GRECO

MISSION ACCOMPLISHED

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www.greco-project.eu

@ProjectGreco

→ GRECO is a multinational research project funded by the European Commission. Within its 36 months lifecycle, GRECO scientists pioneered Responsible Research and Innovation (RRI) practices like Open Science. The GRECO staff has demonstrated how the implementation of its **→ rationale in Open Science** supports and contributes to scientific excellence. As a matrix for other researchers, GRECO published the **→ "Practical Guide on Open Science".**

GRECO has been also open to the world, especially to citizens. Our researchers established effective collaborations with society, e.g. a Citizen Science Initiative which resulted in the app **→ "Generation Solar".** The app acts as a database for solar modules worldwide and helps to boost the use of photovoltaics. Moreover, the GRECO staff developed a novel PV module repair procedure. Including citizens from the very start, our scientists also adapted their research processes to meet the demands of end-users. For instance, GRECO created the most timely technical irrigation solution for farmers. By looking at societal aspects, the GRECO team were also inspired to rethink their scientific methodologies for medium-term innovations.

The lessons learned within GRECO are helping to pave the way for other researchers adopting this new style of managing science. All the research outputs are open and readily available in the following repositories:

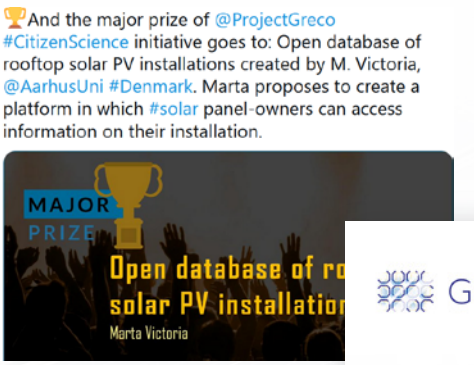
→ Zenodo
→ Cordis

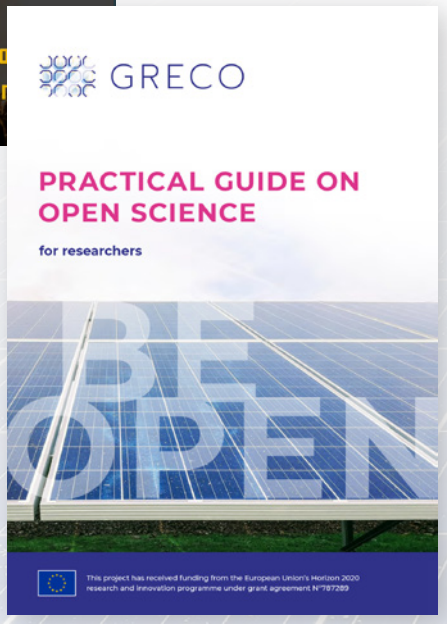
PARTNERS

POLITÉCNICA Instituto de Energía Solar
upf. Universitat Pompeu Fabra Barcelona
UNIVERSIDADE DE ÉVORA
Central Laboratory of Solar Energy and New Energy Sources, Bulgarian Academy of Sciences
HZB Helmholtz Zentrum Berlin
REINER LEMOINE INSTITUT
ESCI European Science Communication Institute
IEE USP Institute of Energy and Environment
Junta de Andalucía, Consejería de Medio Ambiente y Ordenación del Territorio
Euro-Mediterranean Irrigators Community
insolight

