



PRIORITY AXIS

Low Carbon Technologies



SPECIFIC OBJECTIVE

Low Carbon Technologies

SOLARISE aims to raise solar awareness and to reduce carbon footprint in the 2 Seas Region.

SOLARISE will potentially provide 184.000 tCO2 reduction over 25 years.



SOLARISE Consortium

- ❑ 12 partenaires
- ❑ 14 observers

Project budget

4 302 023 €

ERDF amount

2 581 214 €

ERDF rate 60%

Start date: 08/02/2018

End date: 30/06/2021





SOLARISE Partners



University of Picardie Jules
Verne

Lead partner



KU Leuven – Technology
campus Gent



Kamp C



Flux 50



Municipality Zoersel



Fourmies City



City of Heerhugowaard



Brighton & Hove City Council



Enercoop Nord-Pas de Calais
- Picardie



University of Portsmouth
Higher Education
Corporation



City of Middelkerke

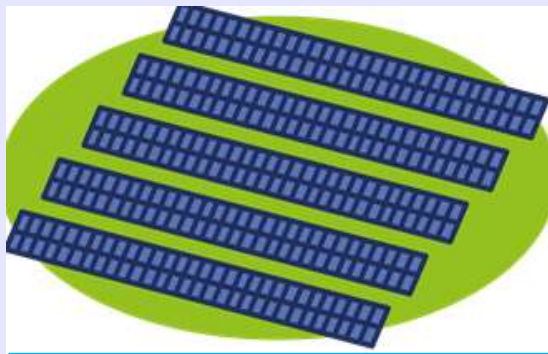


Municipality Middelburg



Main outputs

- Toolkit: Guide package on legislation, market and Innovative technologies
- Feasibility of Potential solar projects (schools, buildings, houses, cinema, swimming pool, solar farm, heritage mill, commercial centre...)
- Solar installations in historical/heritage buildings and public infrastructure. Implementation at housing sites. Living Labs & pilots
- Campaign to boost solar power adoption (Training & education, Web-platform...)
- Roadmap for Solar power



