

# News Release



## Innovation partnership powers Vopak in driving new frontiers for a sustainable future

Singapore, 26 May 2022

Vopak Terminals Singapore has made a number of innovation breakthroughs to create a safer and more sustainable working environment within the industries, with support from the Singapore Economic Development Board.

“We are honored to collaborate with EDB to test new technologies at four Vopak terminals in Singapore. With the support from Singapore Economic Development Board, we have made huge strides to create a safer, more sustainable and productive workplace, thus creating long term value for our customers and enhancing Singapore’s competitiveness to serve the energy and chemical industry,” said Mr. Sjoerd Bazen, Managing Director at Vopak Terminals Singapore.

“Vopak’s continued efforts to pilot new innovative technologies for the industry reflects their commitment to a sustainable future. We are heartened by Vopak’s collaboration with our start-ups here in Singapore and the successful deployment of digital efforts at their terminals in Singapore and the region.” Said Mr Lim Wey-Len, Senior Vice President and Head of Energy Resources, Singapore Economic Development Board.

### **Innovative solutions with a future mindset for sustainability, productivity and safety**

The focal points in this innovation program for Vopak in Singapore are around improving asset management, optimising operational processes and supply chain integration. In these domains a variety of projects were launched at our Vopak Singapore terminals at Sebarok, Penjuru, Banyan and Sakra. (Banyan and Sakra terminals are on Jurong Island). Some of the **Innovations include:**

**1. Use of drones/robotics for safer inspections.**

Vopak’s partnership with Performance Rotors on drones and Asia Offshore Solutions on remotely operated vehicles has supported the international expansion of these two made-in-Singapore innovations. The drones of Performance Rotors allow for safe inspections of confined or hard to reach industrial spaces, and the ROVs of AOS are inspecting our underwater infrastructure without the need to have human divers in potential riskful environments.

**2. Use of Industrial Internet of Things and data analytics to conduct preventive maintenance.**

The application of Industrial IoT devices that are suitable for deployment in hazardous environments including for example wireless vibration sensors can collect real time condition data on rotating equipment (like pumps and compressors). The data which is collected by the sensors is transmitted wirelessly to cloud based analytics platforms where smart algorithms can provide actionable insights for asset maintenance. This helped to give better visualisation of asset operating conditions and can provide diagnostics and actions to be taken - significantly reducing unplanned downtime of assets.

**3. Industrial wireless network**

The pilot roll-out of an industrial **LoRa WAN network** at two of Vopak's terminals kick-starts the deployment of a range of next-generation sensors that will improve safety and sustainability. Examples include valves position sensors to help avoid leakage and contamination; wireless temperature sensors to allow optimisation of tank heating. LoRa Wan defines a Low Power, Wide Area networking protocol designed to wirelessly connect battery operated 'things' to the internet.

#### **4. Artificial Intelligence video analytics for real-time monitoring**

Artificial intelligence video analytics providing real-time visibility of terminal operations have been successfully piloted at the Penjuru terminal in which truck loading activities are monitored in real-time for safety compliance.

#### **5. Cloud based ERP systems for real time insights in supply chain**

Vopak's Singapore terminals were one of the first to use **cloud based ERP systems**. This was developed fully in-house using low code platform Outsystems. It enables the use of I-IoT solutions to digitize operations, providing its customers with real time insights in their supply chain.

#### **6. Supply chain optimisation through secured data sharing platform**

A future ready operational system also enables supply chain integration. Vopak endorses API first data sharing platform **NxtPort International**, to securely and efficiently establish data connectivity with Vopak's supply chain partners. NxtPort connects public and private port stakeholders of different digital maturity ensuring data providers remain in strict control of their data.

#### **7. Flow batteries as sustainable solution for off-grid operations**

Vopak is piloting the use of a micro grid with flow batteries to reduce reliance on diesel generator and improve the sustainability of our operations on our terminal at off-grid island, Sebarok.

About Royal Vopak

Profile Vopak

Royal Vopak is the world's leading independent tank storage company. We store vital products with care. With over 400 years of history and a focus on sustainability, we ensure safe, clean and efficient storage and handling of bulk liquid products and gases for our customers. By doing so, we enable the delivery of products that are vital to our economy and daily lives, ranging from chemicals, oils, gases and LNG to biofuels and vegoils. We are determined to develop key infrastructure solutions for the world's changing energy systems, while simultaneously investing in digitalization and innovation. Vopak is listed on the Euronext Amsterdam and is headquartered in Rotterdam, the Netherlands. For more information, please visit [www.vopak.com](http://www.vopak.com)

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