

Smart Specialisation Platform for Energy

Thematic Partnership

Solar Energy

Start Date (May 2017)

MONITORING PROGRESS REPORT

Reporting Period: from January 2019 to June 2019

This Report is presented to the relevant Working/Steering Committee.
It contains two parts:

- I. Management Report prepared by the Lead Region(s)***
- II. Progress Report prepared by the Lead Region(s)***

Confidentiality: this document (part I) will be made available to the public via the Partnership's web page except for chapter *II.D. Self evaluation*.

Based on the monitoring results, the European Commission will decide on the following year's support.

Executive summary (max. 250 words):

The Solar Energy Partnership was created in May 2017 as a way to support solar electricity generation and distribution in Europe and maintain the European concentrated solar power industry leadership worldwide. The Partnership, which is led by Extremadura (ES) and Alentejo (PT), currently comprises 10 further entities. The focus is aligned with the Thematic objective 4, Low carbon economy, in particular with "Generation a distribution of Renewable sources".

The partners have jointly identified 4 main areas of work: (1) the construction in Extremadura of a solar FOAK Power plant, (2) the deployment of a research facility for solar technologies, (3) the analysis of the Cooperation mechanisms Renewable Directive, and (4) the implementation of medium temperature solar energy in the agro industry.

To date, much of the partnership's activity has focused on the development of the solar FOAK project in Extremadura. The project has already completed the first phase of preparing the plant's value proposition; mapping potential stakeholder interest; preparing a preliminary business plan of the project; and consulting development options with industry players, financing institutions and off-taker countries. The next steps require identifying the necessary enabling conditions and launching the implementation phase.

I. Management Report prepared by the Thematic Platform/Lead Regions

I.A. Partnership Action Fact Sheet

- **Partnership:** Solar Energy
- **Partnership's web-page:** <http://s3platform.jrc.ec.europa.eu/s3-energy-partnerships-solar-energy>
- **S3 Thematic Platform:** Energy
- **Objectives:**

The Solar European partnership has been created as a way to support solar electricity generation and distribution in Europe and maintain the European concentrated solar power industry leadership worldwide.

The Solar S3 partnership offers interactive and participatory arenas for interregional cooperation along regions and MS who selected Solar energy as a priority in their RIS3 strategy. Among the different interesting thematic areas in solar energy, Concentrated Solar power (CSP) has been identified by different regions as one of the key technology. This is undoubtedly linked to the position of European CSP Industry as the worldwide leader along the full CSP value chain.

Furthermore, the Solar S3 Partnership is aligned with the Energy Union R&D and competitiveness priorities and promotes the energy related TO1 (Research and innovation), TO4 (Low carbon economy) and TO7 (Sustainable transport), together with the commitment to the Set Plan 10 key actions. The main objectives of this partnership are:

1. The S3 aims to maintain the global leadership of the European industry in Concentrating Solar Power/Solar Thermal Electricity (CSP/STE);
2. S3 in CSP must be focused on regional development, maintaining the competitiveness of the full value chain of the CSP European industry and strengthening its technological development (TO1, TO4);
3. The EU's Solar Industry must maintain its export opportunities in low-carbon technologies by strengthening partnerships among national governments, industry and research actors (TO4); and
4. S3 in solar (which aligns with the SET PLAN) must focus on achieving significant cost reductions of existing technologies (in the short term), and to work towards the development of next generation technologies (in the longer term) (TO1).

- **Lead Regions:** list of regions/countries leading this partnership

Extremadura (ES)
Alentejo (PT)

- **Official partner regions:** list of regions/countries that have officially committed to follow this partnership and have been active in the last six months.

Andalusia (ES)	Asturias (ES)	South Estonia (EE)
Sicily (IT)	Slovenia (SI)	South Karelia (FI)
Vaasa (Ostrobothnia) (FI)	GAP Region - TR33 (TK)	Madrid (ES)
Veneto (IT)		

- **Other regions:** list of regions/countries that have expressed their interest in this partnership but have not signed a commitment letter).

Republic of Cyprus (CY)	Province of Trento (IT)	
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• **Intentions to join:** list any regional/national authorities

(Please list here all other regions that have expressed their interest to join the partnership)

An e-meeting was held on the 4th of June between members of AGENEX's team and representatives of Central Sweden Region due to their interest in the Solar partnership Nothing was concluded from the meeting, but they did ask to be updated on the activities/meetings carried out.

• **Other participants (other than national/regional authorities):**

(Please list here all other (non-region) participants (clusters, institutes, RTOs, etc.))