Near, city- connected Solar farm

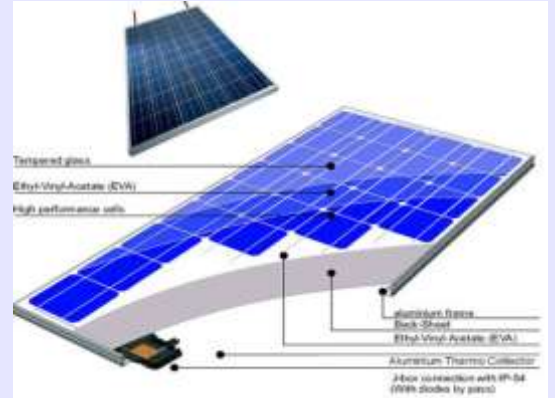
SOLARISE VARIETY of COMPONENTS & TOPICS



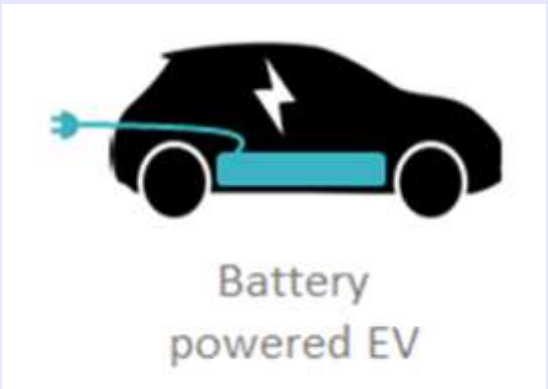
Solar Building integration



Multiple, connected houses



New panels Electricity & Heat

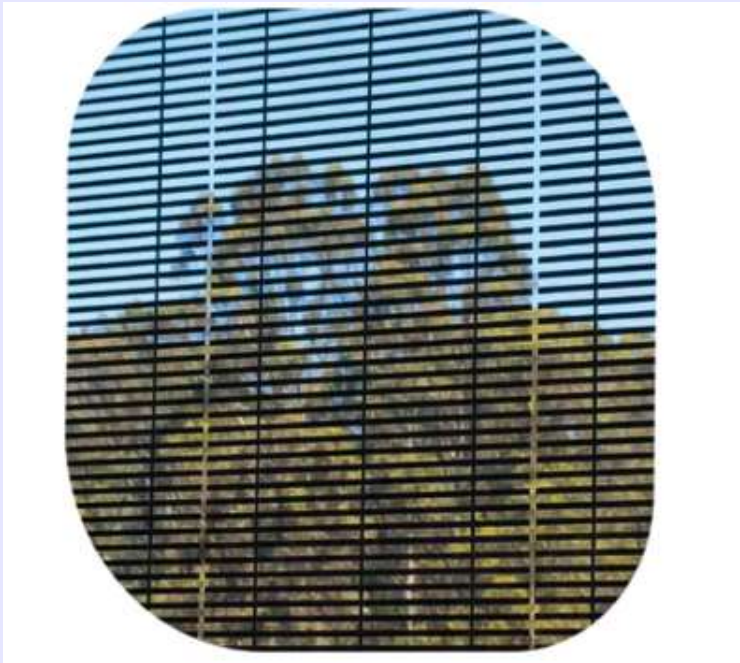


Battery
powered EV



2nd Life
Neighbourhood
Battery

