

CEFRABID

Clean energy from road acoustic barriers infrastructure development

Project duration: from 09.2018 to 08.2020 (3 months extension 11.2020)

Report submitted: 02.2020

Publishable Summary

The CEFRABID Project Proposal concentrates on advanced photovoltaic (PV) products applications in road and rail (r&r) transport infrastructure. It is focused on PV grid integrated with noise barriers and passenger stop shelters along local r&r infrastructure for needs of powering this infrastructure, e.g. for signaling, lighting of neuralgic sections of roads and rail platforms, including r&r crossings, and last but not least, warming or cooling the passenger stop shelters of special innovatory design.

The focus is on innovative manufacturing of and solutions for r&r infrastructure constructions integrated PV systems. The following issues are addressed and goals pursued:

- Dimensional and outlook flexibility with customised sizes, shapes and colours, freeform module technology, and bifacial (especially for N-S oriented r&r) solar cells and modules, electrical design for energy output optimization (shadows, various tilt and orientation angles, safety issues, all of which will be part of extended preliminary tests at specialized Partner's facilities of their different configurations, including both laboratory tests, as well as outdoor tests on partially movable platforms (PMPs).
- Holistic approach for the energy performance, enabling accumulation of energy for night or worsening weather conditions periods, assuming also backup power supplies from conventional electric grid in emergency states.
- Easiness of installation / application based on modular designs of largely independent and self-sufficient Hybrid PV Noise Road (Rail) Barriers' (HPVNRBs) modular sections, which may be easily prolonged and included in the grid (in series when independent, and in parallel layout, for mutual replacement needs) by their suitable reciprocal multiplication.

The traditional road transport infrastructure will be supplemented with the help of these new solutions of HPVNRBs and other surfaces of r&r infrastructure, using innovative and reinforced PV products.

Project consortium

Coordinator and all contact details:

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Participating countries and financing:

Country	Number of organisations involved	Project costs in EUR	Public funding in EUR
Poland	2	157'500	140'625
Spain	1	70'000	70'000
Austria	1	120'384	72'240
Cyprus	1	104'600	104'600
<i>Total</i>	5	452'484	387'455

Funding agencies involved and contracts

Funding Agency	Contract N° and Title
Narodowe Centrum Badań i Rozwoju	Contract No SOLAR/01/CEFRABID/2018 Contract Title: Umowa nr SOLAR/01/CEFRABID/2018 o wykonanie i finansowanie projektu o akronimie CEFRABID + Umowa Konsorcjum of 23.08.2018 between GIG and ML System
Ministry of Economy and Competitiveness – Agencia Estatal Investigacion (MINECO-AEI)	Contract N° PCI2018-093082 Contract Title: ENERGIA LIMPIA PROCEDENTE DEL DESARROLLO DE INFRASTRUCTURAS DE BARRERAS ACÚSTICAS VIARIAS. PROYECTOS I+D+i DE PROGRAMACION CONJUNTA INTERNACIONAL
Austrian Promotion Agency (FFG)	Contract N° 863518 Contract Title: Clean energy from road acoustic barriers infrastructure development (acronym: CEFRABID)
Research Promotion Foundation (RPF)	Contract N° P2P/SOLAR/1216/0004 Contract Title: ΣΥΜΒΟΛΑΙΟ ΕΡΓΟΥ ΕΡΕΥΝΗΤΙΚΟΥ ΕΡΓΟΥ ΜΕ ΑΡΙΘΜΟΠΡΩΤΟΚΟΛΛΟΥ P2P/SOLAR/1216/0004