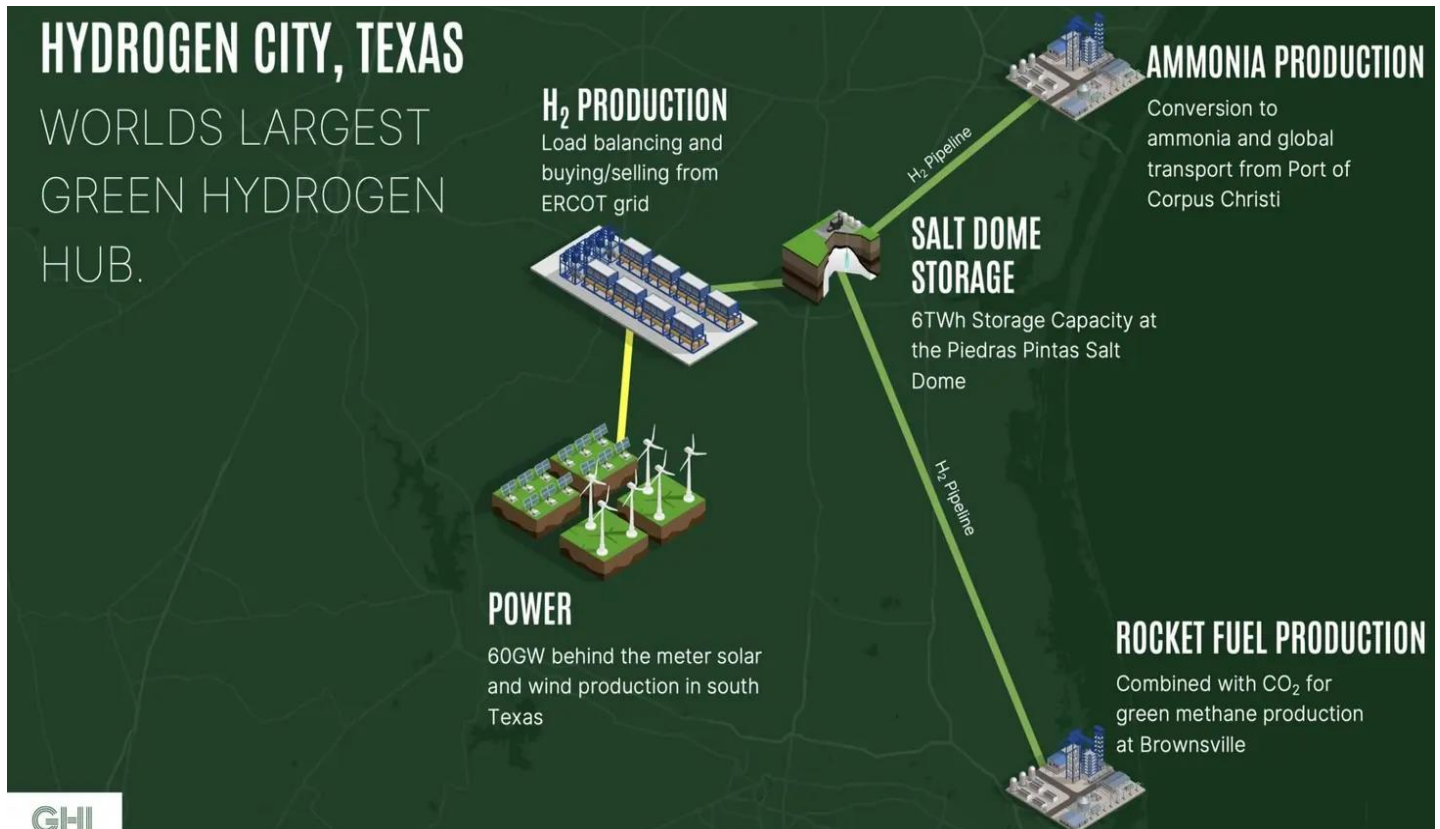


Source: EIA – Today In Energy, March 2022

- [Over 170 countries endorse UNEA-5 plastic resolution](#)
- [Paccor to include RHDPE content in UK dairy caps with a minimum 30%](#)
- [Precious metals market drives Umicore 2021 growth](#)
- [Republic Services moves to vertically integrate in plastics](#)
- [Republic Services Advances Circularity with Nation's First Integrated Plastics Recycling Facility](#), which will “directly address increasing demand from consumer brands and packaging manufacturers for recycled plastic, enabling greater circularity. The Republic Services Polymer Center represents the first time a U.S. company will manage the plastics stream through an integrated process from curbside collection of recycled material to production and delivery of high-quality recycled content for consumer packaging”, per the release.
- [Republic Services Inc. moves into plastics reprocessing](#)
- [Siemens Energy secures electrolyzer order for large-scale eMethanol project](#)
- [Shell confirms shuttered Convent facility will become an alternative fuels complex](#)
- [Something to Believe In? - Co-powering Natural-Gas-fired Power Plants with Hydrogen](#)
