

GREEN HORIZONS



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ABOUT THE COVER

The cover image depicts how we as a business stay in harmony with our environment and our society. Our title, Green Horizons, encapsulates our commitment to have sustainability underpin and drive our business, as we seek new horizons of growth to build a better world.

ABOUT THIS REPORT

At PSA International, we envision a future in which smarter, more sustainable transport and logistics solutions pave the way for a healthier planet and more resilient society for generations to come. This is PSA International's first Sustainability Report. It reflects our commitment to drive accountability and continuous improvement in our sustainability performance as a business.

We hope it will provide our stakeholders with useful and relevant information as well as insights into how we strive to contribute to the sustainable transformation of the wider industry. We will publish our Group Sustainability Report on an annual basis going forward.

Links to our subsidiaries' reports on their sustainability efforts can be found on our website: www.globalpsa.com/sustainability-report

CONTACT We value your opinion to help us improve and progress in our approach to sustainability and sustainability communication. We welcome your comments, feedback or questions regarding this report or our sustainability performance.



Email: Climate Response Command (at) climateresponse@globalpsa.com

SCOPE AND BOUNDARY

This report contains data and information pertaining to the financial year 1 January to 31 December 2020 and may reference events in previous years where relevant. Unless otherwise stated, the performance data covers all our business entities.

REPORTING FRAMEWORK

This report has been prepared with reference to the Global Reporting Initiative (GRI) Standards, including application of the relevant GRI principles for defining report content:

- **STAKEHOLDER INCLUSIVENESS:** Being responsive to stakeholder expectations and interests
- **SUSTAINABILITY CONTEXT:** Presenting performance in the broader context of sustainability
- **MATERIALITY:** Focusing on issues through which we can create impact, and which are of critical importance to our business and stakeholders
- **COMPLETENESS:** Including all information that is of significant economic, environmental and social impact to enable stakeholders to assess our performance

For a full list of disclosures referenced in this report, please refer to the GRI Content Index on page 83.

The data included in this report has undergone a rigorous internal review.



GROUP CHAIRMAN'S MESSAGE

PSA International has gone through several transformations to become a global champion in its industry today. As we look to the future, we realise that our global society, and the shipping and logistics businesses that support it, are faced with new challenges of ensuring sustainable development.

The year 2020 will be remembered for a global health crisis without precedent in modern history. The COVID-19 pandemic impacted both lives and livelihoods around the world. Ensuring the health and wellbeing of our people, our local communities, and the workers across our value chain was of paramount importance from the onset of the pandemic.

The crisis also highlighted just how interconnected our economies are and how important the trade and flow of goods are around the world, as we witnessed disruptions across global supply chains. At PSA, with the dedicated support of our staff, unions and industry partners, we were able to keep our supply chains operational across our global network and continue to facilitate the flow of essential goods throughout the pandemic.

However disruptive the COVID-19 pandemic has proven itself, it will pale in comparison with the impending upheaval which a runaway climate crisis will bring. The pandemic is merely a wake-up call on the serious threat climate change poses to businesses and society, and the need for us all to take urgent action to mitigate and adapt to its effects. As we look to recover and emerge stronger from the pandemic, PSA



has a unique opportunity, as a leading port operator and a global logistics player, to contribute to a more resilient and sustainable global economy. For PSA, we believe that sustainability is not merely an option but our responsibility. It is also imperative to ensure the longevity and resiliency of our business, enabling growth without compromising on the needs of future generations or destroying the environmental systems on which we rely.

To formalise and focus our sustainability efforts, we developed our sustainability strategy framework in 2020. Our framework is based on a rigorous assessment of the environmental, social and governance (ESG) factors that are material to our business, our customers and all other stakeholders. It guides our approach to integrating sustainability comprehensively within our global businesses and provides a roadmap towards our ambition to be a global leader in sustainability for the port and logistics industry, focusing on the strategic priorities of taking climate action, transforming supply chains and nurturing a future-ready workforce. This approach aligns with our brand promise to be “always alongside” our stakeholders, as we support them through the transition to decarbonise and to drive sustainable value creation.

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As a business that is vulnerable to the effects of climate change, we need to do all we can to tackle it as our priority. Decarbonising our business will require investment and innovation to bring new technologies and ways of operating to bear. This is something PSA has long been committed to doing. Several significant strides have already been made, in areas such as the progressive electrification of our equipment and the test-bedding of alternative energy vectors like hydrogen. In planning and developing our mega container port at Tuas, PSA has been entrusted to build a sustainable port business with the latest climate technology, establishing a world class model which Singapore can share with the rest of the industry.

We also recognise that we cannot move the needle on our own. Through partnerships, we seek to be a catalyst for change in our industry. We believe in a science-based approach towards decarbonisation and realise that the building of digital capabilities is an important enabler. Therefore, we are championing industry-wide collaboration in digital adoption. We are ideally positioned within the value chain to develop and deploy new solutions that improve efficiency, resiliency, and that support decarbonisation in supply chains. To this end, we have been growing our Cargo Solutions services to enable cargo owners and customers to make greener logistics choices, and inking partnerships to co-innovate supply chain solutions.

In the spirit of stewardship, we are also ensuring that we set a strong foundation built on responsible business practices. We are committed to reducing the environmental footprint across our operations, protecting the health and safety of our people, safeguarding the security of the port in the physical and cyber spaces, fostering a culture of ethical conduct, as well as supporting local communities wherever we operate. Indeed, upholding high standards of integrity and quality throughout our history has enabled us to earn the trust of our stakeholders.

Evolving the way we do business more sustainably will take time and we cannot achieve our goals without our dedicated and skilled teams operating around the world. We are committed to ensuring our people come on this journey with us. This entails helping them to reskill and upskill, as well as fostering a sustainability mindset and culture within the PSA Group. Only with the whole-hearted support of our people can we transform successfully to thrive in the future.

Launching PSA International's first Sustainability Report with the title 'Green Horizons: Enabling a Better World Through Sustainable Port and Supply Chain Solutions' this year is both timely and significant. It reflects our commitment to accountability and transparency to our stakeholders. It also serves as an opportunity for us to take stock of our sustainability efforts and reflect on how else we want to contribute.

While we are very proud of the progress we have made on our sustainability journey so far, we are cognisant of the challenges that still lie ahead and how much more we have to do. To drive progress across the most material ESG factors facing our business, we have set ambitious targets and we will continue to pursue innovations and partnerships to achieve them.

I hope this report provides our stakeholders with an informative account of our strategy and efforts to steward responsible business practices and create value sustainably over the long term. In closing, I would like to thank all of our people and our partners for being with us on this journey. I am hopeful that our collective efforts will contribute towards securing a better future for everyone.



Peter Voser
Group Chairman
2 August 2021

GROUP CEO'S MESSAGE

Welcome to PSA International's inaugural Sustainability Report. This report reflects our commitment and ambition to be a global leader in climate action and to drive sustainable growth in the port and logistics industry, and in supply chain in general.

During the year under review, the world has had to grapple with the many fallouts caused by the COVID-19 pandemic, which continues to take a toll on public health and economies globally. Ensuring the health and wellbeing of the people working in our operations and across our value chain is necessary to facilitate the flow of essential goods and to keep global supply chains open.

Beyond the pandemic, we are conscious of another looming crisis that poses significant and existential risks, to our business, our stakeholders and society as a whole: global warming caused by climate change. This requires urgent action and we have made this a strategic priority, as we step up our efforts to transform our business to be more resilient and sustainable. As a leading global port operator and supply chain solutions provider, PSA is also well-placed to help cargo owners achieve a more resource-efficient flow of cargo through our intelligent logistics solutions. In 2020, we developed a strategic framework to formalise what sustainability means for PSA and set out a clear plan to address the most material ESG factors for our business. The framework sets out three strategic priorities, which are underpinned by a commitment to ensure that we steward responsible business practices in everything we do.



TAKING CLIMATE ACTION

As part of our commitment to climate action, we have developed ambitious medium and long-term Scope 1 and 2 emissions reduction targets, in line with climate science.

Ultimately, we aim to achieve net zero emissions by 2050 as a group. To this end, we have put in place a Climate Response Management System at the group level to align and focus our climate initiatives. We are accelerating the electrification of our yard cranes and prime movers to reduce our reliance on diesel fuel while pursuing measures to enhance energy efficiency and renewable energy adoption in our operations. We are also trialling and implementing the use of cleaner, alternative fuels. PSA Singapore entered into a joint initiative with multiple government agencies and corporations to study and pioneer ways to utilise hydrogen as a viable low-carbon energy vector, while PSA Antwerp has begun trials with a hydrogen-powered tractor and mobile hydrogen refilling station. Other PSA Business Units (BUs) around the world have also embarked on sustainability initiatives including PSA Marine, which successfully deployed two dual-fuel LNG harbour tugs, the PSA Aspen and the PSA Oak.

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Avoiding catastrophic climate change cannot be achieved with individual actors working alone. We have participated actively in industry-wide forums and action groups under the umbrella of the World Economic Forum, Global Maritime Forum and International Transport Forum, to name a few key ones. In 2020, we also joined the Coalition for the Energy of the Future, a global group of 17 companies with a collective goal to develop future energies and technologies to reduce the climate impact of transport and logistics. The Coalition now has 10 projects under development, including topics such as alternative fuels, zero-emission vehicles and intermodal green hubs.

We are also working to better understand the emissions across our entire value chain and how we can influence change outside our operations. We will establish our Scope 3 inventory by 2022, as a first step towards setting a Scope 3 emissions reduction target.

TRANSFORMING SUPPLY CHAINS

PSA is in a unique position to influence and drive sustainable change beyond our operations, across global supply chains. We have been growing our vision of the "Internet of Logistics", creating an ecosystem of connected and interoperable nodes that can realise the possibilities for enhanced cargo flow for all stakeholders. The CALISTA® digital platform was built for this purpose, connecting the community of logistics stakeholders, and providing cargo and trade flow visibility.

For example, PSA Antwerp has leveraged on CALISTA to help Finnish fibre group Metsä Board to improve visibility and efficiency of the export process, enabling Metsä to manage its cargo flow in a way that minimises

wastage of transport resources and move its goods via more eco-friendly modes of transport like barges.

The Vessel Pilot Communication (VPC) - a module of PSA Marine's ONEHANDSHAKE™ digital platform - was launched in August 2020. Through facilitating timely updates of critical information, such as pilot boarding times at the pilot boarding grounds, VPC helps vessel masters sail at an appropriate speed to arrive in port just-in-time, thereby achieving fuel optimisation and reduction in carbon emissions.

On top of building our digital capabilities to enhance supply chain resilience, we are also striving to innovate new cargo solutions to enable greener logistics choices for supply chain users, especially shippers who are similarly concerned about climate change. For example, to significantly reduce carbon emissions, we offer our customers the greener option of moving cargo via rail instead of trucks through Ashcroft Terminal in Canada, one of the largest inland terminals in British Columbia with enhanced rail connections. In addition, we also provide barging and rail services in lieu of trucking in Singapore, China, Belgium, India and Italy.

We are actively driving greater collaboration within the industry, for we believe that collective action is key to any sustainable change. PSA International has partnered with the Singapore Government and 17 other multinational firms to facilitate and accelerate digital adoption in global trade and commerce, inking a Memorandum of Intent at the World Economic Forum in Davos in January 2020. We are also co-leading an Alliance for Action on supply chain digitalisation in Singapore, to pilot a new common data infrastructure to boost the interconnectivity and visibility of the supply chain ecosystem.

NURTURING A FUTURE-READY WORKFORCE

With the COVID-19 pandemic still raging in many parts of the world, the health and safety of our people continue to be of utmost priority. It is especially critical that we do not let our guard down now. We continue to implement pandemic safety practices and precautionary measures, as our port workers and frontline maritime personnel are exposed to risks in their daily course of work.

Despite physical workplace restrictions, we have managed to keep learning alive for our employees through e-learning and virtual training programmes, creating over 70,000 learning episodes across the group in the year 2020 alone. Education is key to thriving in an increasingly digital and data-driven world. We are committed to support our employees in reskilling and upskilling, and to prepare them for the future of work. Beyond equipping them with technical skills, it is about empowering them with a climate-conscious mindset, through building awareness and knowledge of current issues, and a corporate culture that motivates action to drive sustainable change.

We are also mindful that it is especially in challenging times like these that businesses must step up to support society, particularly the most vulnerable. PSA International signed the Neptune Declaration for Seafarer Wellbeing and Crew Change, joining forces with over 300 signatories across the supply chain to ensure that the challenges facing the crew change crisis are resolved as soon as possible. PSA is also supporting UNICEF in the globally inclusive and equitable distribution of COVID-19 vaccines under the global COVAX programme. Our various BUs across the world have contributed Personal Protective Equipment (PPE) and other necessities to support their local communities affected by the pandemic. In support of Singapore's SGUnited initiative to tackle COVID-19, PSA provided significant logistical support and hosted community care facilities for migrant workers at the Singapore Expo and our Tanjong Pagar Terminal.

THE JOURNEY AHEAD

In an increasingly connected and interdependent world, no business or country alone can tackle a virus, enable trade or reverse environmental degradation. Instead, we have to seize the opportunity today to collaborate across business and national borders to create a shared sense of purpose and to take collective actions.

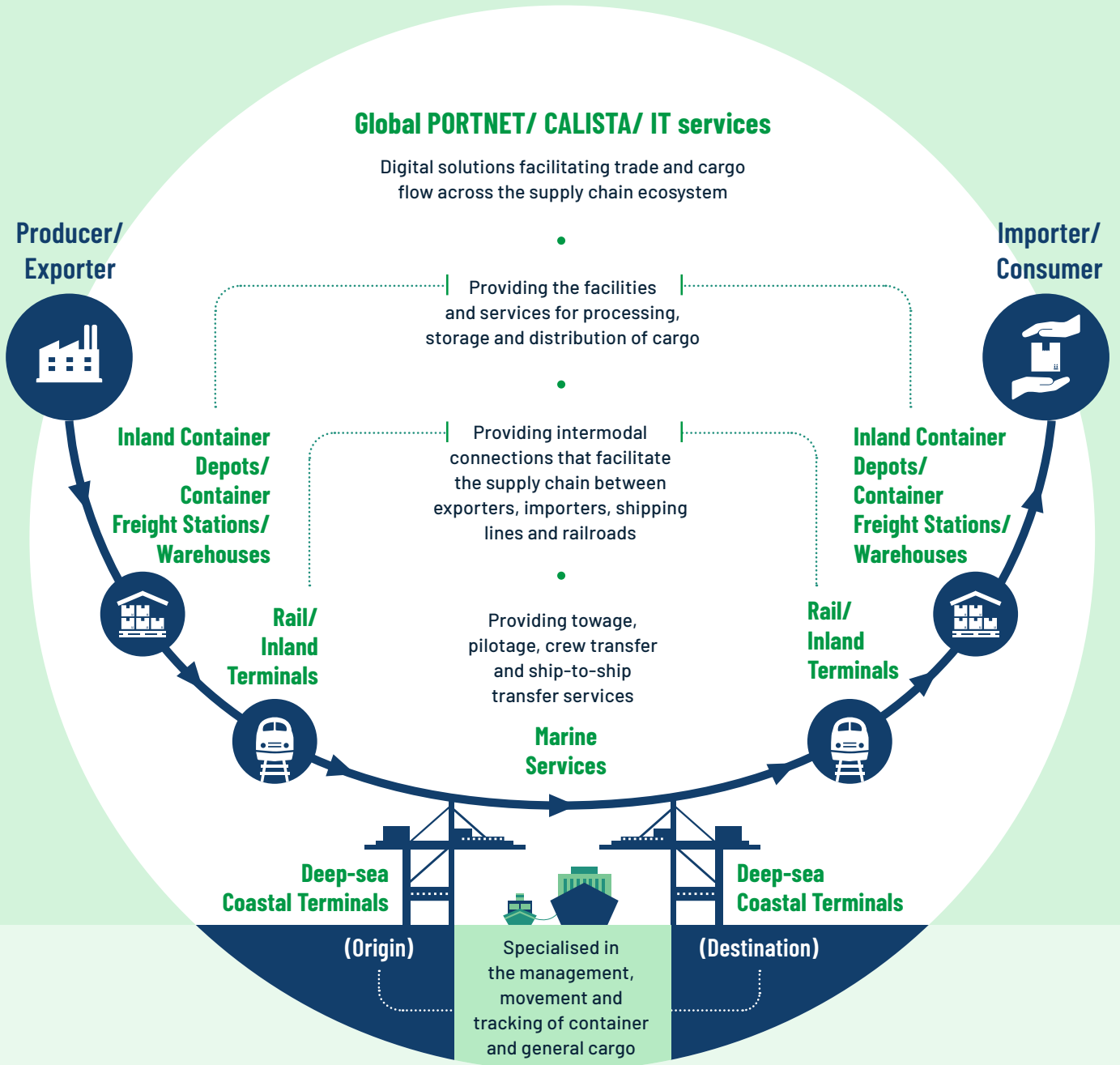
At PSA, we support the Sustainable Development Goals (SDGs) as a clear vision for what the world must work towards by 2030. Our sustainability framework has been developed with this agenda in mind. In particular, we have identified SDGs 7, 8, 9, 11, 12 and 13 as areas towards which PSA can make the most significant contributions. We are confident that through partnership and collaboration, we can enable a better world through sustainable port and supply chain solutions.

I hope this report provides you with a snapshot of our sustainability efforts to date and an overview of our strategic priorities going forward. I wish to express my deepest gratitude to the Group Chairman and Members of the PSA International Board for their steer and guidance, and to all our stakeholders for their trust and support. It is our strong belief that by doing the right things today, we can secure a healthier and greener tomorrow for all.



Tan Chong Meng
Group CEO
2 August 2021

Value Chain of Our Business



OUR CORE VALUES

We are committed to staying true to our values in all our actions and relationships, as we work alongside our various stakeholders.



Committed to Excellence

We set new standards by continuously improving results and innovating in every aspect of our business.



Dedicated to Customers

We help our customers, external and internal, succeed by anticipating and meeting their needs.



Focused on People

We win as a team by respecting, nurturing and supporting one another.



Integrated Globally

We build our strength globally by embracing diversity and optimising operations locally.

Corporate Governance

PSA International's Board of Directors has overall responsibility to chart the company's path ahead. The Board comprises individuals who bring diverse skillsets, qualifications and experience, and are ably supported by the following Committees: Executive Committee; Audit Committee; Leadership Development & Compensation Committee; and Supervisory Committees. Together with the Senior Management Council (SMC), they also oversee the company's sustainability strategy.

PSA's operating entities involved in container and cargo operations are organised into the following business regions – Southeast Asia; Middle East South Asia; Northeast Asia; and Europe, Mediterranean

& the Americas – each headed by a regional chief executive officer (CEO) responsible for its business performance. A fully owned subsidiary, PSA Marine, takes charge of the marine services.

The Regional CEOs report to the Group CEO who is assisted by a small team of senior executives at the Corporate Centre. The Group CEO, Regional CEOs and this team of senior Corporate Centre executives constitute the PSA Senior Management Council (SMC).

More information about our Corporate Governance practices and our Board of Directors' profiles can be found in our [Annual Report 2020](#).

Industry Memberships & Initiatives

As part of the global supply chain and maritime community, we recognise that it is only with collective action that any meaningful and sustainable change can happen. We seek to contribute through active memberships in international and industry organisations. We also seek collaborations with industry stakeholders who share the same objectives and ambitions through our participation in industry-wide initiatives that focus on enhancing sustainability and efficiency.

MEMBERSHIPS



Belgium Luxembourg Chamber of Commerce (BLCC)



Global Maritime Forum



International Association of Ports & Harbors (IAPH)



Institute of Policy Studies (IPS)



Singapore Business Federation (SBF)



Singapore Institute of International Affairs (SIIA)



World Economic Forum

INITIATIVES

Alliance for Action (AfA) on Supply Chain Digitalisation

This is a Singapore government initiative bringing together public and private sectors to seize growth opportunities and co-create a supply chain that is trusted, efficient and resilient. PSA co-leads the AfA on Supply Chain Digitalisation, which has launched a new common data infrastructure to benefit the supply chain ecosystem.

Carbon Pricing Leadership Coalition (CPLC) Singapore

The official Singapore chapter of the CPLC is a platform to facilitate dialogue, knowledge sharing, and collaboration on carbon pricing among leaders of the private sector and government. Companies will provide policy inputs, share concerns and success stories to overcome carbon pricing implementation challenges.

Coalition for the Energy of the Future

The international coalition with 17 members aims to accelerate the development of future energies and technologies to sustain new green mobility models and reduce the impact of transport and logistics on climate change, by collaborating on cross-industry projects.

Global Shipping Business Network (GSBN)

GSBN is a not-for-profit organisation that operates and facilitates a secure and trusted data exchange platform for all stakeholders along the supply chain. The consortium will nurture community participation and introduce a wide range of services and applications to streamline operation processes and overall efficiency. PSA is a founding member and shareholder.