ESTELA	Photovoltaic European technology and innovation platform	EERA Stage-STE
SET Plan (IWG-STE)	ETIP PV	UNEF (Spanish Photovoltaic Association)
ENEREA (Eszak-Alfold Regional Energy Agency)		

<p>Representative of Lead Region 1: (name, institution, address, phone, e-mail)</p> <p>Cosme Segador, Director, Extremadura Energy Agency csegador@agenex.org</p>	<p>Representative of Lead Region 2 (if applicable): (name, institution, address, phone, e-mail)</p> <p>Joaquim Fialho, CCDR Alentejo joaquim.fialho@ccdr-a.gov.pt</p>
<p>European Commission Coordinator: (name, e-mail)</p> <p>Fernando Mérida Martín, S3PEnergy, Unit B3, JRC, European Commission Fernando.MERIDA-MARTIN@ec.europa.eu</p>	<p>Any other relevant information:</p> <p>Please enter here...</p>

I.B. Thematic Working Areas (WA)

• **Thematic Working Areas** (if any, please list of WAs, region(s) in charge of it, names and affiliations of involved regional/national authorities, and other actors)

Working Area	Region in Charge	Involved regions	Other actors
The construction in Extremadura of a solar FOAK Power plant: A large-scale Sustainable Energy Technology (SET) First of a kind (FOAK) project: Concentrated Solar power (CSP) Plant hybridised with Photovoltaic (PV) including storage to provide fully dispatchable power and would also demonstrate the technical and commercial viability of a solar generation plant installed in Southern Europe exporting renewable electricity to Northern European countries.	Extremadura (ES), Alentejo (PT)	Possible OFF taker for the generated electricity (Germany, France...)	Other actors

<i>Research: A research facility for Solar technologies.</i>	<i>Alentejo (PT)</i>	<i>Extremadura (ES), Andaluçia (ES)</i>	<i>Other actors</i>
<i>To analyse the Cooperation mechanisms Renewable Directive: The aim of the partnership is to increase the implementation of the Cooperation mechanisms scheme of the RES Directive (2009) across Europa, promoting electricity exports from solar technologies from Southern to Central and Northern European countries.</i>	<i>Extremadura (ES)</i>	<i>Possible OFF taker for the generated electricity (Germany, France...)</i>	<i>Support from CIEMAT researcher, Natalia Caldés</i>
<i>Implementation of some industrial application: The use of medium temperature solar energy in the agro industry.</i>	<i>Madrid (ES), Extremadura (ES)</i>	<i>Other involved regions</i>	<i>Other actors</i>
<i>Any other comments</i>			

I.C. Overview of partnership's activities**Past activities (past six months, the 1st half of 2019)****Past Meetings**

<i>Title</i>	<i>Date</i>	<i>Place</i>
Solar Energy Leadership Meeting	04.02.2019	Évora, CCDR-Alentejo
E-meeting with interested region (Central Sweden)	04.06.2019	Skype
Any other comments		

Past Workshops

<i>Title</i>	<i>Date</i>	<i>Place</i>
Informal stakeholder event on cross-border renewables within CEF	03.06.2019	Brussels AGENEX connected remotely
The aim of this event was to collect information from stakeholders to define the regulation of these cross-border projects in RES. It is of high interest to the partnership, as it will provide financing to develop projects.		

Past Dissemination Activities

<i>Title</i>	<i>Date</i>	<i>Place</i>

Future activities (the next 6 months – the 2nd half of 2019)**Future Meetings**

<i>Title</i>	<i>Date</i>	<i>Place</i>
Not yet defined		

Future Workshops

<i>Title</i>	<i>Date</i>	<i>Place</i>
Not yet defined		

Future Dissemination Activities

<i>Title</i>	<i>Date</i>	<i>Place</i>
Not yet defined		

II. Progress Report prepared by the Lead Regions of the partnership, describing results achieved during this period.

All items listed in Sections A, B, and C, below, must be addressed.

Additional documentation such as extended technical reports and/or proceedings of workshops may be provided separately as an annex to this report (and should be referenced in the report).

II.A. Innovative results

- Innovative results and achievements that could be attributed to the Partnership.
(Specific examples of Results vs. Objectives)

One of the priority areas of the partnership and a major line of work is the construction, in Extremadura, of a "First Of A Kind" (FOAK) Power plant. The construction of a First of A Kind project as a result of partnership activity is intrinsically innovative.

The FOAK project will be a large-scale Sustainable Energy Technology (SET) First of a kind (FOAK) project: Concentrated Solar power (CSP) Plant hybridised with Photovoltaic (PV) including storage to provide fully dispatchable power and would also demonstrate the technical and commercial viability of a solar generation plant installed in Southern Europe exporting renewable electricity to Northern European countries.

New sources of financing are being explored: through the Connecting Europe Facility.

The second JRC Policy Report was published in March 2019: Road map and action plan for the first cross-border solar project.

- Tangible short- and medium-term socio-economic impacts achieved or expected.
(Specific examples)

The construction of the FOAK solar generation plant would have tangible socio-economic impacts. Making exports from the South of Europe, where solar energy resources are abundant, to the North feasible would help regions in the North meet their renewable targets. This is extremely important for the sustainable development goals of the EU and for the successful transition of the Union to a low carbon economy.

On top of this, the FOAK Solar generation plant, addresses the main goals of the Energy union and CLIMA priorities:

1. the decarbonisation of the economy, through the progressive replacement of the high intensive carbon generation power plants in Europe. The design and development of a combined cycle generation concentrated solar plant, hybridised with photovoltaic plant and gas or biomass, is the only possibility to provide renewable base-load power for the European energy market.

