

# Distributed Atmospheric Water Harvester

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### Vision

- Extracting the atmospheric water available **anywhere and anytime** could offer a democratized solution to the world's water crisis by providing **portable and distributed water supply** to water-stressed countries.

### Issue to solve

- Daily water production of Sorbent-based Atmospheric Water Harvester is still too low **<15 liter** per kg of sorbent.
- The main limiting factors are the **water capture and release kinetics** as well as **mass and heat diffusion**.

### Technology features

- Rapid water capture and release device can provide daily water production rates **>90 liter per kilogram of sorbents** in tropical region.
- A **miniaturized** device footprint of 1 m<sup>2</sup> x 1 m height for 100 liters production: 0.1 m<sup>3</sup> of water per m<sup>2</sup>.
- Technology Readiness Level of 3.

### Possible implementation

- The distributed technology could provide additional **supply of water in proximity** to domestic and industrial demand without relying on the economy of scale.
- Industries with **high water quality and quantity** requirements could be targeted such as electronic, chemical/petrochemical, F&B sector, etc.
- Industrial partnerships for test bedding would be of great benefits to validate the technology.
- In year 2060, water demand in Singapore is expected to **double** to 1200 Mm<sup>3</sup>/year compared to year 2016.
- While domestic water demand would remain constant at ~300 Mm<sup>3</sup>/year, **industrial water demand will increase by 2.5 fold** to 910 Mm<sup>3</sup>/year in year 2060 compared to year 2016.