

# SEGMENTAL REVIEW

## OVERVIEW

In the year under review, PCG's basic chemicals segment comprising Olefins & Derivatives (O&D) and Fertilisers & Methanol (F&M) maintained its strong commitment to Operational and Commercial Excellence.

We fostered close collaboration with key stakeholders across the value chain to deliver value for our customers throughout what has been a challenging year as a result of ongoing geopolitical issues, inflationary pressures and slowing economic growth.

In the first half of the year, both segments undertook major turnaround activities which were successfully completed. O&D completed turnaround activities at PC Derivatives and PC Aromatics, in Kerteh while F&M completed turnaround activities for PC Fertiliser Sabah and PC Methanol Plant 2 in Labuan.

O&D benefited from the higher product prices especially in the first half of the year, as a result of the rise in crude oil prices and rebound in petrochemical demand. F&M also benefited from higher product prices, particularly urea and ammonia, following the increase in natural gas prices and supply disruptions due to the Russia-Ukraine conflict.

Throughout the year however, tight COVID-19 lockdowns in China and ensuing supply chain disruptions continued to weigh on overall demand and impacted our business to a certain extent as freight

costs increased in tandem with limited vessel space. Nevertheless, we were able to mitigate these challenges due to our strong network of partners, as well as through further expansion of our China Domestic Distribution (CDD) programme. The CDD programme which covers domestic tank/warehouse leasing, inroad transportation and term contracts with customers minimised the impact of lockdowns which resulted in better delivery performance.

In 2022, both O&D and F&M segments introduced new or enhanced products, achieved stable plant utilisation rates, delivered a high order fulfilment rate and made further headway in our sustainability contributions to the Group.

Overall, due to the turnaround activities, plant utilisation rate and production volume for O&D segment were lower in 2022 which translated into lower sales volume for the segment. Meanwhile, F&M segment recorded comparable plant utilisation rate, production volume and sales volume. Besides heavy turnaround activities in 2022, each segment also experienced internal reliability challenges in the first half of 2022 which has been addressed resulting in improved plant utilisation above 90% in second half of 2022. On top of internal reliability challenges, some external challenges such as interruption in water supply and disruption in gas supply impacted our production volume. Nevertheless, with close coordination and collaboration, we managed to minimise the impact to our operations which testify to our strong stakeholder relationship.

# BASIC CHEMICALS & DERIVATIVES



# SEGMENTAL REVIEW

## KEY TO SUCCESS

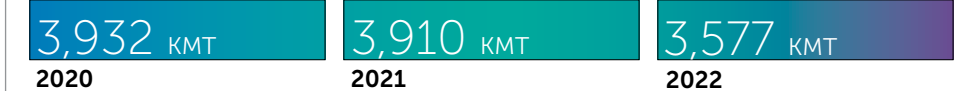
From a manufacturing perspective, we are guided by the overarching goal of maximising production while maintaining safe working environment for our staff and contractors working at our facilities. This manifests itself in many ways, anchoring on the HSE and Operational Excellence supported by simplification and efficiency improvement through digital tools as well as good collaboration with key relevant stakeholders including government agencies and contractors.

From the commercial perspective, we are focused on close collaboration and customer intimacy, as we seek to deliver innovative solutions, products and applications that bring added value to their businesses. Besides leveraging digitalisation to be more efficient in servicing our customers, we also go beyond just fulfilling their basic needs by engaging them through product stewardship. The outcomes of these engagements enable us to enhance our products according to customers' more specific requirements and needs, leading to additional value creation. This is also in line with our Enterprise Optimisation initiative to maximise value creation by finding the optimum state and sales mix based on the value and constraints of each product.

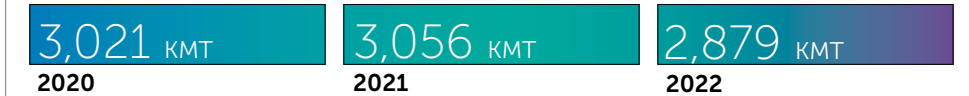
## PERFORMANCE HIGHLIGHTS & ACHIEVEMENTS

### O&D

#### Overall Production Volume



#### Overall Sales Volume\*



\* Inclusive of PIC volume

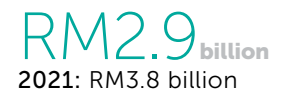
#### Revenue:



#### Profit After Tax:



#### EBITDA:



#### Plant Utilisation



\*\* Lower due to turnaround activities at PC Derivatives and PC Aromatics

#### Production Volume Breakdown



#### Sales Volume Breakdown



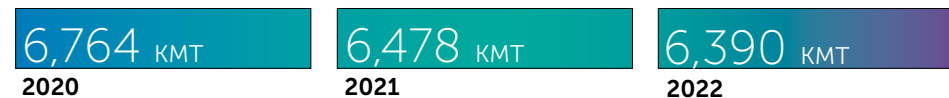
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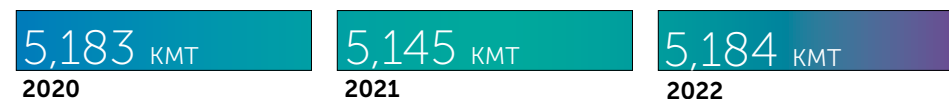
Performance Highlights & Achievements