OUR APPROACH TO SUSTAINABILITY



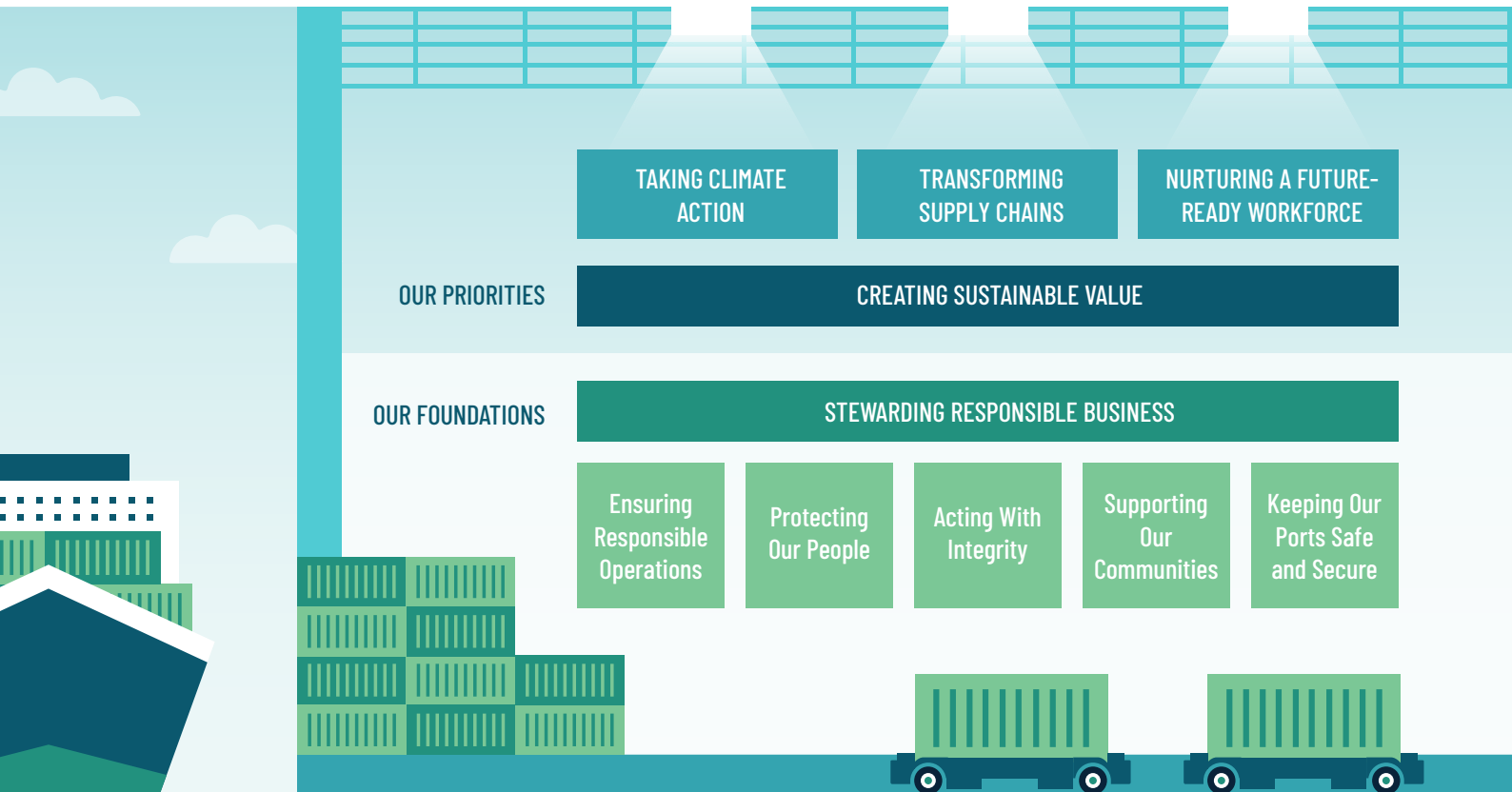
The world relies on a complex network of cargo transport systems to move goods across continents and borders. The growth of global trade has resulted in a corresponding rapid increase in the volume of goods being moved, and currently, the global logistics chain still relies primarily on fossil fuels for energy needs. The International Transport Forum (ITF) estimates that international trade-related freight transport accounts for around 30% of all transport-related CO₂ emissions from fuel combustion, and more than 7% of global emissions.

As both a leading port operator and logistics player, PSA recognises we have a tremendous opportunity to rethink global supply chains, to drive innovation and sustainability. This is both a business imperative that is crucial for our long-term success, as well as a corporate responsibility, for we must do our part to support sustainable development.

In 2020, we developed our sustainability strategy framework to clearly articulate our sustainability ambitions and priorities. The framework helps define what sustainability means to us and guides us in integrating sustainability within our wider business strategy and day-to-day operations.

Our Sustainability Strategy Framework

We are enabling a better world through sustainable port and supply chain solutions



Our sustainability strategy framework was developed through a comprehensive process of stakeholder engagement and materiality assessment. As part of this process to determine our sustainability priorities, we identified and assessed key environmental, social, economic and governance topics that are most material to our business and our stakeholders.

The framework illustrates how we seek to create sustainable value and be a steward of responsible business. We define three key areas of focus that are aligned with our business strategy and linked to value creation. These are the areas which we

believe will differentiate PSA as we continue to build on our strengths and reach for greener horizons. These strategic priorities are underpinned by a commitment to steward responsible business practices across the company consistently and coherently, particularly in the areas identified by stakeholders as important for us to manage and minimise risks and negative impacts.

Importantly, the framework builds upon our purpose of enabling a better world through sustainable port and supply chain solutions, guiding us to balance the needs of our stakeholders to drive long-term value creation.

Sustainability Governance

Our Board of Directors and Senior Management Council drive the company's sustainability strategy, supported by the Climate Response Command (CRC), a newly established team to coordinate and promote group-wide sustainability and climate response efforts. CRC is responsible for the development, implementation and monitoring of the sustainability strategy, working with five cross-functional sub-committees of Climate RESponse AgenTs (CRESTs) in the areas of competence, communications, intelligence, technology and external projects. CRC provides a quarterly progress report to the Senior Management Council, and the Board is updated at least twice a year.

Our Commitment To The UN SDGs

The United Nations Sustainable Development Goals provide a common global platform and language to communicate and act on the most pressing challenges facing humanity today. Directly or indirectly, PSA's business influences all 17 SDGs. Our sustainability approach is focused on the SDGs we can contribute to most meaningfully through our business and are aligned with our material sustainability topics. They also represent the areas where we have the greatest opportunities to partner other stakeholders to build a more sustainable future by 2030.

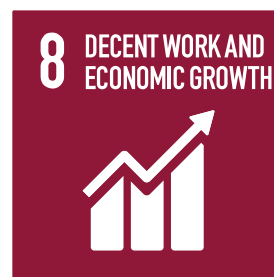


We have identified six SDGs with the strongest link to our core business activities as well as the underlying targets where we can make the biggest impact.



7.2
By 2030, increase substantially the share of renewable energy in the global energy mix

7.3
Double the global rate of improvement in energy efficiency by 2030



8.2
Achieve higher levels of productivity of economies through diversification, technological upgrading and innovation, including through a focus on high value added and labour-intensive sectors

8.8
Protect labour rights and promote safe and secure working environments of all workers, including migrant workers, particularly women migrants, and those in precarious employment



9.4
By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, all countries taking action in accordance with their respective capabilities



11.a

Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning



12.5

By 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse

12.7

Promote public procurement practices that are sustainable in accordance with national policies and priorities



13.1

Strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries

13.3

Improve education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning

Having an impact in one area will often impact other Goals as well; we will ensure our sustainability strategy considers our broader impact across all 17 Goals, especially where they align with our material sustainability topics, and manage these topics to reduce negative impacts and enhance positive impacts. While we will not report directly against the other SDGs, our sustainability report will cover many topics relevant across them.

Our Targets and Commitments

To implement our sustainability strategy and achieve our goals, we have set out targets and commitments to drive performance and manage our priority material sustainability topics. This section summarises our key targets and commitments, which we will track and report our progress on in subsequent reports.

Taking Climate Action

Contributing to:



TARGETS/COMMITMENTS

→ Emissions

- Reduce absolute Scope 1 and 2 carbon emissions by 50% by 2030, and by 75% by 2040, against a 2019 baseline year
- Achieve net zero carbon emissions by 2050
- Establish a Scope 3 inventory by 2022 as a first step towards setting a Scope 3 emissions reduction target

→ Energy

- Aim for 90% of our Rubber Tyred Gantry Cranes (RTGs) to be electric or hybrid by 2030
- Procure only hybrid or full electric new RTGs from 2023 onwards

CURRENT ACTIONS

- Explore and test the viability of cleaner, renewable energy sources such as wind, solar and hydrogen
- Continue converting container handling equipment from diesel to electricity powered
- Test other forms of electrification such as electric prime movers and battery powered automated guided vehicles (AGVs)
- Source a greater proportion of our electricity needs from green energy sources

 [Read more in the section Taking Climate Action](#)

Transforming Supply Chains

Contributing to:



TARGETS/COMMITMENTS

→ Optimisation of Global Supply Chains

- By 2024, implement 10 supply chain projects that provide sustainable logistics and transport solutions impacting at least 3,000 TEUs of cargo volume per project

→ Innovation and Technology

- Invest at least S\$100 million by 2025 in research and development and innovation projects, employing the latest available technologies to achieve more efficient and sustainable operations

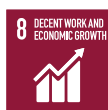
CURRENT ACTIONS

- Provide sustainable supply chain solutions and logistics options to cargo owners and service providers through PSA Cargo Solutions
- Continue to augment the capabilities of PSA's global supply chain digital platform CALISTA
- Partner other industry stakeholders to drive innovation and digitalisation in the industry, e.g. PSA co-leads the Singapore Together Alliance for Action (AfA) on Supply Chain Digitalisation
- Continue to drive collaborations, thought leadership and promoting an innovative corporate culture

 [Read more in the section Transforming Supply Chains](#)

Nurturing a Future-Ready Workforce

Contributing to:



TARGETS/COMMITMENTS

→ People Development

- Achieve at least 75% participation rate in the global Employee Opinion Poll (EOP)*

** for business units participating in their second EOP onwards*

CURRENT ACTIONS

- Provide training and development opportunities to all employees to obtain the requisite knowledge and skills to be future-ready through PSA University
- Champion the FISH movement throughout PSA to promote a corporate culture and behaviours that will help the organisation to evolve to meet future needs

 [Read more in the section **Nurturing A Future-Ready Workforce**](#)

→ Occupational Health and Safety

- Aim for zero significant incidents*

** refers to safety incidents resulting in fatality or permanent disability*

- Continue to enforce workplace health and safety measures and build a culture of safety, to ensure PSA is a safe place to work

 [Read more in the section **Protecting Our People**](#)

Stewarding Responsible Business

TARGETS/COMMITMENTS

→ Sustainable Port Development

- Implement PSA Recommendations for Sustainable Concrete for 50% of new civil infrastructure construction projects* by 2023
- Implement PSA Recommendations for Sustainable Concrete for 80% of new civil infrastructure construction projects* by 2030

** for projects that are PSA-owned and over S\$65 million in value*

CURRENT ACTIONS

- Work closely with authorities to embed sustainability into any port infrastructure development, in compliance with the requirements of environmental consents for each project
- Framework incorporating new sustainability requirements for the construction of new buildings and major building refurbishment projects was implemented in 2020 for immediate application

 [Read more in the section **Ensuring Responsible Operations**](#)

→ Cybersecurity and Data Privacy

- Adopt cybersecurity best practices and ensure full compliance with all applicable laws

- Continue to manage our cybersecurity risks and safeguard our digital assets through our Cybersecurity Management System and policies

 [Read more in the section **Keeping Our Ports Safe and Secure**](#)


TARGETS/COMMITMENTS

CURRENT ACTIONS

→ Port Security

- Ensure the highest security standards wherever we operate


- Continue to manage port security according to the Group Health, Safety Security & Environment Management System and international best practices

 [Read more in the section **Keeping Our Ports Safe and Secure**](#)

→ Ethical Business Conduct

- Conduct our business with the highest standards of ethics and integrity, ensure full compliance with anti-corruption and anti-bribery laws
- Zero tolerance stand towards fraud

- Ensure compliance with the Code of Business Ethics and Conduct by all employees
- Whistleblowing policy and channel in place

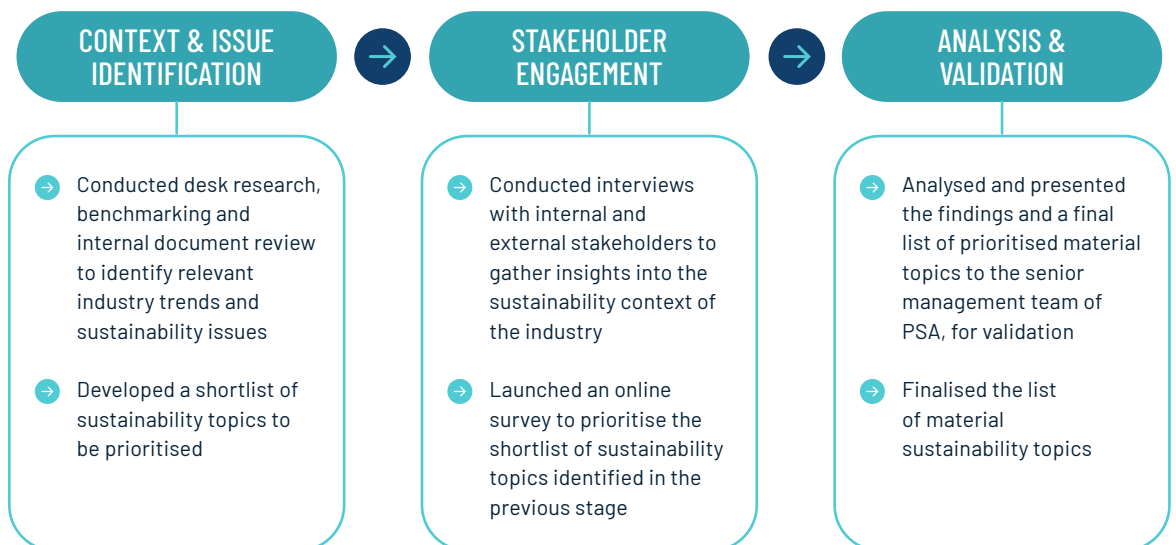
 [Read more in the section **Acting with Integrity**](#)

Contributing to:



Materiality Assessment

A key approach to developing our framework is to identify the significant environmental, social, economic and governance issues that impact our business and which we have significant impact on. In 2020, we worked with a specialist sustainability consultancy firm to conduct an assessment of our most material sustainability topics. Our materiality assessment was based on in-depth engagements with both internal and external stakeholders, comprising of one-on-one interviews and an online survey. Board members, senior and middle management from across our business units, investors, customers, suppliers and regulatory authorities participated in this process.



Going forward, we are committed to conducting a formal assessment of our material topics every two years and also light-touch reviews in between to ensure we stay on top of emerging trends and issues, and determine if there is a shift in the impact and importance of topics currently identified.

Our Material Sustainability Topics

PRIORITY TOPICS

Topics of highest importance to the business and our stakeholders. These form the focus of our sustainability strategy and reporting, for which we aim to disclose goals, targets and performance.

→ CYBERSECURITY AND DATA PRIVACY

Protecting our business systems and ensuring data privacy through adoption of robust cybersecurity measures.

→ EMISSIONS

Reducing GHG emissions across our businesses and supporting the decarbonisation of the shipping & logistics industry.

→ ENERGY

Reducing our energy consumption and intensity by harnessing energy saving and efficiency technology, as well as increasing the use and generation of renewable energy.

→ ETHICAL BUSINESS CONDUCT

Upholding high standards of ethics and regulatory compliance, to go beyond minimum legal requirements, reflecting our long-term commitment to building a business that is successful, honest and responsible.

→ PORT SECURITY

Ensuring safety and security of port operations, including the responsible handling of dangerous goods, as well as working with relevant authorities and partners to put in place adequate controls to safeguard against terrorism and illicit trade.

→ OCCUPATIONAL HEALTH AND SAFETY

Ensuring the highest standards of health and safety for workers across our operations.

→ OPTIMISATION OF GLOBAL SUPPLY CHAINS

Driving sustainability improvements in global shipping and logistics supply chains by working with suppliers, partners and customers on route optimisation and alternative transport options for better efficiency and safety.

→ PEOPLE DEVELOPMENT

Building a future-ready organisation by attracting and retaining an engaged workforce, and providing learning and development opportunities.

→ INNOVATION AND TECHNOLOGY

Innovating and harnessing technology to drive digitalisation and create more efficient and sustainable operations.

→ SUSTAINABLE PORT DEVELOPMENT

Ensuring that the planning, design and development of port infrastructure and operations take into account and address the environmental impacts from land development and reclamation.

IMPORTANT TOPICS

Topics of high to medium importance to the business and our stakeholders. These are actively managed by PSA and will be included in external reporting as relevant, based on the sustainability context and stakeholder interest.

→ CLIMATE CHANGE ADAPTATION

Strengthening resilience of our infrastructure, our operations, as well as the surrounding communities and ecosystems against climate change risks.

→ COMMUNITY RELATIONS

Contributing meaningfully to the lives and wellbeing of the communities where we operate, and engaging community stakeholders to address the social and environmental impact of our operations.

→ EMPLOYEE DIVERSITY AND INCLUSION

Creating a workplace environment that respects and promotes diversity and inclusion.

→ LABOUR RELATIONS AND WORKER WELLBEING

Maintaining strong relationships and engagement with labour unions, establishing best practice labour standards and ensuring worker wellbeing.

→ MARINE PROTECTION AND CONSERVATION

Protecting marine life by preventing water pollution from ongoing port and marine operations, such as berth dredging.

→ PUBLIC POLICY

Engaging and collaborating with stakeholders, including governments and regulators, on issues that are critical to shaping public policy on port and logistics industries.

→ SUSTAINABLE PROCUREMENT

Minimising environmental impact and creating positive social impact through our procurement of goods and services, with due consideration to supplier diversity and engagement.

→ WASTE MANAGEMENT AND RECYCLING

Adopting more circular approaches to optimise resource use, minimise the waste generated in our operations and increase recycling.

→ WATER USE AND POLLUTION

Ensuring efficient use of water and responsible management of waste water discharge.

Stakeholder Engagement

We engage our key stakeholders to better understand their needs, concerns and expectations regarding sustainability at PSA. Establishing a channel of two-way communication enables us to receive and respond to feedback in a timely and transparent manner, helping to build trust and collaborative relationships.

Our material topic owners and business leaders interact with our key stakeholder groups as part of their daily work, through formal engagements and other regular communication channels. These stakeholder groups have been prioritised based on the impact our business activities have on them, as well as their importance to the success of our business.



The table below summarises how we engage with our key stakeholders.

	KEY INTERESTS AND TOPICS RAISED	ENGAGEMENT METHOD & FREQUENCY	OUTCOMES
<p>Employees</p> 	<ul style="list-style-type: none"> Professional skills development Career advancement and training opportunities Remuneration and benefits Fair workplace practices Occupational safety, health and wellbeing 	<ul style="list-style-type: none"> Learning and development programmes (ongoing) FISH workshops (ongoing) Performance appraisal (annual) Employee Opinion Poll (bi-annual) 	<ul style="list-style-type: none"> Variety of programmes to address employees' learning and development needs across their career Better understanding of career paths in PSA Feedback and insights from employees to work on areas of improvement
<p>Customers</p> 	<ul style="list-style-type: none"> Operational efficiency and reliability Cargo visibility Efficient and green product offerings 	<ul style="list-style-type: none"> Operations or business meetings (ongoing) Annual Report Corporate Websites* Sustainability Report 	<ul style="list-style-type: none"> Regular two-way communication to address any operational or business issues and build strong relationships Awareness of developments at PSA aimed at improving customer service Better understanding of strategic direction and sustainability commitments
<p>Joint Venture Partners</p> 	<ul style="list-style-type: none"> Investment opportunities Operational efficiency Health and safety 	<ul style="list-style-type: none"> Operations or business meetings (ongoing) Annual Report Corporate Websites* Sustainability Report 	<ul style="list-style-type: none"> Strong partnerships that enhance operational efficiency and performance for all parties involved Collaboration to drive industry development and sustainable practices
<p>Labour Unions</p> 	<ul style="list-style-type: none"> Labour rights Safe working conditions Skills development 	<ul style="list-style-type: none"> Union meetings (ongoing) Annual Report Corporate Websites* Sustainability Report 	<ul style="list-style-type: none"> Regular two-way communication and open dialogue to build trust and strong relationships Joint efforts and collaborations to bring our workforce up to speed with topics like digitalisation

	KEY INTERESTS AND TOPICS RAISED	ENGAGEMENT METHOD & FREQUENCY	OUTCOMES
Investors 	<ul style="list-style-type: none"> • Business outlook • Financial performance • Corporate governance • Sustainability policies and practices 	<ul style="list-style-type: none"> • Investor meetings • Annual Report • Corporate Websites* • Sustainability Report 	<ul style="list-style-type: none"> • Build trust and confidence in the business and our corporate governance • Better understanding of strategic direction and sustainability commitments
Suppliers 	<ul style="list-style-type: none"> • Technology development • Health and safety • Sustainability 	<ul style="list-style-type: none"> • Operations meetings (ongoing) • Safety trainings/ inductions • Annual Report • Corporate Websites* • Sustainability Report 	<ul style="list-style-type: none"> • Regular two-way communication to address any operational or business issues and build strong relationships • Awareness of safety policies and procedures at PSA
Government/ Port Authorities 	<ul style="list-style-type: none"> • Regulatory compliance • Industry development • Digitalisation • Sustainable operations 	<ul style="list-style-type: none"> • One-on-one meetings (ongoing) • Multi-stakeholder meetings/ events • Annual Report • Corporate Websites* • Sustainability Report 	<ul style="list-style-type: none"> • Collaboration on industry development initiatives such as digitalisation or talent development • Better understanding of strategic directions and sustainability commitments
Community 	<ul style="list-style-type: none"> • Environmental and social responsibility 	<ul style="list-style-type: none"> • Community development or CSR programmes • Annual Report • Corporate Websites* • Sustainability Report 	<ul style="list-style-type: none"> • Continued community engagement efforts • Terminal visits



* Corporate Websites:

globalpsa.com | psacargosolutions.com

CREATING SUSTAINABLE VALUE



How can we drive sustainability in ways that will improve the global health of people and planet? Answering this question provides new opportunities for us to create enduring value for our business, our industry and our society. By continually innovating and adopting next-generation technologies, we seek to address climate change, transform supply chains, and develop talent and capabilities to thrive in the future.

In this
section



Taking
Climate Action



Transforming
Supply Chains



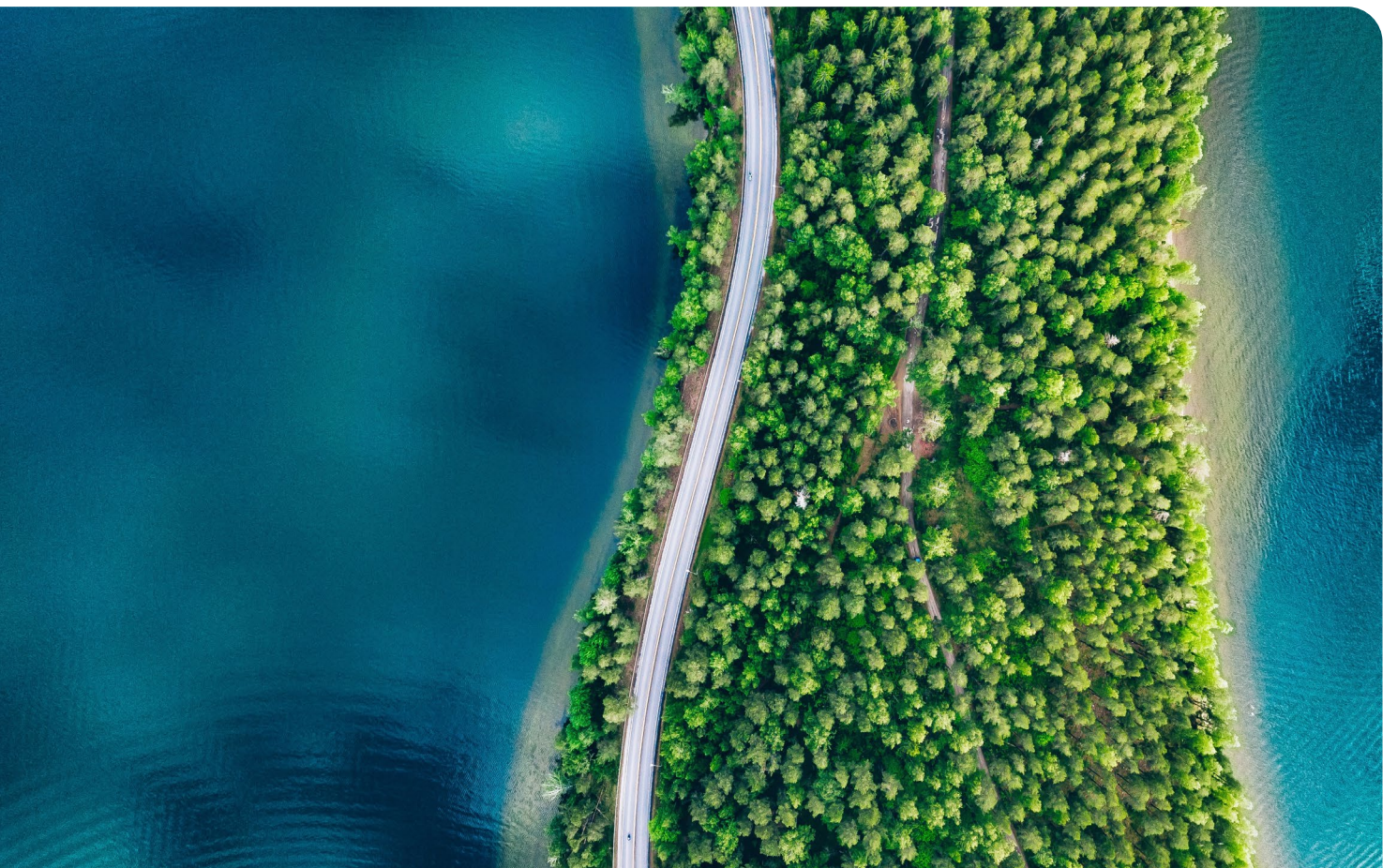
Nurturing a Future-
Ready Workforce

TAKING CLIMATE ACTION

The Intergovernmental Panel on Climate Change (IPCC) stated unequivocally in a 2018 report that limiting global warming to 1.5°C needs to happen urgently for humanity to avoid the worst impacts of climate change. The consequences of global warming are already seen through more extreme weather events, rising sea levels, melting glaciers, among other changes. These are threatening the future of our planet and people's lives and livelihoods.