- [Standards - Project Canary RSG Certifications Key for Producers Aiming to Reduce Emissions](#)
- [Strong fundamentals to support voluntary carbon markets, while EU's ETS slumps: sources](#)
- [Sumitomo exits Bangladesh coal plant expansion plan](#)

- [PR - Técnicas Reunidas and Axens Sign an Agreement to Develop Carbon Capture and Storage Projects](#)
- [TotalEnergies target of lawsuit to test 'greenwashing' in advertising](#)
- [Twelve and LanzaTech Partner to Create Ethanol From CO2](#)
- [UK's CNG Fuels opens world's largest biomethane station](#)
- [World's major companies lag on climate, some markets regress since Paris](#)
- [Our switch to renewables and hydrogen will make us truly independent of Russia,' says EC President](#)
- [IH2A recommends creating a hydrogen taskforce in India to establish five GW-scale hubs in the next 18 months](#)

Exhibit #10: [A major new hydrogen project in the US, dubbed the “world’s largest’ green hydrogen production and storage hub is set to be developed in Texas with a capacity of 60GW.](#)



Source: [H2-View](#), March 2022

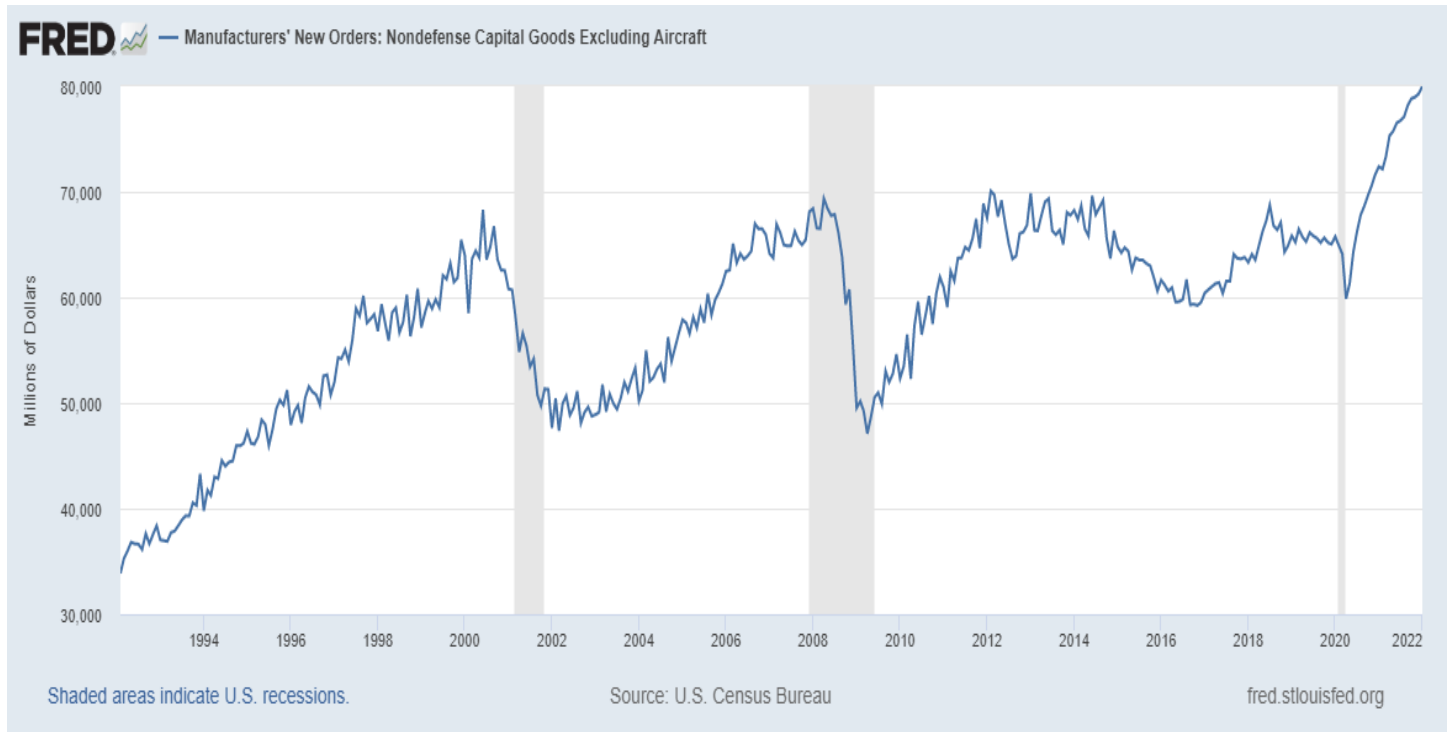
Other Chemical Industry, Demand & Downstream News:

