



Meeting

Tomorrow's

N e e d s



PCS PTE. LTD.

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Our Vision

To be recognized by our customers as a responsible leading essential chemicals producer with

- High standard in sustainable HSE performance through subscription to Responsible Care;
- Reliable and Responsive supply of sustainable quality products;
- Competitive cost; and
- Open, pro-active culture

to achieve profitability, sustainability and growth.

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Leading the Way

PCS, at the forefront of the essential chemicals industry today, and in the future.



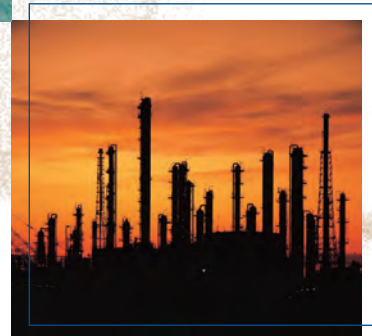
The Pioneer

PCS Pte. Ltd. (formerly known as Petrochemical Corporation of Singapore (Private) Limited) (PCS) is the pioneer of the essential chemicals industry in the region. In 1977, the Singapore Government and the Japan-Singapore Petrochemicals Co., Ltd., (JSPC), led by Sumitomo Chemical in collaboration with the Government of Japan and major Japanese companies, jointly established PCS. In February 1984, PCS put on stream the first full-fledged ethylene plant in Southeast Asia. In 1989, Shell Eastern Petroleum (Pte) Ltd took over the Singapore Government's 50% share in PCS.

The present shareholders with equal equity share are (1) JSPC and (2) QPI and Shell Petrochemicals (Singapore) Pte. Ltd. (QSPS), which took over the shares of the Shell Eastern Petroleum (Pte) Ltd in 2009. And now, the Company with 2 plants of capacities totaling more than 1.8 million tonnes of ethylene and propylene spearheads its future growth to meet tomorrow's needs of the people and society.

Corporate Data

Date of incorporation	: 10 th August 1977
Authorized capital	: S\$750 million
Paid-up capital	: S\$343.353 million
Number of Employees	: 410
Area of Site	: 175 hectares (Complex on Ayer Merbau)
Shareholding Ratio	: Japan-Singapore Petrochemicals Company, Limited (50%) QPI and Shell Petrochemicals (Singapore) Pte. Ltd. (50%)

