

Asia Petrochemical Industry Conference 2011

Country Report

From

Singapore

Prepared by:

Singapore Chemical Industry Council Limited (SCIC)

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Country Report - Singapore

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Facts on Singapore

a. Land and Climate

Total Land Area:	710.2 sq km. Comprising one main island and a number of islets scattered off its north-east and south.
Climate:	Singapore is an equatorial country with relatively uniform temperature, high humidity and abundant rainfall.
Average Daily Temperature:	25.1 – 31 degree Celsius
Time:	GMT +8 Hours

b. People

Total Population: (2008 Mid-Year)	5.07 million
Population Density: (2010)	7,126 per sq km
Population by Race:	Chinese (75%) Malays (13.7%) Indians (8.7%) Others (2.6%)
Official Languages:	English (Language of Administration) Chinese (Mandarin) Malay (National Language) Tamil

c. Government

Singapore is a republic with a parliamentary system of government based on the Westminster model.

The organs of state comprise:

The Executive: Head of State and Cabinet

Head of State: President S R Nathan, re-elected in 2005
(The President is elected for a fixed term of 6 years)

Cabinet: Led by the Prime Minister, Mr Lee Hsien Loong
(since 12 Aug 2004)

Parliament

Parliament is elected by general election every five years. The first sitting of Parliament was held on 8 Dec 1965. The first general election for Parliament was held on 13 Apr 1968. There are 23 registered political parties.

The Judiciary: The Supreme Court and the Subordinate Courts

The Judiciary is one of the three constitutional pillars of government along with the Legislature and the Executive. As an Organ of State, the Judiciary's function is to independently administer justice. The Judiciary is safeguarded by the Constitution.

d. Economic Indicators

Currency: Singapore Dollar (SGD) which is divided into 100 cents

Money Supply: \$112.47billion (as of 2010)

Official Foreign Reserves: \$288.96 billion (as of 2010)

Overview of Singapore's Economy in 2010

Year	GDP at 2005 Market Prices (S\$ M)	% Growth
2006	226,932.9	8.7
2007	246,845.5	8.8
2008	250,516.1	1.5
2009	248,587.0	-0.8
2010	284,560.7	14.5

Overview of Manufacturing Sector Performance in 2010

Year	Total Output (S\$ M)	% Growth
2006	237,880	9.6
2007	253,381	6.5
2008	259,339	2.4
2009	213,669	- 17.6
2010	270,494.7*	26.7*

** Figures are provisional at the time of printing. All statistics indicated above have been extracted from the Statistics Singapore website*

Overview of Chemical Cluster Performance in 2010

The Singapore chemical cluster comprises the Petroleum, Petrochemicals and Specialties sub-sectors.

A progressive recovery has been seen in early 2010 following the global economic downturn in 2009 which led to weak demand for the overall chemicals cluster. The chemical industry's output in 2010 rose by 26.7% to S\$80.5 billion, up from S\$58.5 billion in 2009. The investment commitments in 2010 stood at S\$12.85 billion.

Nonetheless, the chemical cluster still continued being a key contributor to the manufacturing cluster at 29.8% of the overall manufacturing output.

Year	Chemical Cluster Output (S\$ Bn)	% Growth
2005	66.5	31.2
2006	74.7	12.3
2007	83.1	11.2
2008	98.1	18.1
2009	58.5	- 40.4
2010	80.5*	37.6*

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Chemical Industry Sectoral Performance in 2010

Petroleum

Petroleum output continued to be the strongest contributor to the overall manufacturing output of the chemical cluster. This sector contributed an output of S\$41.63 billion in 2010, compared to S\$31.86 billion in 2009. Value added for this sector was S\$ 1.23 billion

Petrochemicals

The petrochemicals sector output rose from S\$19.3 billion in 2009 to S\$29.99 billion in 2010, with value added totaling S\$1,97 billion.