The manufacturer's new orders numbers in the FRED chart below are an indication of some of the labor pressures in the US and the willingness to spend on equipment that can lower labor needs – this is not about machines replacing workers and more about machines allowing manufacturers to operate who cannot find reliable sources of labor. In its recent analyst call Deere talked about the success it is having with autonomous farm machinery and if a farmer can plow a field remotely or harvest a crop with one driver instead of two, it not only creates savings but also improves reliability as you are not waiting/hoping for the other driver to show up.

In our Sunday piece this week we will revisit reshoring, which is also likely driving up manufacturer’s orders, in the light of the rallying cry for buying American that resonated during the State of the Union address this week. While this is a nice sentiment for any country, the economics of the last 30 years have driven investments overseas to lower costs. The timing of the rallying cry is good, as it comes after 18 months of supply chain issues that have helped cause inflation, but also likely scared many US retailers and manufacturers concerning product availability, which is often more important than price. Some of the reshoring ambitions will bump into constraints in the US, not least of which will be material and labor shortages, but we also have very cumbersome and lengthy permitting processes in the US which can also be off-putting for investors. With the right leadership and incentives, both Mexico and Canada could become beneficiaries of the US interest in shortening supply chains. We would still need to see a significant upgrade in the US rail networks to make those moves effective.