F&M

Overall Production Volume



Overall Sales Volume



Revenue:

RM12.9 billion  
2021: RM9.3 Billion

Profit After Tax:

RM4.1 billion  
2021: RM3.9 Billion

EBITDA:

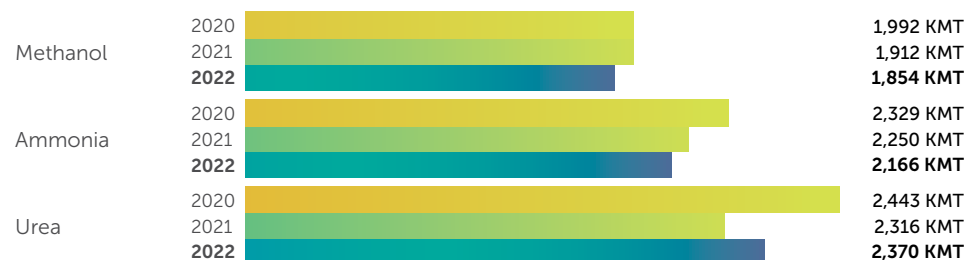
RM5.1 billion  
2021: RM4.6 Billion

Plant Utilisation



\* Lower due to turnaround activities at PC Fertiliser Sabah and PC Methanol Plant 2

Production Volume Breakdown



Sales Volume Breakdown



**Life Cycle Assessment (LCA) enables accurate quantification of health and environmental impacts of products as well as identification of opportunities to reduce these impacts**

OVERALL

HSE

- Zero fatality since 2019
- Zero Major Fire since 2019
- Maintained low LTIF (0.17 vs limit 0.22)
- Maintained low Total Vehicle Accident Rate (TVAR) (0.08 vs limit 0.19)

Operational Excellence

- Secured reliable feedstock and utilities supply to our plants through effective collaboration with feedstock and utilities supplier
- Realised RM25.0 million cost optimisation through the utilisation of digital tools PIVOT Advance Analytics and Asset Performance Management (APM) in managing plant reliability concern

Commercial Excellence

- Optimised sales portfolio mix and maintain high pricing excellence against market benchmark to maximise value
- Maintained low TVAR and zero fatality since 2019, through implementation of Road Transport Operation Guideline (RTOG), Vehicle Acceptance Checklist (VAC), and Electronic Pre-Departure Checklist (ePDC)
- Maintained competitive logistic costs through optimised cost-to-serve amidst rise in Very Low Sulphur Fuel Oil (VLSFO) price and limited vessel space across the Chemical segment

Sustainability

- Delivered GHG accumulated reduction initiative of 108,000 tCO<sub>2</sub>e in 2022 ahead of plan target of 100,000 tCO<sub>2</sub>e by 2024
- Completed 84% of Life Cycle Assessment (LCA) of our products and on track for full completion in 2023

Key Operational Excellence Achievements

O&D

- Successfully commissioned a 3.5km ethylene transfer line, enabling the increase of the export volume of ethylene which has helped to maximise the production of ethylene at PC Olefins and translated into PCG's highest ethylene production volume
- Successfully delivered PC Derivatives turnaround activity ahead of plan
- Optimised run length of PC Olefins and PC Ethylene beyond the normal three-year cycle for turnaround activities by conducting internal evaluations and closely collaborating with Department of Occupational Safety and Health (DOSH) to optimise statutory shutdown activities including participation in DOSH's risk-based Special Scheme of Inspection approach

F&M

- Through the Additional Methanol Team (AMT) consist of multi-stakeholder from all value chain, we manage to eliminate multiple shutdowns of PC Methanol and PC Fertiliser Sabah (PC FS) through shutdown integration without compromising safety aspect and with full compliance to governance requirement
- Successfully delivered PC Fertiliser Sabah turnaround activity ahead of plan
- Effective collaboration with key stakeholders in resolving arising issues especially on the water supply issue at Labuan and Kedah

Key Commercial Excellence Achievements

O&D

- Launched LLDPE MI 7 for Caps & Roto Moulding application which is targeted to improve productivity for caps and closures producers due to the easy-to-process material
- Amidst the pandemic-driven e-commerce boom in 2020, we commercialised PETRONAS Etilinas Alfatene PE3838MA, an innovative solution designed to enhance bubble wrap packaging for e-commerce and courier services. Sales of this product has grown steadily in Malaysia and in the region, which includes countries such as Thailand, Indonesia, Philippines and China. Sales volume in 2022 was 5,700MT compared to 4,000MT in 2021 and 220MT in 2020
- Expanded CDD programme for polymer to Shanghai and Ningbo, Eastern China. The polymer CDD programme was first established in Huangpu, Southern China in 2021

F&M

- Launched Compacted NPK (CNPK) Fertiliser to the National Farmers Organisation for the palm oil sector and other crops in Northern Malaysia. The use of CNPK help to reduce labour, logistics and storage costs as it does not need to be applied as frequently as conventional fertiliser. This also marks our first foray into the palm oil sector as we saw an opportunity to assist our customers given the tight labour market the industry currently faces due to the lingering effects of the pandemic
- Collaboration with strategic partners for differentiated/enhanced products such as Aireblue™, CRF Polymer Coated Urea and Ultra High Purity Methanol has provided an opportunity to address customer pain points, enhance technical capability on specialties (technical know-how) and penetrate new market segments. Year-to-date, the revenue contribution from these products have almost doubled to USD3.57 million (2021: USD1.81 million)
- Expanded the China Domestic Distribution (CDD) programme for methanol with a new satellite tank in Fujian, Eastern China which saw the arrival of its maiden cargo of 21 KMT in October 2022. The Methanol CDD programme was first established in Taichang in 2020