Specialties

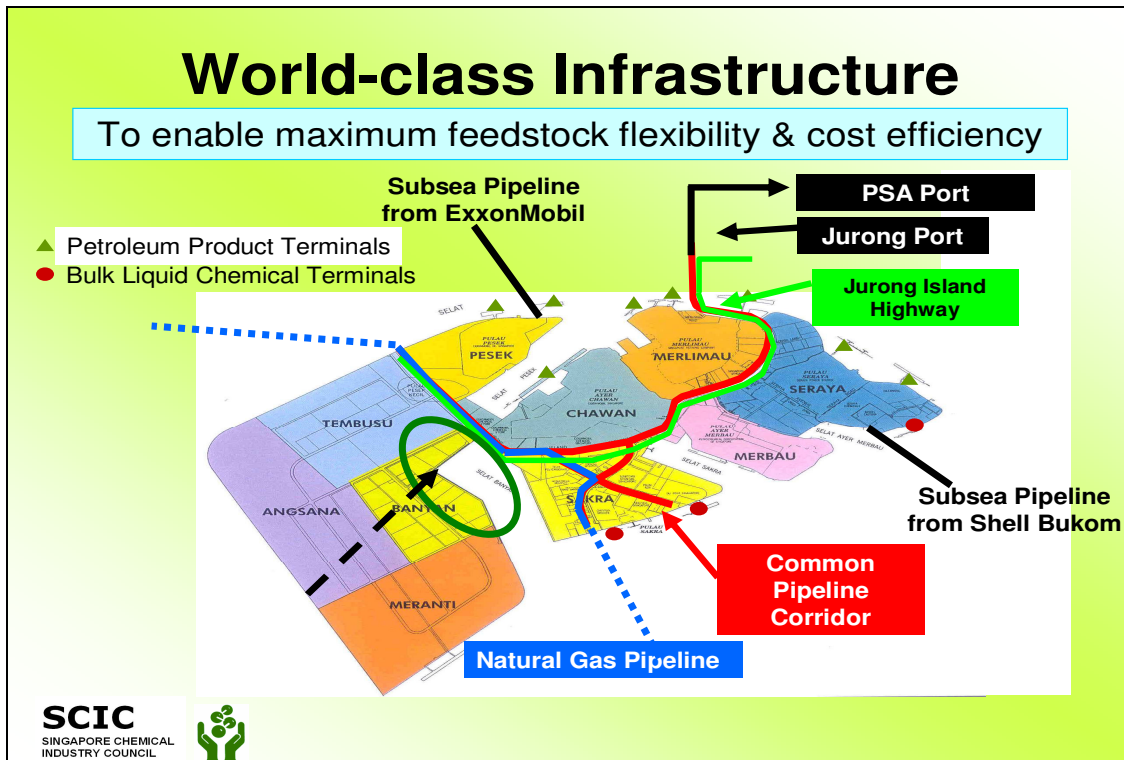
Specialties contribution rose from S\$5.5 billion in 2009 to S\$6.8 billion in 2010. Value added for the year totalled \$2.2 billion.

	2006	2007	2008	2009	2010
	Value (S\$Bn)	Value (S\$Bn)	Value (S\$Bn)	Value (S\$Bn)	Value (S\$Bn)
Petroleum Sector	45.8	48.5	60.3	31.8	41.6*
Petrochemical Sector	22.2	26.9	29.1	19.3	19.9*
Specialties Sector	6.7	7.7	8.7	7.3	6.8*

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Location of Petrochemical Plants in Singapore – Jurong Island

Jurong Island is located on the western coast of Singapore. It is home to leading petrochemical companies as well as third party service providers of utilities, tankages and terminalling facilities, warehouses , maintenance and repair centres.



Singapore firmly believes in the permanence of the outsourcing trend. Today, companies on Jurong Island are able to outsource non-core manufacturing operations like utilities, waste treatment, logistics and storage and terminalling. This translates to lowering of fixed capital investments by 10-15%, hence generating a better return on capital employed.