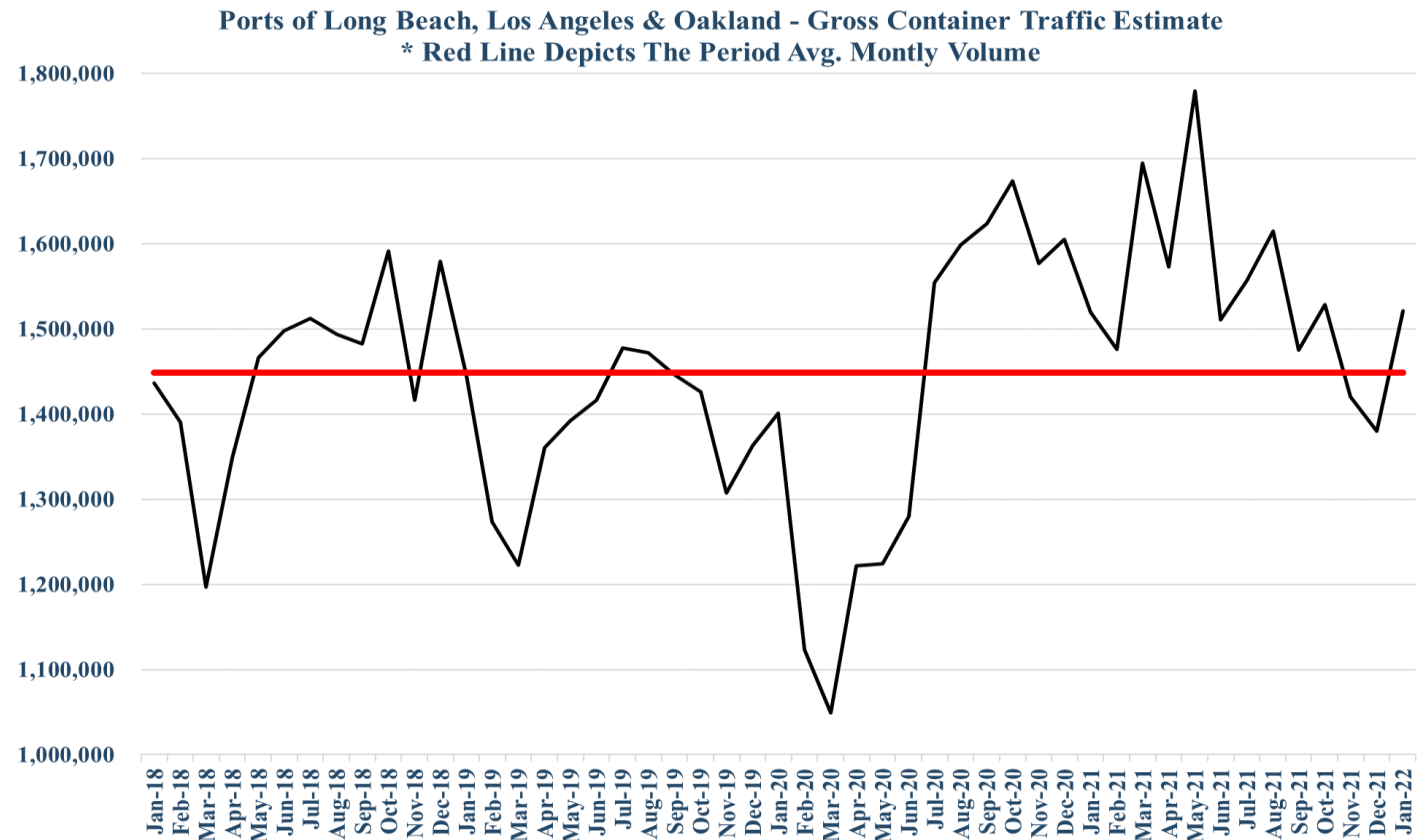
- [Analysis: Chinese banks scramble for 'workarounds' as Russia sanctions impinge](#)
- [Analysis: Sanctions response to Russia's invasion offers clues for China](#)
- [Best Buy Posts Lower Sales](#)
- [Best Buy shares pop as investors bet pandemic gains will last](#)
- [China asked Russia to delay Ukraine invasion until after Olympics -NYT](#)
- [China to further optimize government services](#)
- [China casts EU relations in growth mold](#)
- [China needs to take forceful measures to support economy – regulator](#)
- [ECB should keep sights on policy normalisation as inflation soars: Bundesbank](#)
- [EU bans 70% of Belarus exports to bloc with new sanctions over Ukraine invasion](#)
- [Export Controls Against Russia Add to Uncertainty for Business](#)
- [Eurozone business growth accelerated in Feb as Omicron faded -PMI](#)
- [Eurozone inflation reaches new record high in February](#)
- [Eurozone inflation jumps to 5.8% in February on energy prices](#)
- [Fed's Powell to Discuss Rate-Rise Plans With Senate Lawmakers](#)
- [Guangdong ports initiate express sea lanes to send anti-virus, daily necessities to Hong Kong](#)
- [IKEA temporarily closes stores in Russia, warns of higher prices](#)
- [In China, Fewer Are Willing to Splurge as Economic Worries Mount](#)
- [Kroger Sales, Earnings Grow as Higher Costs Persist](#)
- [Market Talks: Logistics expansion plans at Brazilian ports](#)
- [Maersk flags delays, increased strain on global supply chains from Russia sanctions](#)
- [MIIT: China rolls out measures to tackle supply chain risks and smaller demand](#)
- [Monetary Policy Rules Point to Fed Being Way Behind the Curve](#)
- [Newbuildings Edge Higher This Past Week](#)
- [Retailers start to warn of business impact from Russia's invasion of Ukraine](#)
- [Rouble falls again as sanctions expand, companies pull out of Russia](#)
- [Russia space agency head says satellite hacking would justify war -report](#)
- [Russia to retaliate for US expulsion of 12 diplomats at UN](#)
- [Russia-Ukraine conflict, sanctions may not impact Asia-Pacific much: Moody's Analytics report](#)
- [Russia's War on Ukraine – Topics - IEA](#)
- [Shipowners' muted enthusiasm for scrapping](#)
- [South Korea's Q4 GDP up by 4.2%, expands 4.0% in 2021](#)
- [UK bans Russian vessels, EU mulls more sanctions and Maersk stops calling at Russia's ports](#)
- [Ukrainian cyber resistance group targets Russian power grid, railways](#)
- [U.S. firms buffeted by high inflation and worker shortages, Fed survey shows](#)
- [US Jobless Claims Fall to 215,000](#)
- [US launches 'KleptoCapture' task force aimed at Russian oligarchs](#)
- [US Response to Russian Invasion with Sanctions on Shipping](#)
- [US preparing further sanctions against Russian oligarchs -sources](#)
- [US private payrolls rise solidly as labor market continues to gain traction](#)
- [War Plunges Auto Makers Into New Supply-Chain Crisis](#)
- [War upends EU's fiscal planning as economic clouds gather](#)
- [Yara warns of dangers to global food security from Russia/Ukraine conflict](#)
- [2021 Newbuilding Orders Rise by 32.7%](#)