BIPV: Building-integrated photovoltaics





ECO House

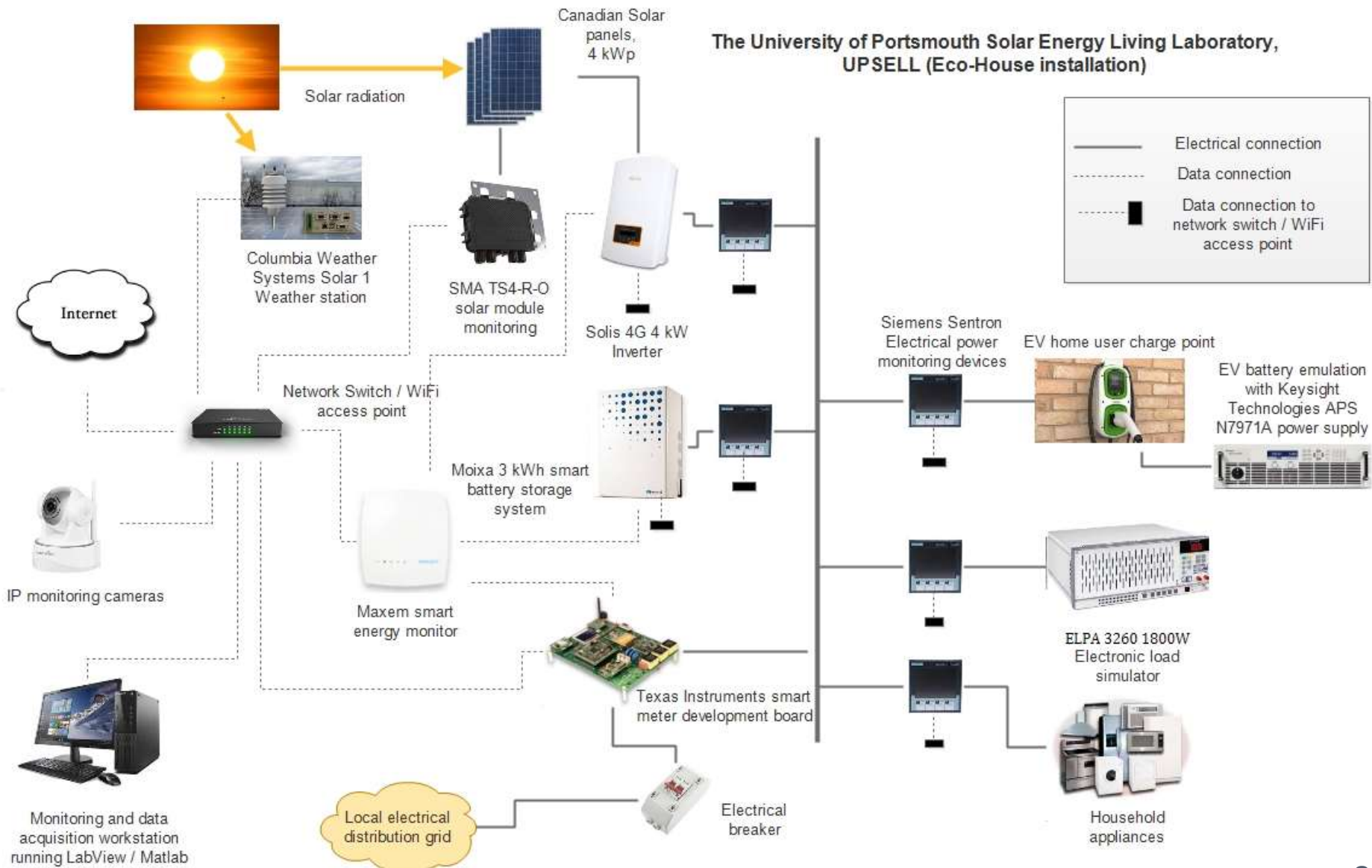
The Port-eco house is a research facility consisting of an instrumented 3 bedroom household for research in energy efficiency and building performance. It will be equipped with solar technologies as part of one of the SOLARISE project's living labs.



