

ICIS TOP 40 POWER PLAYERS



We present the ICIS Top 40 Power Players, the CEOs and senior executives making the greatest positive impact on their companies and the industry. These leaders were selected by the global ICIS editorial news team for demonstrating excellence and vision in one or more of the following areas: ESG, Innovation, M&A/Portfolio Management, Projects, and Profitability/Shareholder Value. ESG and sustainability in particular loom large in this year's Top 40 ranking, as this will clearly be a key component for future growth. Another exciting development is the big wave of new CEOs - a level of change not seen in decades. Check them out in our Ones to Watch!

Top Power Player is BASF's Brudermuller

The BASF CEO is taking the lead in decarbonising operations and investing in products and technologies such as EV battery materials that will help the world

Joseph Chang New York

BASF's Martin Brudermuller, the ICIS CEO of the Year in 2021, takes the top slot among the ICIS Top 40 Power Players as a leader in not only aggressively decarbonising the world's largest chemicals company's vast operations, but also making massive investments in products that enable customers to slash their carbon footprints.

"I am proud that the BASF team is committed to reduce our carbon emissions quite fast and drastically. We can master these challenges as companies, but also as the chemical industry as a whole. And as leaders, we have the responsibility to make bold decisions and set the right path to a more sustainable future for all of us," said Brudermuller at the ICIS Power Players Awards in September.

In November, BASF launched a "Net Zero Accelerator" unit to speed up projects on low-CO2 technologies, the circular economy and renewable energy, to ensure it meets its CO2 emissions reduction target of 25% by 2030 en route to net zero by 2050.



The company has also created a new subsidiary – BASF Renewable Energy – to bundle its activities in this key area. It is acquiring a 49.5% stake in a major wind farm in the Netherlands, and signing deals to source renewable energy to power its operations.

Brudermuller also serves as the president of European chemicals trade group Cefic, and is pushing the EU and European governments to develop policy frameworks to drive industry decarbonisation. In particular, massive investment in renewable energy is needed to achieve the EU's ambitious climate goals.

In the meantime, BASF is working to scale up two key decarbonisation technologies that Brudermuller believes will be game changers by the second half of the decade - electric cracking and methane pyrolysis.

BASF has joined forces with SABIC and Linde to develop the world's first electrically heated steam cracker furnace, which could slash CO2 emissions by 90%. And methane pyrolysis would produce hydrogen from methane, with solid carbon granulates as a byproduct. If renewable energy is used in the process, it would be completely CO2-free.

BASF is also becoming a major player in electric vehicle (EV) battery materials - a key focus area for capital spending.

"With the speed the [EV] transformation has on a global scale... there is a huge opportunity. This is by far the largest new chemical segment that is actually emerging," said Brudermuller.

BASF is rapidly building its capabilities in cathode active materials (CAM) for automotive lithium-ion (Li-ion) batteries worldwide through projects and partnerships. Its Schwarzeide, Germany CAM project slated for start-up in 2022 will be able to supply 400,000 EVs/year.

BASF's flagship petrochemicals project – its China Verbund cracker in Zhanjiang – will use the latest carbon mitigation technologies including electrification, resulting in an estimated 60% lower emissions compared to a similar gas-based facility of the same scope.

BASF is also active in plastics recycling, working with partners to develop pyrolysis technology in its ChemCycling project. The project focuses on difficult-to-recycle plastic waste. ■

ICIS Top 40 Power Players – the methodology

The ICIS Top 40 Power Players are selected by the global ICIS editorial news team for demonstrating excellence and vision in one or more of the following areas:

ESG (environmental, social, governance)

Setting targets for lowering greenhouse gas (GHG) emissions, achieving net zero; investment to decarbonise operations, in products that enable decarbonisation, and in plastics recycling/bio-based materials; demonstrating engagement with commu-

nities and other groups on environmental and social issues; promoting DE&I (diversity, equity and inclusion)

Innovation

Notable investments in game changing technologies and products that provide tangible benefits to customers and society, particularly with an eye on sustainability.

M&A, portfolio management

Value creating acquisitions and divestitures to promote growth and a more resilient portfolio.

Profitability/SH value

Solid earnings and stock performance in past year. Ambitious financial targets and growth plan.

Projects

Investments in growth projects, especially if these will have lower carbon intensity or produce products that enable sustainability.

The Ones to Watch are CEOs and senior executives that started their new roles during 2021 or at the very start of 2022. ■

2 CHAIRMAN AND CEO DOW Jim Fitterling



Fitterling is truly taking the lead in sustainability, putting real dollars behind Dow's 2050 net zero greenhouse gas (GHG) emissions goals by devoting a third of capital spending (capex) - about \$1bn/year - to decarbonising assets. This is the most ambitious capex plan to decarbonise announced by any chemical company thus far.