SEGMENTAL REVIEW



SIGNIFICANT METRICS

In 2022, we leveraged our robust network of domestic and international value chain partners to sustain our sales volume and achieve 95% in Order Fulfilment Reliability (OFR). We also achieved the lowest number of customer complaints since 2019 as we improved our processes at product bagging lines and service providers.

In the year under review, we conducted 12 Felt Leadership sessions with our transporters which involves the management team conducting walkabouts to enforce PCG's mindset on safety policies and procedures such as our Road Transport Operational Guidelines (RTOG). As a result, we have seen improved safety performance in terms of lower Total Vehicle Accident Rate and zero fatalities recorded since 2019. RTOG contains comprehensive road safety modules to upskill logistics service providers to ensure our products are delivered to customers safely and on time.

DESCRIPTION	2020	2021	2022
Lost Time Injury Frequency (LTIF)	0.14	0.07	0.17
Felt Leadership Sessions	9	12	12
Total Vehicle Accident Rate (TVAR) <i>Note: Zero fatalities recorded since 2019</i>	0.13	0.20	0.08
Order Fulfilment Reliability (OFR) (%)	97	87	95
Customer Feedback (no. of complaints)	21	23	9
Product Stewardship & Technical Talks	14	12	13
Life Cycle Assessment (LCA) Completion (%)	56	65	84

SEGMENTAL REVIEW

Value Creation for Stakeholders		
Stakeholders	What They Expected	How We Created Value
<b>Employees</b> 	<ul style="list-style-type: none"> <li>To be able to work and carry out their tasks in a safe and conducive environment</li> </ul>	<ul style="list-style-type: none"> <li>Conduct periodic reach-out programmes to promote a safe working environment, generative culture and good mental health among employees</li> </ul>
<b>Customers</b> 	<ul style="list-style-type: none"> <li>To receive high-quality products and services in a timely manner</li> <li>To develop innovative solutions and collaborate with customers to co-create application solutions that meet their specific needs</li> <li>To receive attentive customer service</li> <li>To be given competitive product pricing and fair credit terms</li> </ul>	<ul style="list-style-type: none"> <li>Optimised production volume through effective coordination with feedstock supplier to secure reliable and quality feedstock supply as well as the implementation of advanced digital tools to manage plant reliability</li> <li>Ensured timely product delivery to meet customer requirements</li> <li>Introduced innovative chemical solutions and co-created application solutions to support customers' business growth and ensured they were delivered on time</li> <li>Addressed customer pain points through effective customer feedback management</li> <li>Offered competitive product pricing based on international market prices, as well as fair credit terms based on risk assessments</li> <li>Educated customers through product stewardship and technical talks to promote safe handling of chemicals and maximise product value</li> </ul>
<b>Supplier &amp; Vendors</b> 	<ul style="list-style-type: none"> <li>To ensure seamless operational business transactions</li> <li>To closely collaborate to enhance business performance</li> </ul>	<ul style="list-style-type: none"> <li>Ensured close engagement to minimise operational disruptions and maintain reliable supply chain</li> <li>Reduced the number of safety incidents with advanced digital analytics and higher health and safety standards</li> </ul>
<b>Business Partners</b> 	<ul style="list-style-type: none"> <li>To form strategic partnerships with PCG to exchange ideas and expertise, as well as further expand their business towards a common goal</li> </ul>	<ul style="list-style-type: none"> <li>Ensured good governance in all business projects</li> <li>Close collaboration and partnership to avoid value leakage</li> </ul>
<b>Shareholders &amp; Investment Community</b> 	<ul style="list-style-type: none"> <li>Adequate, continuous and timely disclosure of information to make informed investment decisions</li> <li>Sustainable shareholder return through stable dividend payment</li> <li>Effective management of financial resources</li> <li>Successful execution of growth strategies</li> </ul>	<ul style="list-style-type: none"> <li>Ensure continuous timely and transparent disclosure of corporate, financial and non-financial disclosure</li> <li>Ensure investors are provided adequate access to management and board to address key issues</li> <li>51.9% dividend payout ratio</li> <li>15.9% return on equity</li> <li>79 sen earnings per share</li> </ul>
<b>Government &amp; Regulators</b> 	<ul style="list-style-type: none"> <li>To ensure full compliance to all regulatory requirements related to plant operations and product specifications</li> <li>To adhere to rules and regulations set by local and foreign authorities in the countries we operate</li> <li>To ensure zero non-compliances</li> </ul>	<ul style="list-style-type: none"> <li>Ensured full compliance with all regulations through periodic engagements with relevant authorities to ensure continued operations despite some deviations in our operations, in tandem with efforts to address the gaps as required by the authorities. We also frequently provide reports to relevant authorities as required by regulations</li> <li>Ensuring plant operations were equipped with reasonable safeguards and necessary monitoring tools</li> <li>Legally allowed to operate in various market locations</li> <li>Strengthened regulatory collaborations for better market growth</li> <li>Compliance to laws and regulations of the chemicals industry</li> </ul>
<b>Communities</b> 	<ul style="list-style-type: none"> <li>To ensure the surrounding environment and ecosystems are safe and free of industrial contamination</li> </ul>	<ul style="list-style-type: none"> <li>Held frequent and periodic engagements with local communities to provide a more comprehensive understanding of the impacts of our operations. For example, all operating units will conduct a Control of Industrial Major Accidents Hazard (CIMAH) briefing to local communities to ensure the surrounding communities are aware of our operations, hazards as well as how to react in the event of emergencies</li> <li>PCG also conducts Safe Handling of Chemicals for School. It is a lab safety programme which teaches basic first aid together with motivational talks as part of our effort in reaching out to schools regarding the topic of HSE</li> <li>We conduct effluent monitoring remotely at Kertih Integrated Petrochemical Complex (KIPC) to prevent any damage to the environment from our water discharge. The Parameter Drainage System helps us to monitor the critical parameters and visually monitor via live cameras located at all our final discharge points at KIPC</li> </ul>