As a leading port operator and logistics player, we have an important role to play in climate response and are committed to mitigating our impact on climate change by decarbonising our operations and supporting the reduction in supply chain emissions within our port and logistics network.

Key to our approach is strengthening our understanding and management of the climate-related risks and opportunities facing our business. In this regard, we are committed to aligning our approach with the recommendations from the Taskforce on Climate-related Financial Disclosures (TCFD). We recognise that aligning to this framework and improving resiliency with regards to climate change is a journey that will take time and dedicated effort. We have begun to take the following initial steps to implement the TCFD recommendations, referencing their four key pillars in the table on the next two pages.



TCFD PILLAR

PSA'S APPROACH

GOVERNANCE

- The Board of Directors has oversight of PSA's long-term strategy, including on sustainability, and sets the strategic vision and priorities of the company. The Board discusses PSA's sustainability strategy at least twice a year, which covers the company's direction for decarbonisation pathways and initiatives, as well as how we manage issues like climate change adaptation.
- PSA's Senior Management Council (SMC), our leadership team at the Corporate Centre and Business Regions are actively involved in setting and executing the sustainability strategy, in which taking climate action is a top priority.
- We have established a dedicated Climate Response Command (CRC) to spearhead the implementation of our climate actions. The CRC reports into the SMC and presents sustainability and climate-related issues at least quarterly to the SMC. Topics such as focus areas identification, standards alignment, performance review, resources and budget allocation for managing climate-related risks and tackling our emissions are tabled for discussion and approval by the SMC at these meetings.

STRATEGY

- Management of climate-related risks and opportunities is embedded across PSA's business strategy and operations.
- We have identified regulatory risks (e.g. from current and future carbon taxes), reputational risks and physical risks (e.g. rising sea levels, increasing severity of storm surges and wind conditions) as potential climate-related risks to our operations. Melting of the Arctic ice cap also poses market risks with potential game-changing implications for international shipping. [Climate Change Adaptation](#) has been prioritised as a material topic that PSA must address.
- We also recognise opportunities from increased operating efficiencies and cost savings. Technological advances in green fuel, equipment and Internet of Logistics (IoL) solutions, if employed effectively, will also provide PSA's business with a competitive edge.
- PSA pursues a sustainability strategy that seeks to reduce our environmental impact, while increasing the efficiency and resiliency of our operations. We are actively sourcing, trialling and investing in innovative ways to shift away from conventional fuel and to power our operations with renewable energy and new energy sources. Read more about our [Shift to Low-Carbon Fuels](#) and [Accelerating Technologies for Decarbonisation](#).

RISK MANAGEMENT

- The Audit Committee assists the Board in overseeing, identifying, and reviewing risks that could have a material impact on PSA, including ESG risks.
- PSA is working towards integrating climate-related risks into the company's overall enterprise risk management framework.
- PSA has started to assess and quantify physical climate risks faced by our key assets. Based on Natural Catastrophe Risk models and Intergovernmental Panel on Climate Change (IPCC) Representative Concentration Pathways (RCP) scenarios, risk scores based on exposure to acute and chronic weather events will be determined for our key assets. This will provide a comprehensive assessment of our key assets and an indication of the resiliency of our strategy and operations.

METRICS AND TARGETS

- We have developed medium and long-term Scope 1 and 2 emissions reduction targets, in line with the scale of reductions required to limit the global temperature increase to 1.5°C above pre-industrial temperatures. PSA will reduce absolute Scope 1 and 2 carbon emissions by:
 - 50% by 2030, against a 2019 baseline year
 - 75% by 2040, against a 2019 baseline year
 - PSA strives to achieve net zero carbon emissions by 2050
- PSA's Scope 1 and Scope 2 emissions data and profile can be found on page 30.
- PSA aims to establish a Scope 3 inventory for its operations by 2022.



Working Towards Decarbonisation

We established the Climate Response Management System (CRMS) to align our climate initiatives and focus our efforts on four key areas of climate change - greenhouse gases, energy, water and waste. The CRMS represents our group-wide commitment to respond decisively and effectively to climate change.

The Climate Response Command (CRC) was set up at our headquarters to drive CRMS across the group, spearhead projects at the group level and coordinate with regions and business units to achieve relevant goals and targets. It is supported by Climate REsponse AgenTs (CRESTs) sub-committees comprising of representatives from regions, group functions and specialised disciplines. Together, they drive initiatives including:

- A series of global climate education programmes to equip staff at all levels, functional experts and leaders with relevant knowledge to make sustainable choices in and outside of the workplace
- Adoption of tools and methodologies such as the Marginal Abatement Cost Curve (MACC) to help our business units prioritise their abatement options
- Onsite assessment by internal experts to help business units with decarbonisation efforts

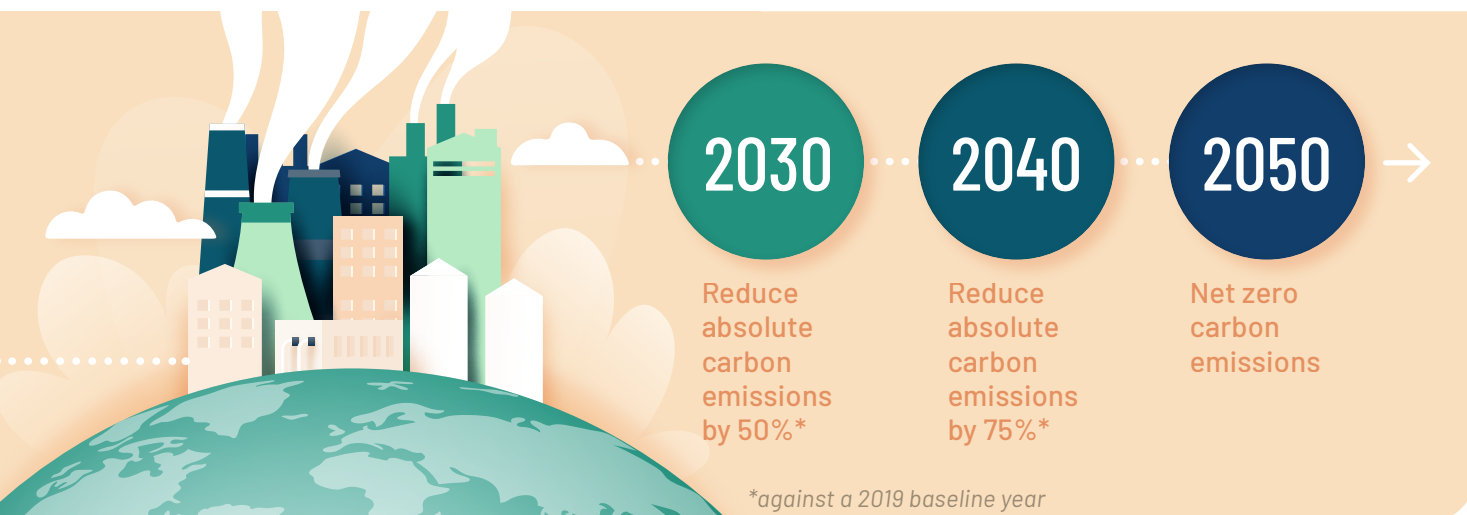
One of the key mandates of the CRC is to look into how we can drive energy efficiency and emissions reduction within our operations. Ports, intrinsically linked to shipping and as a critical node within the logistics chain where various modes of cargo movement come together, are traditionally dependent on fossil fuels as energy sources. We recognise we have an important role to play in reducing maritime-related emissions in order to work towards the goals of the Paris Agreement.

As part of our commitment to climate action, we have developed medium and long-term Scope 1 and 2 emissions reduction targets, in line with the scale of reduction required to limit the global temperature increase to 1.5 degrees above pre-industrial levels.

To develop a holistic understanding of our entire carbon footprint, we aim to establish a Scope 3 inventory by 2022 to measure and manage our value chain emissions.

WHAT IS THE PARIS AGREEMENT?

It is a landmark international accord, adopted in 2015, to substantially reduce GHG emissions to limit global temperature rise in this century to well below 2 degrees Celsius above pre-industrial levels while pursuing efforts to limit the increase to 1.5 degrees. To meet this goal, the Intergovernmental Panel on Climate Change (IPCC) said that the world needs to get to net zero emissions by 2050.



Total Emissions of the PSA Group

	2020	2019
Direct Scope 1 Emissions ('000 tCO₂e)	485	496
Indirect Scope 2 Emissions ('000 tCO₂e)	247	232
TOTAL ('000 tCO₂e)	732	728

Scope 1 and 2 emissions are computed based on an equity share consolidation approach. Gases included in the calculation are CO₂, CH₄ and N₂O. Emission factors for fuel were sourced from GHG Protocol Emission Factors for Cross Sector Tools (March 2017).

Scope 2 emissions were computed using the respective market-based emission factor.

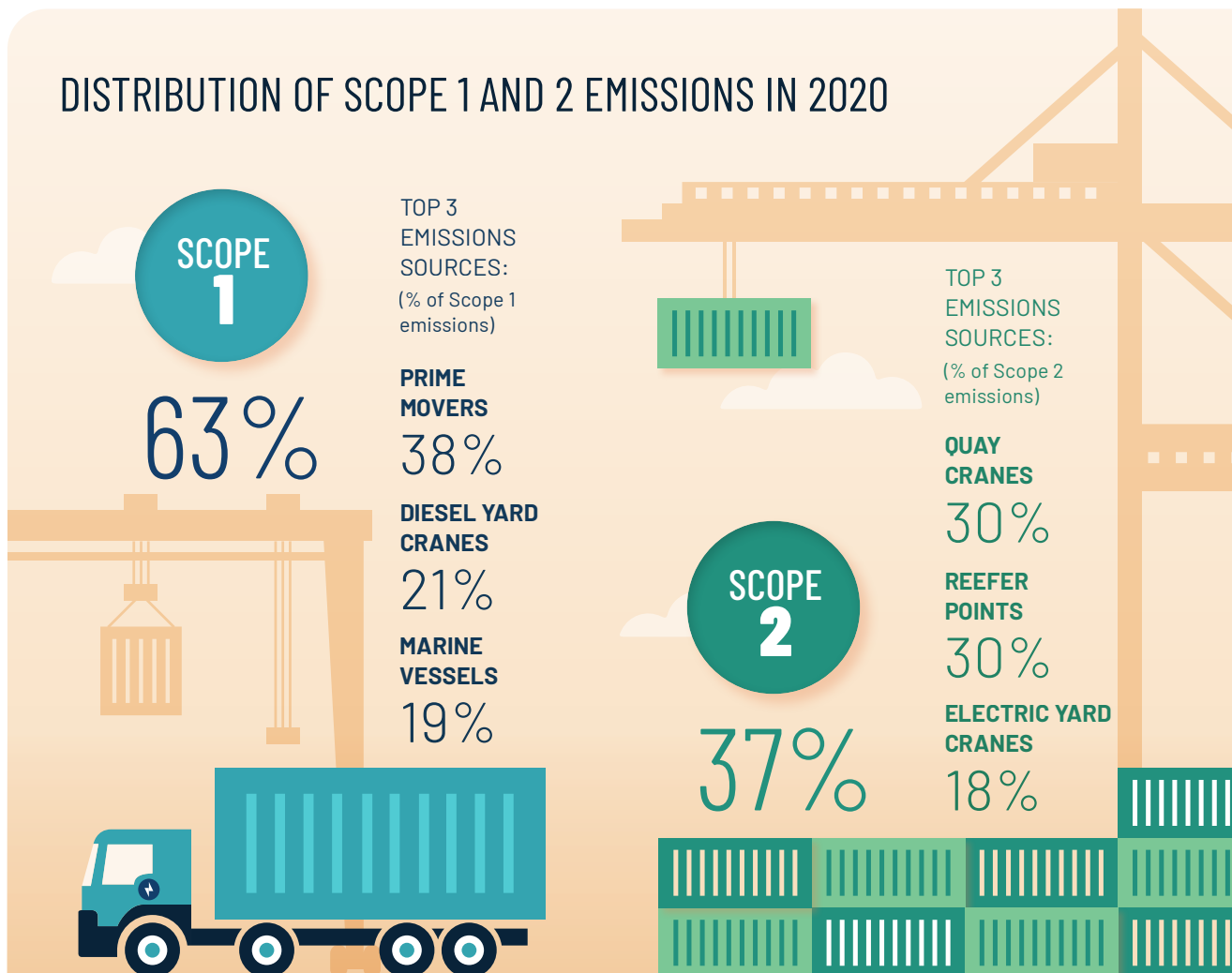
Figures are rounded off to the nearest thousand and may not add up due to rounding differences.

The 0.5% increase in total emissions (by equity-share) in 2020 from 2019 resulted from acquisitions and expansion into intermodal businesses, as well as higher reefer volume and dwell time in our ports due to COVID-19 related events.

Based on the total emissions profile in 2020, the majority of our GHG emissions are attributed to the operations of our container terminals, accounting for 87% of the group's total GHG emissions. Marine services accounted for 12%, with the remaining emissions arising from PSA's operations in the non-container terminals, logistics services and IT businesses.

In 2020, Scope 1 emissions accounted for 63% of total Scope 1 and 2 emissions, with Scope 2 emissions making up 37%. The bulk of our Scope 1 emissions resulted from the operation of our equipment including prime movers, diesel yard cranes and marine vessels. Our Scope 2 emissions resulted from electricity consumption in operating our quay cranes, reefer points, electric yard cranes and our terminal buildings.

DISTRIBUTION OF SCOPE 1 AND 2 EMISSIONS IN 2020



Total Energy Consumption of the PSA Group

	2020	2019
Fuel Consumption from Non-Renewable Sources (TJ)	9,600	9,600
Electricity Consumption (MWh)	1,073,200	974,800
TOTAL (TJ)	13,500	13,100

Fuel types include diesel, LNG, Petrol, CNG, LPG and Biofuels.

Optimisation and Energy Efficiency

To meet our carbon reduction goals, it is vital that PSA continues to manage our energy use and increase energy efficiency. We have implemented measures to enhance energy conservation and efficiency of our equipment, building design and lighting systems. Examples of energy-saving initiatives include:

- Introduction of variable speed drive control for diesel-powered RTGs
- Use of LED lights for cranes and buildings
- Lighting optimisation for automated yard cranes
- Automatic switching off of auxiliary systems when equipment are inactive for a defined period of time
- Workload optimiser installation in yard cranes to optimise jobs assigned for lowest prime mover waiting time or crane gantry distance, to reduce unproductive energy consumption

PSA's Carbon Abatement Pathways

SCOPE 1 ABATEMENT



LOW-CARBON FUEL OR ELECTRIFICATION

- Use cleaner fuel (e.g. LNG)
- Hybrid
- Full Electric



OPTIMISATION & ENERGY EFFICIENCY

- Reduce wastage
- Improve productivity
- Optimise assets

NATURE & TECHNOLOGY-BASED SOLUTIONS



EMISSIONS REDUCTION PROJECTS

- Participate in other green projects (e.g. Forestry, Carbon Capture & Utilisation (CCU), Carbon Capture & Storage (CCS))

SCOPE 2 ABATEMENT



PURCHASE OF RENEWABLE ENERGY

- Power purchase agreements (PPA)



GENERATION OF RENEWABLE ENERGY

- Investment (e.g. Renewable energy assets)



ELECTRICAL GRID OPTIMISATION

- Minimise use of electricity
- Introduce smart grid
- Introduce battery energy storage systems



STORAGE & TRANSPORT OF RENEWABLE ENERGY

- Energy vectors

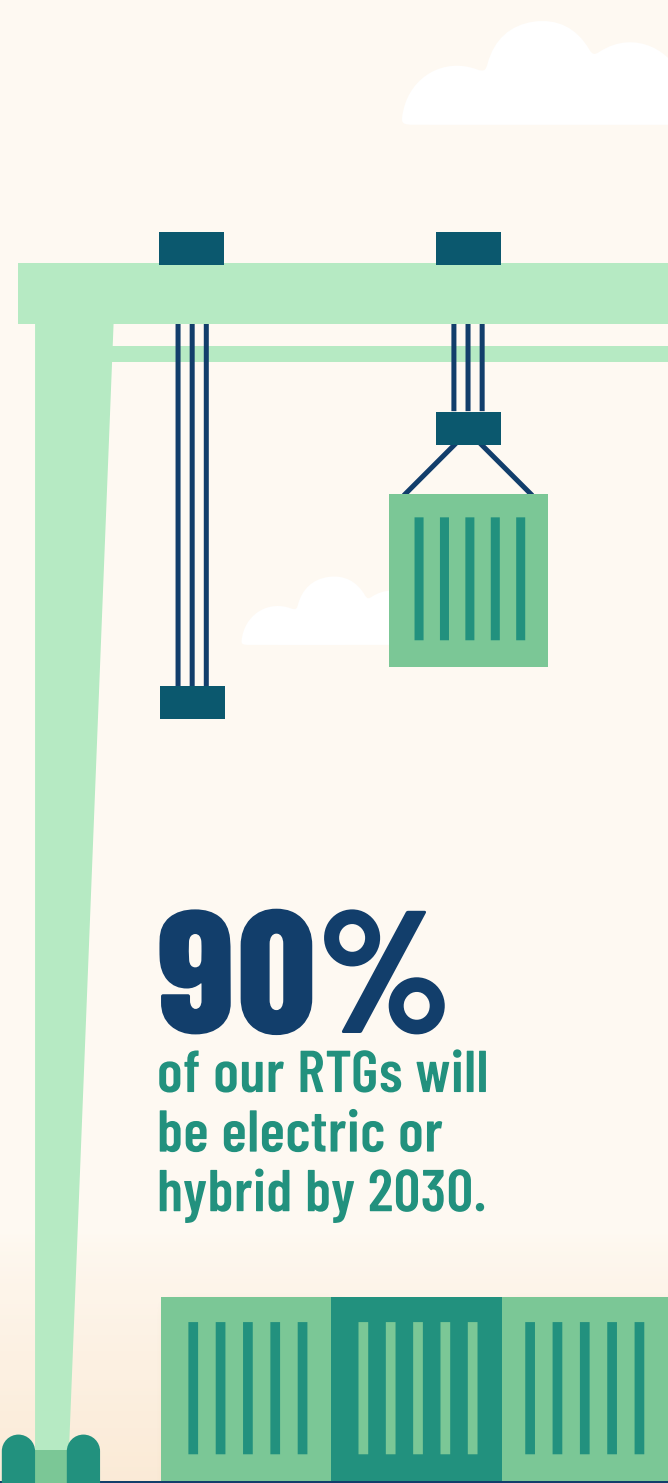
Business units conduct internal studies into energy and emissions reduction opportunities and develop green initiatives in their operations. Tools such as the Marginal Abatement Cost Curve (MACC) have been adopted to help our business units prioritise their carbon abatement options. Emissions and energy consumption are monitored by the business units and reported at the group level on a regular basis for consolidation and tracking.

Shift to Low-Carbon Fuels and Electrification

Our initial decarbonisation efforts are directed towards reducing and switching out from diesel, which we have been heavily reliant on as a traditional energy source to power our container handling equipment. Apart from terminal process optimisation and efficiency improvements to reduce our carbon footprint, we are moving away from the use of diesel by choosing lower-carbon fuels and electrifying our equipment. Lower-carbon fuels such as biodiesel have been adopted in Exolgan and New Priok Container Terminal One, while LNG-powered prime movers are being used in PSA Singapore, Pusan Newport International Terminal (PNIT) and HMM PSA New Port Terminal (HPNT). Earlier this year, PSA Antwerp announced its participation in the trial of a hydrogen-powered terminal tractor and mobile hydrogen filling station at its Europa Terminal.

Electrification plays a crucial role in our decarbonisation efforts. Across the group, we are implementing a gradual conversion from diesel-powered yard cranes to electric or diesel-electric hybrid yard cranes in our ports to reduce our carbon footprint. For example, our hybrid RTGs are operated with electrical power drawn from the battery whenever possible to reduce the frequency of running the onboard engine generator at full load, as well as recapturing energy from regenerative braking. Through this process, PSA's hybrid RTGs can achieve an estimated 53% in fuel savings.

As we pursue large-scale electrification, we are concurrently looking to source a greater proportion of our electricity needs from green energy sources to mitigate the resultant increase in Scope 2 emissions.



90%
of our RTGs will
be electric or
hybrid by 2030.

From 2023,
only electric or
hybrid new RTGs
can be purchased.



Decarbonisation Initiatives at our Business Units

Electrification of Yard Cranes



We are gradually switching out from conventional diesel-operated yard cranes (or RTGs) to electric (eRTG) or diesel-electric hybrid cranes at our terminals around the world, to reduce fuel consumption and emissions.

PSA Sines is one of our forerunners in using eRTGs, deploying them since 2011. They currently operate a fleet of 20 eRTGs and plan to replace 6 more diesel RTGs with hybrid RTGs by 2030.

Mersin International Port has also started electrifying their equipment since 2015 and has achieved 100% electrification of all their RTGs in 2019. This reaps an annual carbon savings of 2,900 tCO₂e for the port.