Dow also plans to build the world's first net-zero emissions cracker in Fort Saskatchewan, Canada by 2027. This will involve capturing off-gases and running them through an Auto-Thermal Reformer (ATR) to produce hydrogen and CO₂. The hydrogen would be used to fuel the cracker furnaces and the CO₂ captured and stored in the Alberta Carbon Trunk Line (ACTL).

Then Dow plans to retrofit the existing Fort Saskatchewan cracker with an ATR to fuel the furnaces with hydrogen. In these two phases, Dow would slash Scope 1 and 2 emissions at the site by 95%.

Fitterling has also been very vocal about the need for carbon capture and storage (CCS) infrastructure in the US and a price on carbon.

"The pathway to carbon neutrality is not easy and it's not free. It's driven by affordability, macro and other factors, and we must keep an eye on US competitive advantage. Public policy can accelerate this, and we are fully engaged to de-risk investments," said Fitterling.

The CEO sees near-term decarbonisation technologies revolving around clean hydrogen, CCS and modular nuclear reactors which are ready to scale today, while future technologies include electric cracking and ethane dehydrogenation (EDH) which Dow is working on developing.

Fitterling also aims to meet growing consumer demand for sustainable packaging with mechanically and chemically recycled plastics.

3 CHAIRMAN INEOS Jim Ratcliffe



Apart from pushing ahead with his INEOS Grenadier 4X4 off road vehicle project, Jim Ratcliffe has been taking big strides and spending serious money on low carbon initiatives. Under his leadership, this year, the innovative company has unveiled an ambitious plan to spend €2bn building green hydrogen plants, with the first ones being built in Norway, Germany and Belgium in the next 10 years. INEOS is also planning investments in France and the UK. The company billed the investment as the largest of its kind in Europe. The plants will rely on electrolysis, which uses renewable power to split water molecules into hydrogen and oxygen.

In November INEOS Styrolution said it will invest in the first pyrolysis-based site in Europe to chemically recycle polystyrene (PS). In collaboration with UK-based Recycling Technologies, the pilot plant in Swindon, UK is due

to become operational in the second half of 2022. The plant will use mixed plastic waste as a feedstock to create recycled PS via a pyrolysis-based chemical recycling process.

In September, INEOS said it would invest £1bn to support businesses across the Grangemouth industrial cluster in Scotland switching to hydrogen by 2030. The investment would also support the development of carbon capture and storage (CCS) technology at the cluster.

Ratcliffe is also investing in low carbon hydrogen beyond his own company. Subsidiary INEOS Energy committed to a minimum £25m stake in the initial public offering (IPO) of HydrogenOne Capital. This fund is expected to target investments in green, blue and waste to hydrogen projects, as well as storage supply chain projects focusing on work on electrolyzers and fuel cells.

4 CEO COVESTRO Markus Steilemann



When he first took the reins at Covestro in mid-2018, Markus Steilemann was tasked with guiding the Germany-based polyurethanes and polycarbonates specialist through its shift towards the lower end of its market cycle. At first, Steilemann was a steady hand on the tiller, but has become increasingly bold in the role as his tenure in the top seat at the company continued, including blueprints set out over the last 18 months that stands to reinvent the firm.

At the onset of the pandemic, executives could be forgiven for hunkering down and focusing on maintaining the status quo, but Steilemann began plotting out a radical new course for the company, placing sustainability at the heart of its growth strategy and expressing plans to move toward more specialised, lower-volume materials.

For 2025 the company has a goal to reduce specific greenhouse gas emissions - those

generated per metric tonne of product produced - by 50% when compared to 2005.

Many companies in the sector have set out green agendas but few have been as unequivocal on the centrality of sustainability to its future. The move seems prescient in the face of increasing pressure on the formerly staid polyurethanes sector to reform itself with a greater focus on re-use, clean disposal and circularity.

Surging margins resulted in Covestro upgrading its 2021 earnings forecast several times through the year and Steilemann pursued several big-ticket bets, including the acquisition of DSM's resins and functional materials business.

Players in the methylene diphenyl diisocyanate (MDI) market are also awaiting the outcome of a review of long-anticipated new greenfield capacity investment by the firm, formerly slated for the US before being put on hold, and now potentially set for China instead.

5 CEO CLARIANT Conrad Keijzer



Keijzer, the ICIS Emerging Leader Award winner in 2020, is targeting technologies and deals that enable sustainability. Clariant has a target to allocate a third of its growth capex to developing sustainable solutions. The company aims to cut GHG emissions by 40% for Scope 1 and 2 emissions, and 14% for Scope 3 emissions by 2030, and will step-up annual investments to Swfr 30m (\$33m) for sustainability measures focusing on GHG reduction. In November, it launched a campaign to offer free catalysts for nitrous oxide (N₂O) removal/abatement to 10 major producers worldwide.

Clariant continues to develop catalysts that enable decarbonisation. In October, Clariant completed its first full-scale bioethanol plant in Romania. It is in the process of selling off its pigments unit to private equity.