## SEGMENTAL REVIEW

RISKS & OPPORTUNITIES			
RISKS	OPPORTUNITIES	ACTION TAKEN	RESULTS
Unsafe working environment exposes our employees and contractors to physical and chemical hazards, leading to potential injuries or fatality	<ul style="list-style-type: none"> <li>Drive the implementation of HSE Excellence programmes at all levels including contractors to ensure safe working environment</li> </ul>	<ul style="list-style-type: none"> <li>Intensified the implementation of Generative Culture to instill effective compliance to HSE requirement and excellence within staff which was also extended to contractors to ensure that we talk the same language when it comes to HSE</li> </ul>	<ul style="list-style-type: none"> <li>Achieved LTIF of 0.17, which is better than the industry benchmark of 0.22</li> </ul>
Unreliable and inconsistent production impacts sales volume and revenue growth	<ul style="list-style-type: none"> <li>Deliver Operational Excellence through digital implementation in managing plant reliability issues</li> </ul>	<ul style="list-style-type: none"> <li>Implemented digital solutions including Asset Performance Monitoring (APM) and Advance Analytics to improve in Equipment Reliability Strategy (ERS)</li> </ul>	<ul style="list-style-type: none"> <li>Successfully addressed major plant threats and bad actors during recent ABF and PC Methanol Plant 2 turnaround which resulted in both plants operating at optimum level post turnaround</li> </ul>
Unreliable feedstock, utilities and chemicals supply which may disrupt plant operation	<ul style="list-style-type: none"> <li>Effectively collaborate with feedstock, utilities and chemicals suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Collaborated with suppliers via Additional Ethane Task Force (AET) and Additional Methanol Task Force (AMT) to drive reliable feedstock supply</li> <li>Collaborated with utility supplier for continuity of supply</li> </ul>	<ul style="list-style-type: none"> <li>Securing reliable ethane supply from PCG which translate into highest ethylene production</li> <li>Coordinated and aligned successful shutdown activities for Sabah and Labuan</li> <li>Manage to sustain plant operations during water crisis (Gebeng, Labuan and Kedah)</li> </ul>
Mismanagement of customer relationships may result in loss of customer loyalty and subsequently, tarnish the company's reputation	<ul style="list-style-type: none"> <li>Reliable and timely delivery of products to customers promotes repeated purchases and customer loyalty</li> <li>Strong engagement with customers enables a better understanding of their product expectations</li> <li>Collaborations with customers provides us with better insight on current market needs</li> <li>Expansion of customer base and exploration of new markets through innovative products</li> </ul>	<ul style="list-style-type: none"> <li>Established CDEx, a digital platform that provides visibility to customers on delivery updates</li> <li>Collaborated on product co-creation opportunities with selected customers</li> <li>Delivered customer-centric value propositions that meet customer needs</li> </ul>	<ul style="list-style-type: none"> <li>Continue to achieve sales volume above 8 million tpa despite the challenges faced amidst the COVID-19 pandemic and the Russia-Ukraine conflict</li> <li>Achieved 5.4 sigma on customer feedback, exceeding the industry standard of 5.0 sigma</li> </ul>
Prolonged logistics restrictions due to COVID-19	<ul style="list-style-type: none"> <li>Strong engagement with vendors enables a better understanding of the current state of the shipping and logistic market</li> </ul>	<ul style="list-style-type: none"> <li>Ensured close engagement to minimise operational disruptions and maintain reliable supply chain</li> <li>Looked for co-loading opportunities to ensure timely delivery to customers</li> <li>Expanded domestic delivery in big markets such as China with CDD</li> </ul>	<ul style="list-style-type: none"> <li>OFR improved to 95% against 87% in 2021 despite prolonged logistics issues</li> </ul>

## SEGMENTAL REVIEW

### Contribution to Sustainability

Collectively, both basic chemicals segments are committed to advancing PCG's Sustainability Agenda. On top of continuous effort in carbon emission reduction at our manufacturing plants at both segments, ongoing projects include conducting feasibility studies into renewable feedstock for key chemicals and potential utilisation of carbon dioxide as a chemical feedstock. We also completed LCA for 36 O&D products and 11 F&M products to determine their carbon footprint and other health and environmental impacts, making good progress to achieve full completion for all current products by 2023.