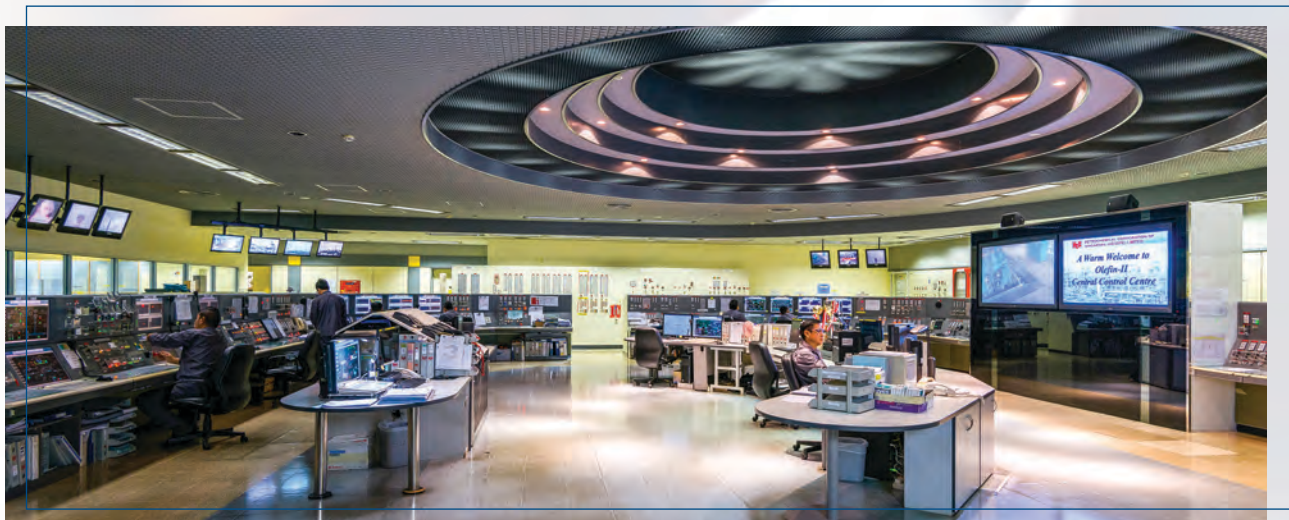
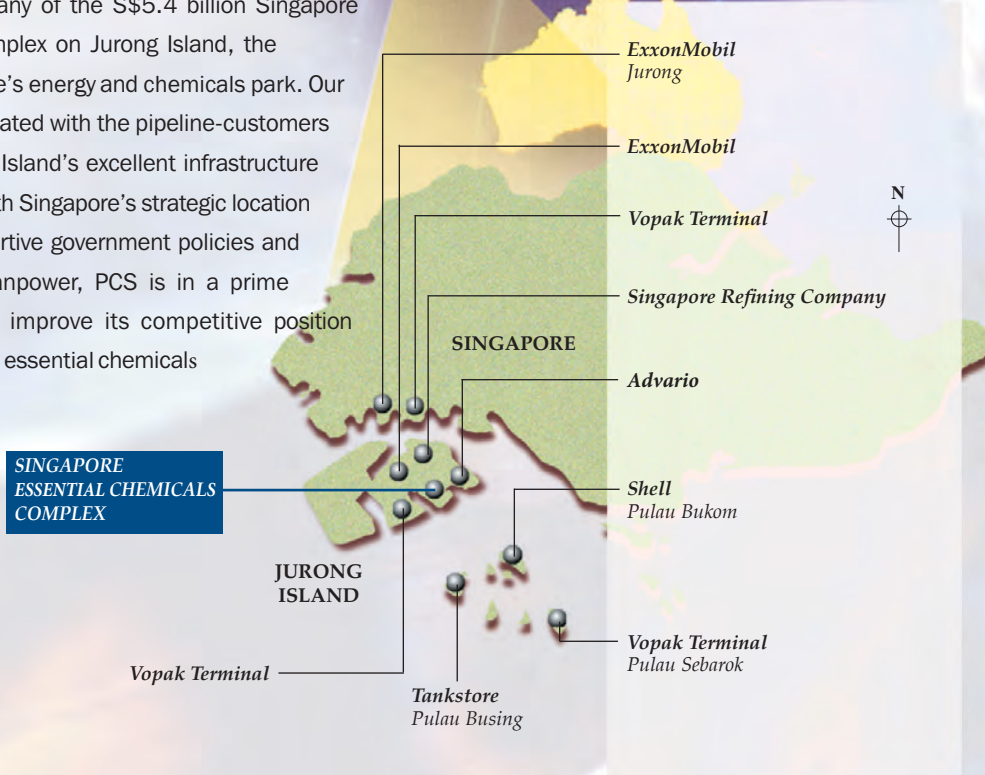


Gateway ^{to} the World

The Singapore Essential Chemicals Complex makes further inroads into regional and global markets.

Strategic Location

PCS is the centre company of the S\$5.4 billion Singapore Essential Chemicals Complex on Jurong Island, the premier hub of Singapore's energy and chemicals park. Our operations are fully integrated with the pipeline-customers and leverages on Jurong Island's excellent infrastructure and facilities. Coupled with Singapore's strategic location in Southeast Asia, supportive government policies and availability of skilled manpower, PCS is in a prime location to sustain and improve its competitive position as a regional leader in the essential chemicals industry.





