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# **Sustainable Photovoltaics Integration in buildings and Infrastructure for multiple applications**



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## **SPHINX - Deliverable report**

### **D3.7 – Coatings for functional and aesthetic PV**



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## Public Summary

Specific coatings are deposited on photovoltaic modules to bring novel functionalities to the panels. Two different coatings are designed: (1) anti-glare and (2) anti-soiling coatings.

The aim of anti-glare coatings is to suppress unwanted light reflection at specific angles (often low specular angles) to avoid glaring. Glaring can be a safety issue, for example for transportation, near airports or road. It can also be a source of legal issues in densely populated areas between neighbours. The usual approach to suppress glare is to use a satinated or sand-blasted front glass. With this approach the front glass is textured leading to light diffusion. Satin glass is the most efficient approach, but its price is very high due to a chemical etching step for manufacturing. In Sphinx, a coating having anti-glare properties is directly applied on the front glass, as an alternative to satin or sand-blasted glass.

The aim of anti-soiling coating is to avoid the accumulation of dirt or dust at the surface of the module. Usually, anti-soiling coatings are based on low surface energy components. By decreasing the surface energy, the adhesion of contaminants at the surface is lowered, leading to an easier detachment in case of raining events. The phenomenon is often referred to as “self-cleaning”.

In Sphinx, both types of coatings have been tested by using a range of different formulations. They have been deposited on tests samples for validation, or 1-cell mini-modules for performances evaluation and reliability tests. Finally, scale-up techniques for covering the whole surface modules have been found and demonstrated. Processes compatible with industrial requirements are now under evaluation.

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### Project partners:

#	Partner short name	Partner Full Name
1	VOL	VOLTEC SOLAR
2	ETW	ETWAY S.R.L.
3	HLP	HELIUP
4	M10	M10 INDUSTRIES AG
5	UNR	UNIRESEARCH BV
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