

PRESS RELEASE

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**Singapore faces stiff competition from regional biofuel refining hubs**

*As the region ramps up biofuel production, Singapore will be well-placed to compete for refinery contracts, but will face competition from producer countries eager to develop integrated biofuel value chains, such as Malaysia, Indonesia and India.*

As a successful petrochemical hub in Asia and the world's third largest oil refining center, Singapore has set its sights on diversifying its portfolio of refining activities to include bio-diesel refining.

However, other countries in the region are giving the island Republic a run for its money (see Table 1).

**Table 1: Bio-diesel refineries in key countries, Asia-Pacific**

Country	Refinery in operation	Refinery planned/under construction	Annual output/ Estimated capacity
Australia <sup>1</sup>	8	8	> 367 million litres
China <sup>2</sup>	1	3	3 million tonnes
India <sup>3</sup>	2	9	NA
Indonesia <sup>4</sup>	1	> 13	70,000 tonnes
Malaysia <sup>5</sup>	1	5	> 300,000 tonnes
Singapore <sup>6</sup>	1	2	> 200,000 tonnes

According to Spire's research, most refinery sites are selected based on access to production inputs and excellent infrastructure. Many Asia-Pacific biofuel players, for instance in Australia, choose to invest in their country of domicile.

<sup>1</sup> Source: Biodiesel Association of Australia

<sup>2</sup> Source: Xinhua News Agency

<sup>3</sup> Source: Ecoworld

<sup>4</sup> Source: Indonesia Energy Information Center

<sup>5</sup> Source: Various Malaysian media reports

<sup>6</sup> Source: EDB Singapore

Global players, however, prefer to plant their refinery seeds in several geographies.

Spire interviewed bio-diesel producers on refinery site selection in Asia. Highlights of the findings include:

- Proximity to production inputs such as palm oil and jatropha is the most crucial factor in refinery site selection.
- Infrastructure comes a close second, with particular emphasis on transportation (port and road) infrastructure, electricity and, to a certain degree, telecommunications.
- Some companies interviewed also cited government incentives and historical factors as important criteria.
- Specifically, Singapore's world-class port, Government incentives for this industry and proximity to both Malaysia and Indonesia (major feedstock producers) are its main advantages in the race to become a biofuel refinery hub.
- In the Asian region, countries deemed to be up-and-coming refinery hubs to rival Singapore are Malaysia and Indonesia, the biggest palm oil producers in the region.
  - Malaysia, in particular, was favored for its proximity to feedstock, its improving infrastructure, as well as aggressive government incentives targeted at the biofuel sector, such as five-year tax holidays.
- India was also mentioned as an attractive bio-diesel refinery location due to a large domestic market and government efforts to promote the adoption of biofuels.

Regional countries which have a comprehensive plan to develop biofuel refineries include India, China, Indonesia and Malaysia. These countries may have the advantage of being able to build integrated value chains from crop cultivation to refining. To stay ahead, Singapore will need to leverage its established fossil fuel logistics sector, its existing refinery base and above all its government's ability to act quickly and invest in infrastructure ahead of demand.

In the face of stiff competition, Mr Julian Ho, Executive Director, Energy, Chemicals and Engineering Services Cluster at Singapore's Economic Development Board, says: "Moving forward, EDB will be focused on 2G biofuel. By 2G biofuel, we refer to technology beyond the traditional trans-esterification process which will produce higher quality biofuel....As most of the 2G biofuel technologies are quite new and in the developmental stages, we are encouraging companies to conduct biofuel R&D and set up biofuel pilot plants in Singapore."<sup>7</sup>

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<sup>7</sup> Source: Spire's interview with EDB

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## Annex

**Table 2: Biodiesel refinery projects of major players in Asia-Pacific**

Company(s)	Country	Biodiesel refineries (operating, under construction or planned)
Continental Bioenergy	Singapore	1
D1 Oils	India	1
Darmex Oil	Indonesia	1
Golden Hope Plantations	Indonesia Malaysia	1 1
Peter Cremer & Kulim Group	Singapore	1
Mission Biofuels	Malaysia	2
Natural Fuel	Australia Malaysia Singapore	1 1 1
Nippon Oil & Petronas	Malaysia	1
Reliance Industries	India	1
Surya Dumai Group	Indonesia	1

Source: Spire Research and Consulting, from multiple sources

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### About Spire Research and Consulting

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