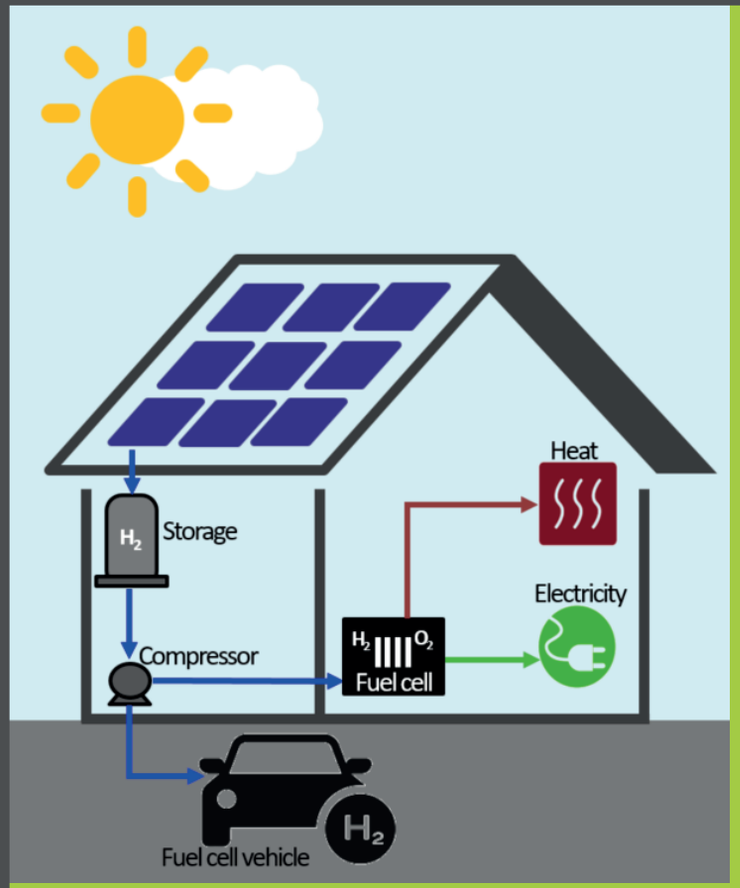


Consortium

Helmholtz Zentrum Berlin
Institute Competence Centre
Photovoltaics Berlin (PVcomB)
Berlin, Germany

Consiglio Nazionalle delle
Ricerche
Catania, Italy

Uppsala Universitet
Uppsala, Sweden

Forschungszentrum Jülich
Jülich, Germany

Enel Green Power
Catania, Italy

Project details

Call Topic: FCH-02-3-2016
Development of processes for direct production of hydrogen from sunlight

Start date: 01 Jan 2017

Duration: 4 years

"This project has received funding from the Fuel Cells and Hydrogen 2 Joint Undertaking under grant agreement 735218. This Joint Undertaking receives support from the European Union´s Horizon 2020 research and innovation programme and Hydrogen Europe and N.ERGHY"

Contact

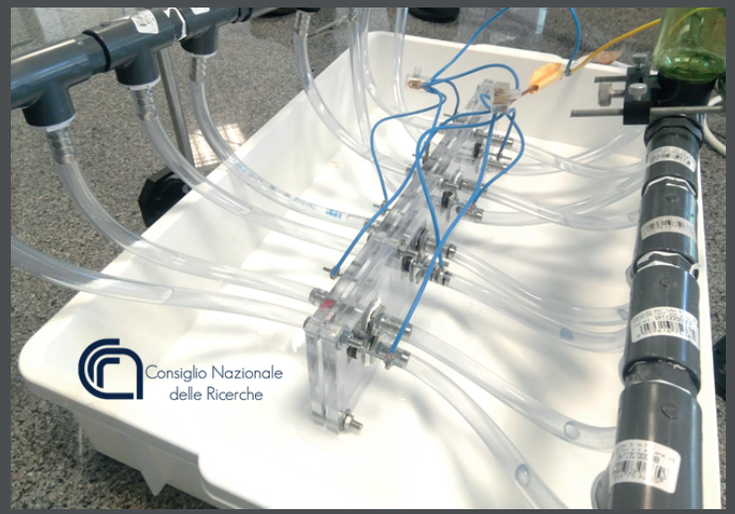
PROJECT COORDINATOR
Dr. Sonya Calnan
Helmholtz Zentrum Berlin
Institute Competence Centre Photovoltaics
Berlin (PVcomB)

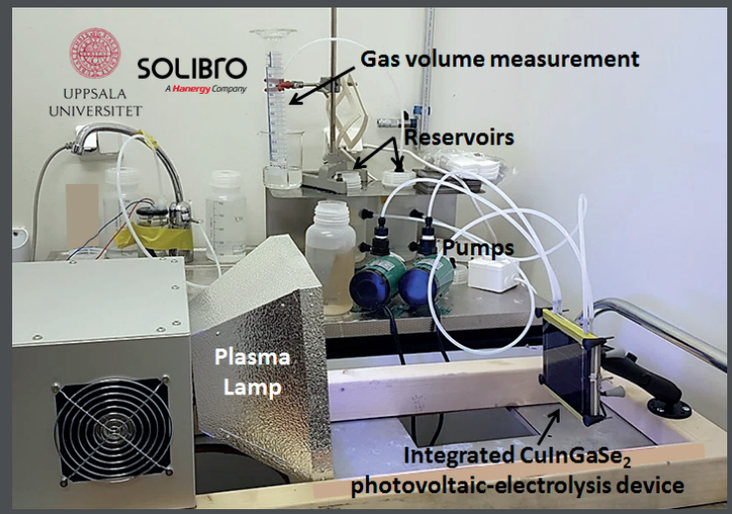
Schwarzschildstr. 3 . 12489 Berlin
sonya.calnan@helmholtz-berlin.de

PECSYS

Technology demonstration of large-scale photo-electrochemical system for solar hydrogen production

www.pecsys-horizon2020.eu





PECSYS

PECSYS is a research and innovation project aimed at demonstrating a system for solar driven electrochemical hydrogen generation. The final demonstrator consists of several planar modules with an active area >10 m^2 and is projected to produce more than 10 kg of hydrogen over a six month period.

The consortium will test various established PV materials (crystalline silicon heterojunction and copper indium gallium di-selenide, CIGS) and integrate them with established electrolyser technologies to develop innovative device concepts for integrated photo-electrochemical devices.

The focus is on solar-to-hydrogen (STH) conversion efficiency enhancement, scaling up and optimizing the long-term stability of these devices, beyond the current state of the art in terms of performance and cost.

Our Goals:

- Study and develop devices for integrated Photovoltaic - Electrolysis (PV-EC) hydrogen generation and scale viable concepts to prototype size > 100 cm^2.
- Use socio-techno-economic analysis to select concepts with levelised cost of hydrogen production below 5 €/kg.
- Scale the prototypes of the less mature but promising technologies to a demonstrator with an active area > 10 m^2.
- Achieve a hydrogen production of 16 g/h from the demonstrator with an STH efficiency of at least 6 %.
- Ensure that the initial demonstrator STH efficiency does not decrease by more than 10 % after six months of continuous operation.

Work Packages:

- WP 1 – Project coordination
- WP2 – Silicon based approach
- WP3 – CIGS based approach
- WP4 – Cassette approach
- WP6 – Device simulation / socio-techno-economic-and life-cycle-analysis
- WP7 – Prototype panel and field tests
- WP8 – Project exploitation, dissemination and communication