Manufacturing Excellence & Dedication to Our Customers:

Our State-of-the-Art Facilities

PCS' ethylene plants incorporate the latest technology, allowing for the flexible use of naphtha, gasoil and LPG to achieve the most economical mix of feedstocks. Our other plants further optimise the value of all our product streams. The entire manufacturing operation is controlled by state-of-the-art process control systems. A comprehensive network of pipelines and storage tanks allows for a seamless flow of products to our customers on Jurong Island and beyond.

We also supply utilities such as seawater, steam, compressed air as well as provide common facilities and services such as berths, security and fire fighting services to ensure the efficient and safe operation of the Complex.

Manufacturing Capacity

PCS is recognised as a leading producer of ethylene and propylene, and other by-products in the region. The capacities of our two crackers together with our metathesis plant; total 1.1 million tonnes per year of ethylene, and more than 800,000 tonnes per year of propylene. We also produce acetylene, butadiene, 1-butene, MTBE, benzene, toluene and xylene. Products that are not consumed in the Complex are exported to the region.

With debottlenecking and additional facilities, including a 200,000 tonnes per year metathesis plant and a 100,000 tonnes per year butadiene plant, PCS' manufacturing capacities have increased over the years. To strengthen its infrastructure, a 240,000 m³ Naphtha Import Facilities were constructed. This project significantly strengthens PCS's naphtha import logistics providing for better efficiencies and optimization of its feedstock. These investments also ensures that PCS continues to remain as a reliable supplier to all its customers.

Manufacturing excellence means to be a reliable provider of quality products and services at competitive prices.



Product	Plants Capacity (Tonnes per year)		Total Capacities (Tonnes per year)
	Plant I	Plant II	
Ethylene	465,000	635,000	1,100,000
Propylene	270,000	375,000	645,000
Propylene (Metathesis)	-	200,000	200,000
Butadiene	60,000	100,000	160,000
MTBE	-	140,000	140,000
1-Butene	-	63,000	63,000
Benzene	105,000	165,000	270,000
Toluene	55,000	90,000	145,000
Xylene	26,000	59,000	85,000
Acetylene	5,500	7,500	13,000





A Progressive

Workforce:

Our people are given every opportunity to grow in their work, to upgrade their skills and acquire new knowledge.

Our Greatest Asset

Our people are indeed one of the keys to our success. We believe that the excellence in skills and the commitment of our people make the Company grow and build up PCS to what it is today. Our benefits encompass systematic training and development schemes. And as PCS grows, our employees grow too. We offer job rotation, multi-skill training programmes, technical and management development courses aimed at building a highly motivated workforce.

At PCS, we believe in accountability and integrity, a shared responsibility in meeting our customer's expectations. To achieve this, all our employees share in five core values:

Teamwork

Strong commitment to working together for mutual benefit and co-ordinated efforts.

Integrity

High ethical standards and business integrity, trustworthiness, dependability, and reliability.

Professionalism

Excellence in all aspects of individual's and organisation's performance.

Innovation and Creativity

Ability to come out with better ideas and solutions.

Open Communication

Recognising the diversity of nationalities working in our Company and the Complex, open and free exchange of views and ideas is valued.





Responsible HSE Care



Fostering a healthy and safe workplace, and best in class environment, results in long term benefits for the individual, the company and society.



At PCS, Health, Safety and Environment (HSE) issues are given top priority. We adopt stringent measures to improve and sustain the health and safety of every individual in our workforce, and strive for a best in class environment.

Our employees and contractors undergo regular comprehensive HSE training and participate actively in various HSE activities aimed towards achieving zero lost-time injury. We reach out to our customers on sharing of HSE best practices. Our workforce and customers benefit from this entrenched safety culture.



Our plants are designed to meet the stringent HSE requirements, with sophisticated safety systems to ensure process safety and monitor all parts of plant operations. Facilities and plants are well-equipped to treat solid, liquid and gaseous wastes. Our HSE Management System is independently assessed to be in line with international standards, obtaining the ISO 14001 Certification in January 2000 and OHSAS 18001 in November 2002.