Jurong Island will be developed into a chemical transshipment centre for the region. 80 hectares of land has been designated for the logistics hub (Banyan Logistics Node) for the movement of bulk chemicals. Companies can also export bulk solids using Singapore's main port (PSA) which is less than 10 kilometres away.

Companies can also work with the Institute of Chemical Engineering & Sciences (ICES), located in Jurong Island itself, in areas ranging from basic chemical R&D (eg. catalysis) to process optimisation.

Key Developments in 2010

The following are some developments that will further strengthen the growth of the Singapore chemical industry over the next few years:

- **Neste Oil**

Finnish energy firm Neste Oil had their start-up of the Singapore plant in Nov 2010 which is the world's largest renewable diesel plant.

The plant will have an annual capacity of 800,000 metric tonnes, making it the largest facility in the world. They employ approximately 120 people, the majority of which are from Singapore and the nearby countries.

- **Shell-SEPC**

Shell officially opens its new Ethylene Cracker Complex and announced the completion of the Shell Eastern Petrochemicals Complex (SEPC)

The SEPC project is Shell's largest investment to date and is the second large-scale petrochemicals project Shell has completed in Asia in the past four years.

- **LANXESS**

LANXESS broke ground for the construction of a new, state-of-the-art butyl rubber plant in Singapore on 17 May 2010.

Its production is expected to start in the first quarter of 2013. The 100,000 tons per annum plant on Jurong Island will require an investment of up to EUR 400 million (575 million USD).

The plant will help serve the rising demand for tires that is being driven by the trend towards greater mobility, in particular among the growing middle-class in countries such as China and India. In addition, the distinct properties of butyl rubber make it an important product of choice for the pharmaceutical industry, in particular in Asia.

- **Mitsui Chemicals-2nd Singapore TAFMER[®] Plant**

Mitsui Chemicals Inc (MCI) announced its opening of its new TAFMER[®] Plant in Singapore on 13 July 2010.

The new S\$280 million plant on Jurong Island, which is MCI's second plant in Singapore and fifth worldwide, incorporates MCI's unrivaled technologies in polymer design, metallocene catalysts, and production processes into a world-class, state-of-the-art production facility with an annual operating capacity of 100,000 tonnes.

- **Jurong Island Rock Cavern (JRC) Project**

Jurong Rock Cavern (JRC) is an innovative initiative driven by JTC to increase underground oil storage capacity on Jurong Island. JRC will comprise an oil storage complex to be built at subterranean depths beneath the seabed of Banyan Basin. Upon completion, the underground caverns will have a potential storage capacity of close to 3 million cubic metres catering specifically to liquid hydrocarbons like crude oil, condensates and diesel oil.