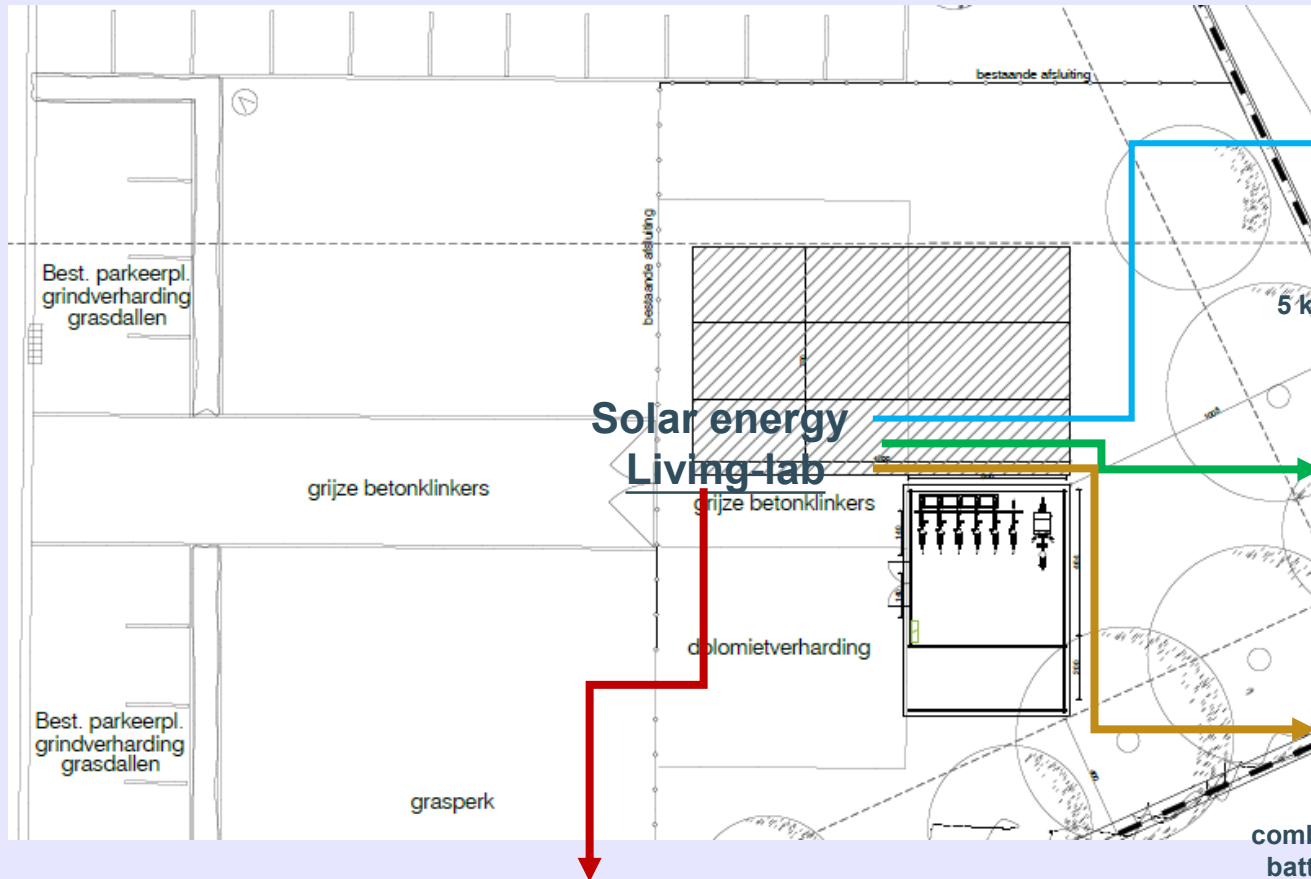
Future Technologies Centre

£12m facility opened in 2018 for project based learning and innovation in engineering and product design
The building is equipped with solar panels and will be provided with an energy storage system through SOLARISE

Schematic diagram of UPSELL (Eco-House installation)



Solar energy - Living Lab' at TC Ghent



5 kW installation (PV, PV/T, various types of solar energy harvesters)



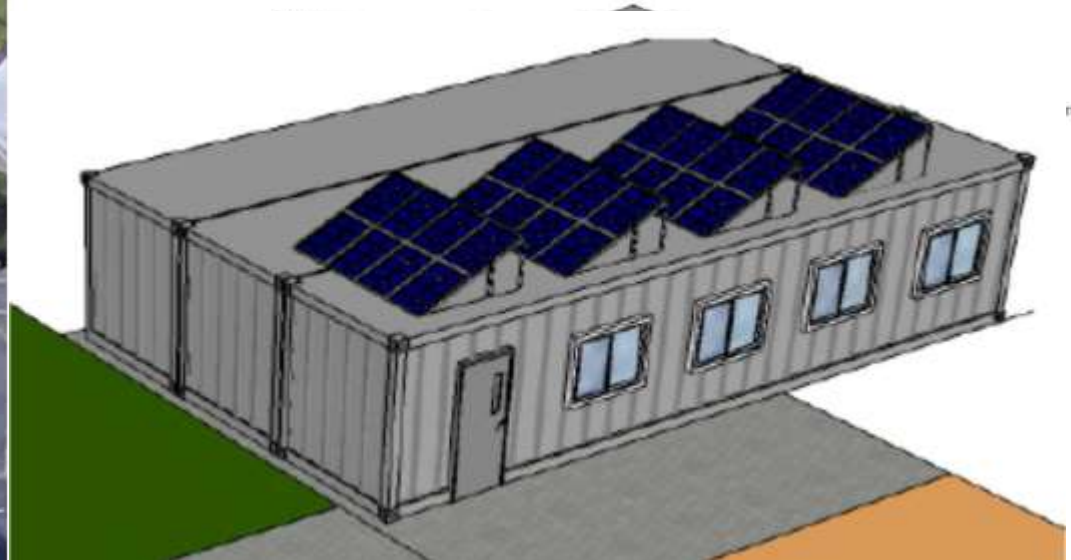
hands-on and virtual learning tools



combination with CHP, heat pump, battery pack, rain-water install...

Applied research on PV/T and thermoelectric materials (heat to electricity conversion) application on solar energy harvesting

Metallic construction/structure - Living Lab



- Solar panels: PV, PV/T; BIPV, CPVT, ...
- Power converters: DC-DC and DC-AC converters with MPPT trackers (+ controller)
- Battery pack (batteries)
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- Hydraulic components: water pump + directional valves (+ controller)
- Sensors
- Home appliances as end-users