PCS takes a serious view of process safety, having its own Process Safety Policy and tracking its own Process Safety Key Performance Indicators for continual improvement. On the environmental front, PCS is proactive in promoting greater consciousness and responsibility, and striving to reduce its carbon footprint.



PCS became the first enterprise to achieve certification to Singapore Standard SS 506 : Part 3 : 2006, accredited by Singapore Accreditation Council in December 2009. SS 506 Part 3 is an amalgamation of Process Safety elements and Occupational Safety and Health (OSH) elements into one integrated system.

PCS actively reaches out to industry and the public, specifically working closely with the Singapore Chemical Industry Council (SCIC) to promote HSE activities and share our experience and expertise. We also work closely with Workplace Safety and Health Council, as a bizSAFE Mentor, in helping companies build up their workplace safety and health capabilities.



Sharing with our Community

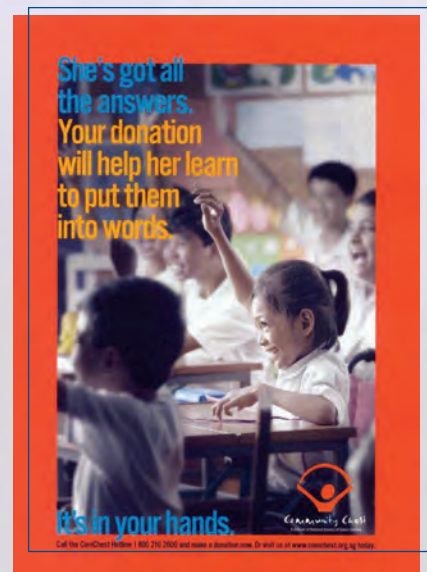
The community is our
lifesource and a lifetime
partner.

Through the years, PCS has forged a close-knit rapport with the community which we belong. We give our support to various charitable programmes and projects. As a socially responsible corporate citizen, we dedicate ourselves to developing a mutually beneficial long-term relationship with our community.

Our Contribution

We are regular participants in Community Chest fund-raising activities for the underprivileged in the community. Together with our employee donations, we match dollar for dollar to the SHARE (Social Help Assisting Raised by Employees) programme.

In other areas of community relations, PCS is committed to the training of highly-qualified manpower for the industry. We offer scholarships to aspiring engineers and technicians at the local tertiary educational institutions. We also participate in internships and industrial attachments with these educational institutions.