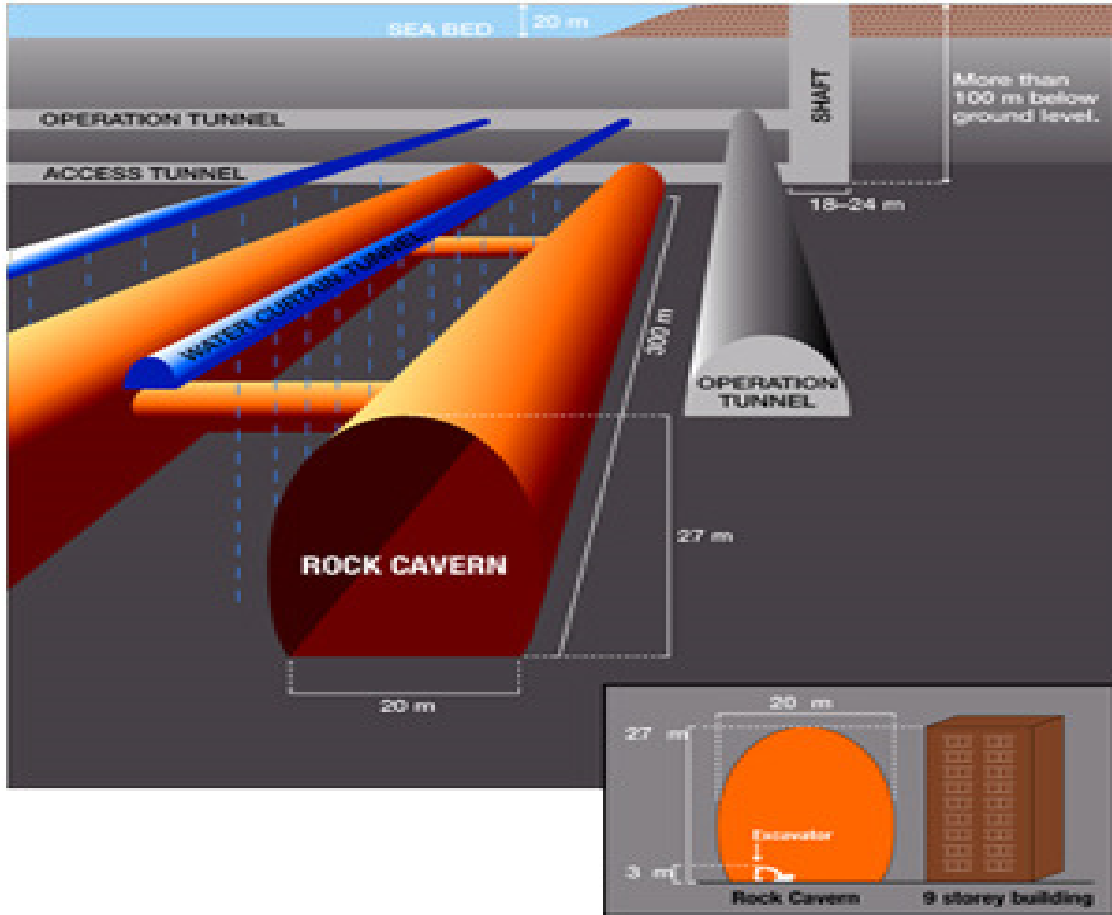
Development works for Phase 1 of JRC, with a storage capacity of about 1.5 million cubic metres, had commenced at the end of 2006. JRC is a milestone project for JTC and marks the next phase in the evolution of Singapore's petroleum and chemicals industry.

Jurong Rock Cavern
Competitive Storage Solution

Proposed location for underground storage

- Ready built storage
- Greater security
- Increase opportunity for trade

SCIC
SINGAPORE CHEMICAL
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**Image courtesy of JTC Corporation*

General Matters and Raw Materials Committee

Production Capacities of Products

Product	Total Production Capacity (tpa)*
ETHYLENE	1,880,000
PROPYLENE	1,055,000
BUTADIENE	60,000
BENZENE	420,000
TOULENE	145,000
XYLENES	495,000

Total Import of Main Products by Value

PRODUCT	2010
	Value(\$K)
ETHYLENE	119,764
PROPYLENE	59,615
BUTADIENE	110
BENZENE	335,363
TOLUENE	30,364
XYLENES	28,836

Total Export of Main Products by Value

PRODUCT	2010
	Value(\$K)
ETHYLENE	371,107
PROPYLENE	175,103
BUTADIENE	2,469
BENZENE	91,669
TOLUENE	281,566
XYLENES	932,573

Total Import of Main Products by Quantity

PRODUCT	2010
	Qty (Tons)
ETHYLENE	65,813
PROPYLENE	36,244
BUTADIENE	0.006
BENZENE	263,072
TOLUENE	25,936
XYLENES	22

Total Export of Main Products by Quantity

PRODUCT	2010
	Qty (Tons)
ETHYLENE	286,595
PROPYLENE	120,610
BUTADIENE	0.833
BENZENE	74,964
TOLUENE	235,911
XYLENES	657,250

Polyolefins Committee

Production Capacities of Products

Product	Total Production Capacity (tpa)
POLYETHYLENE	1,270,000
POLYPROPYLENE	370,000
MTBE	238,000

