EUROPEAN COMMISSION

HORIZON 2020 PROGRAMME
TOPIC H2020-LC-SC3-2019-RES-IA-CSA
Increase the competitiveness of the EU PV manufacturing industry

GA No. 857793

High-performance low-cost modules with excellent environmental profiles for a competitive EU PV manufacturing industry

HighLite- Deliverable report

D4.1- Prototype machine for back-contact module assembly

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 857793. The information and views set out in this publication does not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions and bodies nor any person acting on their behalf, may be held responsible for the use which may be made of the information contained therein.

About HighLite

The HighLite project aims to substantially improve the competitiveness of the EU PV manufacturing industry by developing knowledge-based manufacturing solutions for high-performance low-cost modules with excellent environmental profiles (low CO_2 footprint, enhanced durability, improved recyclability). In HighLite, a unique consortium of experienced industrial actors and leading institutes will work collectively to develop, optimize, and bring to high technology readiness levels (TRL 6-7) innovative solutions at both cell and module levels.

HighLite consortium members

Document information

Deliverable No.	HighLite D4.1
Related WP	WP4.2
Deliverable Title	Prototype machine for back-contact module assembly
Deliverable Date	1-10-2020
Deliverable Type[1]	DEM
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Document history

Date	Revision	Prepared by	Approved by	Description
23/03/2021	1	Tuukka Savisalo	WP leader	First draft
30/03/2021	2	WP Leader	Coordinator	Final

Dissemination level[2]

PU	**Public**	
CO	**Confidential, only for members of the consortium (including the Commission Services)**	X

[1] **Deliverable Type**
Please indicate the type of the deliverable using one of the following codes:
R Document, report
DEM Demonstrator, pilot, prototype
DEC Websites, patent fillings, videos, etc.
OTHER
ETHICS Ethics requirement
ORDP Open Research Data Pilot
DATA data sets, microdata, etc.

[2] **Dissemination level**
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EU-RES Classified Information: RESTREINT UE (Commission Decision 2005/444/EC)
EU-CON Classified Information: CONFIDENTIEL UE (Commission Decision 2005/444/EC)
EU-SEC Classified Information: SECRET UE (Commission Decision 2005/444/EC)

Publishable summary

The goal of this demonstrator was for Valoe to demonstrate a prototype machine capable of assembling ¼-size IBC cut-cells into back-contact modules at a nominal throughput of 1000 full-size cells per hour (entering the machine). Due to change of plans at Valoe after the project start, the equipment that was presumed to be available for modification was never built as the initial design was deemed not sufficiently flexible for the anticipated needs. Therefore, a task that was initially intended in the description of actions as a straightforward modification of existing equipment turned into full scale design and construction of a new machine concept requiring far more time to complete. The Covid-19 pandemic made the use of external resources in the design and commissioning impossible. To mitigate this, an in-house approach where new resources were hired in the company was taken. As of month 18, the demonstrator machine is still under construction and has limited operationality as further explained in this report with parts of the processes already having been tested off-line.

The full completion of this task is now estimated to be in month 20, provided that there are no further Covid19 induced delays, such as closure of the lab due to positive Covid-19 in our staff. Overall, we do not expect any impact on the rest of project implementation as Valoe can produce the modules needed for outdoor demonstrators using other equipment available at Valoe.