Jurong Port

FACT SHEET

Ready-Mixed Concrete Ecosystem

Aerial view of the Ready-Mixed Concrete Ecosystem

Ready-mixed concrete (RMC) is an essential material for constructing buildings and infrastructure. This concrete is created at RMC batching plants by mixing cement, construction aggregates (i.e. sand and granite), additives and water. In Singapore, cement is primarily imported through Jurong Port (JP), while aggregates are brought in through waterfront facilities managed by the Building and Construction Authority (BCA) in Punggol and previously in Tuas (now via JP).

In 2019, JP worked with batching plant players, aggregates importers and government agencies such as BCA, HDB and JTC to co-locate these batching plants close to the port. Construction of this $200 million facility began in September 2020 and it has been operational since October 2023. Working in concert with other construction supply chains served by JP for cement and steel, the RMC Ecosystem creates a synergistic effect that will benefit the entire construction sector in Singapore.

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Project Key Facts

	Tuas Aggregate Terminal (Previously)	RMC Ecosystem at Jurong Port
Land area	20 Hectares	11.9 Hectares (16 football fields)
Operating Lease	3 – 9 years	30 years
Height of Stockpile	8 meters	14 meters
Draft	2.6 meters	13.5 meters
Berth Productivity (throughput per hour, tph)	500 tph	700 tph
Cargo Transfer Rate	650 tph	800 tph
Output Productivity	180m^3 per hour	360m^3 per hour

RMC Ecosystem Customers

Batching Plants

1. Island Concrete Pte Ltd
2. Pan United Concrete Pte Ltd
3. Sinmix Pte Ltd
4. Star Ready Mix Concrete
5. Top-Mix Concrete Pte Ltd
6. YTL Concrete
7. Alliance Concrete (in mid-2027)

Aggregates Importers

1. HL Building Materials Pte Ltd
2. Pan United Concrete Pte Ltd
3. Orient Natural Resources
4. Prospaq

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Key Benefits

The key benefits of RMC Ecosystem are:

Benefits to the Industry:

- **Long-term Investment Security**: The RMC ecosystem offers a 30-year lease, encouraging sector players to invest in advanced technologies instead of settling for short-term arrangements.

- **Enhanced Productivity:** Waterfront access for bulk carriers eliminates double handling, and the clustering of aggregates storage & RMC batching leads to approximately 2 times output productivity per hour.

- **Co-shared services:** Centralised sludge collection and recycling reduces land area, manpower and utilities for individual RMC plants leading to better manpower resourcing and reduction in opex costs. JP reduces waster by recycling concrete sludge to recycled aggregates for consumption by the RMC plants.

- **Digital Transformation:** JP fully digitalised platforms, such as JP Online Modernised platform and RMC Online platform, enable faster, paperless, and transparent transactions from berth booking for vessels to trucks queuing for wash.

Benefits to Singapore:

- **Land Savings:** The project saves up to 8 hectares of land; freeing up this newly available industrial land to be repurposed for other national priorities.

- **Reduced Carbon Emissions and Traffic Congestion**: Eliminates more than 1,000,000 unnecessary truck trips annually. In addition, aggregates vessel can berth directly at JP, eliminating the need for 216 barge trips annually. This translates to a reduction of 23,500 tons CO_2 emissions (equivalent to the electricity needed to power around 11,850 HDB four-room flats for a year).

- **Reduced Operational Carbon Footprint**: Installation of solar panels on the rooftop of RMC Ecosystem has the potential to generate up to 6.8 GWh of solar power each year. This will help offset around 50% of RMC Ecosystem's annual electricity consumption from the grid and reduce operational carbon footprint by close to 1,800 tons of CO_2 (equivalent to the electricity needed to power around 900 HDB four-room flats for a year).

Integrated Construction and Prefabrication Hub

Artist Impression of JP Integrated Construction and Prefabrication Hub

Jurong Port will be building Singapore's first multi-tenants Integrated Construction and Prefabrication Hub (ICPH). Situated in close proximity to the RMC Ecosystem and our future Steel Ecosystem, JP's ICPH will eliminate the need for precasters to set up their own concrete batching facility and steel mesh fabrication systems.

By leveraging on the construction ecosystems at JP (RMC, steel and cement), the construction of precast components and modules could take place in the form of an efficient "assembly line" at JP. This will significantly reduce double handling and land-take, as well as help to decarbonise the supply chain.

In addition, Jurong Port can also support the precasters for surge storage on a pay per use basis.

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Project Key Facts

Items	Open Precast Yard	JP's ICPH
Tenancy model	Single tenancy	Multi-tenancy
Land utilisation	Single storey with open precast yard.	Improved land intensification through multi-storey, sheltered precast area.
Supply chains	Longer travelling distance between batching plant and precaster. Assuming precaster have a built-in RMC batching plant, the estimated truck trips will be 6,200 per annum.	Close proximity – shorter travelling distance between RMC Ecosystem and JP ICPH. Precasters in JP will be supported by RMC plants within the ICP, reducing truck trips to 3,300 per annum for the entire ICPH (across four precasters).

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Key Benefits

The key benefits of ICPH are:

Benefits to the Industry:

- **Long-term Investment Security**: The 25 years lease will foster technology investment among sector players.

- **Co-shared Services**: Tenants will benefit from common co-shared services such as surge storage space on a pay-per-use basis.

- **Enhanced Supply Chain Resilience:** Access to regional sources for precast components with end-to-end shipping and logistics support provided by Jurong Port's existing waterfront partners.

Benefits to Singapore:

- **Land Intensification:** The ICPH is built vertically rather than laterally, contributing to more efficient land use.

- **Reduced Truck Trips**: Assuming the four tenants each have their own RMC batching plant, the new ICPH will eliminate more than 21,500 truck trips annually as it is located next to the RMC Ecosystem.

- **Sustainable Energy:** Enables the investment in and installation of solar panels on the rooftop of ICPH, which can generate up to 2.3 GWh of solar power per year. This has the potential to offset around 50% of ICPH's annual electricity consumption from the grid and reduce operational carbon footprint by close to 550 tCO_2 (equivalent to the electricity needed to power around 280 HDB four-room flats for a year)