Total Import of Main Products by Value

PRODUCT	2010
	Value(\$K)
POLYETHYLENE	1,195,045
POLYPROPYLENE	546,209
MTBE	950,910

Total Export of Main Products by Value

PRODUCT	2010
	Value(\$K)
POLYETHYLENE	1,856,347
POLYPROPYLENE	691,349
MTBE	314,956

Total Import of Main Products by Quantity

PRODUCT	2010
	Qty (Tons)
POLYETHYLENE	814
POLYPROPYLENE	352
MTBE	840,469

Total Export of Main Products by Quantity

PRODUCT	2010
	Qty (Tons)
POLYETHYLENE	1,052
POLYPROPYLENE	386
MTBE	259,819

Styrenics Committee

Production Capacities of Products

Product	Total Production Capacity (tpa)
STYRENE	360,000

Total Import of Main Products by Value

PRODUCT	2010
	Value(\$K)
STYRENE	31,425
POLYSTYRENE	29,599

Total Export of Main Products by Value

PRODUCT	2010
	Value(\$K)
STYRENE	1,210,688
POLYSTYRENE	608,207

Total Import of Main Products by Quantity

PRODUCT	2010
	Qty (Tons)
STYRENE	21,236
POLYSTYRENE	10

Total Export of Main Products by Quantity

PRODUCT	2010
	Qty (Tons)
STYRENE	751,683
POLYSTYRENE	295

Synthetic Fiber Raw Materials Committee

Production Capacities of Products

Product	Total Production Capacity (tpa)
ETHYLENE GLYCOL	122,000
ETHYLENE OXIDE	45,000

Total Import of Main Products by Value

PRODUCT	2010
	Value(\$K)
ETHYLENE GLYCOL	410,143
ETHYLENE OXIDE	1,251

Total Export of Main Products by Value

PRODUCT	2010
	Value(\$K)
ETHYLENE GLYCOL	1,443,416
ETHYLENE OXIDE	33

Total Import of Main Products by Quantity

PRODUCT	2010
	Qty (Tons)
ETHYLENE GLYCOL	347,994
ETHYLENE OXIDE	264

Total Export of Main Products by Quantity

PRODUCT	2010
	Qty (Tons)
ETHYLENE GLYCOL	1,182,003
ETHYLENE OXIDE	0.906

Chemicals Committee

Production Capacities of Products

Product	Total Production Capacity (tpa)
ACETONE	180,000
ACETYLENE	14,500
PHENOL	300,000
BISPHENOL – A	230,000

Total Import of Main Products by Value

PRODUCT	2010
	Value(\$K)
ACETONE	13,812
ACETYLENE	415
PHENOL	26,589
BISPHENOL – A	15,602

Total Export of Main Products by Value

PRODUCT	2010
	Value(\$K)
ACETONE	151,432
ACETYLENE	599
PHENOL	139,555
BISPHENOL – A	77,221

Total Import of Main Products by Quantity

PRODUCT	2010
	Qty (Tons)
ACETONE	11,366
ACETYLENE	81
PHENOL	11,890
BISPHENOL – A	5,248

Total Export of Main Products by Quantity

PRODUCT	2010
	Qty (Tons)
ACETONE	137,916
ACETYLENE	509
PHENOL	73,374
BISPHENOL – A	33,016

About the Singapore Chemical Industry Council Limited

The Singapore Chemical Industry Council, or SCIC, is the official body representing companies from the chemical industry in Singapore. Its membership composition comprises key MNCs, SMEs, Logistics & Service Providers as well as Traders.

SCIC was officially formed under the umbrella of the former Singapore Manufacturers Association on 8th May 1979 by a group of 17 manufacturers. It was incorporated as an independent entity on 28 June 2007.

SCIC is also the national administrator of the Responsible Care initiative, endorsed by the International Council of Chemical Associations, to promote the spirit, principles and practices of Responsible Care to the Singapore Chemical Industry.

Through advocating Responsible Care, the chemical industry in Singapore can make a valuable contribution to the sustainable development and improvement of lives and the environment.