Exhibit #11: Manufacturers' New Orders: Nondefense Capital Goods Excluding Aircraft surged into 2022, continuing an upward trend since mid-2020. Part of the strength is the result of a limited ability to source workers.



Source: [US Federal Reserve Research](#), March 2022

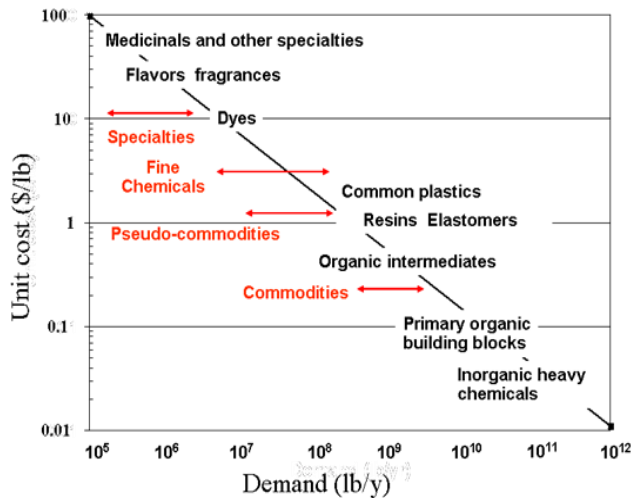
Exhibit #12: Container Traffic Into Three West Coast Ports Rose In Early 2022. We also highlight [Long-Term Ocean Freight Rates On The Rise Again, As Demand, Congestion And Geopolitical Uncertainty Squeeze Shippers](#).