7 CEO SOLVAY Ilham Kadri



Ilham Kadri has continued to consolidate her position at the helm of Solvay in transforming the once established family business into a specialty-focused chemicals company. Sustainability remains a priority, as demonstrated through Solvay's portfolio. In October, Kadri announced plans to achieve carbon neutrality before 2050. New platforms have been created focusing on hydrogen and batteries for electric vehicles, to allow the company to capture share in growing markets. As of January, all US sites have been 100%

powered by renewable sources, and even Solvay's legacy soda ash business has started phasing out coal-use at its German site. Diversity, equality and inclusion (DEI) remain high on the agenda for Kadri, appointing a DEI chief and outlining an internal framework to meet targets to 2025.

9 CEO LANXESS Matthias Zachert



Matthias Zachert continues to shape LANXESS for the future through M&A and a particularly close focus on sustainability. LANXESS has committed to an ambitious 2040 climate neutral goal and seeks to cut emissions by 50% by 2030. In November, it said it would raise €600m through a sustainability bond that commits the company to reducing CO₂ emissions by 600,000 tonnes by 2025. The interest on the bond increases each year if the target is not hit. Again in November 2021, LANXESS gained first

place in the Dow Jones Sustainability Index Europe and was second in the world index. About one-third of variable compensation for the LANXESS board of management is linked to the company's sustainability performance, specifically climate protection and occupational safety.

6 HEAD OF PETROCHEMICALS RELIANCE Nikhil Meswani



Meswani will oversee Reliance's focus on new energy projects as it sets out to meet its net zero emissions goal by 2035. The company called off its \$15bn deal to sell 20% of its oil-to-chemicals business to Saudi Aramco amid a shift in priorities. It now has major plans for its new energy/material business centred in Jamnagar, home to the world's largest refining complex. In the first phase, Reliance plans to build four giga factories: a solar photovoltaic module factory; an advanced energy storage battery factory; an electrolyser

factory for production of green hydrogen; and a hydrogen fuel cell factory. Reliance plans to invest some \$10bn in the new energy business over the next three years. It also aims to boost M&A in specialties with sustainability in mind, and enlarge its footprint in China and North America.

8 CEO LANZATECH Jennifer Holmgren



Under Jennifer Holmgren's leadership, US biotechnology company Lanzatech - overall winner of the 2021 ICIS Innovation Awards - is scaling up quickly to commercialise its microbial greenhouse gas-to-ethanol technology which has potential applications across the chemical industry. The group has commercialised a fermentation technology which converts carbon found in municipal waste plus industrial waste streams, such as carbon monoxide, hydrogen, and carbon dioxide, into ethanol.

The ethanol can then be further processed into chemicals and polymers plus jet fuel. Lanzatech is going through a period of rapid expansion using its licensing and joint venture model, with several projects due onstream in 2022 and beyond in both chemicals and jet fuel.

10 PRESIDENT AND CEO TRINSEO Frank Bozich



Bozich is making big moves to transform Trinseo into a 100% specialty chemicals company. The company announced it will start a formal sales process for its styrenics business in Q1 2022. This comes after a surge in M&A activity where it acquired acrylic materials company Aris- tech Surfaces for \$445m. In May, it completed its \$1.36bn acquisition of Arkema's polymethyl methacrylate (PMMA) business. Trinseo is selling its synthetic rubber business to Synthos for \$491m in a deal expected to be completed in 2022.

These are big transformational moves designed to make all the company's products value-priced rather than formula-based. Bozich has progressed recycling projects in polystyrene (PS) and polymethyl methacrylate (PMMA) worldwide. PS recycling will be divested as part of styrenics.

11 CHAIRMAN AND CEO ARKEMA

Thierry Le Henaff



In 2021, under CEO and chairman Thierry Le Hénaff's leadership, Arkema took some major steps along the road towards its goal of transforming into a 100% specialties company by 2024. In August the group signed an agreement to acquire Ashland's Performance Adhesives business. With sales of around \$360m, the move strengthens Arkema's presence in the US as well boosting its specialty materials offering. Le Hénaff also sold Arkema's polymethyl methacrylate (PMMA) business last

year in his drive to reduce commodity exposure. Arkema intends to fully publish details of the company's carbon footprint, including Scope 3 emissions. In 2020 the company announced a goal to cut greenhouse gas emissions by 38% by 2030 versus a 2015 baseline.

12 CEO INDORAMA VENTURES

Aloke Lohia



Lohia is spearheading the company's efforts to meet its sustainability objectives, which includes strengthening its circular economy and PET recycling initiatives. The company pledged \$1.5bn in investments to meet green targets, including a commitment to recycle 750,000 tonnes/year of post-consumer polyethylene terephthalate (PET) materials as feedstock into its polyester production. Indorama announced in July plans to build a facility in Karawang, Indonesia, to recycle almost 2bn plastic bottles/year in sup-

port of the government's plan to reduce ocean debris. The company also completed a new PNDA (purified 2,6-naphthalene dicarboxylic acid) production unit in Decatur, Alabama, US in June, making it the world's largest producer. In August, Indorama agreed to acquire Brazil-based Oxiteno.

