

PUB launches open grant call to develop breakthrough water technology

Singapore, 27 October 2023 – PUB, Singapore's National Water Agency, has launched an open Request-for-Proposal (RFP) to develop innovative technologies and solutions in energy and waste reduction, decarbonisation and water quality. This grant call falls under the Competitive Funding for Water Research (CWR)¹ initiative, which is funded by the National Research Foundation (NRF).

2 Singapore's water demand is projected to almost double by 2065 with economic and population growth. In tandem, energy required for producing and supplying water and sludge generation – a byproduct of the water treatment process – will also increase. With climate change, the risk of prolonged drought will also impact our water supply. Among Singapore's Four National Taps², NEWater and desalinated water are weather-resilient but more energy intensive water sources. PUB's research and development (R&D) goals are thus aimed at reducing energy and chemical consumption, as well as waste production, while also increasing Singapore's water resources and improving water quality. These efforts would also serve to moderate PUB's operating costs in the long-term, as we meet the rising water needs of the nation.

3 For this RFP, PUB is keen to advance new and existing ideas, as well as develop breakthrough technologies in the following R&D areas:

- a) **Desalination, water reuse and used water treatment:** To reduce the energy consumption at system level for seawater desalination and NEWater production. For used water treatment, PUB aims to attain energy self-sufficiency and eventually develop an energy-positive water reclamation plant.

¹ The CWR is a funding scheme under the Urban Solutions & Sustainability domain of Singapore's Research, Innovation and Enterprise (RIE) 2025 Plan. The funding is provided by the National Research Foundation.

² The Four National Taps are local catchment water, imported water, reclaimed water (NEWater) and desalinated water.

- b) **Waste reduction and resource recovery:** To reduce sludge production in water and used water treatment, recover useful resources from seawater brine and other waste streams of the water loop, as well as reduce the amount of waste sent to landfill. Resources, metals, or minerals that are recovered from seawater brine should either have value to industry or be usable as chemicals in PUB's water treatment plants.
- c) **Decarbonisation:** To capture, remove and utilise carbon dioxide from the environment using technologies that can be integrated with PUB's operations.
- d) **Water quality and security:** To maintain high water quality standards and more secure water resources for the nation's needs through protection of source water, monitoring of water quality in treatment, distribution and sewers, and management of contaminants of emerging concern.

4 There are two tracks under the RFP – the first solicits for novel ideas and technologies with focus on the abovementioned R&D areas, while the second focuses on translating and scaling up promising technologies with the end goal of commercialising or integrating the solutions with PUB's operations. The maximum funding amounts are S\$1.5 million and S\$2 million for the first and second tracks respectively.

5 Dr Pang Chee Meng, PUB's Chief Engineering and Technology Officer, said, "As we prepare for the challenges of climate change and increasing water demand, it is critical that PUB continues to press forward with our R&D efforts to maintain the sustainability of Singapore's water system by leveraging the latest water and digital technologies. We look forward to receiving proposals with novel and scalable solutions that will help us build a sustainable and resilient water system while meeting present and future water needs."

6 Under the current RIE2025, PUB had previously launched three grant calls covering areas such as the recovery of chemicals and minerals from the water loop, the projection of climate change impacts on Singapore's water system, and the use of technologies (e.g., machine learning, radar satellite and imagery) for the collection of data to support PUB's coastal protection efforts. A total of eight projects have been awarded. These include the recovery of lithium and mineral precipitates from seawater brine, the development of a machine learning-based model to predict changes on network water quality due to climate change, and the use of novel data-model integration techniques to improve capability in predicting drought events.

7 This RFP is open to Institutes of Higher Learning (IHLs), public sector entities and private sector entities based in Singapore or overseas. Overseas entities must be registered in Singapore to be eligible for funding. The deadline for submission of proposals is **4pm (Singapore time) on 2 February 2024**. An information session will be held on 9 November 2023 from 2pm to 5pm at PUB's WaterHub. Interested parties may register for the session via this link: <https://go.gov.sg/rfp2301-infosession>. Registration will close on 2 November 2023.

8 More information on the funding scheme and the application procedure for the RFP are available at <https://beta-pub-gov-sg.cwp-stg.sg/Industry/RandD/InnovationFunding/RFP/RFP-2301>

Note To Editor

Please use “**PUB, Singapore's National Water Agency**” or “**National water agency PUB**” in your report, and “**PUB**” if an acronym is required.

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About PUB, Singapore's National Water Agency

PUB is a statutory board under the Ministry of Sustainability and the Environment (MSE). It is the national water agency, which manages Singapore's water supply, water catchment, and used water in an integrated way. From April 2020, PUB also took on the responsibility of protecting Singapore's coastline from sea-level rise as the national coastal protection agency.

PUB has ensured a diversified and sustainable supply of water for Singapore with the *Four National Taps* (local catchment water, imported water, NEWater, desalinated water). PUB leads and coordinates whole-of-government efforts to protect Singapore from the threat of rising seas and the holistic management of inland and coastal flood risks.

PUB calls on everyone to play a part in conserving water, in keeping our waterways clean, and in caring for Singapore's precious water resources. If we all do our little bit, there will be enough water for all our needs – for commerce and industry, for living, for life.

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