The Singapore Essential Chemicals Complex: Successful Relationships

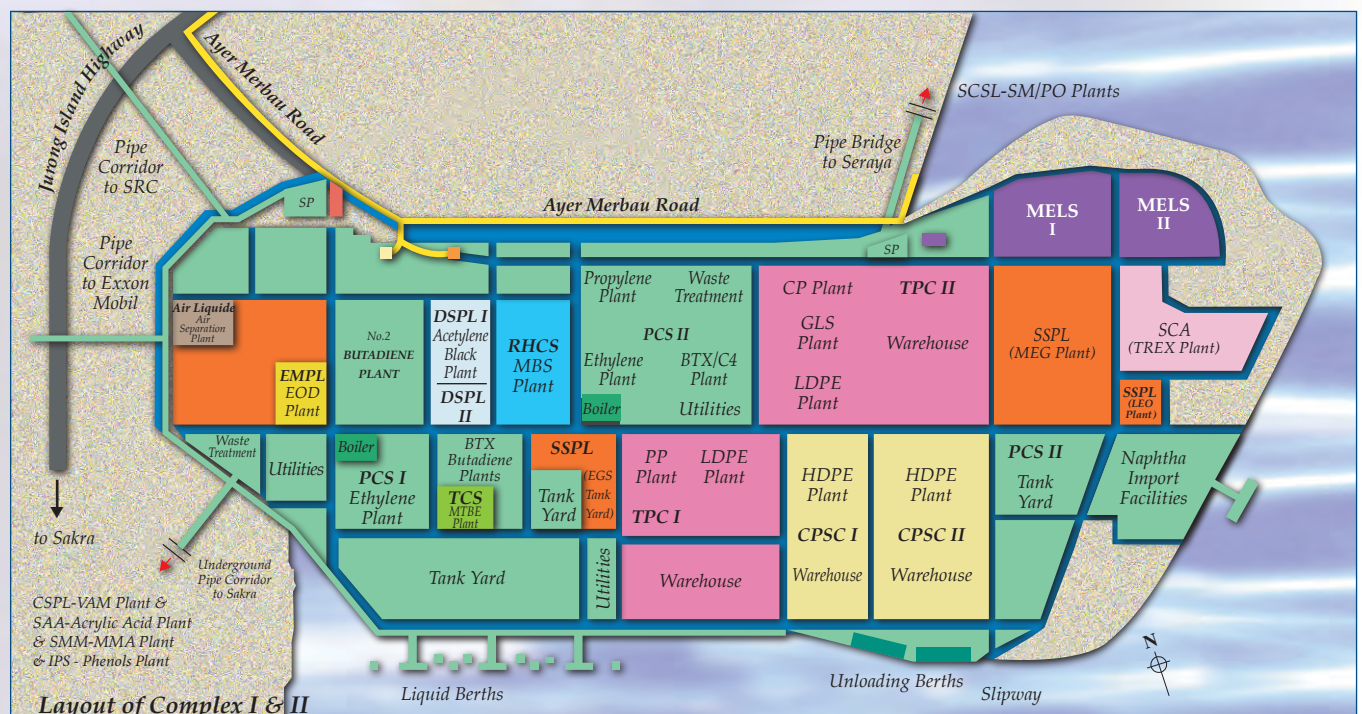
The Complex scheme is characterized by the close inter-connected relationships at every level. PCS now serves more than 10 world-class essential chemicals pipeline-customers on Jurong Island in their production of essential chemicals products, such as, high/low-density polyethylene, polypropylene, styrene monomers, ethylene oxide, ethylene glycols, vinyl acetate monomers, acrylates, polyols, etc.

PCS is committed to providing a reliable supply of olefins, aromatics and other essential chemicals products as well as excellent supporting services for the efficient and safe operation of our customers. On Ayer Merbau, we have The Polyolefin Company (TPC), Chevron Phillips Singapore Chemicals (CPSC), Shell Singapore (SSPL), Denka Singapore (DSPL), Rohm and Haas Chemicals Singapore (RHCS), Ethoxylates Manufacturing (EMPL), Tetra Chemical Singapore (TCS), Mitsui Elastomers Singapore (MELS) and Sumitomo Chemical Asia (SCA) forming the integral part of the Singapore Essential Chemicals Complex, receiving feed stocks and utilities from PCS.

Product pipelines from PCS are also extended to Shell Chemicals Seraya (SCSL) and Denka Singapore (DSPL) on neighboring Seraya, to Singapore Methy Methacrylate (SMM), Singapore Acrylic (SAA), Celanese Singapore (CSPL), Ineos Phenols Singapore (IPS) and Mitsui Chemical Methacrylates Singapore (MCMS) on Sakra on Jurong Island.