Open Science Communication

Generation Solar

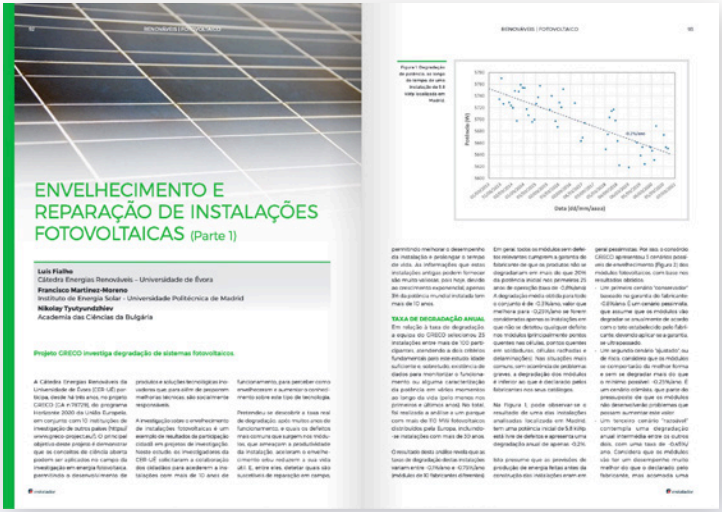




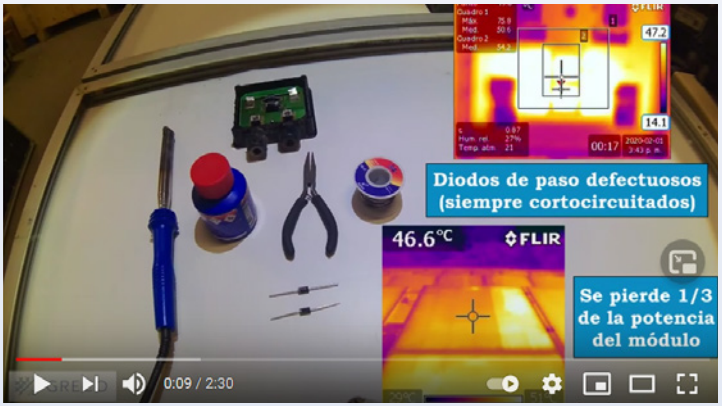
- Establishment of a Social Advisory Board with expertise on Open Science, Citizen Science, citizen participation, energy democracy, photovoltaic research and gender analysis in research
- Organisation of six trainings on Responsible Research and Innovation (RRI) and Open Science (OS), reaching more than 100 people in Spain, Germany, Bulgaria and Portugal
- Launch of the digital Citizen Science initiative “Generation Solar” to create a solar energy community and provide data on PV installations. With web and app versions for iOS and Android, it has more than 130 photovoltaic installations registered across 5 European countries
- Open peer-reviewed “Practical Guide on Open Science for researchers”

WP2

Ageing and Repair of PV modules



- Call for “Old Modules” resulting in installations from more than 100 participants in Europe
- Analysis of more than 110MW in photovoltaic power distributed across Europe, including installations over 30 years old
- Result: The average degradation obtained for the whole set is -0.3%/year, a value that improves to -0.25%/year for modules without defects
- Video tutorials on how to repair:
  - hot spots in cells
  - hot spots in welds
  - bypass diodes in permantent short-circuit
  - loss of electrical insulation at the edges of the modules



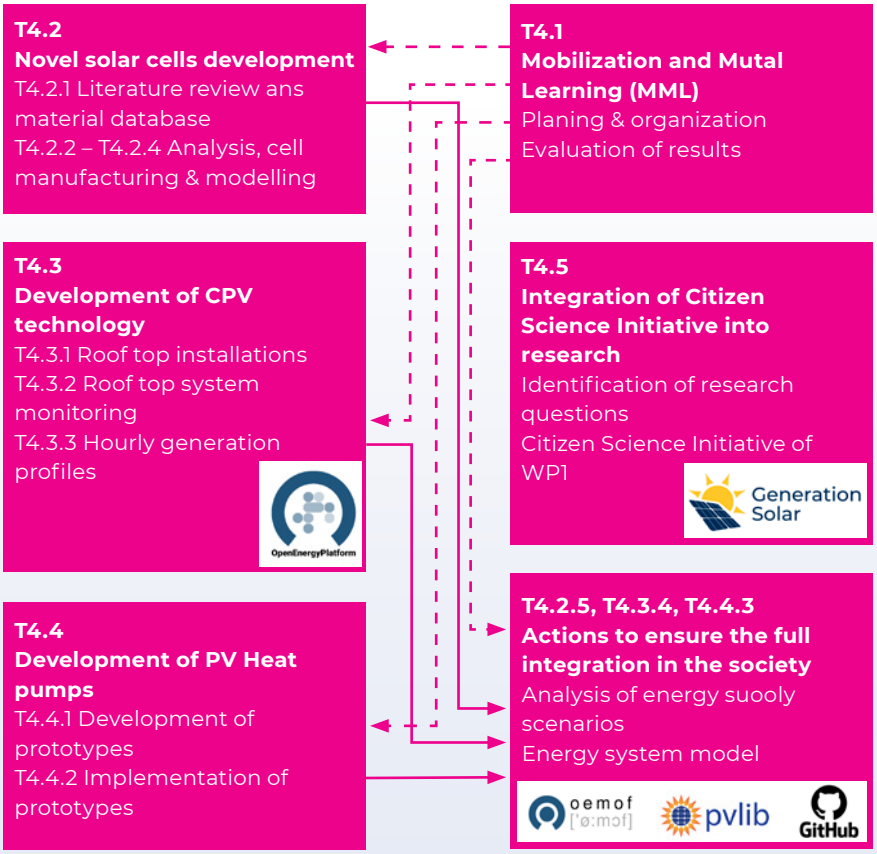
WP3

PV irrigation solutions for large irrigator communities using high voltage pumps

- Survey among farmers in Andalucia on their suggestions on pv irrigation systems
- Analysis on stand-alone high voltage heat pumps for irrigation systems
- 360° video showroom of a pv pumping system in the Spanish Rioja region