2. The contribution to a fully-integrated internal energy market. The project also analyse the import-export energy market across Europe.

II.B. Inter-regional and inter-partnership collaborative results

- Additional results obtained from working with other partnerships under the thematic S3 Platforms. (Specific examples)

During the current reporting period (first semester 2019) there has not been much collaboration with other partnerships.

- Evaluation of the involvement of relevant business sector (clusters, SMEs, business associations, chambers of commerce, Digital Innovation Hubs, etc.) in the Partnership activities. (Specific examples)

ESTELA (renewable energy industry association), Photovoltaic European technology and innovation platform, EERA Stage-STE, SET Plan (IWG-STE)).

- Evaluation of whether **the level of inter-regional cooperation is sufficient** to potentially provide *practical and relevant socio-economic impacts*. (Specific examples)

The main project being carried out requires interregional cooperation on two levels. Firstly, the development of Solar Energy-related infrastructure in Alentejo and Extremadura; and secondly, the partnering of the FOAK Power Plant in Extremadura with regions in the north of Europe for the export of generated renewable electricity. Successful inter-regional partnering in both areas would be sufficient for the projects to succeed and to have a relevant socio-economic impact.

II.C. New activities

- Involvement of regions from EU13 Member States in the Partnership, in particular with respect to scoping, mapping and/or matchmaking. *In addition, justification should be provided if no EU13 regions are involved.*
EU13 regions involved in the partnership are: South Estonia (EE) and Slovenia (SI)
- Involvement of regions/countries from outside of EU28 Countries. (Number of participants from non-EU countries. Specify their contribution)

GAP Region - TR33, Turkey (TK).

- Advancement and promotion of the Partnership through publications and other communication/outreach activities. (Number of outreach activities that resulted from the Partnership. A complete list with references and web-links should be given in an annex)

JRC prepared a policy report on the topic titled: "Promoting solar electricity exports from Southern to Central and Northern European countries: Extremadura study case". This report presents the value proposition of solar exports in Europe in order to increase the awareness and support among decision makers. This report also studies the possible financial structures to enable such projects to achieve financial close, in order to cover the gap between the Public Power Purchase Agreement (PPA) and the electricity market price so that the project becomes profitable. In particular, the report explores the possibility to make use of (i) the Cooperation Mechanisms of the Renewable Energy Directive 28/2009/EC and (ii) other EU financial support instruments.

JRC prepared a second policy report on the topic titled: "Roadmap and action plan for the first cross-border solar project". This report proposes the use of a legitimization function of the Technological Innovation System (TIS), as an analytical framework to develop a roadmap and action plan for deploying cross-border renewable projects in Europe. This approach assesses the role, competences and critical issues of a subset of the key stakeholders. Based on this information, a set of actions are proposed as to achieve the social acceptance towards cross-border renewable projects in Europe. To conclude, a solar project in Extremadura is studied in order to validate this approach.

- Activities and projects with partnerships working under other S3 Thematic Platforms (Agri-Food, Energy and Industrial Modernisation).

N/A.

III.A Your Partnership and the UN 2030 Sustainable Development Goals (SDGs)

The EU has a strong position when it comes to sustainable development and is also fully committed to be a frontrunner in implementing the UN's 2030 Agenda¹, together with its member countries and regions. Many interregional partnerships under the thematic S3 Platforms contribute strongly to the attainment of these 17 goals.

Please indicate to which Sustainable Development Goals and to what extent your thematic Partnership contributes?

Your Partnership and Sustainable Development Goals

Goals to which your partnership (can) contribute:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Not applicable
Goal 1. End poverty in all its forms everywhere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Goal 2. End hunger , achieve food security and improved nutrition & promote sustainable agriculture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Goal 3. Ensure healthy lives & promote well-being for all at all ages	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Goal 5. Achieve gender equality & empower all women and girls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Goal 6. Ensure availability and sustainable management of water and sanitation for all	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 8. Promote sustained, inclusive and sustainable economic growth , full and productive employment & decent work for all	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 9. Build resilient infrastructure , promote inclusive and sustainable industrialisation & foster innovation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 10. Reduce inequality within and among countries	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 11. Make cities & human settlements inclusive, safe, resilient and sustainable	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 12. Ensure sustainable consumption & production patterns	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 13. Take urgent action to combat climate change and its impacts	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 14. Conserve and sustainably use the oceans, seas & marine resources for sustainable development	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems , sustainably manage forests , combat desertification , halt and reverse land degradation and halt biodiversity loss	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 16. Promote peaceful & inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Goal 17. Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

¹ The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), adopted by the United Nations (UN) in September 2015, gave a new impetus to efforts to achieve sustainable development.

III.B Your Partnership and the UN 2030 Sustainable Development Goals (SDGs)

The S3 Platform is currently considering carrying out a study which would feature how selected thematic S3 Partnerships are contributing to the Sustainable Development Goals.

Would you be interested to have your partnership to be considered to be included in this study? (Please feel free to put us in touch with a different region/colleague.).

[Please complete]