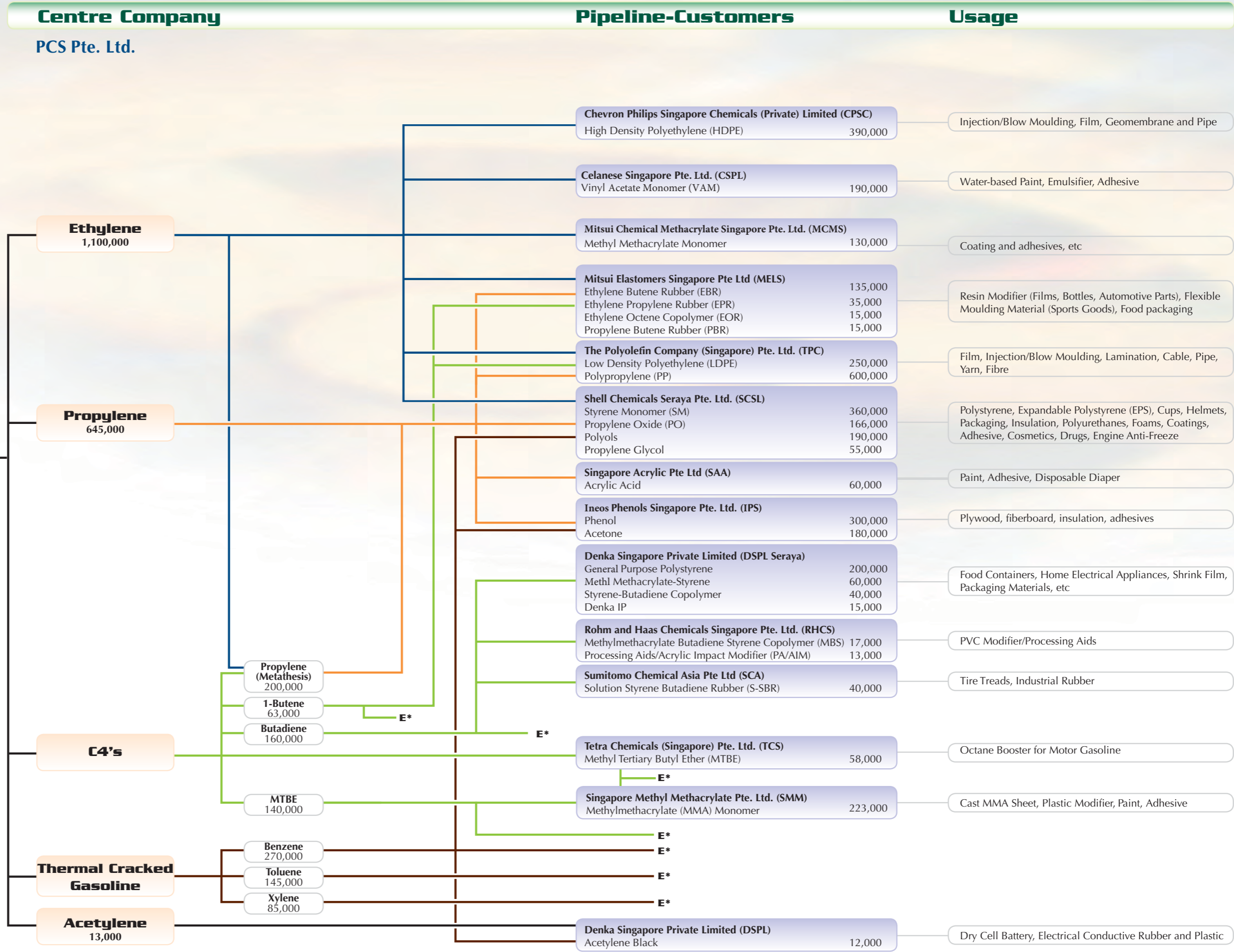
PCS is also connected by pipelines to Singapore Refinery Company on Merlimau, ExxonMobil on Ayer Chawan, Shell Bukom and more recently Vopak Banyan Terminal for the LPG feed stocks.

In order to help strengthen the local essential chemicals industry's competitiveness, PCS continues to seek opportunities to upgrade, integrate and synergise with neighbouring chemical companies to transform Jurong Island to a sustainable energy and chemicals park.



