



10 April 2024

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By email: s 9(2)(a)

## **Subject: Sunfield Masterplanned Community Solar Installation**

The purpose of this letter is to outline to you that the proposed installation of solar project at the Sunfield masterplanned community ("Sunfield") can be undertaken in such a way as to not impede on the operations of Ardmore Airport, operations of the nearby airport, as requested for resource consent considerations.

As we have discussed, Lightforce will undertake all works related to the Sunfield solar project in compliance with the Federal Aviation Administration ("FAA") to ensure compliance with all stipulated safety standards and to mitigate potential glare hazards on the airport and its operations. These guidelines necessitate demonstrating adherence to specific standards, including the absence of glint/glare in the Airport Traffic Control Tower ("ATCT") cab and low potential for glare or afterimage along the flight path. Using Lightforce's proven approach and technologies, several remedial measures will be incorporated into the Sunfield solar project to ensure that compliance with the FAA is always adhered to.

### **The key mitigation strategies for glare on airport installations are as follows:**

- Prior glare analysis for the proposed location of the photovoltaic (PV) system in airport areas.
- Application of antireflective coatings and/or texturing of the protective glass surface.
- In some instances, blinds or protective films can be added to the control tower.
- Appropriate the siting and design of an airport-based solar PV system.
- Install PV modules away from the final threshold approach path and ATCT.

**Utilisation of Anti-Reflective ("AR") Coatings:** Lightforce proposes use Trina solar panels which are coated with anti-reflective materials to enhance light transmittance, improve overall efficiency, and reduce glare. These coatings ensure that the panels blend seamlessly with the surrounding environment and mitigate potential hazards to pilots. Detailed below is the Mildura Airport in Australia case study who constructed a 540kWp solar system to protect their future energy requirements. Mildura Airport chose solar and specifically Trina solar panels due to their anti-reflective coating, to satisfy the requirements of the aviation safety authorities.

**Variation in PV Module Orientation:** In direct eyeline of the runway path or ATCT, we can adjust the orientation of the panels to avoid any glare or reflection. By adjusting the tilt and orientation angles of PV modules, we can modify the direction of solar reflection, further reducing the risk of glare.

### **Case Studies:**

Hamilton Airport has become the first airport in New Zealand to install and commission its own solar energy farm. Anti-reflective panels and orientation of the panels were incorporated to avoid any glare.

Auckland Airport is currently working on building what is expected to be the largest roof-top solar system in New Zealand at 2.3 megawatts. Auckland Airport has released the following statement: *"A key consideration for any rooftop solar array in an airport environment is that it does not create glare or reflection on the flight path for pilots or the control tower"*



Lightforce is confident that the Sunfield solar systems can be installed in a location which is far enough away from the runway and ATCT to not be visible. If there is a requirement for the Sunfield solar system to be visible, analysis and design parameters can be set through pitch and orientation to avoid any reflection and glare. Lightforce will ensure that the Sunfield solar system is compliant with the FAA requirement ensuring that it does not adversely affect the airport operations. We remain committed to upholding the highest safety standards while promoting renewable energy initiatives.

Sincerely,

Lightforce Solar