Source: [Bloomberg, C-MACC Analysis](#), March 2022

Flow Charts & Ancillary Data

Ex. 13 Specialty versus commodity



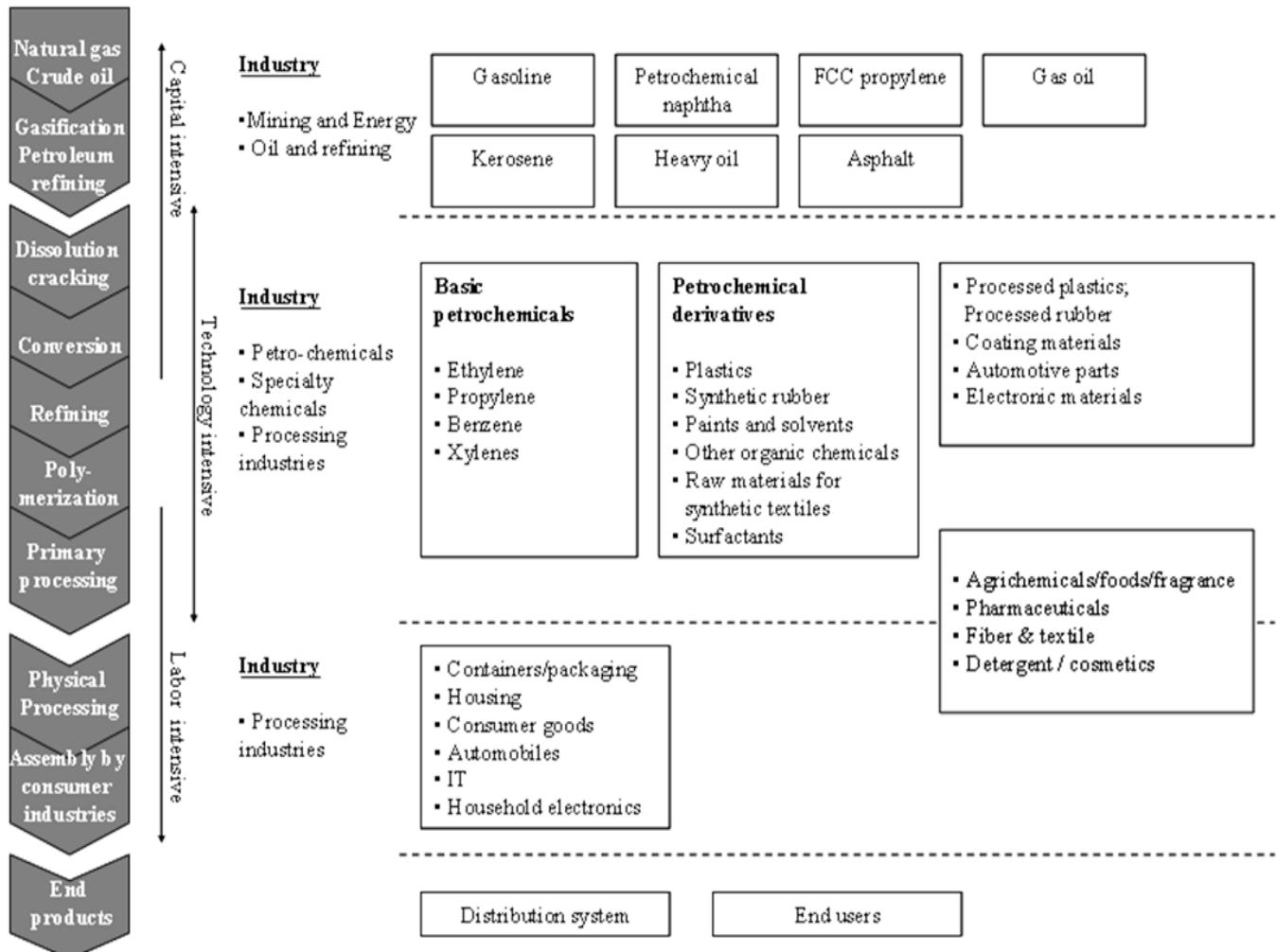
Source: SRI consulting, C-MACC, March 2022

Ex. 14 Chemical industry characteristics

	BULK CHEMICALS	FINE CHEMICALS	SPECIALTY CHEMICALS
Product life cycle	Long	Moderate	Short/moderate
# of products	00's	000's	0000's
Product volumes	>10,000t/y	<10,000t/y	highly variable
Product prices	<5US\$/kg	>5US\$/kg	>10US\$/kg
Product differentiation	none	very low	high
Value added	low	high	high
Capital intensity	high	moderate	moderate/low
R&D focus	process improvement	process development	application/product
KEY SUCCESS FACTORS			
• cost	✓ ✓ ✓	✓ ✓	✓
• technical service	-	✓ ✓ ✓	✓ ✓ ✓
• links with customer	-	✓ ✓	✓ ✓ ✓

