



BUILDING INDUSTRIES



DECAL 2.0 Briefing
26 January 2026



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[OPEN / SENSITIVE NORMAL]



Challenge 1: Low Carbon Solutions – Maximizing renewable energy potential for industrial buildings

Background

JTC is expanding its solar footprint but faces technical constraints and limited rooftop space. We are seeking cost-efficient technologies that unlock more renewable energy opportunities beyond conventional rooftop solar.

Desired Outcomes

Increase renewable energy generation by 10-20% through various ways such as

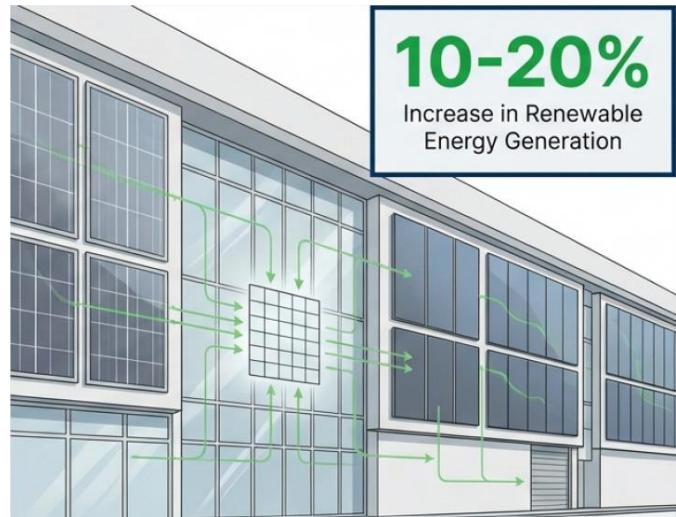
- Alternative solutions (e.g. wind, hybrid systems)
- Higher energy yield or more durable solar PV solutions.
- Maximising deployment on non-conventional surfaces (e.g solar films, BAPV).

Key Requirements

- Technology Readiness Level (TRL of 7 or above)
- Scalable, cost-effective, and safe for continuous operations.
- Innovative and not yet deployed at a large scale

Test Site

JTC Defu Industrial Estate. – **29 Jan 2026 (Thurs,10am)**



Please scan for Challenge Statement 1 detail

Defu Industrial Estate (Lane 10)

Defu Lane 10 comprises 17 blocks of single storey terrace workshops and 7 blocks of four-storey industrial workshops



Defu Industrial Estate (Lane 10)

Industrial Workshops

Slab Block - 1, 2, 37 & 38

- flat roof without water tank at rooftop with secondary roof system
- waterproofing at rooftop with 10-year warranty till 2031
- catladder at 4th storey lift lobby is the only access point to the rooftop
- *What types of solar PV and the mounting systems can be adopted without affecting the roof warranty?*



Defu Industrial Estate (Lane 10)

Industrial Workshops

Deployment of Mobile Crane for Heavy Lifting Works

- Mobile crane is necessary for lifting heavy materials onto the rooftop for Industrial Workshops.
- The ground team is required to coordinate with the tenants to shift their cars away from the reserved lots before mobile crane can be deployed.

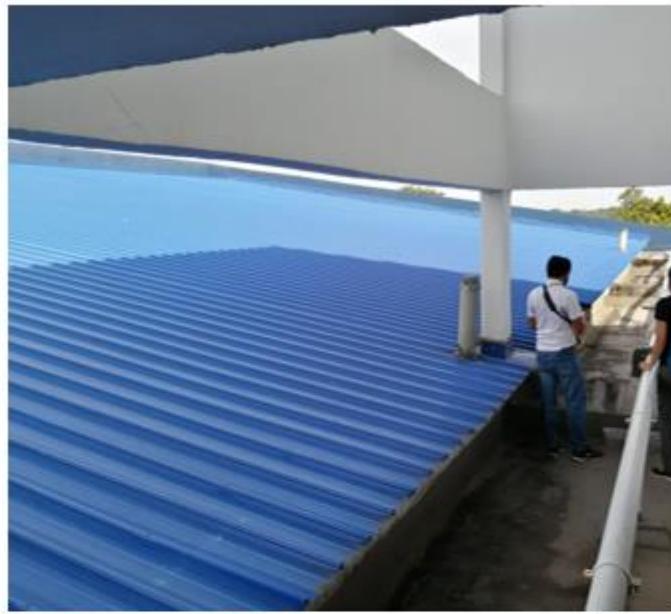


Defu Industrial Estate (Lane 10)

Industrial Workshops

H Block – 30, 31 & 32

- metal pitch roof with warranty till Apr 2031
- no catladder access to the metal rooftop
- *what types of solar PV and the mounting systems can be adopted without affecting the roof warranty?*
- *can vertical solar PV be installed on the façade wall?*



Defu Industrial Estate (Lane 10)