Why use electricity powered RTGs?

- **Half the amount of diesel equivalent required to handle 1 TEU compared to diesel RTG**
- **Lower maintenance costs and downtime**
- **Quieter, reduced noise pollution**
- **Reduced nitrogen oxides emissions on-site**

Switching Out from Diesel in Our Horizontal Transport



LNG CONVERSION FOR PRIME MOVER ENGINES

Prime movers transfer containers between the wharf and the yard, making countless trips day and night. Reducing emissions from this horizontal transport is thus a priority in our ports.

At HPNT and PNIT, more than 130 prime movers are currently running on LNG. More conversions to LNG are planned in the upcoming years.

At PSA Singapore, we have started to phase in LNG prime movers, with a total of 160 units deployed by the end of 2021 and adding another 140 units in 2022. As part of this project, we have developed the first LNG refuelling kiosk for prime movers in Singapore.

Though a fossil fuel, LNG is cleaner than diesel, has a carbon footprint that is **up to 20% lower** and emits significantly lower levels of pollutants.



AUTOMATED GUIDED VEHICLES (AGVs) AT PSA SINGAPORE

PSA Singapore started operation trials with AGVs in 2015 at Pasir Panjang Terminal, progressing from hybrid diesel-electric AGVs to now fully battery-powered ones. AGVs will be deployed extensively at the future Tuas port.

The adoption of battery-powered AGVs at Tuas Port will reduce carbon emissions by about 50% compared to using diesel prime movers. Annually, this will help abate over 80,000 tCO₂e of carbon emissions when the entire Tuas port is fully completed in 2040. They also generate less noise pollution and require 25% less maintenance efforts compared to their diesel counterparts.



Trialling Electric Prime Movers

At the Guangzhou Container Port (GCT), diesel prime movers contribute about 20% of total GHG emissions. As one of its carbon abatement options, it started conducting trials with electric prime movers with various vendors. The trials conducted with one vendor provided encouraging results in fuel efficiency.

A full deployment of electric PMs at GCT could potentially result in an annual emissions reduction of more than 1,000 tCO₂e.

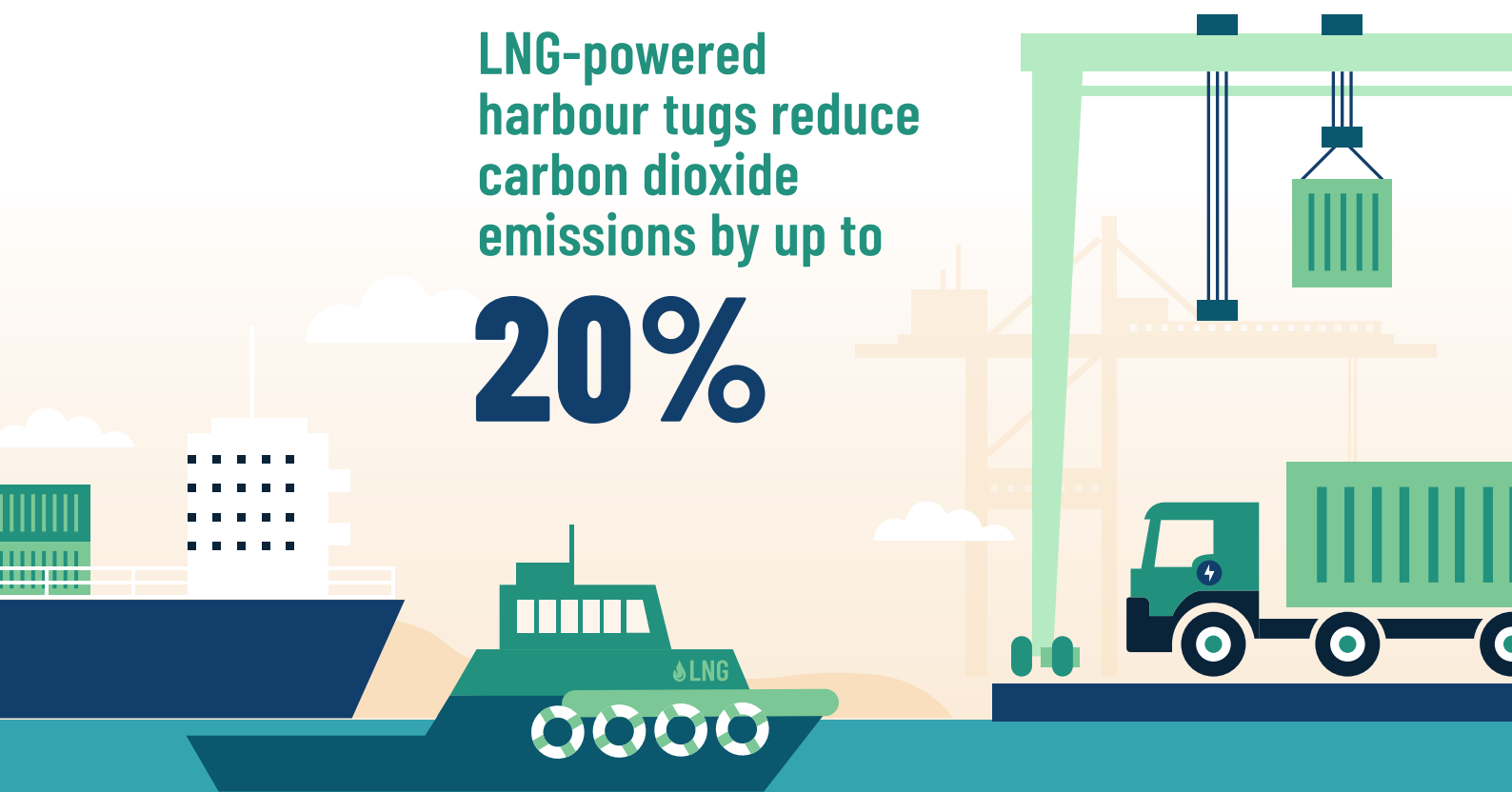


Powering our Harbour Tugs with LNG

With two dual-fuel LNG harbour tugs, PSA Aspen and PSA Oak, joining the Singapore harbour tug fleet in 2019 and 2020, PSA Marine has been able to operate its towage services in a more sustainable way. Compared to marine gas oil, LNG is a cleaner alternative fuel and with the harbour tugs on LNG mode, it is estimated that carbon dioxide emissions are lowered by up to 20%. Also, emissions of pollutants such as nitrogen oxides (NO_x), sulphur oxides (SO_x) and particulate matter are significantly reduced.

LNG-powered
harbour tugs reduce
carbon dioxide
emissions by up to

20%



Electrical Grid Optimisation & Renewable Energy Adoption

PSA also has plans to introduce the latest battery energy storage systems and smart grid solutions in some business units to optimise energy use. The implementation of smart grids will enable the energy consumption within the terminals to be better managed, balancing peak and trough demand and reducing the risk of power-related disruptions.

* Smart Grid System

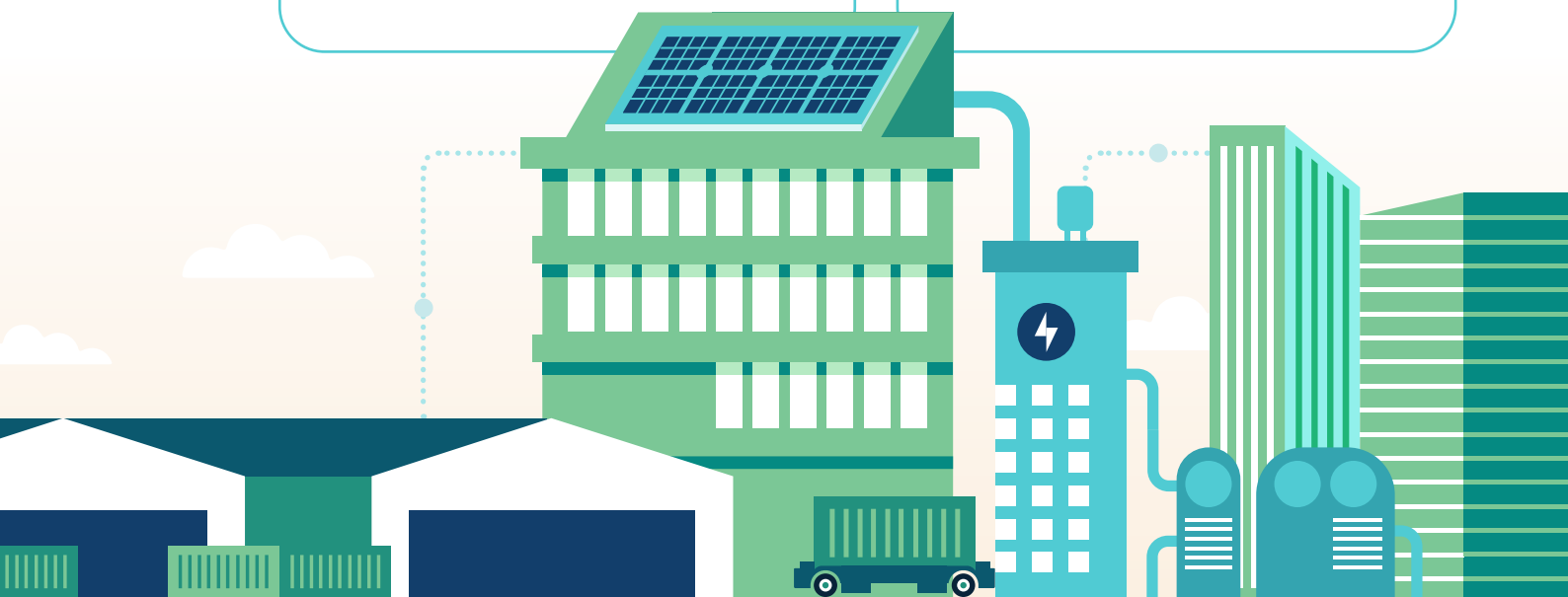
In 2019, together with the Energy Market Authority, PSA Singapore launched a joint grant call of S\$8 million, to develop a Smart Grid system for port applications at Pasir Panjang Terminals 4, 5 and 6. The scope of the project included an artificial intelligence based SmartGrid Management System (SGMS) and a 2MW/2MWh Battery Energy Storage System (BESS).

The project was awarded in 2020 to a Consortium led by Envision Digital International, together with Durapower, Anacle, Singapore University of Technology and Design and the National University of Singapore. The AI-powered platform will aggregate and optimise energy production sources and manage consumption loads as well as collectively harness connected solar panel systems, battery storage systems and battery power of horizontal transport (e.g. AGVs, prime movers) across PSA sites.

* Tapping on Nature for Fuel

Currently, more than five of our business units are harnessing solar energy to generate electricity for buildings and crane lightings through the installation of solar photovoltaic systems. While still being tapped in small supply, our solar photovoltaic systems have generated more than 5,000 MWh of energy in 2020.

PSA Panama has installed solar panels on one of its quay cranes to partially power the operation of the crane with clean energy. PSA Mumbai has also installed a 300 kWp solar photovoltaic system on the rooftop of their engineering workshop, capable of generating about 400 MWh of electricity per year.



Accelerating Technologies for Decarbonisation

Accelerating the development and deployment of technologies to decarbonise energy will be key to tackling climate change. This involves investments into research and innovation, piloting of new technologies, as well as scaling market-ready solutions.

Innovation and technology will be key enablers of our sustainability efforts. As our industry continues to evolve and undergo structural changes, PSA is committed to innovate and leverage technology to stay ahead of the game and be a truly innovative leader. PSA will invest at least S\$100 million by 2025 in R&D and innovation projects, employing the latest available technologies that can help us to achieve more efficient and sustainable operations. We are investing in projects that have the potential to achieve greater operational efficiency and reduce our carbon footprint, as well as exploring and testing emerging technologies such as hydrogen.



Exploring Low-Carbon Future Fuels

The International Energy Agency stated in a 2019 report that the time is right to scale up technologies and bring down costs to allow hydrogen to become widely used as an energy carrier, especially in sectors where it is almost completely absent, such as transport, buildings and power generation, in order to realise its potential to support clean energy transitions.

PSA Singapore embarked on an initiative with four other Singapore companies, two Institutes of Higher Learning (IHLs) and two hydrogen supply chain solutions partners, Chiyoda and Mitsubishi, to research on catalyst development, as well as to study and pioneer ways to utilise hydrogen as a viable low-carbon energy source in Singapore.

The companies came together to identify and evaluate the technical and commercial feasibility of hydrogen usage with SPERA Hydrogen®, a technology developed by Chiyoda that enables safe, large-scale storage and transportation of hydrogen. The aim is to identify and start a commercial scale project for sustainable hydrogen economy by 2025 and realize a sustainable hydrogen economy by 2030. They will then work on proof-of-concept (POC) demonstrations to develop use cases for utilisation of SPERA Hydrogen® in Singapore. PSA Singapore will be involved in the POC development of hydrogen refuelling ecosystems including fuel cell prime movers.



We recognise hydrogen's role as a strategic enabler for Tuas Port and its ecosystem by 2030.

The first steps will be a strategic collaboration in the hydrogen supply chain to reach cost parity target for hydrogen adoption, as well as complete a state-of-the-art dehydrogenation plant demonstration pilot to power a fleet of prime movers and vehicles as a proof of concept and value.

ALVIN FOO,
HEAD OF NEW TECHNOLOGIES AND
SUSTAINABILITY, PSA SINGAPORE

While we have made some headway in our decarbonisation efforts, it will continue to be challenging as we seek to balance our growth aspirations with our sustainability ambitions. Yet, it is clearly possible to overcome the challenges if we plan ahead with our goals in mind.

For example, as PSA Singapore gradually transitions and grows our operations in Tuas, and because of the predominantly transshipment nature of PSA Singapore's container volumes, more trucking or haulier trips will be needed to connect containers between the Pasir Panjang terminals and Tuas Port, with a resulting increase in carbon footprint. Until all container handling will be handled in Tuas in about 20 years' time, to minimise the potential impact during this transition period, we are looking into the use of barging as a more efficient mode of transport. In addition, we are also exploring the deployment of electric prime movers for such inter-gateway trips between the Pasir Panjang terminals and Tuas Port.

To mitigate the need for increased manpower to manage operations for both locations, our yard operations are planned to be operable remotely from control centres, reducing the need for staff travel to Tuas Port.

Climate Change Adaptation

While we address the impact of our operations on climate change, we also need to consider the effects of climate change on our operations. Ports, in particular, are very much exposed to climate-related risks due to their coastal locations. As ports are critical infrastructure assets and key nodes in the global supply chain, any disruption in port operations can also have broader implications for international trade and economic development. It is, therefore, crucial to enhance the climate resilience of our port infrastructure and equipment as a matter of strategic importance.

Some considerations include sea level rise, frequency and intensity of extreme weather, waves, storm surges and floods, temperature variations and water shortages. At the business unit level, local climatic conditions are to be incorporated into equipment purchase specifications. For example, for those operating in areas with high wind conditions, cranes will be equipped with storm anchor pins and tie-downs to prevent crane damage from storms and strong winds.

To ensure that we continue to safeguard our assets, operations and supply chain against physical climate-related risks such as rising sea levels and extreme temperatures, PSA is developing a climate change resilience framework to be applied for our civil infrastructure. These guidelines will help our business units to assess vulnerability to climate risks and ensure PSA's assets and operations are able to withstand more frequent and severe climate events.



TRANSFORMING SUPPLY CHAINS

Beyond our operations, we see immense opportunities in reducing climate impact by enabling shippers to make greener logistics choices, improve efficiencies and increase the resilience of their supply chains to withstand the impact of potential disruptions. A [World Economic Forum report](#) found that eight supply chains (food, construction, fashion, fast-moving consumer goods, electronics, automotive, professional services and freight) account for more than 50% of global carbon emissions and fully decarbonising these would be a vital game-changer. Seven of these eight supply chains (except professional services) rely critically on greener logistics and transport options to realise significant positive climate impact. Therefore, optimising logistics solutions would be very crucial for decarbonisation.



Internet of Logistics and Digital Solutions

We believe that by working together with our partners and customers, we can leverage digital solutions and data to orchestrate supply chains better – enabling logistics players and cargo owners to optimise routes and choose transport modes that are low-carbon, more efficient and resilient. Our vision of the Internet of Logistics is one where the possibilities of enhanced cargo and trade flow can be realised – an ecosystem of communities connected through interoperability, where platforms and systems can be ‘plug and play’.

PSA Cargo Solutions was set up to realise this ambition to shape the future of smart and sustainable logistics. Digitalisation and data analytics are key enablers in our strategy. One of the first initiatives

was the development and launch of CALISTA (Cargo Logistics, Inventory Streamlining & Trade Aggregation), a global supply chain platform that brings together the key physical logistics and non-physical (such as regulatory and financial) activities of logistics on a digital ecosystem that serves the community of logistics stakeholders.

As we leverage digitalisation to connect the global supply chain community and enable greater collaboration, there can also be better ecosystem-wide optimisation that not only supports decarbonisation but also addresses other sustainability issues like food and resource wastage due to supply chain inefficiencies.



Reducing Food Waste with Smarter Logistics

The [UN Food and Agriculture Organization \(FAO\)](#) estimates that 1.6 billion tons of food are lost or wasted annually – this is nearly one-third of the world’s food production and enough to feed two billion people. One of the main causes of food loss is due to inefficiencies in the supply chain, such as poor logistics infrastructure and handling processes.

Through our CALISTA platform, we aim to provide real-time visibility of shipment flow so exceptions can be responded to swiftly to

reduce potential food spoilage. We are exploring potential solutions with Roambe, a startup that our corporate venture capital arm PSA unboXed has invested in, to augment CALISTA with continuous recording and monitoring of reefer containers and their cargo from origin to destination, using sensor technology, cloud data analytics and automated responses. Alerts will be sent to shippers or customers on issues that can cause food spoilage, such as temperature control failure or power loss so that remedial actions can be taken immediately.



Green Supply Chain Restructuring

Apart from digital solutioning, PSA aspires to be part of the climate change solution for the logistics sector by restructuring supply chains and offering greener transport modes to our customers. In 2018, we acquired Ashcroft Terminal, an inland port strategically located to facilitate cargo flow through the Pacific Gateway Corridor in Canada.

The Railway Association of Canada states that a single freight train can remove more than 300 trucks from the road. Shifting modest amounts of truck traffic to rail can result in substantive emissions reductions- if just 3% of truck traffic was moved by rail, there would be a reduction of 1.1Mt of CO₂e per year.

As an inland terminal, Ashcroft Terminal can help alleviate congestion around Metro Vancouver by handling import and export rail cargo offloaded from or destined for container ships docking at the port. Its direct rail connection means we can move a greater

volume of cargo via railway instead of trucks and offer this greener option to shippers. Unique match back is facilitated in the same location with export cargo, reducing empty trips and improving efficiencies. Our facilities are geared to have 30,000 import containers arrive and depart by rail instead of truck per year.



Beyond offering rail solutions in Canada, PSA has been exploring the conversion of truck to rail or truck to barge in various parts of the world including Singapore, China, Belgium, India and Italy through our cargo solutions arm.



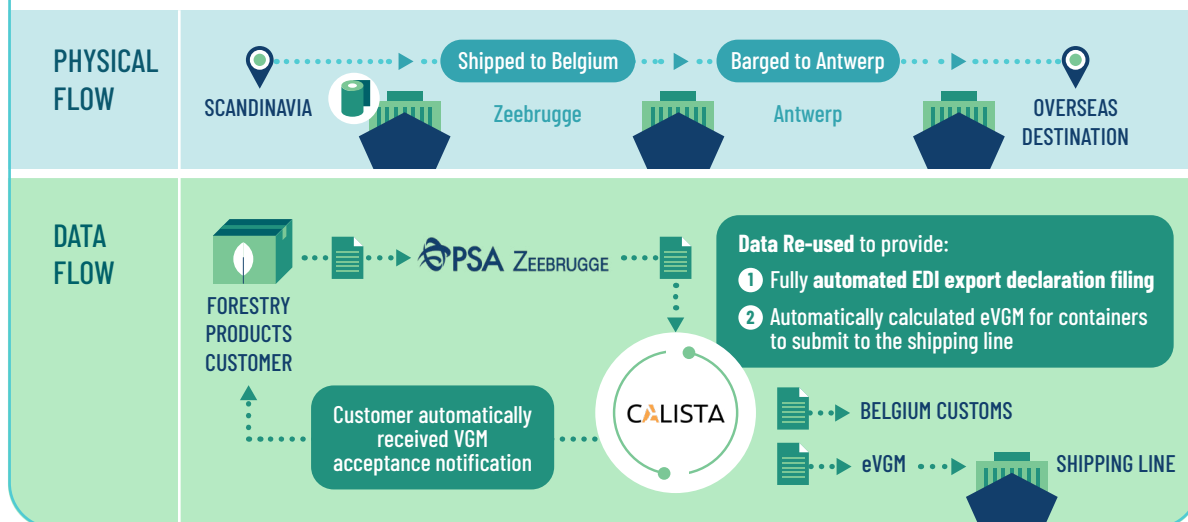
Achieving an Optimised, Connected and Sustainable Supply Chain

Metsä Board (Metsä), a leading European producer of premium fresh fibre paperboards, was looking for a supply chain solution to serve its overseas markets out of Europe with the lowest possible environmental impact.

The PSA Cargo Solutions team stepped in to offer an integrated solution covering the terminal handling operations in Zeebrugge, the barge transport between Zeebrugge and Antwerp and the required

compliance documentation. This solution utilised CALISTA to automate the regulatory compliance documentation as well as provide timely and automated Verified Gross Mass (VGM) declarations to the carriers.

This innovative solution allowed Metsä to also shift its supply chain to Zeebrugge and Antwerp, and in the process, switch its hinterland transport from truck to barge, reducing its carbon emissions.



PSA will continue to innovate to improve cargo flow choices for shippers and empower them to take an active role in reducing the environmental impacts of their freight transportation. For example, we are developing a carbon footprint calculator on CALISTA that can help customers make more informed decisions on transportation planning. By adopting recognised frameworks such as the Global Logistics Emissions Council (GLEC) framework to establish base calculations and working closely with shipping lines

and Logistics Service Providers (LSPs) to improve information and data accuracy, the carbon footprint calculator will support analysis of freight emissions and facilitate data-driven decisions.

Through PSA unboXed, our corporate venture capital arm, we also harness technology and innovation from the startup ecosystem, focusing on LogTech solutions that can complement the port and supply chain of the future.

* Co-creating New Solutions



PSA unboXed, our external innovation and corporate venture capital arm, was launched in 2016 to support PSA's businesses by harnessing technology and innovation from the startup ecosystem through investments, partnerships and collaborations. Since its inception, we have completed dozens of proof-of-concepts, trials, and commercial arrangements with startups to co-create the future of port and logistics.

We seek solutions with a focus on ports, maritime, logistics and containerised cargo flow, as well as sustainability aspects of these areas:



SUSTAINABLE OPERATIONS

Solutions that actively manage energy consumption, recycle materials, waste and consumables, and reduce GHG emissions through exploring alternative energy vectors.



