

# PVAdapt: A cost-effective, smart, sustainable and multifunctional Building Integrated Photovoltaics (BIPV) system

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In the PVAdapt project, an innovative building integrated photovoltaics (BIPV) system of substantially lower cost than conventional solutions will be developed. Combined innovations in modular construction and modular photovoltaics will lead to the creation of an adaptable and multifunctional BIPV system. Active energy components are combined with passive and sustainable components with structural, mechanical, thermal and other functions (figure 2) to produce prefabricated BIPV modules in order to achieve cost reduction as well as quick installation. The project also employs a sustainable by design philosophy with all the parts of the system being recyclable/reusable. Additionally, a Smart Envelope System featuring grid connectivity, load prediction and shifting and intelligent energy management systems with predictive algorithms will be integrated in the PVAdapt turn-key BIPV system.

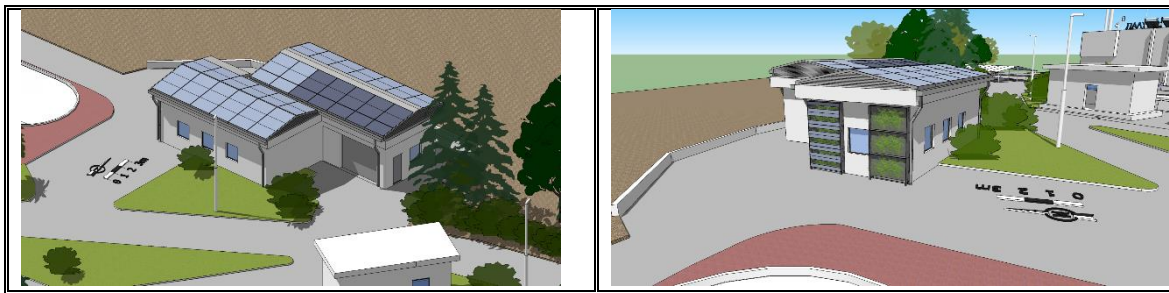


Figure 1: 3D modelling presentation of the PV, PVT & GW modules to be installed at the R&D department of EYDAP facilities, in Metamorfoosi-Attica



Figure 2: Active & passive components joining process of the PVadapt BIPV module

As a result of participating in the PVAdapt project, the Research and Development Department of EYDAP (R&D) is responsible for the integration and the operation of the project's innovative components at the roof and the façade of the office & chemical laboratory building showed in figure 1. The vision is that the BIPV systems will replace the previously traditional elements with an innovative functional component able to generate energy, achieve insulation and weatherproof properties as well as provide hot water to various usage applications according to the needs and the specific profile of the end user.

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