13 EXECUTIVE CHAIRMAN AND CEO DUPONT

Ed Breen



Legendary deal maker Breen is making big transformative moves, the latest being DuPont's \$5.2bn acquisition of advanced and electronic materials firm Rogers Corp, and the planned divestment of a substantial part of its Mobility & Materials (M&M) business - moves widely applauded by Wall Street. Breen expects the sale to bring in around \$12bn. If this happens, DuPont will have billions of dollars left over to make additional acquisitions in specialties. The company bought electronics materials producer Laird Per-

formance Materials for \$2.3bn in July and in February completed the separation of its Nutrition & Biosciences unit through a merger with IFF. DuPont aims to cut carbon emissions by 30% and source 60% of electricity from renewables by 2030, and become carbon neutral by 2050 or earlier.

14 PRESIDENT AND CEO CELANESE

Lori Ryerkerk



Much of the US-based acetyls and engineered materials producer Celanese's innovation is tied to its advanced materials segment, which develops compounds and resins for downstream applications. Ryerkerk sees growing markets in 5G, medical and light-weighting autos. The company is lowering its carbon footprint by committing to use solar energy to power its acetyl intermediates site in Clear Lake, Texas, US. Celanese has been active in M&A, buying ExxonMobil's elastomers business for \$1.15bn and acquiring

certain polyacetal technology from Poland's Grupa Azoty. Celanese initiated several expansions, including acetic acid production in Clear Lake, Texas to 2.6m tonnes/year from 1.3m tonnes/year. Throughout 2021, Celanese consistently increased its earnings guidance.

15 PRESIDENT EXXONMOBIL CHEMICAL

Karen McKee



Karen McKee is overseeing the chemical business' contribution to ExxonMobil's shift towards sustainable businesses. The company is building a chemically recycled plastics plant in the US and is working with Plastic Energy to develop one in Europe. It is assessing sites in other parts of the world. The parent company is leading in the development of a carbon capture and storage (CCS) hub in Houston, Texas. ExxonMobil Chemical is moving forward on a major complex in China featuring a cracker, three polyethylene (PE)

lines and two polypropylene (PP) lines. Its joint venture with SABIC is starting up its integrated PE complex in Texas. A new PP plant should start up in Louisiana in 2022. On M&A, ExxonMobil closed the \$1.15bn sale of its Santoprene business to Celanese, allowing it to focus on olefins derivatives.

16 CHAIRMAN SINOPEC GROUP

Ma Yongsheng



Sinopec has vowed to achieve carbon neutrality by 2050, a decade ahead of the China's target. Pacing with the world's trend of energy transition, the biggest Chinese refiner is reshuffling portfolios to become a comprehensive energy service provider of oil, gas, hydrogen, electricity and non-oil service. It is constructing the country's first world scale carbon capture, utilisation and storage (CCUS) project. It plans to build up 5,000 battery charging/swap stations in 2021-2015 for electric vehicles and aims to become

China's largest hydrogen provider. The company completed first phase expansion of Zhenhai base this year by adding a new 1.2m tonne/year cracker. Also, it successfully completed industrial testing of its self-developed crude oil to chemical (COTC) technology, a breakthrough in China.

17 PRESIDENT AND CEO SAUDI ARAMCO Amin Nasser



The leader of the world's largest energy and petrochemicals company is focusing on CCS, along with green and blue hydrogen and ammonia in a major decarbonisation push. Aramco continues to form partnerships on hydrogen with companies around the world, and will ramp up investments in renewable energy. Plastics subsidiary SABIC is also working with BASF and Linde to advance electric cracking (e-cracking) which would dramatically lower the carbon footprint of crackers. In October, Aramco announced

its ambition to achieve net zero GHG emissions by 2050. In the meantime, the company continues to develop crude oil-to-chemicals (COTC) technologies with a target of converting 70-80% of a barrel of oil to chemicals. The industry is on watch for the first such project from Aramco.

19 CHAIRMAN, PRESIDENT AND CEO HEXION Craig Rogerson



Rogerson is burnishing his reputation as a turnaround and restructuring specialist with big moves and the ultimate sale of the company – all engineered in 2021 with closings expected in 2022. In November, Hexion agreed to sell its epoxy business to Westlake Chemical for \$1.2bn and in December announced the sale of the rest of the company – adhesives and versatic acids and derivatives – to American Securities for \$30/share, an enterprise value of \$3.3bn – a windfall for shareholders who saw shares at around

\$13 at the start of the year. Rogerson engineered the transformation of Hexion and its sale with the divestiture of its forest products resins businesses to Black Diamond and Investindustrial for \$425m. This allowed it to pay down debt and separate the epoxy and adhesives businesses.