Faisabilité du solaire sur toiture

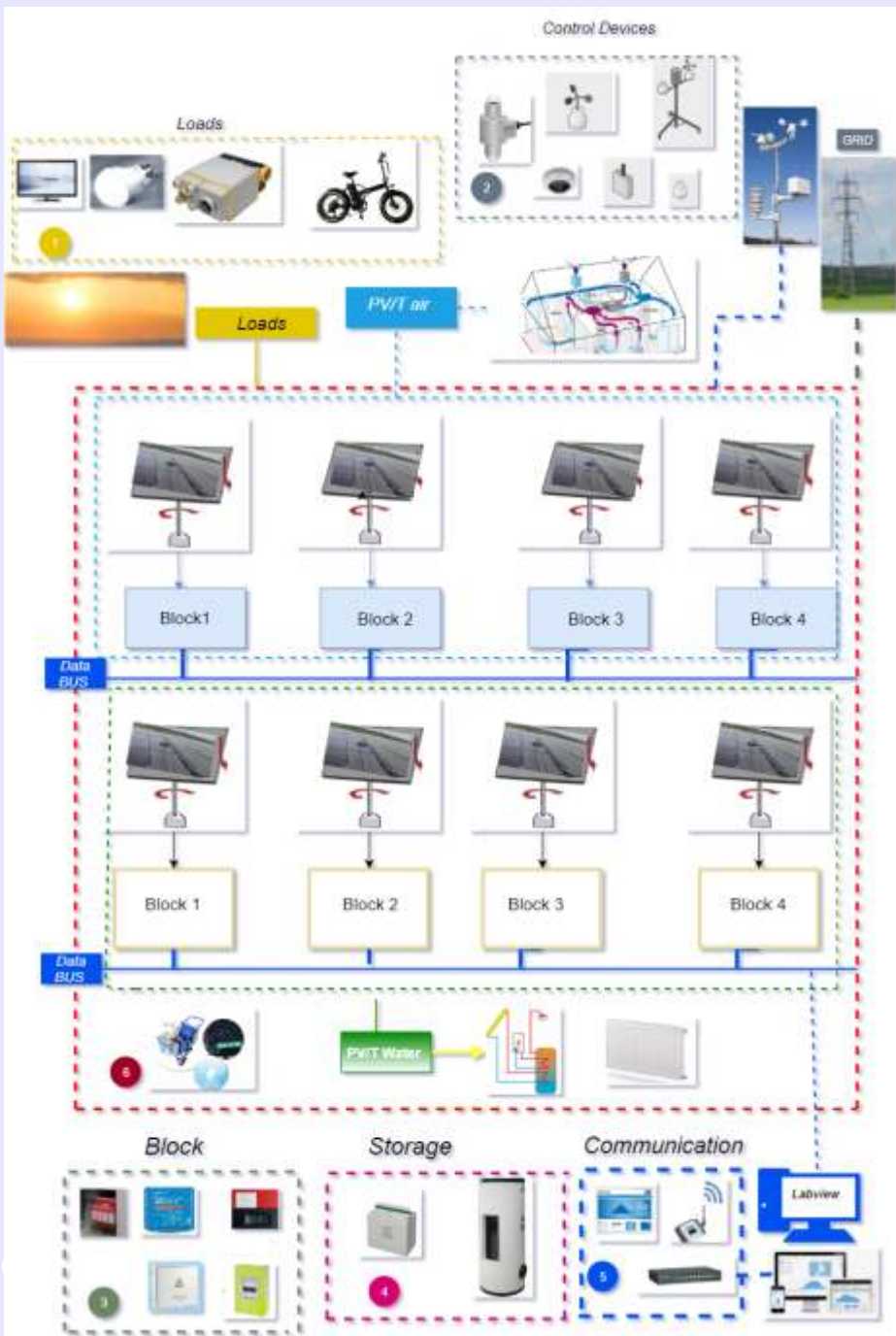


Living-Lab sur toiture



Puissance installée 111 kWc

Energie photovoltaïque totale 122 062 kWh



SOLAR ELECTRIC PENDULUM

THE ELECTRIC PENDULUM TRICYCLE is part of a global research project on innovative solutions for urban electric mobility developed at the Laboratory of Innovative Technologies, University of Picardie Jules Verne in Amiens (France). The pendulum device allows overcoming centrifugal forces and a safe higher speed in curves.

Current version



SOLAR PART

Within the SOLARISE project, a **mobile photovoltaic solar station prototype** with removable structures was designed. It includes **4 flexible solar panels**. The structure is retractable by circular translation of solar panels and can be mounted in a modular way on the electric tricycle.