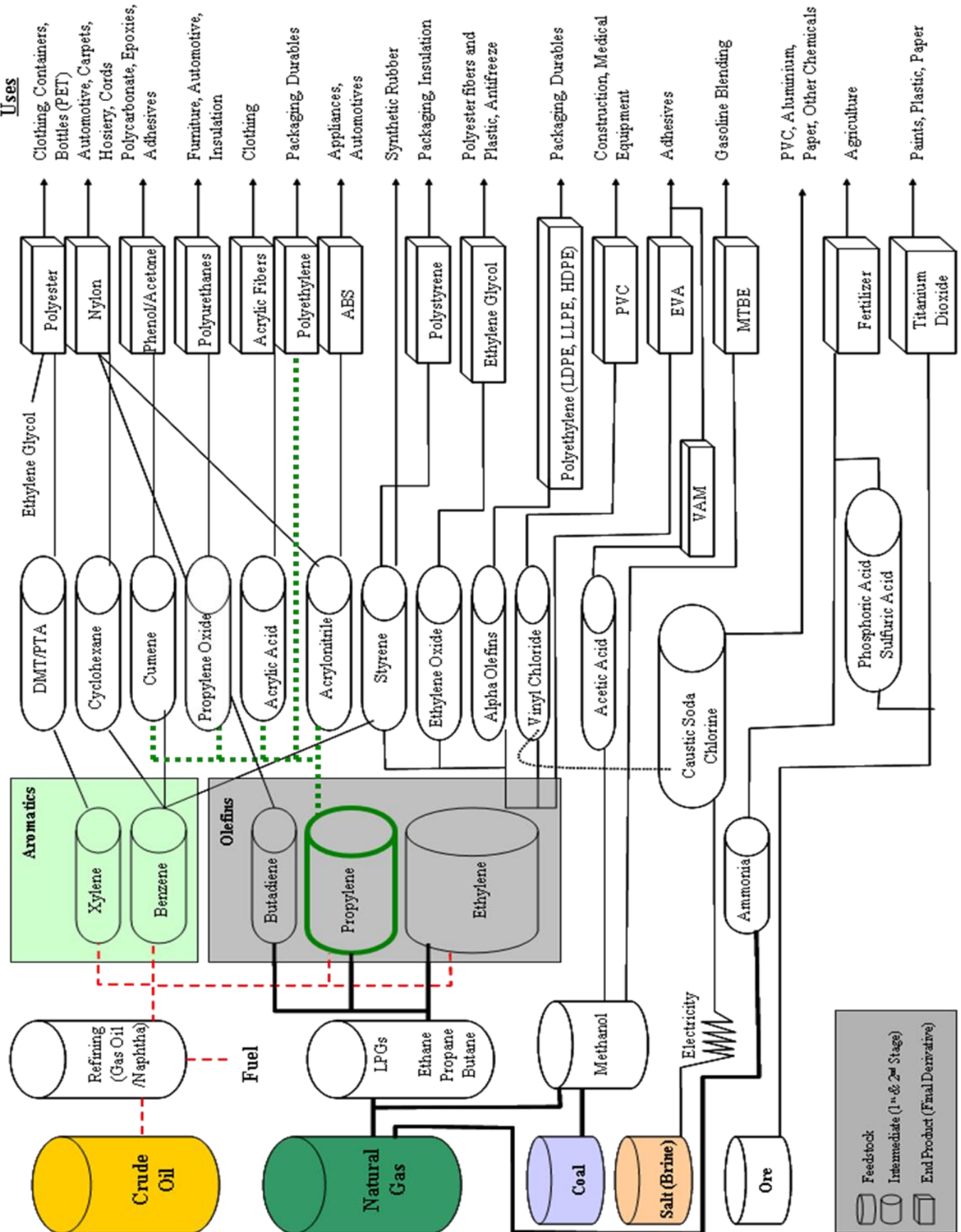
Source: C-MACC, March 2022

Ex. 15 Chemical industry and its upstream and downstream industries



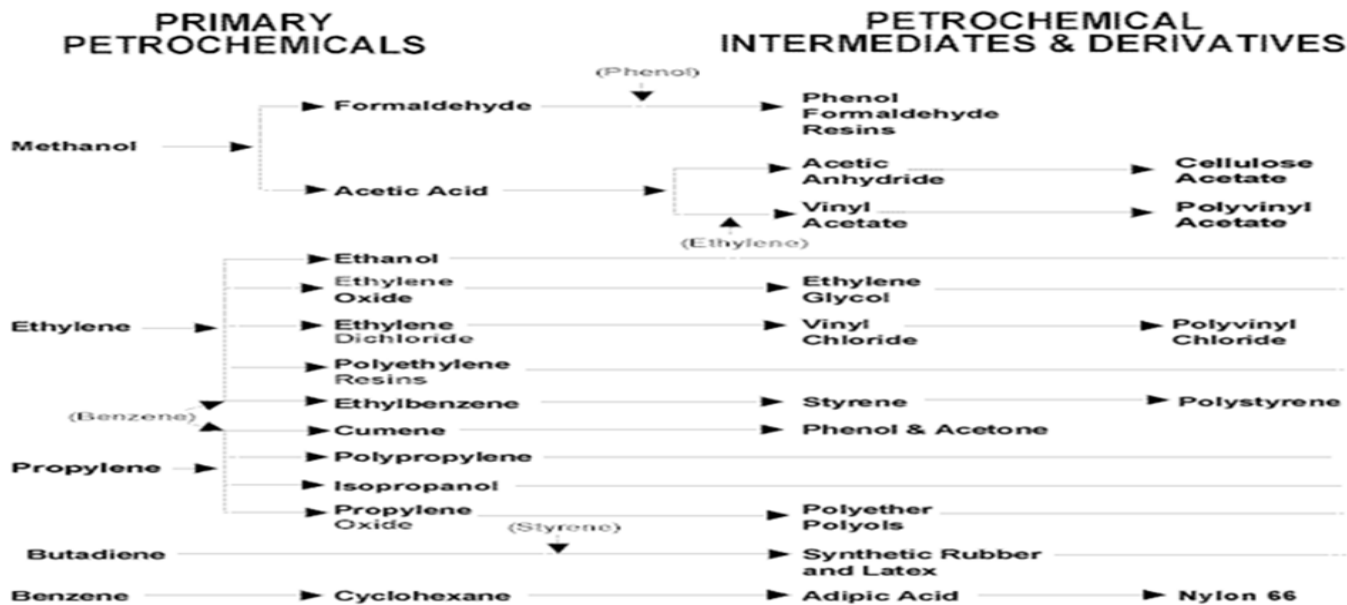
Source: C-MACC, March 2022

Ex. 16 Petrochemical Industry Production Flow – a look at the commodities and their end use