21 PRESIDENT AND CEO WESTLAKE CHEMICAL Albert Chao



One example of how Westlake's Chao is leading his company's efforts toward sustainability is through the formation of Westlake Innovations. The subsidiary, created in 2021 to facilitate the company's potential investments in new technologies and pursue innovative digital, mechanical or chemical applications, is partnering with Canadian construction technologies company Nexii Building Solutions to construct buildings with reduced environmental footprints. Chao was also active in M&A with the planned

\$1.2bn acquisition of Hexion's epoxy business at an attractive price. In October, the company closed on its \$2.15bn acquisition of Boral's North America building products business, adding downstream exposure to polyvinyl chloride (PVC) and other products for housing.

18 PRESIDENT, REFINING AND CHEMICALS TOTALENERGIES Bernard Pinatel



French energy giant Total rebranded itself TotalEnergies to demonstrate its shifting identity that now accommodates its renewables portfolio. In 2020, Total announced its ambition to get to net-zero emissions by 2050. As its president of refining and chemicals, Bernard Pinatel led the segment to a rise in adjusted net operating income between January and September of 181.5% compared to the previous year. The company is undertaking a range of initiatives to support its sustainable agenda. As well

as committing to the production of sustainable biofuels, other projects include constructing a pyrolysis-based chemical recycling facility in the US, partnering to develop carbon sinks in Australia and collaborating with Daimler to create a hydrogen infrastructure for commercial fleet vehicles.

20 CHAIRMAN WANHUA CHEMICAL Liao Zengtai



Liao has led Wanhua in its evolution from a polyurethane maker to a chemicals giant with continuous investments and innovations. In the capital market, investors have granted their recognition by driving up its stock price to a skyrocketed high of over CNY150 in February 2021. Before that, its stock value had never touched CNY60. Liao has outlined his company's future focus: renewable energy, environment and climate, and quality of life. Money has been diverted to those areas. In

Shandong, it has invested in wind and solar energy projects. In Sichuan, it has built up a 60,000 tonne/year polybutylene adipate terephthalate (PBAT) plant and eyes the establishment of a battery materials production base for electric vehicles.

22 FOUNDER AND CEO RECYCLING TECHNOLOGIES Adrian Griffiths



Recycling Technologies was one of the early movers in chemical recycling. Its initial public offering has been delayed until early in 2022 as markets became unsettled due to the impact of the Omicron coronavirus variant. The group has several projects underway including one in collaboration with INEOS Styrolution which will invest in the first pyrolysis-based site in Europe to chemically recycle polystyrene (PS). This pilot project, located in Swindon, UK is due to become operational in the second half of 2022. Recycling Technologies and three academic institutions were given a grant of

£1.2m to help them improve the nascent technology. The recycling group is working with the University of Birmingham, University of Surrey, and Cranfield University to develop new process monitoring systems.

23 **CEO SASOL** Fleetwood Grobler



Fleetwood Grobler is guiding Sasol through a challenging period as the coal to liquids fuels and chemicals producer shifts operationally and technically towards a much reduced carbon footprint. The company has committed to net zero emissions by 2050 and accelerated 2030 targets from 10% to 30% for its energy and chemicals businesses. The aim is to transition from coal to natural gas as feedstock and then over the longer term to green hydrogen and “sustainable carbon”.

Grobler has said that the transition can be delivered without further divestments and offsets. Hydrogen is key for the company - which already produces significant volumes in its coal to liquids facilities. South Africa is well placed to become a hydrogen economy leader.

24 **CEO BERRY GLOBAL** Tom Salmon



Salmon is planning for a boom in recycled plastics demand, with a goal of making 100% of its plastics packaging circular, as more brands aim to meet recyclable content goals in 2025 and 2030. Berry announced a deal with Wendy's and LyondellBasell to supply plastic clear cups with 20% recycled plastic using a mass balanced approach to Wendy's US and Canadian restaurants in early 2022. Berry has secured around 300m lb/year of chemically recycled plastics by 2025, along with about 300m lb/year of

mechanically recycled plastics worldwide. Berry is also developing new products to make them easier to recycle, such as a dispenser that replaces the metal spring in nozzles with ones made from PP. Berry has a goal of achieving net zero GHG emissions by 2050 with a 25% reduction by 2025.

25 **CEO SIBUR** Dimitry Konov



The big news for Russian petrochemical group, SIBUR, in 2021 was its announcement with compatriot group TAI of an agreement to merge assets to create the fifth largest player globally in both polyolefins and elastomers. According to SIBUR, the joint entity would produce 8.1m tonnes/year of polyolefins, including upcoming capacities in their Amur GCC and EP-600 large-scale projects. Such capacities in polyolefins production would be behind only China's Sinopec (13.5m tonnes/year), US-based ExxonMobil (12.9m tonnes/year) and LyondellBasell (10.7m tonnes/year), and Saudi Aramco (8.2m tonnes/year). In October, SIBUR signed a deal to construct PE and PP projects in Kazakhstan. The group's huge Amur polymer project in eastern Russia for the China market broke ground 2020.