SUSTAINABLE SUPPLY CHAINS

Digital solutions connecting multiple nodes within the global supply chain driving greater visibility, optimisation and collaboration to enable green supply chains and circular economies for supply chain stakeholders.



GREEN INVESTMENTS

Adopt Environmental, Social, and Governance (ESG) investing to increase climate-related financial flows to boost resilience and capacity.

By 2024, we aim to implement 10 supply chain projects that provide sustainable logistics and transport solutions impacting at least 3,000 TEUs of cargo volume per project. As we advance in this space, we continue to amass know-how and experience to fine-tune our projects and ensure enhanced value for the environment and our value chain stakeholders. Leveraging the Internet of Logistics and facilitating collaboration across the industry, PSA believes we can play a key role in creating more sustainable, resilient and efficient supply chains.

NURTURING A FUTURE-READY WORKFORCE

Our people are the bedrock of our business. They keep our operations running and underpin our mission to be the partner of choice in the global supply chain. We believe that we can succeed only if our people succeed. That is why we invest in attracting and retaining a talented and engaged workforce, and in their continued growth and development. We are guided by our core beliefs in Diversity, Equity, Leadership and Talent Management, and Learning and Development, to make PSA a great place to work, where employees feel inspired and are provided with the support to be at their best.



People Development

Our current workforce of approximately 40,000 is made up of direct hires and sub-contracted staff. The majority of this workforce is directly employed by PSA, comprising both frontline and office-based permanent employees, as well as a pool of contract staff who are essential to our port operations, providing services such as driving prime movers, lashing operations and wharf operations supervision.

Our People Strategy framework comprehensively covers the full spectrum from recruitment, onboarding, learning and development, leadership and talent management, performance management, to employee engagement and organisational development. The framework helps us to execute our people strategy consistently as we strive to be the “employer of choice”.

We put emphasis on recruiting and retaining the right people who are able to contribute to the company’s mission and business objectives as well as fulfil their individual goals. Our global recruitment best practices toolkit provides practical guidance to our business units while giving them the flexibility to tailor their recruitment strategy to their own local context. For example, some of them work with local universities on career days, talent programmes or provide scholarships.

New Employee Hires and Employee Turnover in 2020

TOTAL NEW HIRES	TOTAL ATTRITION (%)
3,200	6

This only includes permanent employees.

Where applicable, employees undergo an annual performance appraisal, which reviews individual achievements for the year, the result of which is a key driver of individual performance incentives, promotion opportunities, salary increments and development needs. It is also a feedback channel for employees on their level of work satisfaction and career aspirations, in addition to ongoing feedback on a day-to-day basis.

A career planning and development process is in place to help employees grow in their career with PSA, including global mobility and lateral rotation opportunities. For those identified as having leadership potential, they will be enrolled in global leadership training programmes, including PSA Horizons Development Programme and Short-Term International Development Experience (STRIDE). Other specialty signature courses designed and developed in-house for Leadership and Organisation Development (OD) include Coaching and Mentoring, Global Recruitment Best Practices and a series of FISH and FISH-related programmes. Leadership and OD programmes are not one-off ‘programmatic courses’, but are designed to be sustained interventions as part of PSA’s Global Organisation Development Movement (ODM) across the organisation worldwide.



Learning and Development

PSA ensures that our employees are provided with training and development opportunities to grow to their fullest potential, beyond performing their current job, and to be equipped with the requisite knowledge and skills to be future ready. Such skills training and development programmes are made available throughout their career – onboarding and new entrant training for fresh hires, cross-skilling to develop multiple skillsets, and upskilling to prepare for new job roles.

This is done through various avenues including self-learning resources, classroom training and facilitation, on-the-job training, challenging work projects, cross-functional assignments and job rotations. Training is conducted using state-of-the-art learning technologies to enhance training effectiveness, including simulation training, virtual reality, augmented reality and mixed reality. The use of technologies helps to bridge the gap between theory, practical and on-the-job training, enabling employees to hone their skills and gain greater confidence before moving on to real-life operations.

As our industry embraces greater digitalisation and automation, we are committed to support our employees through this transformation journey. We continue to align our training programmes to help our people develop the requisite skills and attitudes to meet dynamic business needs and evolving job roles. This includes equipping them with future-ready competencies in areas such as automation, digitalisation, data analytics, cybersecurity and sustainability.

For example, PSA's Data For Excellence (DFE) unit and PSA University jointly developed the Acquiring Data Analytics Proficiency through Training (ADAPT) programme to equip our employees globally with data analytics skillsets to support their respective business needs in data discovery and visualisation. The Imparting Process Automation Competency Training (IMPACT) programme was another training launched in 2020 to equip participants with the skills to build Robotic Process Automation (RPA) solutions to enhance work processes and efficiencies.





Shaping our Workforce of the Future

Our learning and development efforts are driven through PSA University (PSAU), set up in 2016 to consolidate and uplift PSA's global learning and development capabilities and to be the knowledge hub of port, supply chain and logistics know-how.

To ensure that the learning directions are aligned with business needs, the PSA University Council chaired by PSA Group CEO with the Global Head of Human Resource as the Vice-Chair, provides the strategic steer on key focus areas. A Group Learning function also cascades and aligns learning policies, plans and initiatives, optimises resources and oversees the learning community development across the PSA Group. With its in-house team of learning designers and developers, PSAU is able to design and update training programmes, delivered through highly experienced and qualified trainers who are practitioners themselves.



2020 marked the establishment of PSAU's new physical campuses in Singapore and Antwerp. While COVID-19 may have disrupted training plans in the physical campuses, learning never stops. In 2020, despite the pandemic and workplace restrictions, PSA University rolled out over 70,000 e-learning and virtual training placements aided by the PSAU Learn platform, which enabled our employees around the world to continue learning and upskilling themselves anytime and anywhere. To help employees better cope with the changes and uncertainties brought about by COVID-19, PSA has also developed an in-house signature programme – FishBall – to help employees build individual and team resilience, as they adapt to the new norms and work arrangements.

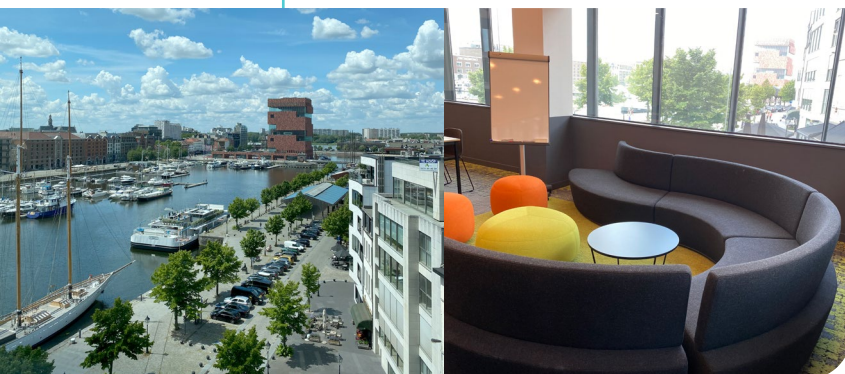


A New Learning Community at PSAU Antwerp Campus

The Antwerp campus is PSA University's first overseas campus outside Singapore set up in 2020. It is housed in the headquarters of PSA Antwerp, Belgium, in the trendy neighbourhood of Het Eilandje.

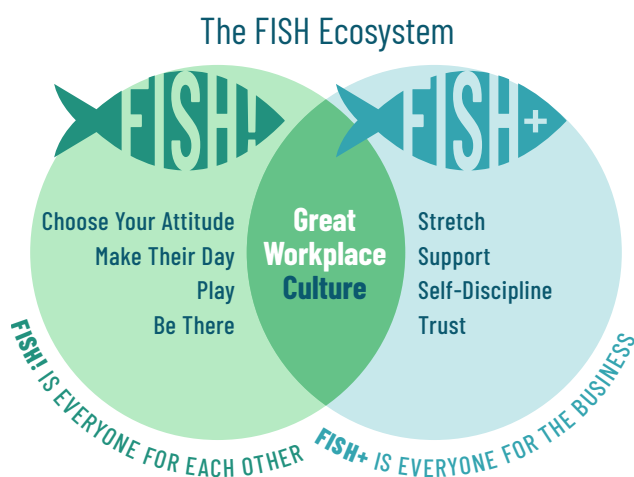
Offering a wide range of high quality training to all categories of staff, PSAU Antwerp Campus (PSAU AC) aims to provide training to meet business needs while supporting employees in their development to help them grow professionally and personally. Tailor-made content and methodologies are adopted for the various target audiences' needs. New technologies such as virtual reality, RPA, e-learning and game-based learning are also integrated in its suite of training.

Alongside PSAU Singapore Campus, PSAU AC strives to build a competent and agile workforce in PSA through continuous skills development to support the organisation's vision to be a global leader in supply chain orchestration.



A Great Place to Work

Our vision for the future of work at PSA is enhanced by our culture of FISH that promotes behaviours to build trust and camaraderie among colleagues and within teams. The FISH movement was launched 15 years ago to shape our own unique organisational culture and has been embraced by business units around the world. Originating from Pike Place Fish Market in Seattle, the FISH!* philosophy was adopted and adapted by PSA to become FISH! and FISH+ (collectively known as FISH), which provides a common language to embed daily behaviours of caring for one another as well as doing our best for the business. We believe it is important to have a common identity and a shared sense of purpose across PSA, to create a positive working environment that sustainably supports high performance and high morale.



FISH is woven into the daily lives of employees through the introduction of FISH-related initiatives throughout the year, such as campaigns, contests, workshops. Employees can send messages of appreciation to one another via FISHapp (on mobile devices) or FISH365 (plugin on Microsoft Outlook).

FISH has also inspired a series of FISH-themed signature workshops which are developed and facilitated in-house, to drive organisational change and growth to meet the evolving needs of the industry and customers. Aligned with business needs, these workshops cover a gamut of topics: Leadership, Sustainability, Innovation, Change Management, Mental Wellness, Productivity, Safety, Data, Cyber Security, among others. The delivery of in-house signature programmes usually involves senior leaders, emphasising the importance and commitment towards these initiatives.

*FISH! is a trademark or service mark of ChartHouse Learning. For further information on the world-famous Pike Place Fish Market and the FISH! Philosophy, please go to <https://www.fishphilosophy.com/fish-philosophy-story/>



LeaderFish+ to Enhance Leadership Effectiveness

In January 2020, 26 leaders from PSA Halifax, Ashcroft Terminal and PSA Penn Terminals attended the LeaderFish+, a signature leadership development programme which reinforces PSA's FISH culture for our leaders, allowing them to gain a deeper insight into their own leadership styles and how to create a caring culture alongside high performance, harnessing the FISH! and FISH+ Principles. This enables them to better drive organisational performance alongside business success.



As a new Business Unit to the PSA family, the LeaderFish+ programme gave us the opportunity to align our leadership values and approach early in our journey. What made it particularly impactful were the ideas and guidance on how we could create an inclusive and caring culture with high performance. It was a great reminder for all of us in the management team, that only in a culture where each individual feels valued, are they actually empowered to perform at their best. We understood that as leaders, we create that opportunity in our teams when we reflect and work on our own strengths and weaknesses, while committing to the aspiration of creating a workplace that upholds trust, support, self-discipline and stretch, through a shared vision. LeaderFish+ gave us all the chance to put learnings into practice, to bond as a team and provided a springboard to our further growth.

ANDY HERRIOT,
CHIEF COMMERCIAL OFFICER, PSA HALIFAX



To measure employee engagement and organisational wellbeing, we conduct a bi-annual Employee Opinion Poll (EOP). The last one was done in 2019, with a high satisfaction level of over 70% across our global portfolio. That was a significant achievement as benchmarked against industry norms. The feedback and insights from our employees enable us to work on areas of improvement as well as reinforce what has been effective. PSA aims to achieve at least 75% participation rate in the global Employee Opinion Poll for business units that are participating from their second EOP onwards.

* Building an Innovation Culture in PSA

Innovation drives progress. We are constantly looking to improve efficiencies and break new ground in port operations and supply chain adjacencies through the application of novel technology and innovative solutions.

We believe that nurturing a culture of innovation is fundamental to realise our Innovation Vision 2022 – an aspiration of what innovation@PSA should be in the future; where our employees are bold in pushing boundaries while collaborative in seeking solutions, where opportunities to innovate abound and leaders walk the talk in championing out-of-the-box thinking, where innovation is not an abstract idea but driven to execution.

The Group Innovation team was set up to drive initiatives and projects across PSA Group, working closely with a global network of innovation catalysts from the business units as well as industry stakeholders. In addition, group-wide initiatives serve to promote and support innovation within the organisation.



iCAN is an innovation platform that allows PSA employees from around the world to ask questions, share and build up ideas to improve PSA's workplace processes or extend its business boundaries. Since its launch in 2016, iCAN has received thousands of staff entries covering a broad range of topics including HR, engineering, technology and IT, health, safety, security & the environment. Feasible submissions may be adopted, developed or implemented within PSA.

The Group Innovation Fund sets aside a sum of US\$1 million per year to encourage and facilitate efforts by PSA employees in test bedding innovative ideas and solutions, including the trial of products previously untested or unproven in PSA as well as in adopting solutions and products that have proven to be successful in other business units.



The annual **Kua Hong Pak Innovation Awards (KHPIA)** is named in honour of the late Mr Kua Hong Pak, one of PSA International's longest-serving board directors. The annual innovation challenge is open to all staff of Corporate Centre and PSA business units including JVs to submit novel ideas applied to their respective business environment. Every year, hundreds of entries are received and a panel of judges, consisting of PSA Board and SMC members, evaluates and rewards participants who dare push the boundaries to devise or apply innovative solutions in their work.



Developed in-house at PSA, **Catfish Innovation** is a HR programme designed to kickstart and fuel the innovation engines of PSA employees, by honing skills to innovate, unleash creativity, evolve ideas and lead the innovation journey.



Diversity and Inclusion

A work environment that attracts, retains and engages a diverse group of employees helps to build organisational resilience and widens our talent base. At PSA, we respect employees as unique individuals and seek to ensure equal opportunity to support the diversity, equity and inclusivity in our workplace.

PSA does not discriminate against employees on the basis of race, gender, religion, age, disability, family status, sexual orientation, pregnancy or any similar attribute or condition. This is embedded in our Code of Business Ethics and Conduct (“The Code”) which all employees must observe. All forms of discrimination are prohibited and all allegations of harassment, including sexual and racial harassment are taken seriously and investigated by a unit comprising Group Human Resources, Group Internal Audit and other parties co-opted into the Unit as and when required, e.g. Group Legal. All employees have access to a whistleblowing hotline and mailbox through which they can report any incidents of intimidation, discrimination or harassment of staff and other persons during the course of work. Please refer to [Ethical Business Conduct](#) for further details on our Whistle-Blowing policy and procedures.



Empowering Women in the Port Industry

As PSA adopts more automation and smart systems to meet the growing business in the future, the work environment has gone through several enhancements.

In PSA Singapore, automated cranes can now be controlled remotely from PSA’s Automated Crane Operations Centre at its Pasir Panjang premises. Previously controlling quay cranes from cabins 17 storeys high, operators now run automated cranes remotely from an office, seated behind computer screens, aided by sensors and cameras, and a console to manoeuvre the cranes. Besides increases in labour productivity, this transformation has paved the way to shift mindsets around working in frontline port operations and to create a more balanced playing field for women.

To commit to a more gender-balanced workforce and to walk the talk in creating a culture of equal opportunities, Mersin International Port (MIP) also worked with the Women Entrepreneurs Association of Turkey (KAGIDER) to conduct a joint study aimed at detecting inequalities in processes such as recruitment, training, career planning and development, and at ending gender discrimination in corporate settings. The study also sought to lay out best practices in these processes that companies can adopt.

One of the outcomes was the first-time recruitment of female gate checkers in MIP, a position historically dominated by males. 10% of the checkers roles are now held by females, successfully setting a precedent. MIP also organised an “#IamRemarkable” workshop for all female employees, a Google initiative to empower women and other underrepresented groups to celebrate their achievements in the workplace and boost their confidence.

For its efforts, MIP was awarded with the Equality in Opportunities certificate by KAGIDER, which is based on an independent assessment of a company on how the company’s policies and procedures promote gender equality.

As a traditionally male-dominated industry, we recognise that we need to do more to increase gender diversity. At the non-operational functions and management positions, we have seen more women coming into the organisation. However, due to the nature of frontline operations involving heavy machinery, we still tend to have more males in the workforce. We foresee opportunities to bring more women into our workforce with automation and

digitalisation of operations. This would help pave the way for changing perspectives and creating a more level playing field, making this industry a more attractive workplace and career option for women. Similarly, we want to open up the prospect of having a more gender-balanced board and senior management composition. We started collecting gender diversity data for our global workforce in 2021 and will aim to disclose this information in future reports.



Grooming Female Talent

Who says there cannot be female Container Equipment Specialists (CESs)? While it is rare, it is not impossible, as the female CESs at PSA Mumbai have shown.

These female staff are trailblazers in their own right, having come from nearby villages with little or no exposure to a job; but rose to the challenge of working in a state-of-the-art container terminal. They passed the same rigorous selection process as all other employees, including tests in the fear of heights, aptitude, psychometric and medical. As CES trainees, they received theoretical lessons as well as practical instruction on the latest equipment simulators, before going for on-the-job training to enhance their skills. They have since passed tests before being deployed on quay and yard cranes.



We are glad to take up this profession which is different from what other females are doing. We are very thankful to PSA Mumbai for training us so well that now we are able to guide even the new trainees to operate (cranes).

PRATIKSHA MHATRE, CES

PSA Mumbai prides itself for having female employees working in almost every department in the company, including Engineering, Finance, Human Resources, Information Technology, Operations and Engineering.

Ms Sanjam Sahi Gupta, President of Women's International Shipping and Trading Association, India (WISTA) appreciates PSA Mumbai for making a concerted effort to help the industry groom more women, especially in roles traditionally considered a man's job. "Diversity may be disconcerting, but it will help the port sector recruit untapped talent, obtain fresh perspectives and possibly innovative solutions."



STEWARDING RESPONSIBLE BUSINESS



We do what is right even when no one is looking. That is what guides us at PSA to act responsibly and with integrity every day at work. We anchor our business on the foundations of trust and accountability, and we strive to consistently “do the right thing and do things right” by incorporating responsible practices into every part of our business.

In this
section



Ensuring
Responsible
Operations



Protecting
Our
People



Acting
With
Integrity



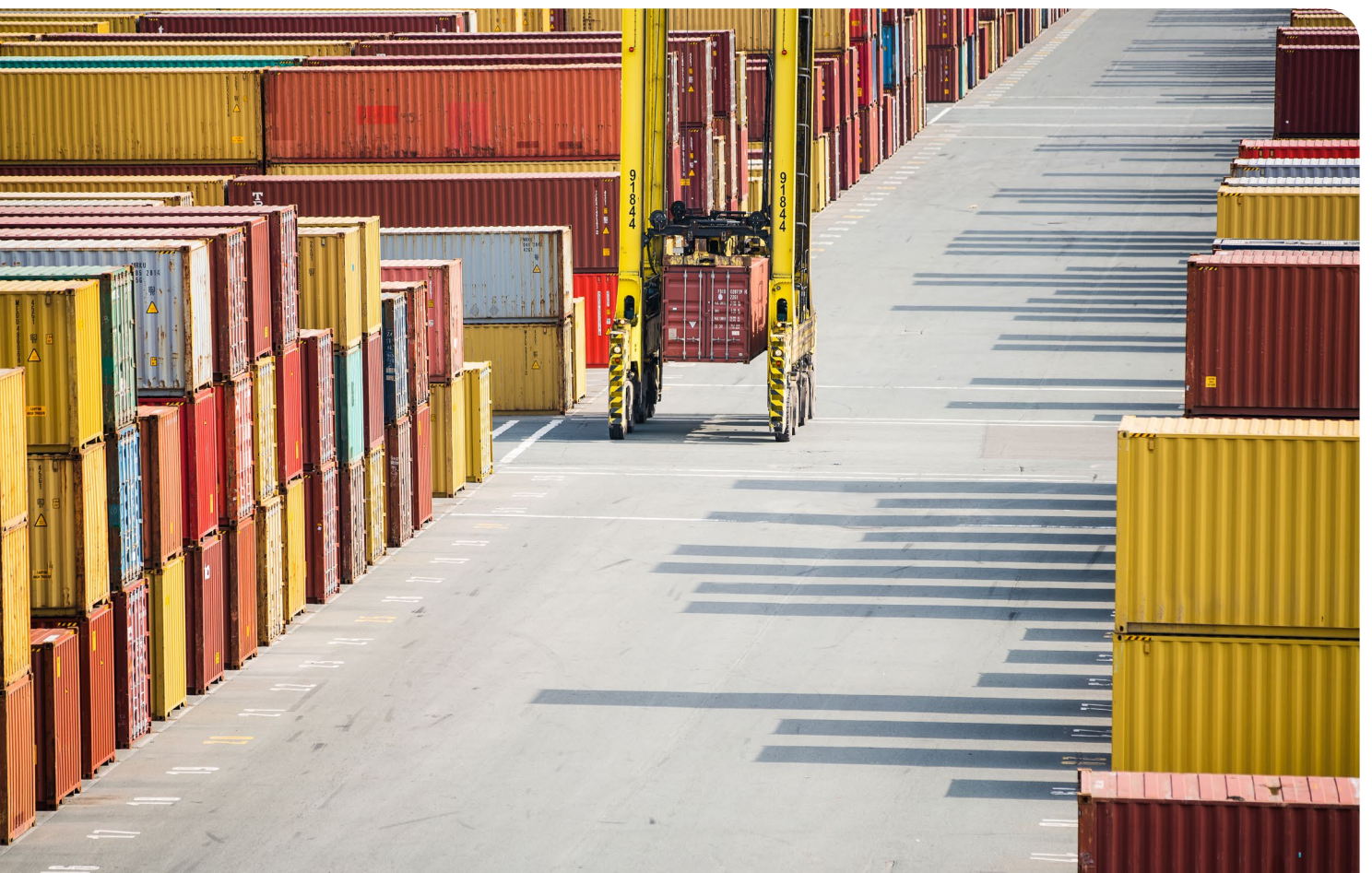
Supporting
Our
Communities



Keeping Our
Ports Safe
and Secure

ENSURING RESPONSIBLE OPERATIONS

We believe in the importance of implementing responsible development and operation practices to minimise environmental pollution and conserve resources for the wellbeing of our people and the sustainability of our planet. At PSA, this involves ensuring that port development and operations take into account and address environmental impacts, both on land and in the sea, as well as the responsible consumption and discharge of water, and management of waste in our operations. Our Group HSSE (Health, Safety, Security and Environment) Policy defines how we operate by incorporating leading environmental practices into our business strategy and operations, and by committing to continuous improvement.