WP4

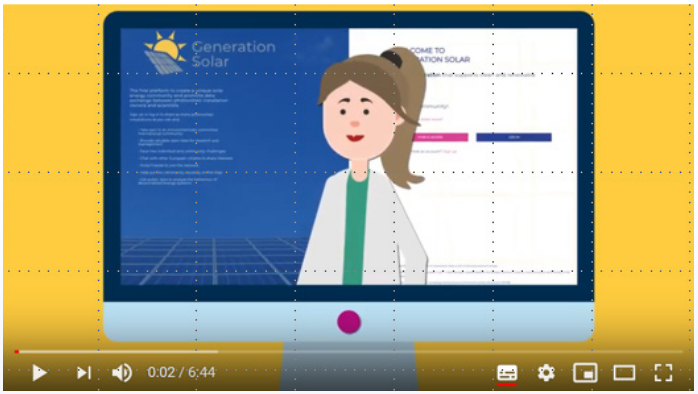
High penetration of photovoltaics



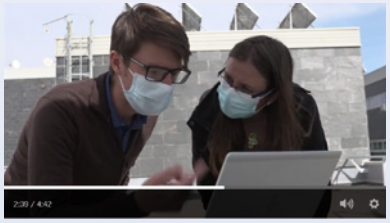
- Organisation and Performance of Mobilisation and Mutual Learning (MML) actions
- Development and testing of tools to model the performance of the innovative technologies silicon-perovskite tandem cells, concentrator PV and PV powered heat pumps
- Business plans for the three innovative technologies
- Development of an Open Source Guide
- Guide on how to organise MMLs: → https://zenodo.org/record/2652776#.YH6JLy0ry9Q
- Conclusion on MMLs: → https://zenodo.org/

WP5

Coordination of communication, dissemination and exploitation

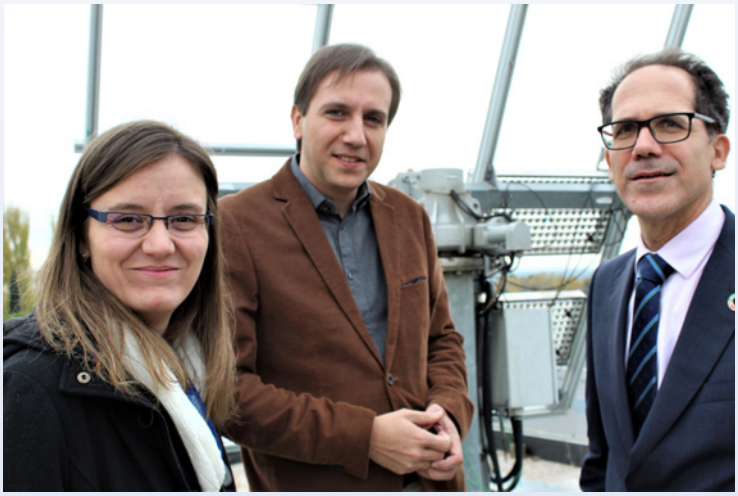


- Creation of visual identity/website
- Introductory and final project film in six languages
- Final project film
- Design and review of the Practical Guide On Open Science for Researchers
- Video tutorial on the Citizen Science app “Generation Solar”
- Journalistic articles
- Ongoing communication activities on the GRECO Social Media Channels
- Constant support of WP1-WP4 with communication activities on all the GRECO platforms



WP6/7

Management of the Consortium and Ethics requirements



- Performed throughout the lifecycle of the 36 month project
- Management of ethics requirements for different engagement processes and data management, and surveillance of legal obligations regarding IP issues
- Follow-up on gender balance throughout the project and promotion of gender equity
- Novel management of GRECO know-how – leading to the identification of more than 80 results produced in three years – under the tip of the iceberg (key results)
- Contribution to the promotion of GRECO joining efforts with other stakeholders
- Setting up and management of a prompt and complete communication flow of technical and organisational information among participants

References

WP 1

→ https://play.google.com/store/apps/details?id=com.generation.solar
→ https://apps.apple.com/de/app/generation-solar/id1518020779
→ https://zenodo.org/record/4385767#.YHXIwD9CQ2w
→ https://twitter.com/ProjectGreco/status/1139514092903895041

WP 2

→ https://www.youtube.com/watch?v=Ylxh5fueiW0&list=UU8GHEox39_lmkV_gB_BLMew&index=4
→ https://www.oinstalador.com/FlipBooks/BI/296/92/?web=1&wdLOR=cBB09ED1B-6DA9-46DA-88CD-4F046CA6B301

WP 3

→ https://www.youtube.com/watch?v=OQiRtQ4nCww

WP 4

→ https://pvcompare.readthedocs.io/en/latest/model_assumptions.html#perosi
→ https://pvcompare.readthedocs.io/en/latest/model_assumptions.html#cpv
→ https://oemof-thermal.readthedocs.io/en/stable/validation_compression_heat_pumps_and_chillers.html

WP 5

→ https://www.youtube.com/watch?v=INUrm-icy80
→ https://www.youtube.com/watch?v=YlstniDDr2A&list=UU8GHEox39_lmkV_gB_BLMew&index=34