26 **CEO GENOMATICA** Christophe Schilling



The CEO of the winner of a key ICIS Innovation Awards category – the ICIS Process with Best Benefit to the Environment and Sustainability – continues to make advances for the long-running technology start-up. Genomatica has commercialised a new process which allows single-step conversion of sugars to butanediol (BDO) by an engineered microorganism, coupled with complete process design, technology transfer and plant start-up support. The new technology reduces GHG emissions up to 93% compared

with conventional technologies, according to the company. In August, the company scored a huge deal with major athleisure company lululemon which will also make an equity investment in Genomatica. The companies will work to create plant-based nylon to replace conventional nylon.

27 **CEO BRENNTAG** Christian Kohlpaintner



Christian Kohlpaintner has presided with success over the most turbulent times in chemicals logistics, with global supply chains upended since the pandemic began. On the earnings side, the company is on course for healthy double-digit increases year on year in 2021 jumping on the bandwagon of the recovery. On the spending side, Kohlpaintner wants a leaner company and has launched Project Brenntag, an ambitious plan aimed at boosting profitability and return the company to organic earnings growth. Among

other measures, the cost saving programme includes 1,300 job cuts and around 100 site closures. It aims for €220m/year in cost savings from 2023. So far, investors like the narrative and Brenntag's share price is up nearly 20% in the past 12 months.

28 **CHAIRMAN, PRESIDENT AND CEO HUNTSMAN** Peter Huntsman



Peter Huntsman continues to transform the company towards specialties with the \$250m acquisition of Gabriel Performance Products, adding specialty additives and epoxy curing agents for CASE and composites. Huntsman has divested commodity and intermediates businesses, while building up specialties. It is boosting ethylene carbonate capacity for electric vehicle (EV) batteries by seven-fold in Conroe, Texas by mid-2023, and expects to start up its MDI splitter in Geismar, Louisiana in Q2 2022. In November,

the company was awarded \$665m in a long-running legal dispute with Albemarle. The windfall will allow Huntsman to further fund growth efforts. With major share price gains in 2021 on the back of strong earnings, Wall Street believes in the transformation story.

29 CHAIRMAN, CEO AND FOUNDER PLASTIC ENERGY

Carlos Monreal



Carlos Monreal founded Plastic Energy because of his liking for disruptive technologies and newcomers, following on from investments by his Greenland Capital fund. The UK-headquartered company aims to “play a significant role” in solving the plastic waste problem, and it is putting some money into it. It is leading the way in chemically recycled plastics technologies, and the company is finding the right partners that could propel it further. It has signed deals with major global chemicals players like INEOS and Total to

use its proprietary pyrolysis technology and is building a plant in France to supply ExxonMobil’s refinery and is jointly building another plant in the Netherlands with SABIC. The company aims to process 300,000 tonnes/year of plastic by 2025, with more plant start-ups or expansions planned.

30 CEO AGILYX

Tim Stedman



Stedman is advancing the technology company’s efforts in plastics recycling through partnerships. It partnered with ExxonMobil to establish the Cyclyx joint venture to help scale up the supply of qualified plastic waste for the recycling industry. In December, Agilyx announced a “first of its kind” plastic recovery facility to process waste plastics for committed offtake associated with chemical recycling projects on the US Gulf Coast, including ExxonMobil’s project in Baytown, Texas. The facility is expected to process

up to 60,000 tonnes/year of recycled plastic feedstock with start-up in late 2022. In October, its patent for PS recycling was extended to all waste plastics. The company is already producing recycled PS at Tigard, Oregon and studying a large plant with AmSty in St James, Louisiana.

31 PRESIDENT AND CEO SIAM CEMENT (SGC)

Roongrote Rangsiyopash



Siam Cement CEO and president Roongrote Rangsiyopash is making a big push towards a low carbon future. The Thai conglomerate expects the share of environmentally-friendly products to account for about 70% of total sales in 2030 from 40% currently, as part of its circular economy roadmap. It aims to achieve net zero carbon emissions by 2050. It plans to beef up its “green” polymer capacity to 400,000 tonnes/year by 2025. In the medium term, its ASEAN capacity will surge with the

start-up of wholly owned subsidiary Long Son Petrochemical (LSP) in Vietnam in the first half of 2023; and with the planned second petrochemical complex in Indonesia by its 30.57%-owned affiliate Chandra Asri Petrochemical, slated to begin production in 2026.

32 PRESIDENT AND CEO NOVA CHEMICALS

Luis Sierra



The leader of Canada-based petrochemicals company plans to scale up volumes of post-consumer resins (PCR) in the coming years to the level where it becomes a major business. Sierra is also working on chemical recycling but is emphasising mechanically recycled PCR and sees this being a major business for NOVA in the next decade. When Sierra came to NOVA as CEO in August 2020, the two key areas he aimed to develop were PCR and decarbonisation. In November, NOVA announced the shipment of railcar quantities of linear low density polyethylene (LLDPE) PCR to specialty films producer Charter Next Generation (CNG). On the projects front, NOVA is on track for a Q4 2022 start-up of its Canada cracker expansion and new LLDPE unit.

