

TOWARDS PERFORMANCE-DRIVEN BIPV DESIGN REQUIREMENTS: THE HELI-ON CASE STUDY

Claudio Castellan,^a Marcello La Rosa,^a Aleksandar Pavlovic,^a Luciano Angeli,^a

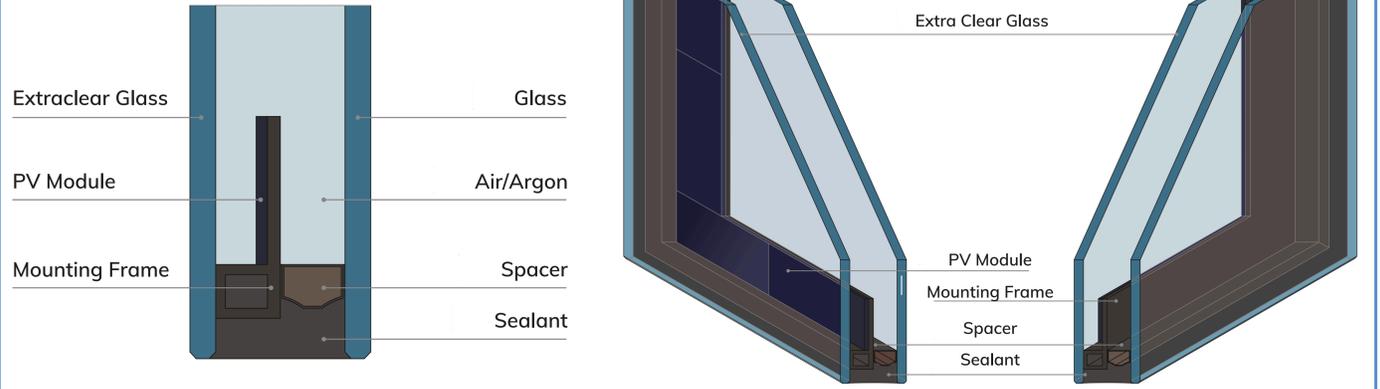
a) Glass to Power, via Zeni 8, 38068 Rovereto (Trento), Italy

claudio.castellan@glasstopower.com - marcello.larosa@glasstopower.com

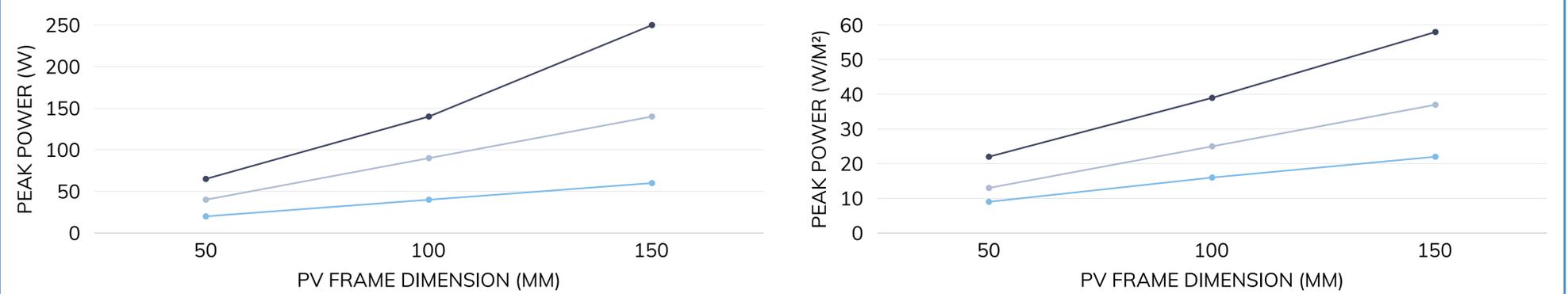
A holistic BIPV methodology that embeds PV elements directly into building systems is reported. The Heli-ON solution allows for transparent glazed surfaces generating energy with no aesthetics or performance.



DESIGN



POWER EFFICIENCY



PROJECT

As demo of this innovation, the authors report a first relevant environmental installation in Provincia Autonoma di Trento (Northeast of Italy) within the framework of the H2020 European funded project "Digital green solutions to reduce energy consumption in buildings (ARV)".

Number of insulating glass units: **12**
 IGU area: from **1,5 m²** to **2,5 m²**
 Facade area: **18 m²**
 Total installed power: **375 Wp**
 Annual energy production: **313 kWh**

The Heli-On case study shows that integrating PVs into IGUs enables efficient, visually integrated BIPV façades and offers a model for future sustainable, design-driven solutions.



CONCLUSIONS

An innovative PV integration process has been successfully achieved, showing that the Heli-On system provides up to 30 W/m² with high transparency and low visual impact, outperforming conventional transparent PV solutions.

ACKNOWLEDGMENTS



This project has received funding from the European Union's Horizon Europe Research and Innovation programme under Grant Agreements No 101096139 and 101036723

Project funded by

Schweizerische Eidgenossenschaft
 Confédération suisse
 Confederazione Svizzera
 Confederaziun svizra
 Swiss Confederation

Federal Department of Economic Affairs,
 Education and Research EAER
 State Secretariat for Education,
 Research and Innovation SERI