Sustainable Port Development

We commit to embed sustainability into any port infrastructure development, working with local authorities to ensure we consider and address any environmental impacts from land development, reclamation and construction. At business unit levels, new infrastructure projects are developed in compliance with the requirements of environmental consents for each project.

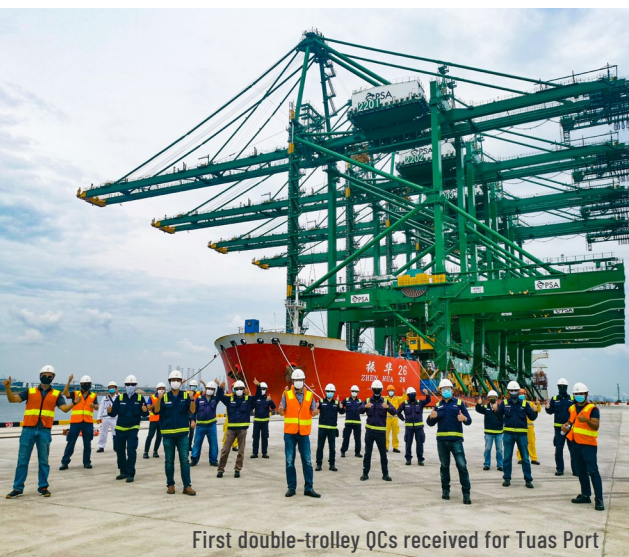
Port of the Future

The development of Tuas Port, situated at Singapore's western seaboard, is a prime example of how we plan and design ports of the future with innovation and sustainability at their core. To be progressively developed in four phases, with completion in 2040, Tuas Port will be the largest fully automated container terminal in the world, with an annual handling capacity of 65 million TEUs.

While designed to be future-proofed for the demands of the world's largest mega-vessels and mega alliances, it also strives to reach new heights in environmental sustainability and efficiency. From the start, the Maritime and Port Authority of Singapore (MPA), with PSA Singapore's inputs as terminal operator, designed Tuas Port to be built on reclaimed land with more than 50% of the total fill materials for Phases 1 and 2 comprising re-used dredged material and excavated earth from other construction projects. Reusing such materials reduces the reliance on sand extraction and transportation for reclamation. Environmental impact assessments were conducted

to establish strict environmental quality objectives for compliance during the reclamation works. A S\$6 million programme was implemented to relocate impacted corals together with nature volunteers and non-governmental organisations, and the relocated corals survival rate was 80%.

PSA Singapore continues this focus on environmental sustainability and efficiency in Tuas Port's terminal design, by incorporating innovations such as intelligent data-driven operations management systems, wharf and yard automation, full-electric automated guided vehicles, as well as smart engineering and power management platforms, all directed towards enhancing efficiency and sustainability. The wider Tuas Ecosystem, comprising synergistic industries and supply chain activities, is envisioned to be a dynamic and future-ready community interlinked by a seamless mesh of physical and digital connections, strengthening the local business climate while demonstrating the harmonious co-existence of sustainability and economic growth.



First double-trolley QCs received for Tuas Port



Tuas Maintenance Base (TOP April 2021)

Sustainable Buildings

In 2020, PSA implemented a framework incorporating new sustainability requirements for the construction of new buildings and major building refurbishment projects with immediate application. The framework details PSA's global requirements to embed sustainability into the design and construction of PSA buildings around the world. It stipulates commitments in seven key areas to increase environmental sustainability and cost-savings, while creating comfortable workplaces for our staff. For example, all new developments are required to deliver a waste minimisation and recycling strategy in the planning stages.

7 KEY AREAS FOR SUSTAINABLE BUILDINGS

SITE WIDE CLIMATE ADAPTATION

ENERGY & CARBON

WASTE & MATERIALS

WATER

HEALTH & WELLBEING

ECOLOGY

MONITORING & REPORTING



The use of eco-friendly building materials is also an important feature. Recognising that concrete production accounts for approximately 8% of global carbon emissions and that significant quantities of concrete are utilised in our port infrastructure projects and terminals buildings, PSA has developed a sustainable concrete framework to reduce the embodied carbon footprint of our construction projects.

We are seeking to maximise the use of more sustainable cement substitutes that are made from industrial by-products in PSA terminals around the world, to reduce the environmental impact of using Ordinary Portland Cement (OPC).

Using products such as ground granulated blast-furnace slag (GGBS) to replace OPC can provide carbon emissions savings of up to 50% for reinforced concrete while also increasing the durability of the concrete.

We aim to implement the PSA Recommendations for Sustainable Concrete for 80% of new civil infrastructure construction projects (PSA-owned and over S\$65 million in value) by 2030. We also aim, as an interim target, to ensure that 50% of our new civil infrastructure construction projects implement the recommendations by 2023.

PSA Horizons: At the Cutting-edge of Building Sustainability

The new PSA headquarters in Singapore, PSA Horizons, is a living model of our vision for green building excellence. The building design incorporated a host of energy efficient and environmentally friendly solutions, which are expected to reduce its energy consumption by about 37% per year as compared to a standard building. They include:



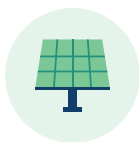
HIGH-PERFORMANCE GLASS

Each piece of glass on the building has a special coating to minimise the amount of ultraviolet/infrared light passing through, thus keeping the building cool while allowing maximum daylight penetration.



SMART LIGHTING

Digital Addressable Lighting Interface (DALI) based lighting system with motion sensors turns on the lights only in the presence of people and slowly dims and turns off once people have left the area to reduce energy usage.



SOLAR PANELS

500 solar panels on the rooftop generate about 300 MWh of clean electricity to help with our power needs.



EFFICIENT BUILDING DESIGN AND MATERIALS

The building is designed to have no direct west-facing facade which reduces heat gain by 28%. Efficient materials used include low-carbon and lightweight sustainable concrete. Up to 80% PBFC concrete was applied in the construction of PSA Horizons.



RAINWATER COLLECTION SYSTEM

Large tanks collect rainwater used for the automatic sub-soil drip irrigation system for the watering of landscape plants. In addition, a system treats at least 35% of storm water runoff from the building development before discharge to public drains, going over and beyond the minimum regulatory requirements.

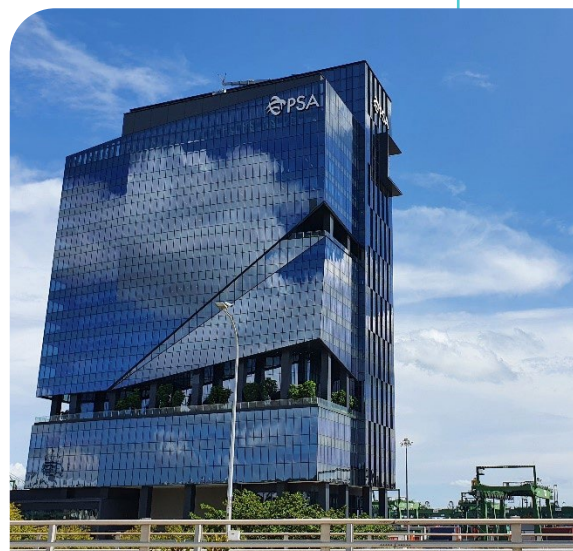


INTEGRATED ENERGY MANAGEMENT SYSTEM

A central management portal controls all the energy assets distributed within the complex. It works closely with the Battery Energy Storage System (BESS) and solar panels.

PSA Horizons received the Building Construction Authority (BCA) Green Mark Platinum Award that recognises outstanding achievements in environmental sustainability in the built environment.

PSA's Tuas Maintenance Base has also been awarded BCA's Green Mark Platinum Super Low Energy Building (SLEB). With the employment of active and passive system designs to reduce energy use, Tuas Maintenance Base is expected to achieve 58% savings on annual energy costs versus a standard building's consumption.



Marine Protection and Conservation

We are conscious of the potential impact on marine biodiversity from development and construction projects, as well as ongoing terminal operations and maintenance, that we may undertake in partnership with local port authorities. Land reclamation or dredging activities can disrupt marine and coastal habitats, and marine pollution from waste water and solid waste can negatively impact ecosystems, if not managed well. As a global terminal operator and major partner to many port authorities for port development, PSA is committed to actively encourage nature conservation, pollutants reduction and proper management of waste wherever we operate.



Nature Conservation at DCT Gdańsk

DCT Gdańsk port area is partially located on Natura 2000 sites, which is a network of nature protection areas in the territory of the European Union.

When DCT Gdańsk started its terminal construction, it was aware of the significant environmental impact the project could have on the surrounding coastal habitats which were rich in biodiversity, including the presence of valuable bird species as well as protected and rare dune plant species.

To preserve their natural habitats, DCT Gdańsk built a protective birds' nesting platform. This included fencing off the part of the beach adjacent to the terminal, where nests and breeding sites were built for the four species: common ringed plover, shelduck, merganser and little tern. The part of the beach where protected species of birds settled is under permanent supervision of ornithologists.

DCT Gdańsk also worked with the Biological Station of the University of Gdańsk and the Foundation for the Development of the University of Gdańsk to build the only artificial sand dune in Poland, which was located in the port area. The "Dune Laboratory" was designed to imitate the natural coastal habitat as closely as possible and several species of dune plants were planted.

Besides nature conservation, the project also provided education and recreation opportunities. DCT Gdańsk sponsors trips and biological workshops at the UG Biological Station, where the dune is located, for school students and nursing home residents in the vicinity.



Our Group HSSE Management System requires all business units to assess and manage their environmental impacts, ensure compliance to local environmental laws and regulations, and ensure continual improvement. Business units must have a legal register that takes into account and monitors all relevant HSSE local regulations to ensure compliance. They are also required to track any HSSE fines and penalties paid in the current year resulting from non-compliance with HSSE regulations, as part of Group HSSE Performance Monitoring and Reporting Parameters. No significant fine and non-monetary sanction for non-compliance with environmental laws and/or regulations was reported in 2020 by any business unit.

Water Use and Pollution

Within our terminal areas, water is mostly withdrawn from third-party water providers. In some regions, we also draw water from water wells, seas and rivers. Water is mainly used for maintenance and repair of daily facilities, berths and yard cleaning, as well as for use in office buildings and canteens.

As per the Group HSSE Policy, use and discharge of water must be in line with local regulatory authority requirements and guidelines. Business units must adopt necessary measures as per regulations to manage waste water and ensure waste water quality meets the necessary legal requirements before discharge.

Total Water Withdrawal of the PSA Group in 2020 (megalitres)

Water Source	Water Withdrawal from Water-stressed Areas	Water Withdrawal from Non Water-stressed Areas
Surface Water	3	32
Groundwater	12	17
Seawater	-	11
Third-party Water	384	2,225
TOTAL	399	2,285

Water-stressed areas are determined using the WRI Aqueduct Water Risk Atlas tool accessed in June 2021. Water-stressed areas are areas where the ratio of total annual water withdrawal to total available annual renewable water supply (i.e. baseline water stress) is high (40-80%) or extremely high (>80%), based on recommendations by GRI Standards 303: Water and Effluents 2018.

PSA is committed to actively manage and work towards reducing our water footprint. Water reduction initiatives include the installation of water efficient plumbing and sanitary wares, water usage monitoring processes and employee awareness sessions around water conservation. Across our terminals, treated waste water is recycled and rainwater is harvested for activities such as car washing, sanitary facilities, gardens and workshops.

At PSA Antwerp, for example, domestic waste water is purified on site and then discharged into the surface water of the dock complex having sufficiently met quality standards. In addition, rainwater collection tanks with a total capacity of 345,000 litres also help reap annual savings of 3 million litres of potable water. In Colombia, Sociedad Puerto Industrial Aguadulce (SPIA) employs a rainwater harvesting system and water treatment plant to provide for the water consumption needs in the terminal. Rainwater is collected in the bladder tanks of the treatment plant and undergoes filtering, ozone and ultraviolet (UV) light treatment, before being used for potable consumption and non-potable uses. In 2020, more than 10 million litres of water, or 92% of water used in SPIA was obtained from harvested rainwater.

Waste Management and Recycling

Waste generation at PSA generally results from port equipment maintenance activities (waste oil, batteries, rope and lashings), office operations (general waste such as paper, plastics, food) and storage facilities (pallets and plastic wrappings). All waste storage, treatment and disposal practices must comply with the Group HSSE standards at a minimum as well as local regulations. Business units must adopt necessary measures to minimise waste generation, optimise reuse and recycling, and properly dispose of waste.

For waste disposal, business units are required to make use of government-approved disposal sites, methods and contractors with professional qualifications where appropriate. If licensed third-party waste and recycling companies are engaged, they must ensure the waste transport, disposal and recycling practices are compliant with the local regulations. They are required to retain the waste disposal and tracking records for periods defined by the local legal requirements.

At our terminals, recycling of generated waste is implemented as much as possible. Waste recycled include empty chemical drums, used tyres, vehicle batteries, steel cables and air-conditioning units.

In 2020, waste minimisation through 3Rs (reduce, reuse, recycle) was the selected theme for the group-wide Go-Green programme. Initiatives like awareness talks, recycling drives and upcycling workshops were organised for PSA employees around the world to promote a sustainable 3Rs culture and cultivate environmental consciousness. Business units also initiated collection drives to reuse and recycle pre-loved items. Collectively, more than 3,000 kg of items including e-waste, clothes, plastic bottles and pre-loved books were collected and sent to appropriate recycling plants or donation centres to give these items a second lease of life. At our Mersin International Port and Beibu Gulf terminals, we saw our colleagues creatively reusing discarded tyres, empty containers and scrap wood to construct a children's playground and a mini garden respectively.



We are standardising and collating waste data across our business units as part of our goal to establish a global waste reduction and recycling plan by 2023, which includes assessing waste streams and identifying opportunities for waste reduction and recycling. We intend to disclose our group waste data in subsequent reports.

PROTECTING OUR PEOPLE

Protecting the health, safety and wellbeing of our people is our primary responsibility as they strive daily to keep global supply chains moving. To be safe from harm at work is a basic human right that we respect and we aim to make PSA a safe and conducive place to work. We believe in achieving this through building strong and resilient labour-management relationships that promote trust and collaboration.



Workplace Health and Safety

The PSA Group HSSE (Health, Safety, Security and Environment) Policy and Management System framework, driven by the Group HSSE department, ensures that we implement and enforce workplace health and safety practices, and comply with health and safety laws and regulations across all our business units.

Managing Health and Safety Risks

PSA Group HSSE Management System (HSSE MS) is aligned to ISO 45001:2018, an international standard for occupational health and safety management. Business units are required to implement the HSSE MS and are audited by Group HSSE on their compliance to the framework requirements upon completion of implementation and regularly thereafter. Business units that do not perform hazardous activities (such as IT and regional offices) are not required to implement the HSSE MS. In these workplaces, appropriate feedback channels and control measures are put in place to ensure their workers remain safe and healthy.

Under the HSSE MS, business units are required to identify the hazards that are relevant to their locations and scope of work, and assess and manage the risks associated with these hazards using the Hazards & Effects Management Process (HEMP), which is our risk management methodology. This is done whenever there are significant changes to the operations or activities at the business unit, the occurrence of a safety incident or local regulatory circumstances that call for a review. A governance structure is set up by each business unit to show who is responsible for implementing the Group HSSE MS requirements, monitoring performance, leading continuous improvement plans and managing the health and safety skill pool.

Employees are encouraged to report unsafe behaviours, hazardous situations or any other health and safety concerns to their manager, safety leader or through other feedback mechanisms. Our HSSE MS ensures that workers can do this without threat of dismissal, disciplinary actions or other reprisals. Workers can also stop work without fear of reprisal if they consider that the work presents an imminent danger to their health and safety.

Business units are required to conduct HSSE inspections and reviews of work practices to ensure compliance with health and safety requirements. Actual or potential non-compliances that have been identified will be addressed by relevant preventive and corrective measures, with the follow-up and closure of such measures conducted by the appropriate persons.

As part of workplace hazards identification, occupational health risks must be identified and managed by the business units. In addition, the business units must adhere to the group-wide HSSE standards for occupational health such as hearing conservation and drug & alcohol standards. For example, business units are required to identify tasks and areas where noise levels may result in noise-induced hearing loss. Following this, noise exposure has to be reduced to as low as reasonably practicable using the hierarchy of controls. The Hearing Conservation Programme at PSA Singapore was implemented to minimise such occupational noise hazards which may be present in the working environment and to prevent noise-induced deafness.

To safeguard the health and safety of suppliers or contractors working within our premises, we ensure that contracts consistently and effectively cover the management of health and safety risks. During the bidding process, contractors are evaluated on their safety performance record and whether they have the capabilities and resources to manage risks. After awarding the contract, the contractors are required to assess and manage the HSSE risks, and communicate relevant information on the relevant HSSE risks and controls. HSSE inductions are conducted for contractor personnel prior to starting work, with regular monitoring and assessment of the contractors' HSSE performance.

Building a Culture of Safety

As part of the HSSE MS, business units are to ensure that workers are consulted in implementing the framework requirements, such as on the assignment of roles, responsibilities and accountabilities, identification of training needs, as well as changes affecting workplace risk assessment. This is done through their participation in risk assessment teams, safety committees or other processes at the business unit level. Safety committees typically comprise of management, employees, union representatives who meet regularly to discuss safety issues, such as compliance to local regulatory requirements, incident reviews or findings from joint inspections.

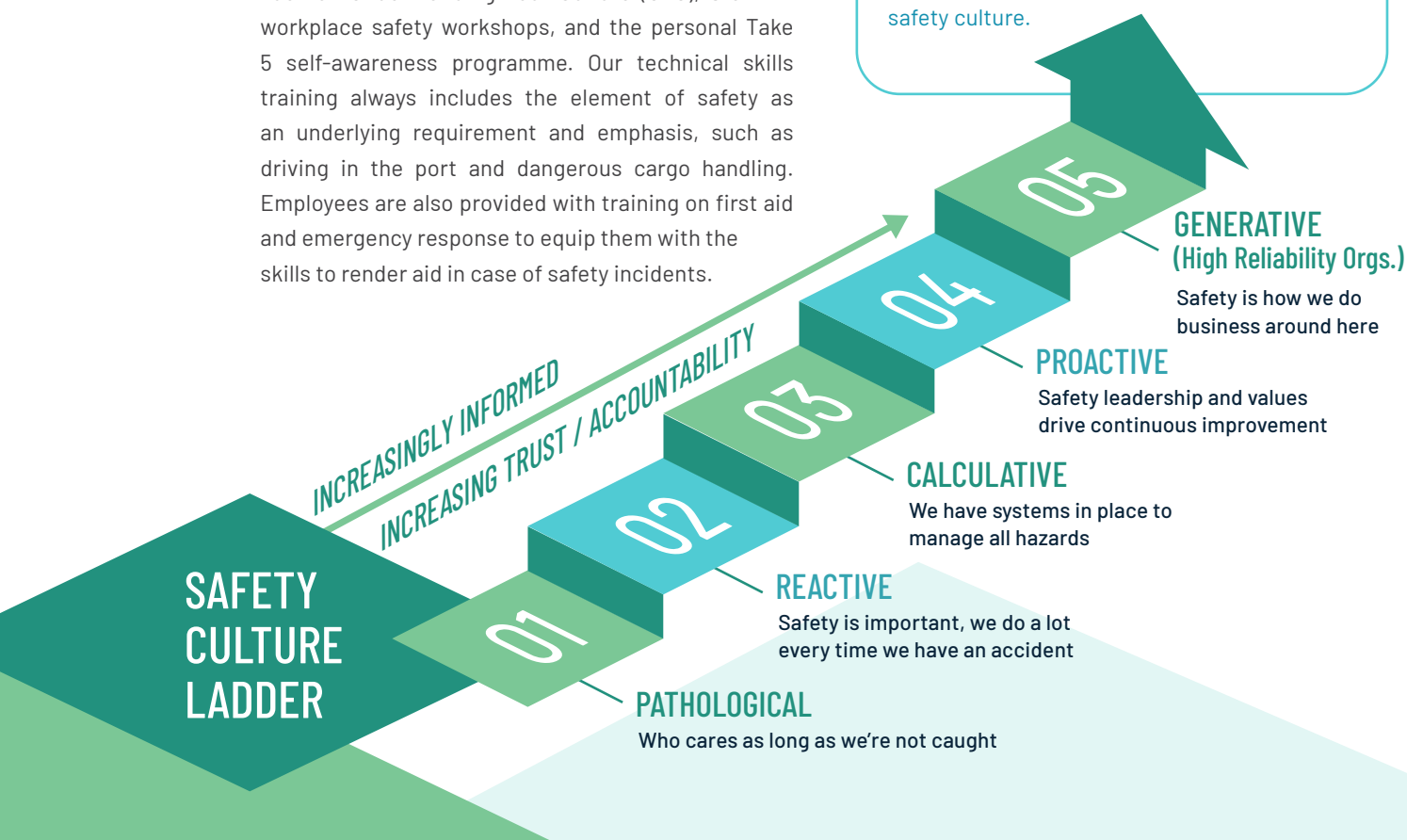
Other than such meetings, health and safety information is communicated to workers through daily toolbox briefings, posters or notices on bulletin boards or employee communication apps, email reminders, safety review meetings, safety training and quizzes. The annual PSA Safety Week takes place in the first quarter of each year to reinforce the importance of safety. Leadership commitment to safety is demonstrated in annual safety-themed video messages by our Group and Regional CEOs.

Group-wide programmes to improve safety awareness and embed a safety culture are rolled out globally, such as Understanding Your Culture (UYC), StarFish workplace safety workshops, and the personal Take 5 self-awareness programme. Our technical skills training always includes the element of safety as an underlying requirement and emphasis, such as driving in the port and dangerous cargo handling. Employees are also provided with training on first aid and emergency response to equip them with the skills to render aid in case of safety incidents.

Understand Your Safety Culture

Since 2016, we have introduced Understand Your Culture (UYC) initiative to PSA business units. This initiative aims to provide the business units with a better understanding of the current safety culture and how to improve it. A strong safety culture requires the business unit to climb up the safety culture ladder, moving up from pathological to generative.

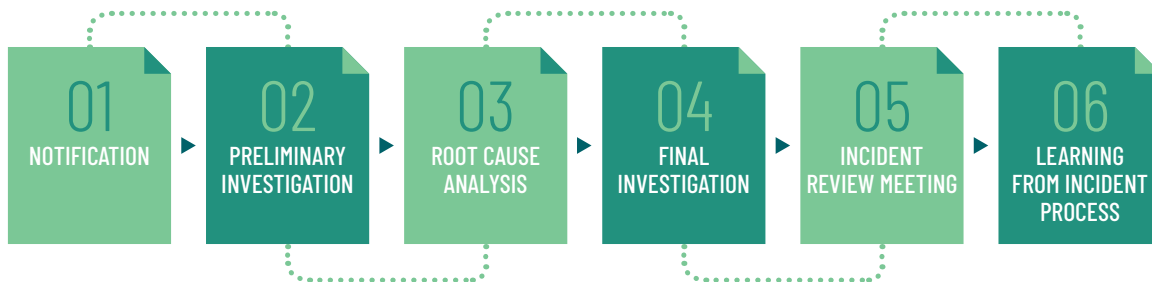
Through the UYC workshop, participants provide their feedback in relation to relevant dimensions of safety culture. Their inputs are collated to tabulate an overall score for the business unit, showing their position on the safety culture ladder. The workshop also allows the participants and management to identify areas of weakness in their safety culture, as well as relevant measures that can help to close the gaps. Moving forward, business units strive for continuous improvement by conducting a survey annually to track the evolution of their safety culture.