33 CHAIRMAN ZHEJIANG PETROLEUM & CHEMICAL

Li Shuirong



Production units of the second phase of Zhejiang Petroleum & Chemical’s \$20bn mega refining and petrochemical complex gradually came on stream in 2021. The site is China’s pilot integration project that minimise fuels production while maximising chemical yields. Still, with a refining capacity of 800,000 bbl/day, the complex is now China’s biggest crude processor. In green initiatives, the company is looking into the technology of direct processing crude into olefins to lower carbon emissions. Also, the company is actively drawing up plans to capture and utilise CO2 to produce acetic acid and synthetic gas. In addition, all its heating, cracking and conversion furnaces are taking de-sulphurised dry gas and syngas so as to reduce emissions.

34 CEO ASCEND PERFORMANCE MATERIALS

Phil McDivitt

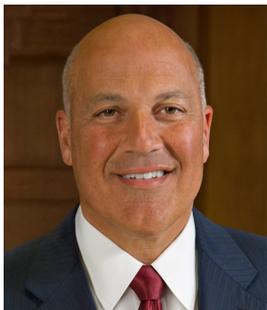


McDivitt is growing the nylon and compounding business through acquisition and innovation. In December, Ascend announced a deal to buy a compounding facility in Mexico and the assets of DM Color Mexicana, expanding its global footprint to Latin America. In January 2021, it closed the acquisition of France-based Eurostar Engineering Plastics, enhancing its electrical and electronic (E&E) capabilities with a wide range of nylon 6,6, nylon 6, and polybutylene terephthalate (PBT) products. Ascend aims to grow

its Acteev antimicrobial nylon business into a substantial part of the company in the coming years. In May, it announced its commitment to cut GHG emissions by 80% by 2030. Today it is cutting emissions of nitrous oxide, buying solar energy and bringing on cogeneration units at its sites.

35 CEO SHERWIN-WILLIAMS

John Morikis



Morikis is overseeing the US coatings giant's transition towards sustainability by committing to reduce the environmental footprint of its global operations. By 2030, the company intends to reduce absolute Scope 1 and 2 GHG emissions by 30%, increase renewable energy to 50% of total electricity usage, increase operational energy efficiency by 20%, and reduce waste disposal intensity by 25%. The company is acquiring Specialty Polymers Inc, a manufacturer of water-based polymers used in architectural and

industrial coatings, to expand its internal resin manufacturing capability. Sherwin-Williams was the ICIS Company of the Year in 2021 based on its strong financial performance in 2020. In 2021, earnings were resilient despite high raw material costs and feedstock and logistics constraints.

36 CEO PURECYCLE

Mike Otworth



Otworth is overseeing the construction of two recycled polypropylene (R-PP) in the US - one in Ironton, Ohio, which has a single production line and is expected to produce 105m lb/year (48,000 tonnes/year), and another in Augusta, Georgia, which includes three lines with a total nameplate capacity of 390m lb/year. Volumes at the Ironton plant have sold out before it begins producing at a commercial scale. PureCycle Technologies uses licensed proprietary technology developed by Procter & Gamble to

turn used PP and R-PP into consumer goods and products for use in automotive, construction and industrial applications. In 2021, PureCycle formed partnerships with Japan's Misui & Co and South Korea's SK Global Chemical to build recycling plants in their respective home countries.

37 CEO PETRONAS CHEMICALS GROUP

Sazali Hamzah



Hamzah is working towards supporting Malaysia state energy firm PETRONAS' goal of net zero carbon emissions by 2050, as well as looking at opportunities to grow in specialty chemicals via M&A. The company has three projects in the works: its subsidiary Da Vinci Group's silicone blending facility in Gebeng, Pahang; the expansion of Da Vinci's lubricant additives and chemicals plant in Echt, Netherlands; and a partnership for liquid chemical distribution in Indonesia. The company is expected to start operations

at its mega Pengerang Integrated Complex in southern Malaysia in the first quarter of 2022. Its growth plans also include green initiatives such as investment in the world's first bio-monomethylene glycol (MEG) pilot plant via direct conversion from palm biomass utilising in-house technology.

38 CEO LG CHEM

Hak-Cheol Shin



Under Cheol Shin's leadership, LG Chem recently joined with fellow Korean producer GS Caltex to develop mass production technology for 3HP (hydroxypropionic acid) - a biodegradable plastic material - to promote the circular economy and in keeping with its target to be carbon-neutral by 2050. 3HP - an eco-friendly material produced through a microorganism fermenting process of bio-materials such as glucose and unrefined glycerol derived from vegetable oil - is drawing attention

as a next-generation platform chemical that can be used as raw materials for a variety of products including biodegradable plastic, as well as super absorbent polymers (SAP) used in nappies, paints, adhesives and glues, coating materials, and carbon fibre, among others.

