**Bright Thinkers Power Station**

**$496k** Funded by ARENA

**$2.62m** Total project cost

* **Lead Organisation** BTPS 1 Pty Ltd

**Location** Keeps Creek, New South Wales

* **Start Date** November 2019
* **Project Partners** Epho Pty Ltd

**Summary**

This Bright Thinkers Power Station project will develop and construct a 1.7 MW industrial rooftop solar PV system to demonstrate the Bright Thinkers Power Station (BTPS) concept.

**Need**

The BTPS system differs from a conventional rooftop [solar PV](https://arena.gov.au/renewable-energy/solar-pv-rd/) system in its ability to direct solar energy either partially or fully to the consumer on site, or directly trade the energy on the National Electricity Market (NEM).

The project aims to unlock further investment and installation of solar PV on the entire usable roof space of commercial and industrial buildings. This compares to the present practice where current rooftop solar PV systems are constrained in size to align with tenant demand.

**Action**

[Epho](https://epho.com.au/) has partnered with Siemens to develop a control system with switching technology that segregates electricity through two separate channels.

The dynamic switching will be enabled by an algorithm being jointly developed by Epho and Siemens, based on solar PV output, electricity wholesale market signals and expected tenant demand.

**Outcome**

The BTPS technology allows the operation of an industrial solar system under dual functionality, meaning that the system can direct a share of the solar power generated to the building (‘behind the meter’) and the other share to the National Electricity Market (NEM) as a market-participating power station.

The split of the share can vary over very short time periods, which provides a unique flexibility on how to operate the solar system and still maintain the value of solar electricity delivered behind the meter to the tenant. The BTPS technology allows the unique alignment of the interests of the landlord, the tenant and the owner of the solar asset, and at the same time opens up the opportunity to fully utilise the entire industrial rooftop.

**Additional impact**

BTPS opens a path to enable the development of ‘large-scale’ rooftop power stations connected to the NEM and will allow further solar integration into the Commercial and Industrial market.

Epho’s knowledge sharing activities at an industry level will feature presentations at significant industry events, to provide feedback to the solar industry on the learnings, and challenges, of completing such a project.