Incident Reporting

All workers must report any incidents, including near misses, to their supervisor of the work activity. Business units are required to investigate and analyse all workplace incidents, including the use of a risk assessment matrix to classify the incident and a root cause analysis tool. All incidents are logged in an online platform, which is also used to report and track safety statistics such as monthly employee and contractor exposure hours.

INCIDENT INVESTIGATION PROCESS



Adopting Technology to Prevent Accidents

At PSA Singapore, predictive analytics has been adopted as a key enabler to identify and prevent accidents during prime mover and container handling operations. For example, using telematics data from sensors installed on prime movers, drivers who performed risky driving behaviours such as hard braking and sharp turnings, can be identified, and sent for Intervention Programmes (IPs) before an accident can occur. This has led to 97% of IP participants remaining accident free, and 80% of the IP participants improving their telematics safety scores.

Video Analytics (VA) and sensors have also been applied to increase safety surveillance. In situations where human eyes are unable to check and enforce safety procedures and requirements around-the-clock, VA is deployed to detect safety infringements and unsafe conditions during lashing and prime mover operations. This will then trigger immediate intervention.

At Fuzhou Container Terminal, thermal sensors and alarms have also been installed to detect and warn personnel potentially walking under suspended loads of quay cranes.

PM DRIVERS PROFILING

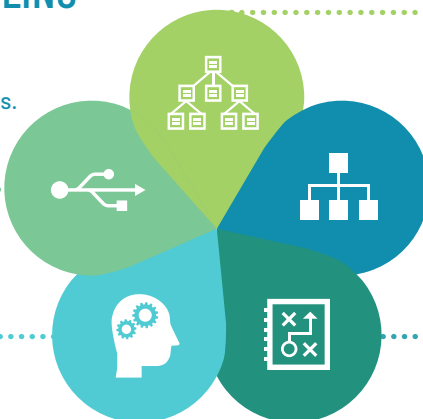
Use of different statistical methods in identification of higher risk prime mover drivers.

REGULARIZED REGRESSIONS

- Ridge
- Lasso
- Elastic Net

NEURAL NETWORK

- Ability to learn and model non-linear and complex relationships.
- Does not impose any restrictions on the input variables.



ALGORITHMS USED

RANDOM FOREST

- An ensemble classifier that consists of many decision trees.
- Handy for a quick understanding of what features are important.

GRADIENT BOOSTING MACHINE (GBM)

- Popular decision tree method.
- Grows many trees in a sequential manner.

SUPPORT VECTOR MACHINE (SVM)

- Fits a hyperplan that best separates the data into different domains.
- Effective in the higher dimension.



Health and Safety Performance

The main types of high consequence work-related injuries sustained by employees or contractors include vehicular accidents, lashing-related injuries and falls from height. The business units take corrective and preventative actions to eliminate identified hazards and minimise risks, including equipment modifications, review of work methods and safety campaigns.

We consistently track the number of work-related injuries and fatalities that have occurred. Our Group CEO personally conducts reviews on all fatalities, safety incidents resulting in permanent disabilities and high potential safety incidents. Also, safety performance data is discussed at Board meetings every six months.

In 2020, we recorded one fatality sustained by employees, where a prime mover driver was fatally injured by a fallen empty container. Two fatalities were sustained by contractors, involving a lashing worker onboard a berthed vessel and a technician who fell from height. We will continue to work closely with our employees and contractors to manage and monitor safety risks, including safety inductions and reminders for personnel while working on our premises. We are committed to working towards our target of zero significant incidents across the PSA Group. Significant incidents refer to safety incidents resulting in fatality or permanent disability.

Safety Performance for the PSA Group in 2020

	FATALITIES		SAFETY INCIDENTS RESULTING IN PERMANENT DISABILITY		RECORDABLE WORK-RELATED INJURIES	
	NUMBER	RATE*	NUMBER	RATE*	NUMBER	RATE*
Employees	1	0.02	0	0	121	2.36
Contractors	2	0.04	2	0.04	199	4.21

*Rate is calculated by No. of incidents/Number of hours worked x [1,000,000].

LOST-TIME INJURY FREQUENCY RATE (LTIFR): 3.25

Per million hours worked by employees and contractors

Labour Relations and Worker Wellbeing

We always endeavour to forge collaborations and partnerships for the mutual good of our company and employees represented by the labour unions. We recognise the need to work closely with the unions to safeguard the interests and wellbeing of our employees, and provide a work environment in which they can find personal and professional satisfaction.

PSA believes in constructive labour-management relations as a key success factor. This is fundamental to the way we do business and our continued success. We continue to maintain an open line of communication with the International Transport Workers' Federation (ITF) and to promote positive union engagements.

We fully support the rights of our employees to exercise freedom of association and collective bargaining. Collective labour agreements are country specific, based on local laws, regulations and best practices. As part of our Code of Business Ethics and Conduct ("The Code"), we are committed to respecting the views of unions and seek the amicable resolution of issues with the unions in a manner that is constructive, open, honest and ultimately beneficial to all parties concerned.

Regular dialogues are held with union representatives and employees to discuss any issues pertaining to the workforce or operational changes. Minimum notice periods regarding operational changes are provided to employees as specified in the labour agreements or labour laws. Labour agreements also include matters like job redesign, upskilling, professional development and employee benefits.

Certain employment benefits provided to employees under such labour agreements will differ by business units depending on their country of operation. Most employees are covered under company health insurance. Some of the business units also subsidise medical consultation at appointed clinics or services at health centres. Other initiatives to promote better employee health and wellbeing include customised health programmes to address occupational health hazards, smoking cessation programmes, health awareness talks, nutritionist consultations and gym access.



Staying alongside employees and unions during COVID-19

PSA Singapore has enjoyed many years of good relations with its unions - the Singapore Port Workers Union (SPWU) and the Port Officers' Union (POU). The year of COVID-19 was no exception.

Regular virtual communications took place between PSA senior management and union representatives, ensuring that our workforce continued to be updated and aligned in terms of business outlook and upcoming plans.



Oldest union in Singapore registered in 1946, representing the rank & file



Registered in 1967, representing the executives

PSA Singapore also embarked on joint efforts and collaborations with the unions including new initiatives and partnerships to bring our workforce up to speed with digitalisation, such as the use of online collaboration tools for effective communications, learning and development. Team-building and professional development seminars continued to take place virtually, despite COVID-19 challenges, to maintain strong relations with our unions and tripartite partners.



ACTING WITH INTEGRITY

We are committed to following the highest standards of ethics and integrity, with accountability to our customers, our people and the unions that represent them, our partners, governments, the local communities and the environment.



Ethical Business Conduct

PSA is committed to conducting our business with the highest standards of ethics and integrity, in full compliance with anti-corruption and anti-bribery laws, and maintaining a zero tolerance stand towards fraud.

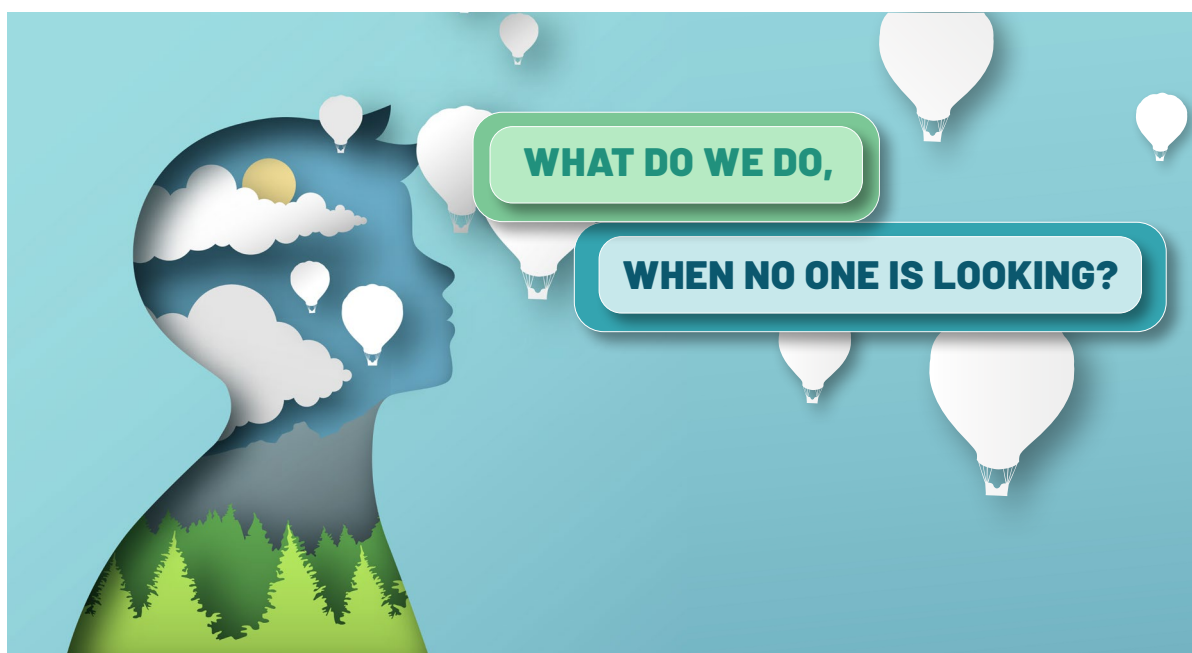
Our Code of Business Ethics and Conduct ("The Code") sets out the standards of behaviour expected of all PSA employees. It serves as a compass to guide our ethical choices, especially when faced with situations of improper, illegal or unethical conduct. Under The Code, all PSA employees must comply with all laws and authorities, observe properly incurred duties to third parties and act in accordance with the highest standards of ethical, personal and professional conduct.

The Code is provided to all employees upon joining the company and regular refreshers given through e-learning or emails to ensure they stay updated on the content. A copy of The Code can also be found on [our website](#). All employees are expected to adhere to The Code at all times. Violation of The Code will not be tolerated, and violators will face disciplinary action, which may include dismissal from employment by PSA.

The Code covers the following:

- The ethical foundations upon which our business is built, including our Core Values and Business Principles
- Respectful workplace culture based on responsibility to one another and teamwork
- What constitutes ethical behaviour in the conduct of business, including fair and open competition, anti-bribery and corruption, anti-fraud
- Prohibition of conflict of interest
- Prohibition of improper behaviour or any conduct that would otherwise bring PSA into disrepute, such as money-lending and illegal possession of drugs
- Assurance of healthy, safe and secure work environment
- Respect for the environment and compliance with all local environmental laws
- Treatment of information
- Relationships with stakeholders
- Whistle-blowing

The Code supplements other PSA policies and guidelines addressing more specific obligations and compliance.



Whistle Blowing

PSA has established the Whistle Blowing policy for its employees, business partners and others to report any concerns they may have in regard to compliance with The Code, or the laws and regulations that govern PSA's business, without fear of reprisal.

Employees and external parties have access to an Ethics Hotline and email to report any misdeeds or improprieties committed by the management or staff of the company, or by vendors. Such improprieties include but are not limited to:

- Fraud or suspected fraud, thefts and dishonest acts
- Profiteering as a result of insider knowledge
- Accepting or giving bribes
- Intimidation, discrimination or harassment of staff and other persons during the course of work or in the capacity of a PSA employee
- Misappropriation of funds
- Disclosure of confidential information to outside parties
- Conflict of interest in business dealings with external parties

Disclosed reporting (i.e. disclosure where the whistle blower identifies himself / herself) will be handled and investigated, with the appropriate measures taken to protect the whistle blower.

Concerns or issues can also be raised through other channels where appropriate, including through:

- The immediate supervisor
- The head of department
- Head, Group Internal Audit
- Global Head of Human Resource
- Audit Committee Chairman or members
- The Board of Directors

To ensure that PSA has a single repository of all reported cases, a centralised unit called the Whistle Blowing Unit is tasked to handle all matters relating to whistle blowing. The Unit comprises Group Human Resources, Group Internal Audit and other parties co-opted into the Unit as and when required, e.g. Group Legal. All matters reported will be reviewed within a reasonable time frame by the Whistle Blowing Unit and a decision taken on whether to proceed with a detailed investigation. Depending on the nature and severity of the case, the Whistle Blowing Unit will conduct the investigation and seek guidance and direction from a Review Panel comprising Senior Management where necessary.

Quarterly reports on cases reported will be submitted to the Review Panel and the Audit Committee.

Bribery and Corruption

We stand strongly against bribery and corruption. Beyond reputational damage and financial cost to the industry, it also undermines the business environment.

PSA complies with all the laws of the countries in which it operates and conducts its business, particularly in full compliance with anti-corruption and anti-bribery laws. The provision or acceptance of any type of bribe, kickback, payoff or inappropriate gratification or advantage, directly or indirectly, is strictly prohibited. This also applies to unauthorised, illegal or improper payments. This rule is enshrined in The Code which is communicated to all employees as part of the staff onboarding programme.

In PSA Singapore, beyond internal stakeholders, we communicate our stance and policy on anti-bribery and corruption to our business partners and suppliers by incorporating relevant clauses into our contracts.



Sustainable Procurement

We recognise that our purchasing decisions can have significant environmental, social and economic impacts as a company with an international presence. Sustainable procurement thus plays an important role in our commitment to protect the environment and to promote positive social impact in our supply chain.

Our procurement teams across the PSA Group of business units seek to adhere to this principle, with due consideration to supplier diversity and engagement. Each business unit has its own procurement guidelines, which adhere to the Group Finance Policies and Procedures, Group HSSE Policy and The Code in giving due consideration to safety and environmental issues in all commercial and business decisions.

Unlike the manufacturing sector where a large portion of procurement covers materials for cost of goods sold, we source for goods and services needed to keep the port running. As such, most of our expenditure is on indirect procurement. Key operating expenditures include energy (fuel and electricity), manpower (labour, logistics, services), maintenance (spare parts and services) and consumables (wire-rope, lubricant, tyre, PPE). For capital expenditures, key categories include port equipment (ship-to-shore and yard cranes), port construction (design, dredging, civil and construction) and IT (infrastructure, network and development). These are largely sourced within the geographic locations of our business units, with some regional or group deals.

Currently, business units incorporate environmental and social criteria into their procurement evaluation, depending on the local context and values, e.g. for material purchases or to support business requirements on emissions reduction or energy conservation. At PSA Singapore, key local legislations such as the Workplace Safety and Health Act, Environmental Protection and Management Act and Resource Sustainability Act are taken into consideration in the procurement process. Tender applicants for contracts of more than S\$250,000 in value are required to meet minimum Health, Safety,

Security and Environment (HSSE) requirements such as the national workplace health and safety certification BizSAFE Level 3. Business units including Mersin International Port, Exolgan and our Korea terminals have developed a Supplier Code of Conduct to communicate expectations on ethical practices and compliance with all laws and regulations.

Increasingly, PSA as a group is procuring greener products and solutions, ranging from sustainable concrete and eco-friendly building fixtures to port equipment powered by LNG, hybrid and electric engines.

To develop a more consistent application of procurement guidelines and better manage sustainability risks in our supply chain, we have set up the Group Procurement unit in 2020, with the aim to develop a Sustainable Procurement policy at the group level in 2021 and roll it out in 2022. We recognise that this is a journey and that we need to educate ourselves and our suppliers on how to implement sustainable practices, whilst keeping company needs for cost efficiency and supply chain resiliency in mind.



Public Policy

At PSA, we build our business shaped by the tenets of sustainable growth and mutual advantage, collaborating with like-minded partners to strengthen the resilience of global supply chains and contribute to the shaping of public policy for the wellbeing of the industry and our stakeholders.

As a regulated business, often with significant national implications for economic and social development, we seek to build a trusted and collaborative relationship with public sector stakeholders, including governments and regulators, to engage on issues that are critical to shaping the development of the port and logistics industries in the countries where we operate. They broadly include talent and capability

development for the industry, maritime policies, labour conditions, port and terminal development, corporate social responsibility and sustainability issues.

Tapping on PSA's resources, expertise and networks, we contribute to the discussion and development of public policies in these areas, through participating in multi-stakeholder dialogues and joint initiatives at regional and local levels. PSA leaders also participate in external speaking engagements and public forums to share insights with the maritime industry and community at large and contribute to thought leadership in topics ranging from digitalisation and low-carbon economy to stakeholder capitalism and post-pandemic recovery.



PSA Senior Management Council Members' Participation in External Engagements



DBS ASIAN INSIGHTS CONFERENCE **JULY 2020**

Leading a Business Through a Post-Pandemic World

WORLD BANK (TRANSPORT) WEBINAR **JUNE 2020**

COVID and Beyond: Maintaining Global and Domestic Logistics

SINGAPORE ECONOMIC DEVELOPMENT BOARD (EDB) WEBINAR **AUGUST 2020**

3 Supply Chain Trends to Watch in SEA

14TH SINGAPORE MARITIME LECTURE **SEPTEMBER 2020**

GCNS VIRTUAL SUMMIT **OCTOBER 2020**

Towards a Tipping Point: the imperative to shift focus from shareholders to stakeholders

SINGAPORE INTERNATIONAL ENERGY WEEK SUMMIT **OCTOBER 2020**

Building a Low Carbon Economy

SAUDI ARABIA G20 PRESIDENCY WEBINAR **NOVEMBER 2020**

Developing Industry Training and Career Pathways

In Singapore, PSA also collaborates closely with government agencies and Institutes of Higher Learning to support talent and capability development for the port industry. This includes offering structured training and professional development certification courses to groom new talent as well as promoting skills mastery, lifelong learning and capability building.

Below are some examples of collaboration with Institutes of Higher Learning in Singapore.



Institute of Technical Education

- Work Study Diploma in Port Automation Technology
- Nitec in Port Equipment Technology
- ITE Skills Certificates (ISC)



- Work-Study Post-Diploma (Specialist Diploma in Port Management and Operations)



NGEE ANN
POLYTECHNIC

- Certificate in Maritime Motion and Control Systems



SINGAPORE
INSTITUTE OF
TECHNOLOGY

- Specialist Certificate in Systems Engineering

PSA also collaborated with SkillsFuture Singapore (SSG) to develop and implement the Skills Framework for Sea Transport sector to help individuals better assess career interests, identify relevant skills to develop, and prepare for desired job roles in the sector.

Career Pathways in Sea Transport Sub-sectors



PORT OPERATIONS

- PORT INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)
- PORT ENGINEERING
- TERMINAL OPERATIONS
- PILOTAGE



SHIPPING

- SEAFARING
- SHIP MANAGEMENT
- SHIPPING OPERATIONS
- COMMERCIAL MANAGEMENT
- BENEFICIAL CARGO OWNERS (BCOs)



MARITIME SERVICES

- BROKERAGE
- MARINE INSURANCE
- SHIP FINANCE
- TECHNICAL SERVICES

Collaborating for Greener Logistics

The Government of Canada's CAD\$2.3 billion National Trade Corridors Fund (NTCF) was launched in 2017 to support and fund infrastructure projects in Canada. Together with the Halifax Port Authority, the Halifax Regional Municipality and the Canadian National Railway (CN), PSA Halifax (PSAH) is participating in a NTCF project designed to shift truck traffic to rail to reduce the carbon footprint of cargo transport.

The project involves enhancing existing rail infrastructure through additional rail tracks and switching units while developing commercial end-to-end solutions for Beneficial Cargo Owners (BCOs). For example, BCOs will benefit from no

longer needing to hire trucks for long journeys and can instead replace them with short shuttle trips to inland rail depots. Through this project, green miles will be encouraged as the relative environmental impact of rail per box is much less than that for truck. Container truck traffic congestion and social impacts to the city's downtown core will also be reduced.

PSAH, together with CN, will continue to play a crucial role in ensuring the entire journey leg (truck to rail to port) is well supported, efficient, affordable and contributing towards national transportation and carbon reduction objectives.

SUPPORTING OUR COMMUNITIES

As a global business, we are defined not just by commercial performance but our contributions to the local communities in which we operate. We believe that the ESG aspect of our success is measured by what we do alongside the communities, to make a positive impact to their lives and wellbeing. We seek to use our talents and resources to contribute to the betterment of our communities around the world.

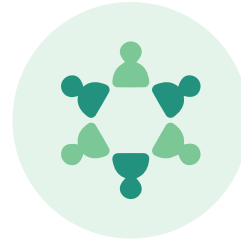


Community Engagement and Social Responsibility

Community engagement and corporate social responsibility (CSR) programmes are initiated at the group and business unit levels to positively impact our local communities. They include fundraising initiatives, sponsorship of humanitarian programmes or community projects, education and capability development, and regular employee volunteering activities.

In 2020, PSA International donated S\$300,000 to Keppel Club's annual Charity Golf (KCG) event in Singapore. Funds raised from the event totalled S\$1.57 million and were channelled towards the annual President's Challenge to support its 74 charities, as well as 15 selected local charities including HCA Hospice Care, St Luke's Hospital, the Down Syndrome Association (Singapore) and the Alzheimer's Disease Association.

Across the group, we support and participate in initiatives in three focus areas:



**COMMUNITY
DEVELOPMENT**

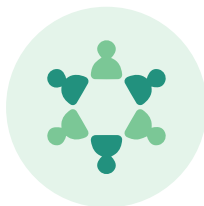


**ARTS, EDUCATION,
SPORTS AND
CULTURE**



**INDUSTRY
OUTREACH AND
DEVELOPMENT**





Community Development:

We help to address community needs by partnering and/or supporting non-profit organisations and charitable social causes. At the same time, staff volunteerism is encouraged through these programmes.

* Supporting Elderly Care and Active Ageing

Population ageing puts a strain on existing healthcare, welfare and social support systems that can have widespread and multifaceted impacts on the economy and society. Singapore is one country that is experiencing a rapidly ageing population due to increased life expectancy coupled with decreasing birth rates.

In collaboration with established healthcare partners in Singapore and with the support of the Singapore Port Workers Union and the Port Officers' Union, the PSA Health@Home (H@H) programme was launched in 2015 to support ageing in place and home-based healthcare, primarily for the elderly, chronically ill or infirm. At the same time, it seeks to prepare PSA staff, particularly those nearing retirement age, for an active lifestyle after retirement through health education that focuses on active ageing and promotes healthy habits.



PSA H@H volunteers undergo a training programme before they undertake activities such as visiting and supporting the activities of the daycare centres under our healthcare partners; organising activities both physically and virtually, and other innovative ways for our volunteers to stay connected with our beneficiaries; or simply providing social and emotional support on a befriending basis.