TECHNICAL FEATURES

(CAN BE ADAPTED)

- **MOTOR** Brushless DC motor, 48V - 800W.
- **BATTERY** LIMCN 13515P 48V x 30 Ah
- **MAXIMUM SPEED** 45 Km/h
- **WEIGHT (WITHOUT DRIVER)** 58 Kg
- **DIMENSIONS (M)** 1,68 x 0,72 x 1,57
- **SOLAR PART 4** = 65Wp, 560mm x 740 mm

RANGE MEAN VALUE

(CAN BE ADAPTED)

- **WITHOUT SOLAR PANELS** 30 km
- **WITH SOLAR PANELS** 60 km





solarise2018 : Energie Solaire et Smart Grid

18 oct. 2018 Amiens (France)

Programme	
09h00	Ouverture de la journée Présentation du projet Interreg SOLARISE. <i>Ahmed RACHID, Professeur Université de Picardie Jules Verne - LTI</i>
09h15	Optimisation de l'extraction de la puissance électrique sur les systèmes solaires photovoltaïques. <i>Jean-Paul GALBERT, Professeur Université de Poitiers, ENSIP-LIAS</i>
09h45	Photovoltaic thermal (PV/T) hybrid systems: state-of-the-art technology, challenges and opportunities <i>Emilia MOTDASCA (Prof.dr.ir.), Clément de la Fontaine (PhD Student), Baptist Vermeulen (Ing.)</i> <i>KU Leuven, Dept of Electrical Engineering, Research Group Energy & Automation (E&A)</i>
10h15	Smart Grids: key concepts and challenges with the integration of solar energy <i>Victor BECERRA, Professor of Power Systems Engineering, School of Energy and Electronic Engineering, University of Portsmouth</i>
10h45	Pause
11h	Centrale solaire 2.5MWc des Hauts de France. Législation française, administration et marché de l'électricité <i>Pierre Gauéilo, Responsable énergie, ENERCODIP</i>
11h30	Stratégie énergétique de la Ville de Fournies <i>Mathias LOUIS HONORE, Chargé de mission Énergie – Mobilité, Service Troisième Révolution Industrielle, Mairie de Fournies</i>
12h00	L'autoconsommation collective d'électricité solaire <i>François-Xavier CALLENS, CD2E, Responsable du Pôle des ENR, Animateur de la Plateforme Technologique LumiWatt</i>
12h30	Présentation du projet VERTPOM <i>Humberto HENAO, Professeur Université de Picardie Jules Verne - LTI</i>
12h45	Côture

- 8h30** Registration
- 9h15** **Welcoming speech and Presentation of the SOLARISE Project**
Denis Postel, Vice President of the Research Commission, UPJV
Ahmed Rachid, SOLARISE Project Leader
- 9h15** **Neighbourhood energy & mobility transition dashboard**
Hugo Niesing, www.resourcefully.nl
- 9h45** **Artificial photosynthesis in electricity production from sunlight: challenges and opportunities**
Frédéric Sauvage, LRCS - CNRS-UPJV - FR
- 10h15** **Performance enhancement of solar photovoltaic system using phase change material**
Sourav Khanna, University of Portsmouth - UK
- 10h45** **Simulation of the direct and diffuse components of the solar radiation to improve the precision in the solar resource estimates**
Thierry Elias, www.hygeos.com - FR
- 11h15** **Devolving the responsibility and ownership of renewable energy production to local communities**
Audrey Jumeaux, www.energethic-asso.fr
- 11h45** **Interreg NWE project PowerVIBES: developing a tower for wind and solar energy as a green energy solution for festivals to replace fossil fuels**
Faas Moonen, www.tue.nl
- 12h15** Lunch
- Solar Energy Contextual framework in the 2 Seas Region**
Emilia Motoasca, KU Leuven - Technology campus Gent - BE
- 14h30** **Feasibility studies of solar projects**
Victor Becerra, University of Portsmouth - UK
- 15h00** **Solar Installations in the SOLARISE project**
Tiny Maenhout, www.middelburg.nl - NL
- 15h30** **Energy transition in Heerhugowaard**
Henk Jan Jansen, www.heerhugowaard.nl
- 16h00** Closure



***Thank you for
your attention***