



Cool Ideas Enterprise Open Innovation Challenge Statement

A. Problem Statement/ Title:

Develop a solution to reduce glare and ambient heat generated by solar panels, and improve their efficiency.

B. Background:

HDB is rolling out solar photovoltaic (PV) panels on HDB rooftops on a large scale, with the aim of achieving 540MWp capacity by 2030. With the solar PV panels expected to cover about 70% of HDB blocks island-wide, we are looking for solutions to mitigate the following issues:

Glare

The solar panels that are currently deployed already fall within acceptable reflectance levels under BCA regulations (which specifies the acceptable daylight reflectance of materials used on building exteriors). However, HDB is looking to further minimise glare to neighbouring buildings.

Urban Heat Island Effect

There are also concerns that the solar panels could emit heat, thus contributing to the urban heat island effect.

C. Technical Requirements/ Performance Criteria:

The solution should be easy to use and maintain, and preferably be applied to existing solar panels, e.g. film/ coating that can be applied on panels.

The product should:

- I. **Reduce glare** (to be demonstrated through reflectivity measurements)
- II. **Reduce ambient heat generated by panels** (to be demonstrated through temperature measurements)
- III. **Improve efficiency of panels by absorbing more sunlight and converting it to electricity** (to be demonstrated through generated electricity measurements)

HDB will testbed different solutions to see which best meets the requirements.