* Serving Communities in Need



PSA Antwerp supports Kamiano, a welfare organisation which provides free meals and showers for the homeless. PSAA employees volunteer their time to serve hot meals to the homeless and help out at the shower areas by giving out towels and clean recycled clothes.

Guangzhou Container Terminal (GCT) in China provided volunteer support and organised a donation drive for a special needs school in Huangpu, Guangzhou. 2020 was the eighth consecutive year that GCT has initiated donation efforts for the school.

PSA Genova Pra' (PSA GP) sponsored several non-profit organisations providing aid to ill patients, including Il Porto dei Piccoli ONLUS and Gigi Ghirelli Association. Besides raising funds, staff from PSA GP also contributed towards patients' daily essentials by donating clothing and food.



Arts, Education, Sports and Culture:

We promote the arts, education, sports and culture in the community through financial and in-kind sponsorship.



Supporting Education

The Howe Yoon Chong (HYC) PSA endowment fund was set up in 2008 to honour the late Mr Howe Yoon Chong. Mr Howe was a visionary Singaporean who made significant contributions to Singapore, including the building of Singapore's first container terminal. The former Cabinet Minister also held the position of Chairman of the then Port of Singapore Authority.

To honour him, PSA set up the endowment fund to award bond-free scholarships to Singapore citizens. The endowment is under the auspices of local charity organisation Trailblazer Foundation Ltd, and comprises contributions from PSA, Temasek Holdings and NSL Ltd.

The HYC PSA Scholarships seek to support Singaporean students from lower income families, especially those who strive for excellence, embrace a spirit of adversity and possess the zeal to contribute back to society. These scholarships will pay for tuition and other compulsory fees in full, as well as provide book and living allowances. To date, the scholarship has touched the lives of over 260 recipients from diverse backgrounds, helping them to achieve both their educational and life goals.

To support educational needs in the region, Mersin International Port (MIP), in collaboration with the Mersin Governorship, built the Mersin International Port Primary School. It has since completed construction and has some 720 students. Additionally, MIP also donated 918 tablets to the Directorate of National Education. These were to facilitate learning for children who had limited opportunities and could not benefit fully from the online education support campaign by the government.



Nurturing Musical Talent

MIP started its MIP Kids' Music Academy in 2013 for the children aged 5-14 years old of MIP personnel, in collaboration with the Mersin University State Conservatory. As music and instrument training in the country is costly and not easily accessible, this initiative sought to provide equal opportunities for musically-inclined children who would otherwise not have access to music education.

The Academy can accommodate up to 80 students for instrument and voice training. Students have to audition for a spot in the programme and the selection is done by the teachers of Mersin University State Conservatory. The trainings are carried out in parallel with the school term at the State Conservatory. Students who complete the programme obtain a certificate from Mersin University State Conservatory which is well regarded. The Academy not only enables the children to explore and nurture their interest in music but also open doors for a future education in music. Since 2014, the Academy has benefited 250 children of MIP employees.



I joined the MIP children's orchestra when I was 8. That's how my journey with music began and made me take decisions which also affected my future. Now, I want to make a good music career in the future.

EYLÜL KAYGISIZ, STUDENT





Industry Outreach and Development:

We engage local communities to raise public awareness and the appeal of the port and logistics industry.



Boosting the Industry's Public Profile

As part of community outreach, PSA and its business units regularly conduct tours of its terminals to industry partners and associates, state dignitaries, selected community organisations and educational institutions. This provides a platform to foster exchanges with our communities and enhance understanding of the port's operations.

As an industry with significant influence on national economic performance, it is vital that we continue to attract fresh talent to meet future needs. PSA works with relevant local authorities to promote learning and employment opportunities in the industry. For example, PSA Marine has ongoing collaborations with schools, Institutions of Higher Learning and stakeholders in the maritime industry (such as the Singapore Maritime Foundation) to conduct learning

journeys and provide internship opportunities for students to get first-hand experiences of working in PSA Marine.

In the face of intense competition for talent globally, our industry is exploring new ways to attract and retain good people. With our employer branding and recruitment efforts, we seek to ameliorate negative perceptions and showcase the dynamism of our work and activities.

For example, one of PSA Antwerp's recruitment fairs integrated elements of virtual reality to give students and potential employees an idea of what it is actually like working in the port, while showcasing that the port is very much technology driven. With the help of VR glasses, one can experience standing on a 50-meter-high quay crane with a panoramic view, to watch an operator at work.



As a responsible corporate citizen, we also seek to conduct business in a manner that promotes sustainable development for both PSA and the community. This includes taking due consideration of social norms and environmental issues in all commercial decisions such as port development. For example, at PSA Singapore, ambient air quality monitoring and boundary noise assessments are conducted to ensure the port environments remain safe, healthy and appealing. In 2020, the measured air pollutant and noise values were found to be within and complying with the limits of Singapore's National Environment Agency (NEA) Ambient Air Quality Targets and NEA Boundary Noise Regulations respectively.



Promoting Green Spaces

Beyond community efforts, PSA has been contributing towards optimising green spaces and supporting biodiversity conservation. PSA Singapore provided a sponsorship of S\$3.5 million to the Garden City Fund, which was established in 2002 by the National Parks Board to fulfil Singapore's vision of a City in Nature.

This sponsorship contributed towards the development of a 2.5km stretch of the Pasir Panjang Linear Park, located in front of the PSA Horizons development. PSA also provided port-related artefacts for display and use in the park's children play area. The park will not only help to beautify the surroundings of the port area but also bring the community closer to the port.



Standing Together Against COVID-19

We sought to play our part to support international efforts and our communities amidst the significant disruption to lives and livelihoods brought about by the COVID-19 pandemic. A Global COVID-19 Response Task Force (GCRTF) was set up to provide updates and advisories on the COVID-19 situation and coordinate our collective efforts to strengthen PSA's COVID-19 response capabilities globally. As we progress on our journey to build organisational resiliency, the PSA GCRTF has drawn up solutions in the areas of work, operations and supply chain resilience, and prepared a comprehensive pandemic plan, putting us in good stead to handle any similar outbreaks in the future.



Supporting International Efforts

One of the effects of the COVID-19 pandemic has been an unprecedented crew change crisis, impacting hundreds of thousands of seafarers. This in turn puts the safety and integrity of maritime supply chains at risk. PSA International has signed the Neptune Declaration for Seafarer Wellbeing and Crew Change, joining forces with over 300 signatories across the supply chain to promote and protect the welfare of seafarers, and push for the crew change crisis to be resolved as soon as possible.

Beyond calling for the priority vaccinations of seafarers, PSA has also made a commitment to enable the safe, sustainable and globally inclusive distribution of COVID-19 vaccines. As a signatory of the World Economic Forum's Supply Chain & Transport Industry Charter in support of UNICEF and the global COVAX Vaccine Distribution programme, PSA will offer access to our global infrastructure, logistics knowledge and expertise, as well as on-the-ground assistance in supply chain operations, to support UNICEF plans to distribute around 2 billion doses within 2021.

Supporting Local Frontline Efforts



65,000 masks,
5,000 pairs of hand gloves,
5,600 N95 masks,
>500 bottles of hand sanitisers donated

To help safeguard the health and safety of port workers at Chattogram Port Authority (CPA) during the COVID-19 pandemic, PSA International and PSA Marine Bangladesh donated personal protective equipment (PPE) items to the employees of CPA and the Chattogram Port Hospital.



65,000 masks donated

PSA's two Belgian-based entities in Antwerp and Zeebrugge donated masks to local community partners and social organisations who support underprivileged families to ensure they can continue their important work in the community.



To contribute to Singapore's national efforts to combat COVID-19 spread at the height of the crisis, PSA repurposed its Tanjong Pagar Terminal (TPT) to support the need for isolation facilities. We built

tentages that can house up to 10,000 people as well as berthed floating 'hotels' alongside TPT

to accommodate healthy foreign workers for safe distancing. These 'floatels' were later designated as dedicated accommodation to facilitate safe crew change in Singapore.

Other than that, PSA also coordinated logistical support and hosted community care facilities at the Singapore Expo and worked with the Ministry of Trade and Industry to set up food supply visibility dashboards to ensure national food supply chains remain resilient and reliable.

Caring for Our Communities

The COVID-19 pandemic has brought social inequity to the forefront, with the marginalised and disadvantaged communities disproportionately affected. It is all the more important that we reach out to support those in our midst who require our care during these challenging times.



Despite physical volunteering activities being unable to be carried out in 2020, innovative methods were developed to continue supporting the needy. Through a “Wishing For 500 Smiles” campaign created by PSA Health@Home (H@H) and CrimsonLogic, one of our IT business units, employees came together to grant the wishes of 500 underprivileged individuals, including patients with life-limiting illnesses, elders who live alone and low-income residents. The wishes consisted mainly of lifestyle items and furniture. The initiative received heart-warmingly enthusiastic response as all wishes were adopted within two weeks by PSA employees.

In 2020, PSA also initiated PSAssist – a specialised care pack targeted at helping our H@H partners through this difficult period. This included sponsoring meals for underprivileged children, hospice care patients, and healthcare staff deployed to implement COVID-19 tests. Virtual volunteering activities and training sessions were also carried out.



LCB Container Terminal 1 in Thailand donated COVID-19 PPE and consumable goods to Baan Jing Jai Foundation and Children’s Home Pattaya.



Colombia’s Sociedad Puerto Industrial Aguadulce actively contributed during the pandemic, donating food baskets and purchasing hospital beds to local communities and healthcare organisations respectively.



PSA Panama donated more than 1,000 food baskets to families and institutions who had suffered lost sources of income due to COVID-19.



PSA Venice donated equipment such as stretchers to be used for COVID-19 emergency. PSA Venice employees also stepped up to donate voluntarily to disadvantaged families affected by COVID-19.



In 2020, **PSA Marine Peru** donated a total of 21 oxygen tanks to the local hospitals in Talara, one of the cities stricken with COVID-19 infections in Peru. PSA Marine Peru continued to support local medical needs by donating a container for use in the construction of a temporary medical services facility.

KEEPING OUR PORTS SAFE AND SECURE

Ensuring security in the port area and operations is fundamental to business continuity and the safety of our people. As critical infrastructure within the global supply chain, ports are vulnerable to threats such as terrorism and criminal activities. PSA seeks to ensure the highest security standards wherever we operate. Increasingly, cybersecurity also plays a crucial role as attacks can happen through our information technology and operational technology systems. We cannot afford to be complacent. It is our utmost priority to minimise any risk and put in place strict measures to safeguard our port security, both in the physical and cyber spaces.



Port Security

Following the terrorist attacks on September 11, 2001, the International Maritime Organisation (IMO) created the ISPS Code (International Ship and Port Facility Security Code), designed to protect the maritime industry against external threats. The ISPS Code applies to vessels on international voyages and port facilities serving them. Each business unit ensures that their Port Facilities Security Plan complies with the ISPS Code and is endorsed by the port authority or a Recognised Security Organisation. The ISPS Code also mandates a security assessment be done every five years.

Beyond that, all PSA business units are required to engage a professional security expert to conduct a Threats, Vulnerabilities Readiness Assessment (TVRA) to assess the threats and vulnerabilities pertaining to terror and related incidents as well as their readiness in handling such incidents. The TVRA assessed various threat scenarios, studied the vulnerability of sensitive assets and locations, and examined the readiness and security capability of the business unit to respond. The findings helped prioritise areas of action as well as indicators for monitoring the security situation.

Each business unit sets up a governance structure to oversee port security management, according to the Group HSSE Management System. This includes a PSA group-wide security standard which requires the business units to implement a plan to safeguard people and assets. Security managers and port facility security officers will be responsible for implementing the Port Facilities Security Plan, which also covers security procedures for terminal access control, surveillance of terminal perimeters and response to security threats.

Our ports work closely with local customs authorities to ensure all legislation is met and baseline security measures are implemented, to prevent illicit trade and undeclared dangerous goods. Accurate declarations and proper handling according to regulations are key to preventing incidents from happening as hazardous materials move through ports on an almost daily basis. For example, PSA Singapore is certified under the Singapore Customs' Secure Trade Partnership Programme, which is consistent with World Customs Organisation's SAFE Framework of Standards to secure and facilitate global trade. It also supports Singapore Customs' initiatives such as the Cargo Targeting System (CTS), Container Security Initiative (CSI) for US-bound goods and Radiation Detection Initiative (RDI) for export containers.

Training is conducted for security management staff with regular refresher courses, such as ISPS training, counter-terrorism, Dangerous Cargo (DG) management, and security awareness. Port security drills are also held every three months to test the effectiveness of the Port Facility Security Plan and identify any gaps.

Security incidents are investigated according to PSA's [incident investigation procedures](#), and reported via the online platform. Where required, cases will be turned over to the local authorities and PSA will support them for further action.



Cybersecurity and Data Privacy

Former Cisco CEO John Chambers once said, “There are two types of companies: those that have been hacked, and those who don’t yet know they have been hacked.” Cyberattacks hit businesses every day. They can come from malware, phishing, denial-of-service, among many others. There is also the risk of data security breach, which can compromise the confidentiality and integrity of both company data and those entrusted to us by our customers.

Building resilience against cyberattacks and risks is of the highest importance to PSA as we build smart ports and terminals worldwide with increasingly digitalised and interconnected systems and operations. The impact of a cyber event can spread quickly across the organisation and to the entire supply chain. We are committed to safeguarding PSA’s digital assets through adaptation of cybersecurity best practices and compliance with all applicable laws.

To manage our cybersecurity risks and safeguard our digital assets, we have established a group-wide Cybersecurity Management System, as well as Group Information Technology and Operational Technology Security Standards. These are complemented with other corporate policies including Group Document and Information Policy, Group IT Acceptable Use Policy, Group Intellectual Property Policy and Group IT Security Policy. We also use third party risk management platforms, services like Security Information and Event Management (SIEM), and subscribe to international cybersecurity forums to monitor cyber threats and enable timely incident response. Each business unit is responsible for complying with the cybersecurity standards and regulations of the country of operation. Business units are measured on their cybersecurity performance including their security risk rating, SIEM response timeframe and frequency of cybersecurity awareness training.



In 2020, there were no incidents of leaks, thefts, losses of customer data or complaints concerning breach of customer privacy, as a result of cybersecurity incidents.

Our Group Data Policy identifies five key aspects of data governance, namely data accountability, data access, data usage, data integrity and data retention. This policy is supported and elaborated by PSA Group Data Governance Standards (DGS). All subsidiaries and joint ventures in which PSA has operational control must implement the DGS. Furthermore, all business units are to comply with

the Group Personal Data Protection Policy and laws in force in their country of operation, such as the EU General Data Protection Regulation and the Personal Data Protection Act in Singapore. All employees are required to abide by these policies when handling information that they have access to in connection with their employment.

To reinforce cybersecurity awareness and cultivate safe cyber practices among employees, we conduct an annual Cybersecurity Campaign, complemented by the PSA Swordfish e-learning which all new-hires have to attend and pass when they join the organisation.



Cybersecurity is Everyone's Responsibility

PSA International launched its inaugural Cybersecurity Day on 2 October 2019 at PSA Corporate Centre. More than 160 employees were urged to defend PSA's digital borders through collective efforts as well as adopt the principles of Guard IT, Protect IT, Secure IT.

Group CEO Tan Chong Meng used the event as a springboard to launch PSA's group-wide cybersecurity campaign. The six-month long campaign started with PSA Corporate Centre first and was gradually cascaded to all business units. He stressed that cybersecurity is not just an IT responsibility, but the responsibility

of everyone across all levels and functions. Attendees were also introduced to Swordfish Cybersecurity e-learning and the Swordfish Cybersecurity brownbag – learning materials that were provided to employees to upgrade their skills and competencies on cybersecurity.

Cybersecurity Day was established to raise awareness and knowledge of cybersecurity risks and measures across PSA International, and meant to be an annual affair. Though we did not manage to hold the event in 2020, the team behind it was busy creating the Cybersecurity Experiential Centre (CEC).

The CEC was built with the intent of recreating the PSA Cybersecurity Day in-person experience and delivered in virtual format, allowing PSA employees to access it anytime, anywhere. The CEC was launched at the PSA Cybersecurity Day 2021 with the theme of "Elevating Cybersecurity Awareness in the New Normal". Employees can access educational videos, PSA's Cybersecurity Master Plan in a flipbook format, and participate in an online quiz with attractive prizes.



GRI CONTENT INDEX

This report has been prepared with reference to the GRI Standards. The table below presents our GRI content index, which specifies each of the GRI Standards and disclosures referenced in the report, including where the information can be found.

GRI STANDARD	GRI DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	PAGE REFERENCES
GRI 102: General Disclosures 2016	ORGANISATIONAL PROFILE		
	102-1	Name of the organisation	9
	102-2	Activities, brands, products, and services	9
	102-3	Location of headquarters	9
	102-4	Location of operations	9
	102-5	Ownership and legal form	Annual Report 2020
	102-6	Markets served	9, 10
	102-7	Scale of the organisation	9
	102-8	Information on employees and other workers	9, 43
	102-9	Supply chain	10, 67
	102-10	Significant changes to the organisation and its supply chain	<i>There were no significant changes to our organisation and supply chain in 2020.</i>
	102-11	Precautionary Principle or approach	14, 52
	102-12	External initiatives	12
	102-13	Membership of associations	12
	STRATEGY		
	102-14	Statement from senior decision-maker	4-8
	ETHICS AND INTEGRITY		
102-16	Values, principles, standards, and norms of behaviour	11, 65	
102-17	Mechanisms for advice and concerns about ethics	66	

GRI STANDARD	GRI DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	PAGE REFERENCES
	GOVERNANCE		
	102-18	Governance structure	15 <i>Annual Report 2020</i>
	102-19	Delegating authority	15
	102-20	Executive-level responsibility for economic, environmental, and social topics	15
	102-21	Consulting stakeholders on economic, environmental, and social topics	19, 22
	STAKEHOLDER ENGAGEMENT		
	102-40	List of stakeholder groups engaged	22
	102-42	Identifying and selecting stakeholders	22
	102-43	Approach to stakeholder engagement	22
	102-44	Key topics and concerns raised	22
	REPORTING PRACTICE		
	102-45	Entities included in the consolidated financial statements	9 <i>Annual Report 2020</i>
	102-46	Defining report content and topic Boundaries	3
	102-47	List of material topics	20-21
	102-48	Restatements of information	<i>No information or data was reinstated.</i>
	102-49	Changes in reporting	<i>There were no changes in reporting.</i>
	102-50	Reporting period	3
	102-51	Date of most recent report	3
	102-52	Reporting cycle	3
	102-53	Contact point for questions regarding the report	3
	102-54	Claims of reporting in accordance with the GRI Standards	3
	102-55	GRI content index	83

CREATING
SUSTAINABLE
VALUE

GRI STANDARD	GRI DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	PAGE REFERENCES
ENERGY			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	31
	103-3	Evaluation of the management approach	31
GRI 302: Energy 2016	302-1	Energy consumption within the organisation	31
EMISSIONS			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	29
	103-3	Evaluation of the management approach	29
GRI 305: Emissions 2016	305-1	Direct (Scope 1) GHG emissions	30
	305-2	Energy indirect (Scope 2) GHG emissions	30
CLIMATE CHANGE ADAPTATION			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	21
	103-2	The management approach and its components	26, 37
	103-3	Evaluation of the management approach	26, 37
INNOVATION AND TECHNOLOGY			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	36, 41, 47
	103-3	Evaluation of the management approach	36, 41, 47

GRI STANDARD	GRI DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	PAGE REFERENCES
OPTIMISATION OF GLOBAL SUPPLY CHAINS			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	38
	103-3	Evaluation of the management approach	38
PEOPLE DEVELOPMENT			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	42
	103-3	Evaluation of the management approach	42
GRI 401: Employment	401-1	New employee hires and employee turnover	43
GRI 404: Training and Education 2016	404-2	Programmes for upgrading employee skills and transition assistance programmes	44
EMPLOYEE DIVERSITY AND INCLUSION			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	21
	103-2	The management approach and its components	48
	103-3	Evaluation of the management approach	48

STEWARDSHIP
RESPONSIBLE
BUSINESS

GRI STANDARD	GRI DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	PAGE REFERENCES
SUSTAINABLE PORT DEVELOPMENT			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	52
	103-3	Evaluation of the management approach	52
MARINE PROTECTION AND CONSERVATION			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	21
	103-2	The management approach and its components	55
	103-3	Evaluation of the management approach	55
GRI 304: Biodiversity	304-2	Significant impacts of activities, products, and services on biodiversity	52, 55
GRI 307: Environmental Compliance 2016	307-1	Non-compliance with environmental laws and regulations	55
WATER USE AND POLLUTION			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	21
	103-2	The management approach and its components	56
	103-3	Evaluation of the management approach	56
GRI 303: Water and Effluents	303-1	Interactions with water as a shared resource	56
	303-2	Management of water discharge-related impacts	56
	303-3	Water withdrawal	56

GRI STANDARD	GRI DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	PAGE REFERENCES
WASTE MANAGEMENT AND RECYCLING			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	21
	103-2	The management approach and its components	57
	103-3	Evaluation of the management approach	57
GRI 306: Waste 2020	306-1	Waste generation and significant waste-related impacts	57
	306-2	Management of significant waste-related impacts	57
OCCUPATIONAL HEALTH AND SAFETY			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	58
	103-3	Evaluation of the management approach	58
GRI 403: Occupational Health and Safety 2018	403-1	Occupational health and safety management system	59
	403-2	Hazard identification, risk assessment, and incident investigation	59, 61
	403-3	Occupational health services	59
	403-4	Worker participation, consultation, and communication on occupational health and safety	60
	403-5	Worker training on occupational health and safety	60
	403-6	Promotion of worker health	63
	403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	59
403-9	Work-related injuries	62	

GRI STANDARD	GRI DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	PAGE REFERENCES
LABOUR RELATIONS AND WORKER WELLBEING			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	21
	103-2	The management approach and its components	63
	103-3	Evaluation of the management approach	63
GRI 402: Labour/ Management Relations	402-1	Minimum notice periods regarding operational changes	63
COMMUNITY RELATIONS			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	70
	103-3	Evaluation of the management approach	70
ETHICAL BUSINESS CONDUCT			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	65
	103-3	Evaluation of the management approach	65
SUSTAINABLE PROCUREMENT			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	21
	103-2	The management approach and its components	67
	103-3	Evaluation of the management approach	67

GRI STANDARD	GRI DISCLOSURE NUMBER	GRI DISCLOSURE TITLE	PAGE REFERENCES
PUBLIC POLICY			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	21
	103-2	The management approach and its components	68
	103-3	Evaluation of the management approach	68
PORT SECURITY			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	80
	103-3	Evaluation of the management approach	80
CYBER SECURITY AND DATA PRIVACY			
GRI 103: Management Approach 2016	103-1	Explanation of the material topic and its Boundary	20
	103-2	The management approach and its components	81
	103-3	Evaluation of the management approach	81
GRI 418: Customer Privacy	418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	82



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