In addition, we collaborated closely with the Malaysian Plastics Manufacturers Association (MPMA) to launch Operation Clean Sweep (OCS) in Malaysia to drive industry efforts to reduce accidental loss of plastic to the environment. We also collaborated with MPMA to educate plastic players on upcoming sustainability efforts through webinars and provide inputs for the Malaysia Plastics Sustainability Roadmap 2021-2030 and Global Plastics Agreement driven by the Ministry of Natural Resources, Environment and Climate Change.

To drive sustainability efforts to transition to a more sustainable petrochemicals industry, PCG played a crucial role in organising the inaugural Petrochemicals Sustainability Conference 2022 (PSC 2022) as part of the steering committee and as a platinum sponsor. With the theme "Future Ready Petrochemicals", the conference brought together petrochemical producers, consumers, policy makers, and other stakeholders to discuss the pathways by which Malaysian and regional petrochemical companies and the petrochemical value chain can support global net zero ambitions and navigate climate-related transitions together. In showing our commitment and support, PCG's MD/CEO, Ir. Mohd Yusri was a panellist at the executive forum session that discussed the 'Future of Petrochemicals in a Sustainable World'.

#### O&D

- Started offering Roundtable on Sustainable Palm Oil (RSPO) Certified product, Fatty Alcohol Ethoxylates. This is part of our continuous effort to support customers in their sustainability journey through the provision of responsibly-sourced bio-based feedstock
- We have introduced two surfactant products, HC501 and HC701, that have a high Renewable Carbon Index and are suitable for a wide range of applications in household, industrial and institutional cleaning solutions, therefore helping to advance our customers in their respective sustainability journeys

#### F&M

- Played an active role at the Methanol Institute trade association for the global methanol industry, enabling us to drive sustainability initiatives related to low carbon Methanol
- Ultra-high Purity Methanol (UHPM) was launched in 2021 to address our customers' needs, serving as a low-carbon solution for stationary and mobile energy solutions for fuel cell applications. In 2022, we have continued to increase production capacity to cater to the high demand for UHPM which also supports efforts in reducing greenhouse gas emissions

### Outlook

Looking ahead, we are seeing softened demand, particularly for polymer products, as high cost of energy persists. Potential recessions and high inflation in key economies around the world will also impact demand. Having declined to 2021 levels as at the end of 2022, the prices of olefins and derivatives are expected to moderate further until the easing of restrictions in China. New production coming on stream is also expected to weigh on prices. Urea prices are expected to remain firm as energy prices remain elevated due to the ongoing Russia-Ukraine war.

Southeast Asia will continue to be our primary export market as we enjoy a competitive edge in this region based on our strategic location which is nearer to our customers. At the same time, we have developed more inroads into China, and this looks to be a promising market given its sheer size and we are well-positioned to meet the demand especially with new volumes expected from the Pengerang Integrated Complex (PIC) in 2023. China's reopening will be a key factor to the recovery of the chemicals and polymers market going forward.

Although the chemicals market is subject to volatility of oil and gas prices, we will focus our efforts in realising value from our operations. Our expanding customer base, excellent delivery and rapidly growing portfolio of products put us on a stronger footing to chart through the unpredictable landscape. To better serve our customers, PCG will join the PETRONAS Group in the rollout of PETRONAS360 next year, which will bring all downstream products onto a single platform, therefore being able to serve our customers anytime.

We are also cognisant of the growing demand for low carbon products and will continue to conduct LCA studies to determine the carbon footprints of our products and identify opportunities to support our customers' respective decarbonisation journeys.

From a manufacturing perspective, we remain fully committed to being the best-in-class while prioritising the safety and health of our people at all times.

## SEGMENTAL REVIEW

## OVERVIEW

Since 2017, PCG has charted its growth trajectory via the Two-Pronged Strategy, with diversification into derivatives and specialty chemicals as anchors for growth. Specialty chemicals are differentiated chemical products that are sold on the basis of their performance or function in contrast to basic chemicals that are more commodity-based. It is further supported by intensive technical chemistry and application knowledge, alongside continuous product innovation. PCG has been actively pursuing growth in specialty chemicals to future-proof the business against the cyclical nature and volatility of the oil and gas industry.

In the year under review, PCG's specialties segment has made significant headway in its growth journey with the landmark acquisition of Perstorp Group, a global leader in sustainable specialty chemicals. The acquisition is in line with the second prong of PCG's two-pronged strategy to establish a key platform to diversify into the specialty chemicals industry. In addition, our silicone and lubricant additives business through BRB Group has also grown strongly and delivered its highest EBITDA to date.

While 2022 was a challenging year due to inflationary pressures, geopolitical instability and European energy crisis, we have continued to weather the storm and stayed on course to notch important wins in the specialty chemicals space. For example, BRB Group has launched its new lube oil additives manufacturing facility in Echt, Netherlands in November 2022, which will serve as a Lube Oil Additives and Chemicals (LAC) hub in Europe. In addition, BRB Group has expanded its regional presence as a reliable producer and supplier via the establishment of a subsidiary in South Korea, approval to set up another in the United Kingdom and appointment of new distributors in Africa.