Singapore Essential Chemicals Complex

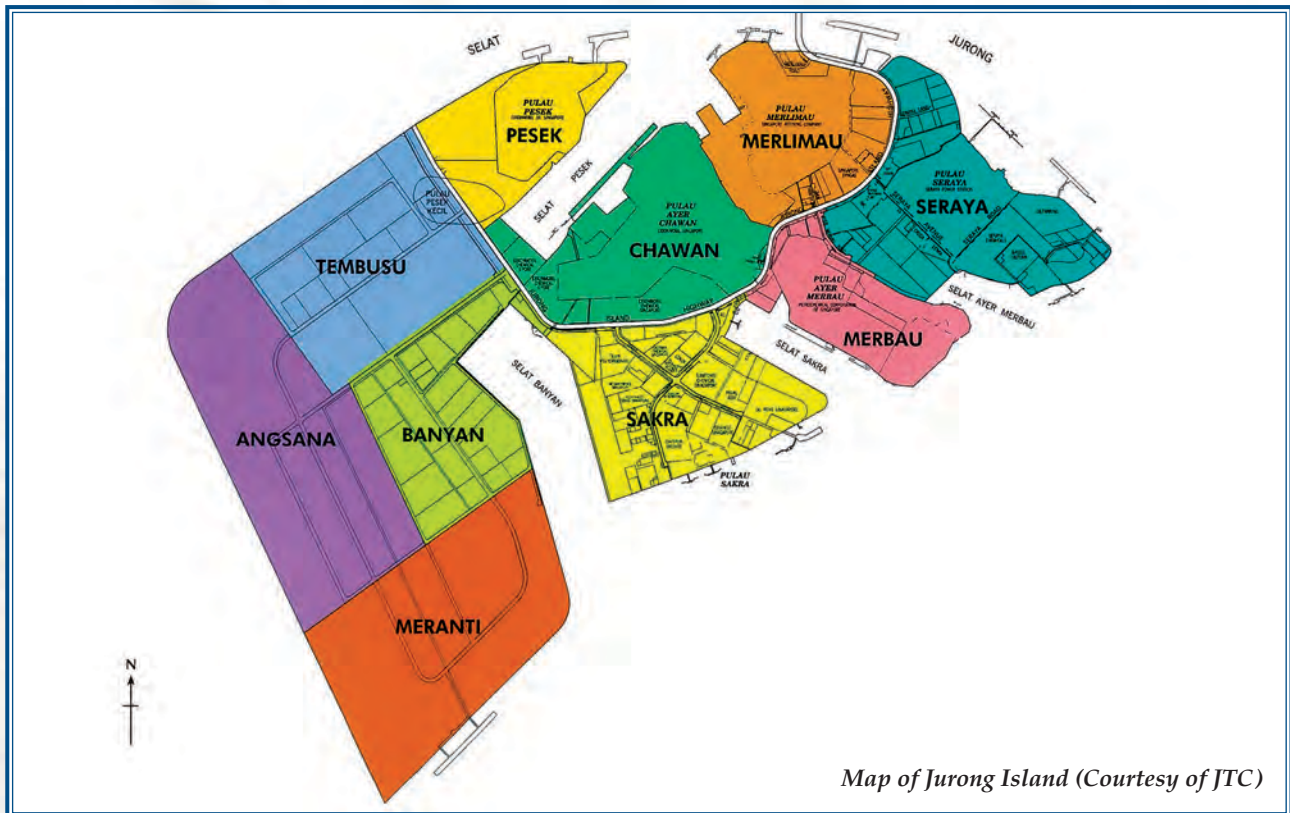
Scheme of



*E-export market
 Note: PCS' name plate capacities are based on 5-yr average.

Unit: tonnes per year

Jurong Island Synergy



Map of Jurong Island (Courtesy of JTC)

PCS, the core of Singapore's energy and chemicals park.

Jurong Island is being developed by the Singapore Government to serve as a world-class hub for the energy and chemicals industry. Since March 1995, intensive land reclamation had taken place to merge seven of Singapore's southern islands, including Ayer Merbau, into a 3,200-hectare self-contained essential chemicals island. It is now home to more than 100 leading energy and chemical companies. More is expected as there is still room on Jurong Island for further expansion of Singapore's chemical industry.