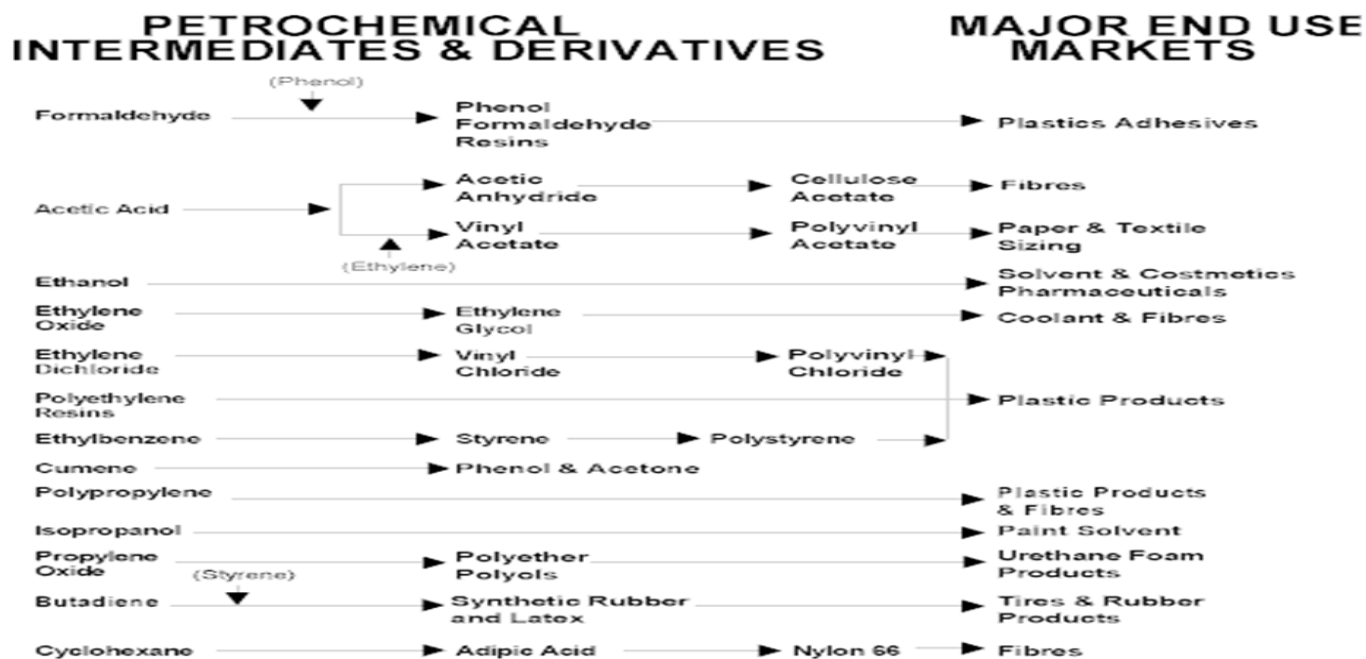
Source: C-MACC, March 2022

Ex. 17 The conversion of petrochemicals to primary intermediates/derivatives



Source: C-MACC, March 2022

Ex. 18 Intermediates & derivative conversion to end markets



Source: C-MACC, March 2022

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