With Perstorp Group now a part of PCG, we have significantly expanded our playground in specialty chemicals and equipped ourselves with exciting technologies to advance PCG's Sustainability Agenda. The top priority with Perstorp Group is on preserving and growing the business while ensuring a smooth post-merger integration to maximise the acquisition synergies.

## SPECIALTY CHEMICALS



## SEGMENTAL REVIEW

## KEY TO SUCCESS

Several factors will ensure our success now and into the future. Firstly, the Perstorp Group acquisition has boosted our profile and footprint significantly and brought us much closer to the end-market as well as its opportunities and challenges. Our success will depend on our ability to create differentiated products to fulfil unmet market needs. This requires our capability in market intelligence, technology innovation, and close collaborations with our strategic customers and suppliers. Innovation, in particular, is a key area for specialty chemicals to compete and differentiate against the competitors, and this will be the focus area to be developed moving forward.

The market-facing and innovative commercial acumen are complemented by our focus on Operational Excellence in areas of procurement, supply chain, regulatory and product stewardship (including ecotoxicology), and digitalisation. Furthermore, sustainability is embedded across our product offerings, enabling us to become the preferred supplier of choice in supporting customers' efforts towards achieving their decarbonisation goals.

## PERFORMANCE HIGHLIGHTS &amp; ACHIEVEMENTS

## BRB Group achieved record strong EBITDA in 2022



- New Lube Oil Additives and Chemicals (LAC) site in Echt, Netherlands opened in November 2022
- The silicone blending facility in Gebeng has obtained halal and kosher certification for its range of food grade, MeSTI certificate and free sale certificates (China). This equipped us with more robust offerings to customers and potential penetration into the food and beverages as well as personal care segments to capture growth opportunities in the region
- Introduced new and innovative products such as a new water-based silane/siloxane emulsion concentrate for water repellency for the construction market. In the personal care segment, a non-volatile silicone elastomer blend providing a superior sensory feel and a light silky non greasy touch was introduced
- In terms of digitalisation, we have standardised and optimised inventory and portfolio management, improved sourcing of single source products, in addition to gaining efficiencies in sales, operations and inventory planning resulting in better customer experience in a very short market

## Perstorp Group delivered resilient results amidst the energy crisis faced in Europe

- Project Air achieved an important milestone in 2022 as the EU Innovation Fund granted EUR 97 million to support investments required to construct the facility. Project Air is led by Perstorp Group and is an industrial collaboration with German energy company, Uniper, to build a unique production facility for sustainable methanol
- Introduced Gastrivix™ Avi, a unique and innovative gut health solution for customers in the poultry space
- Expanded the range of Ymer™ product offerings for applications such as leather coating, floor coating, and wood coating
- Introduced Isononanoic Acid (Iso-C9 Acid), a critical building block for customers in the synthetic lubricant space
- Expanded the use of digitalisation to drive marketing, improve sales and pricing capabilities as well as optimise plant operations



# WELCOMING PERSTORP GROUP

We are pleased to introduce PCG's newest subsidiary, Perstorp Group, a significant specialty chemicals player in Europe with footprint in America and Asia-Pacific. This is a landmark acquisition and a major milestone in PCG's history as we have simultaneously established a key platform in the specialty chemicals industry.

This acquisition represents the realisation of the second prong of our Two-Pronged strategy, which is to selectively diversify into derivatives, specialty chemicals and solutions. The addition of Perstorp Group immediately adds a broad range of specialty products with an established customer base in the specialty chemicals arena, which is complementary to the existing PCG portfolio.

Moreover, Perstorp Group will enable PCG to participate in markets segments such as resins and coatings, engineered fluids, animal nutrition and added advanced materials, which all have positive long-term growth outlooks. We have also gained a massive talent injection as well as technological platforms and sustainability-related advancements.

Post-acquisition, in addition to continue preserving and growing the business of Perstorp Group, there are future plans to combine the strength of PCG and Perstorp Group to enhance our collective position in Asia Pacific market and to grow our specialty chemicals market presence.

As a result of this acquisition, we have significantly advanced our

## SUSTAINABILITY JOURNEY

as we gain access to Perstorp Group's Finite Material Neutral processes, methodologies and commercialised pro-environment solutions

Added  
**1,566**  
NEW EMPLOYEES

Added  
**2.6**  
MILLION METRIC TONNES  
to our production capacity

Increased our revenue potential by  
**28%**  
BASED ON  
Perstorp Group's 2021 results

### SUSTAINABILITY IN PERSTORP GROUP'S DNA

With the ambition to be Finite Material Neutral, Perstorp Group is fully committed to reducing its carbon footprint as well as its overall environmental impact. The concept centralises on ensuring that no resources are used at a rate greater than nature can replenish.

Becoming Finite Material Neutral includes:

- ✓ Using renewable, recycled or reclaimed raw materials and energy
- ✓ Having no waste from own processes or products
- ✓ Forged a multitude of strategic partnerships in support of PCG's overall Sustainability Agenda
- ✓ Continuously lowering the water footprint
- ✓ Using only metals and minerals that are recycled/reclaimed/responsibly sourced for catalysts

<sup>1</sup> For additional information on Perstorp Group's sustainability goals, targets and achievements, please refer to SR on page 60-61.