39 CHAIRMAN AND CEO EASTMAN CHEMICAL

Mark Costa



Costa made a huge push at its Innovation Day in December to focus on circular and sustainable products. This will include using its PRT (polyester renewal technology) to build two additional polyester recycling facilities - one in the US and the other in EMEA in addition to one already being built in Kingston, Tennessee, US. Eastman sees PRT projects adding \$450m/year in EBITDA by 2026. It also will use its CRT (carbon renewal technology) to recycle a wide range of plastic waste to make intermediates including acetic anhydride. Combined with wood pulp, these will produce

a range of materials including fibres for apparel, eyewear and packaging, and add \$200m/year in EBITDA by 2027. Eastman aims to cut carbon emissions by a third by 2030 en route to carbon neutrality by 2050.

40 CEO HANWHA SOLUTIONS

Kim Dong-kwan



Hanwha Solutions is investing in "green" development, with a plan to jointly develop with Korean food and confectionery conglomerate SPC Group eco-friendly biodegradable plastic materials based on polylactic acid (PLA). It recently fully acquired French renewable energy developer RES Mediterranee for \$860m, marking its entry into the French power generation market and expand its power generation portfolio through wind power and greenfield development. It pledges to achieve net-zero

carbon emissions by 2050 via advanced technologies, and has joined the global initiative to produce electricity with renewable energy. The company was formed in January 2020 with the merger of Hanwha Chemical, Hanwha Q CELLS, and Hanwha Advanced Materials.

Power Players – Ones to Watch

We highlight emerging leaders in the chemical industry, including CEOs and senior executives that have recently started in new roles. Watch for exciting changes ahead

EVP, CHEMS & PRODUCTS SHELL CHEMICALS

Robin Mooldijk



Chemicals are key to the energy transition at Shell which aims to become a net zero energy business by 2050. Robin Mooldijk has to lead the re-shaping of petrochemical operations into integrated refin-

ing and chemicals parks while growing chemicals earnings by \$1-2bn over the next few years. Feedstock availability and feedstock slates will change, as decisions are taken to move to alternatives in Singapore and Germany have shown.

CEO W.R. GRACE

Bob Patel



The veteran former CEO of LyondellBasell and two-time CEO award winner started at Grace in January 2022. After building a premier global petrochemicals company through key invest-

ments and acquisitions, Patel will have a very different challenge at specialty chemicals company Grace, which was recently bought by privately held Standard Industries.

PRESIDENT & CEO CHEVRON PHILLIPS CHEMICAL

Bruce Chinn



Bruce Chinn became CEO in April, and the company could soon make a decision on a cracker project it could develop on the US Gulf Coast with Qatar Petroleum.

The cracker furnaces could burn hydrogen or natural gas, with some processes being electrified. The company broke ground on a new 1-hexene plant in Texas.

PRESIDENT & CEO CHEMOURS

Mark Newman



Starting in July, long-time Chemours chief operating officer Newman took over as CEO from Mark Vergnano. Early on, he has managed feedstock constraints in TiO2 well, and maintained strong traction on

long-term contract business. Newman seeks to focus M&A on its fluoro businesses and TiO2. In December, Chemours completed the sale of its mining solutions business for \$521m.

CEO KNOWDE

Ali Amin-Javaheri



Amin-Javaheri is betting that younger workers joining the chemical industry makes it the right time to successfully launch a digital marketplace. The company has some industry veterans on

board and has so far attracted about 4,000 suppliers on its digital chemicals marketplace. Knowde can start up a company's digital storefront in weeks.

CEO & CO-FOUNDER ORIGIN MATERIALS

John Bissell



Bissell and co-CEO Rich Riley have led the technology start-up through a year of opportunities. Origin formed several partnerships to open avenues of application for its technology. Origin's technology turns

woody biomass to produce materials such as paraxylene (PX). Origin is working with Packaging Matters to develop polyethylene furanate (PEF), a polyester similar to PET.

CEO VERSALIS

Adriano Alfani



Adriano Alfani was appointed CEO of Versalis in January 2021, replacing Daniele Ferrari. Alfani came from Dow where he had served most recently as senior global business director & strategy director. Under his

leadership, Versalis is continuing its low-carbon transformation, most recently by signing a deal with Italian firm BTS Biogas to develop biogas and biomethane.

CEO BOREALIS

Thomas Gangl



Thomas Gangl was brought in to preside over two transitions: Borealis' integration into OMV's structure as its petrochemicals division, and the divestment of the fertilizers assets which

became an oddity amid a mostly polyolefins portfolio. Both tasks have kept Gangl busy during his 10 months as CEO and he still has a lot to prove in his new role.

CEO MITSUBISHI CHEMICAL

Jean-Marc Gilson



In April 2021, the Belgian-born Gilson became CEO of Japan's Mitsubishi Chemical. He came from France-based food and pharmaceutical ingredients producer Roquette. In December, the company an-

nounced a massive pivot to exit its petrochemicals and carbon product businesses, along with a strategic focus on the electronics and healthcare and life sciences markets.