



Deliverable Report

Deliverable No: D1.6
Dissemination level: Confidential
Title: First pilot run of components for 300 PV modules

Date: 27/01/2015
Version: FINAL
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Grant Agreement Number: 322425
Project Type: FP7 – ENERGY.2012.2.1.2: Demonstrations of smart multifunctional PV modules
Project acronym: SuMMiT
Project title: Smart large lightweight long life Multifunctional PV Module Technology for large Power Installations and Distributed Energy Generation
Project start date: 01/12/2013
Project website: [www.summit-project.eu]
Technical coordination: TULiPPS (www.tulipps.com) (NL)
Project management: TULiPPS / Uniresearch (www.uniresearch.com) (NL)



Executive Summary

According to the scope of D1.6, *First pilot run of components for 300 PV modules*, particular focus was set on proving the manufacturability of polymer components for the prototype of the small prototype (BIPV) module design. In a first stage the current design of the polymer components was evaluated with regard to available process technologies and the requirements that need to be fulfilled by such. As a result of this initial evaluation, injection molding was determined to be the technology of choice due to the parts' design aspects such as part size, geometric complexity and others. Furthermore, injection molding is a wide-spread technology for high-volume manufacturing within the plastics industry and hence shows high potential to meet the economic targets for a cost-efficient manufacturing of the PV module's polymer components as stated in D1.1.

Based on the chosen process technology, a prototype mold was ordered and used for the first pilot run of injection molded components. The mold is designed modularly, consisting of a mold frame and exchangeable cavities. This allows producing the polymer components' side modules as well as middle modules with a single mold. Details of the mold design are presented as part of this report. As an outcome of D1.2, several long-fiber reinforced material variants, combined with varying colors, were investigated. It can be concluded that the performed pilot run successfully proved the manufacturability of the polymer components. With all material variants it was possible to produce in-spec parts. In total, components for a number of approx. 500 PV modules were produced.

Acknowledgment



This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 322425 (Project acronym: SUMMIT)

http://cordis.europa.eu/fp7/cooperation/home_en.html

<http://ec.europa.eu>

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This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no 322425.

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