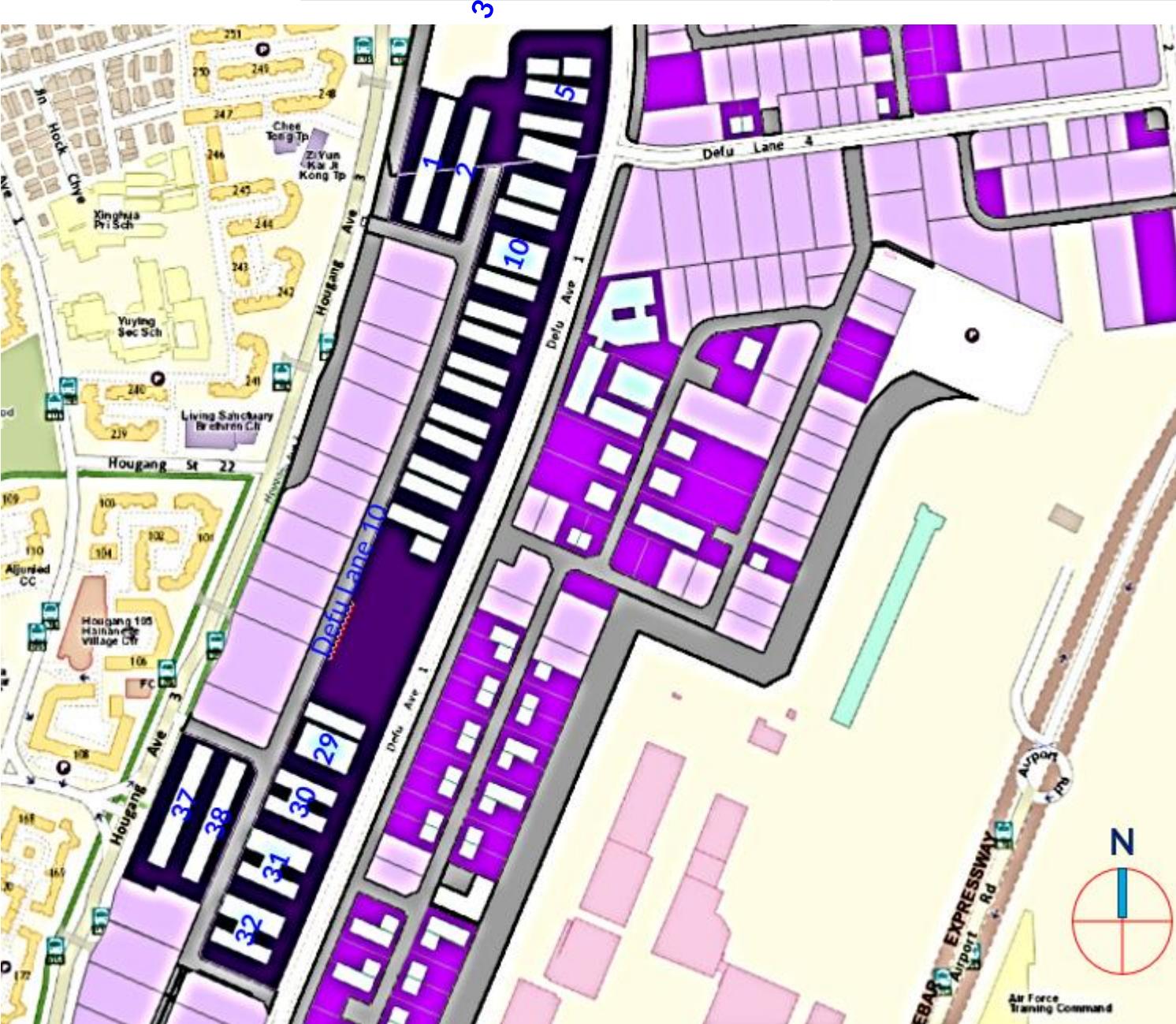
Terrace Workshops (17 Blks)

- metal pitch roof with warranty till Apr 2031
- conventional solar PV installations typically require roof penetrations for mounting rails, which can complicate repairs to the roof surface, and potentially affect the roof warranty.
- *What other types of solar panels can be installed for Terrace Workshops without complicating roof repair work and affecting the roof warranty?*



Defu Industrial Estate (Lane 10)

Layout Plan





Thank you.



Technology Readiness Level (TRL)

TRL	Description	Definition
0	Idea	Unproven concept, no testing has been performed
1	Basic Research	Basic principles postulated and observed but no experimental proof available
2	Applied Research	Concept and application have been formulated
3	Critical Function	First Laboratory test completed; proof of concept
4	Concept Validation	Small Scale Prototype built in a laboratory environment; technology validated in laboratory
5	Validation of Integrated System	Component and/or validation in a relevant environment
6	Verification of Integrated System	System model or prototype tested in intended environment close to expected performance
7	Demonstration System	Operating in operational environment at pre-commercial scale
8	System Completed and Qualified	Manufacturing issues solved
9	Full commercial application	Technology available for consumers