### FOCUSING ON FOUR PRIMARY MARKET SEGMENTS

Perstorp Group targets to grow its operations by focusing on four market segments:

#### RESINS & COATINGS

Perstorp Group's essential building blocks and specialty products can be used and tailored to produce resins and coatings that perfectly satisfy the requirements of different segment needs and thousands of applications. Perstorp Group's innovative solutions are applied in alkyd resins, liquid saturated polyester, liquid unsaturated polyesters, powder polyesters, polyurethane dispersions, radiation curing, cationic curing, and intumescent carbon donors.

#### ENGINEERED FLUIDS

Perstorp Group is a one-stop centre for high quality building blocks for polyol ester base stock, with a complete range of polyol portfolio to choose from. The Polyol portfolio is second to none and Perstorp Group is the only supplier offering a complete range to choose from. Synthetic lubricants are used in aviation turbine oils, hydraulic fluids, metalworking fluids, refrigeration lubricants, transformer oils and di-electric fluids.

#### ANIMAL NUTRITION

Perstorp Group is a specialist in innovative organic acid based solutions for the agricultural industry, with a history dating back to the 1960s. Feed plays a vital role in all animal production systems and it can be as high as 70% of all costs related to farm management. Perstorp Group helps its customers to optimise their feed and feed raw materials and by extension of the performance and well-being of their animals. Perstorp Group's solutions improve gut health and performance, acidify feed, which helps animals to cope with heat stress as well as help to keep feed nutritious and safe from enteros, mycotoxins, moulds and yeasts.

#### ADVANCED MATERIALS

Perstorp Group provides focused and innovative chemistry related to polymers -polyurethane, PVC and polyesters. A leader in several areas of plastic materials to help formulators, compounders and converters to produce safer, more sustainable and higher performing plastics. Plastic materials are applied in bioplastics, heat resistant plastic, plasticisers, polymer additives, polyurethane elastomers, safety glass, and thermoplastics.

### HIGHLIGHTS

#### MANUFACTURING

Successfully increased 2-EHA capacity by

**15%**

via a debottlenecking exercise at the Stenungsund plant.

**PERSTORP GROUP'S NEW PENTA PRODUCTION SITE IN SAYAKHA, INDIA**

is entering its last phase of construction and is set to deliver its first batch of product by June 2023.

Digitalisation of various manual operations via **ROBOTIC AUTOMATION PROCESS**.

#### COMMERCIAL

**Introduced the MYPERSTORP ONLINE CUSTOMER PORTAL**

where customers can manage the business and interactions they have with Perstorp Group as well as to place orders online.

**Launched new products such as YMER™ 90 AND YMER™ 180, GASTRIVIX™ AVI AND ISONONANOIC ACID (ISO-C9 ACID)**

to meet customer needs.

#### EMPLOYEES & COMMUNITIES

**Established the PERSTORP YOUNG TALENTS PROGRAMME**

to strengthen the talent pool and also introduced the Change Maker programme that taps on the expertise of our colleagues to accelerate digital transformation in Perstorp Group.

**PERSTORP GROUP'S TECHNICAL GYMNASIUM**

was recognised as having the best teaching team in Sweden by Teknikcollege, Sweden's largest collaboration platform for technically oriented education.

#### SUSTAINABILITY

**PERSTORP GROUP HAS ESTABLISHED 2030 TARGETS**

for Scope 1, 2 and 3 CO<sub>2</sub> emissions (approved by the Science Based Target initiative), freshwater and waste.

**Reduction in Scope 3 emissions are largely driven by PERSTORP GROUP'S PRO-ENVIRONMENT SOLUTIONS**

that are based on a traceable mass balance approach which shifts from using virgin fossil raw material to renewable or recycled materials, fully or partly in order to accommodate to the customers' needs.