Jurong Island is now linked to the Singapore mainland by an eight-lane highway. Travelling time to and from the mainland via the road link is shortened considerably. This has helped to reduce transportation and operating costs.

PCS has a strategic location on Jurong Island. This has and will enable us to serve our current and future customers better.

“ PCS has and will use its strategic location on Jurong Island to better serve current and future customers on Jurong Island and the region. ”



Beyond

Tomorrow

Contributing to modern living standards and industrial development in the region.

As the Asian economies continue to grow, the essential chemicals industry remains one of the most dynamic in the world. With Asia's large population base, demographic profile and changing lifestyle, the growth in demand for essential chemicals products is amongst the highest in the world.

Applications of essential chemicals products are widely spread across both the industrial and consumer fields:

- Household products: textiles, furniture fabrics, carpeting, paints, luggages, electrical appliances, kitchen accessories, detergents, etc.
- Transportation: automotive products such as polyester car and truck bodies, acrylic automobile finish coats, styrenic car bumpers, synthetic elastomers for tires, tire treads and hoses, vinyl seat covers, methacrylate traffic lights and road signs.
- Electronics: computers, digital hi-fi, audio-visual consumer products, and telecommunications/office equipment.
- Other industrial sectors: agriculture, packaging, building, medical and surgical equipment, parts and components.

With growing demand and changing markets, coupled with greater competition, PCS looks forward to continue playing a leading role in the industrial development and rise of living standards, and providing our customers a reliable source of cost-effective products in an environmentally and socially responsible manner.



PCS Growth

August 1977	Incorporation of Petrochemical Corporation of Singapore (Private) Limited (PCS)
July 1980	Start of construction works of PCS on Pulau Ayer Merbau
February 1984	Start up of PCS I and its pipeline-customers: The Polyolefin Company (Singapore) Private Limited (TPC), Phillips Petroleum Singapore Chemicals (PPSC), and Denka Singapore (Private) Limited (DSPL)
February 1985	Startup of Ethylene Glycols (Singapore) Private Limited (EGS)
March 1985	Official Opening of PCS I as part of the Singapore Petrochemical Complex
March 1989	1st Debottlenecking of PCS I capacity
October 1989	Shell's participation in PCS
October 1992	2nd Debottlenecking of PCS I capacity
December 1994	Ground Breaking Ceremony of PCS II and Complex II companies
April 1997	Start up of PCS II and additional pipeline-customers' plants in Pulau Seraya and Pulau Sakra
December 1997	Official Opening of PCS II as part of Singapore Petrochemical Complex
July 1999	3rd Debottlenecking of PCS I capacity
January 2000	ISO 14001 certified
June 2000	Startup of Condensate Splitter Unit jointly owned with Shell Eastern Petroleum and constructed on Pulau Bukom
August 2001	Debottlenecking of PCS II capacity
December 2002	OHSAS 18001 certified
April 2003	Startup of Mitsui Elastomers Singapore Pte Ltd
April 2005	Ground-Breaking Ceremony of PCS Metathesis Plant
May 2006	Start-up of PCS Metathesis Plant
November 2006	Official Opening of PCS Metathesis Plant
November 2009	Start-up of Shell's MEG Plant
December 2009	QPI and Shell Petrochemicals (Singapore) Pte. Ltd.'s participation in PCS
October 2012	Ground-Breaking Ceremony of PCS 2nd Butadiene Plant
May 2014	Start-up of PCS 2nd Butadiene Plant
October 2014	Official Opening of PCS 2nd Butadiene Plant
March 2016	Ground-Breaking Ceremony of PCS Naphtha Import Facilities
November 2017	Start-up of PCS Naphtha Import Facilities
March 2018	Official Opening of PCS Naphtha Import Facilities



Incorporation of PCS in 1977



PCS Ground Breaking Ceremony in 1980



Complex II Official Opening in 1997



Official Opening of PCS 2nd Butadiene Plant in 2014



Official Opening of PCS Naphtha Import Facilities in 2018