SEGMENTAL REVIEW

SEGMENTAL REVIEW

RISKS & OPPORTUNITIES			
RISKS	OPPORTUNITIES	ACTION TAKEN	RESULTS
Unsafe working environment	<ul style="list-style-type: none"> <li>Drive the implementation of HSE Excellence programmes at all levels</li> </ul>	<ul style="list-style-type: none"> <li>Intensified the implementation of Generative Culture to instill effective compliance to HSE requirement and excellence within staff which was also extended to contractors</li> </ul>	<ul style="list-style-type: none"> <li>Strengthened health and safety culture with increased risk awareness and team accountability</li> </ul>
Unreliable and inconsistent production	<ul style="list-style-type: none"> <li>Deliver Operational Excellence through digital implementation</li> </ul>	<ul style="list-style-type: none"> <li>Defined the roadmap to leverage the data collected from plant operations globally, in addition to continuing the efforts to develop and deliver a simplified, digital environment for the operators in the control rooms</li> </ul>	<ul style="list-style-type: none"> <li>Delivered business benefits through improvement in execution resulting in stabilised production and delivery to plan</li> </ul>
Unreliable feedstock, utilities and chemicals supply (stability, quality, and cost)	<ul style="list-style-type: none"> <li>Effectively collaborate with feedstock, utilities and chemicals suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Effectively collaborate with feedstock, utilities and chemicals suppliers</li> </ul>	<ul style="list-style-type: none"> <li>Secured contingency volume through alternative feedstock such as LNG or C4 that can be used as fuel in steam production if natural gas is not available</li> <li>Minimal to zero disruptions to the manufacturing (both continuous and batch) processes of the products</li> </ul>
Change in demand/customer behaviour	<ul style="list-style-type: none"> <li>Reliable and timely delivery of products to customers</li> <li>Strong engagement with customers enables a better understanding of their product expectations</li> <li>Collaborations with customers provides better insight on current market needs</li> </ul>	<ul style="list-style-type: none"> <li>Expanded the broad customer base to be more resilient to demand reductions, besides following the supply/demand changes in the market as key indicators for capacity planning as needed</li> <li>Improved customer satisfaction and complaints handling to become more customer driven and better understand customers' needs and painpoints</li> </ul>	<ul style="list-style-type: none"> <li>Increased customer collaboration and customer satisfaction</li> <li>Strong customer satisfaction as proven by Net Promoter Score results globally*:                             <ul style="list-style-type: none"> <li>- Account management: +35</li> <li>- Delivery &amp; logistics: +42</li> </ul> </li> </ul> <p>* Score ranges from -100 to 100</p>
Missing out on business opportunities	<ul style="list-style-type: none"> <li>Opportunities to undertake joint development research agreements with other counterparts</li> </ul>	<ul style="list-style-type: none"> <li>Established Innovation function has a solid process in place to pick up trends and needs in the market at an early stage</li> </ul>	<ul style="list-style-type: none"> <li>Strong near-term project pipeline with various opportunities to continue driving growth and expanding presence in existing and new markets</li> </ul>
Negative variances in business development and competitive landscape	<ul style="list-style-type: none"> <li>Expansion of customer base and exploration of new markets</li> </ul>	<ul style="list-style-type: none"> <li>Ensured strategies are followed and investment criteria are met through strategic processes and frameworks</li> </ul>	<ul style="list-style-type: none"> <li>Timely delivery of the investment projects to drive growth</li> </ul>
Prolonged logistics restrictions due to COVID-19	<ul style="list-style-type: none"> <li>Strong engagement with vendors enables a better understanding of the current state of the shipping and logistic market</li> </ul>	<ul style="list-style-type: none"> <li>Ensured close engagement with suppliers, customers, and logistic providers to minimise operational disruptions and maintain reliable supply chain</li> </ul>	<ul style="list-style-type: none"> <li>Minor impact to the manufacturing and shipping of the products</li> </ul>

Contribution to Sustainability

Specialty chemicals, which are further down the chemicals value chain and closer to end users, are under greater scrutiny in the context of sustainability. The demand for sustainable products is stronger than ever as customers look for solutions that will help them fulfil their respective decarbonisation journeys.

In this context, Perstorp Group is driven by the ambition of becoming Finite Material Neutral which means that all energy, raw material and other resources used in, or flows through, the business are part of closed systems. That means no resources are used at a rate greater than nature can replenish. Based on a traceable mass balance concept, Perstorp Group has designed a portfolio of product, coined as "Pro-Environment" to reduce the carbon footprint throughout the value chain and to support sustainable sourcing of renewable and recycled raw materials. Pro-Environment products are chemically identical to their fossil counterparts, offering the same quality without compromising the performance, and are International Sustainability & Carbon Certification (ISCC) PLUS certified.

One of Perstorp Group's key sustainability initiatives known as Project Air is Finite Material Neutral and has secured funding of EUR 97 million from the European Union Innovation Fund to create the first-of-a-kind, large-scale production of sustainable methanol. The opportunities to use greener feedstock also provide PCG with a better approach to cut down carbon footprint in achieving our NZCE 2050 targets. The same can be said for silicone products sold by BRB Group, which are capable of providing significant GHG savings over the product life, contributing towards Scope 3 emissions reductions for customers and users in their net-zero journey.

Outlook

Looking ahead, in the short to medium term, the market remains uncertain with recessionary pressure looming, in line with tightening fiscal policies alongside the ongoing Russia-Ukraine conflict that continues to cast uncertainties onto the global economic equation. However, the long-term prospects of the specialty chemicals market remain bullish, riding on the wave of continued growth driven by Asia as the next key market for chemicals.

For PCG, there will be continued business growth with BRB Group opening a new subsidiary in the United Kingdom and Perstorp Group commissioning a new plant in Sayakha, India by the second quarter of 2023. The new plant will produce Pentaerythritol (Penta) as well as its renewable equivalent Voxtar™, offering customers a reduced carbon footprint. Designed to produce 40,000 tpa of Penta, the site will significantly expand Perstorp Group's production capacity.

Overall, it is an exciting time for the specialty chemicals business. We have already taken a big step forward with the Perstorp Group acquisition and will focus on delivering the goal of preserving and growing the business alongside Post Merger Integration efforts to harvest synergies. Seeing the combined talents and capabilities along with our well-defined strategy, we are confident that we will achieve our aspiration to be a leading player in specialty chemicals and achieve our growth targets. We will also further cross-fertilise the synergies among Perstorp Group, BRB Group, and PCG to expand our product portfolio and market participation. To support this, we will continue to build capabilities across critical areas such as technology, innovation and market intelligence.

