

SOLAR-ERA.NET
ERA-NET ON SOLAR ELECTRICITY FOR THE IMPLEMENTATION
OF THE SOLAR EUROPE INDUSTRY INITIATIVE

Stefan Nowak, NET Nowak Energy & Technology, Waldweg 8, 1717 St. Ursen, Switzerland,
T: +41 26 494 00 30, F: +41 26 494 00 34, stefan.nowak@netenergy.ch
Marcel Gutschner, NET Nowak Energy & Technology, marcel.gutschner@netenergy.ch
Stefan Oberholzer, Swiss Federal Office of Energy, stefan.oberholzer@bfe.admin.ch
Christoph Hünnekes, Forschungszentrum Jülich – PtJ, ch.huennekes@fz-juelich.de
Herman Bastek, Forschungszentrum Jülich – PtJ, h.bastek@fz-juelich.de
Martina Biedrawa, Forschungszentrum Jülich – PtJ, m.biedrawa@fz-juelich.de
Melanie Schulte, Forschungszentrum Jülich – ETN, me.schulte@fz-juelich.de
Stefan Rabe, CEF-NRW, rabe@cef.nrw.de
Karin Wikman, TEKES Teknologian Ja Innovaatioiden Kehittaemiskeskus, Karin.Wikman@tekes.fi
Yvonnick Durand, Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME), yvonnick.durand@ademe.fr
Céline Coulaud, Agence de l'Environnement et de la Maîtrise de l'Energie (ADEME), celine.coulaud@ademe.fr
José Herrero, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT),
jose.herrero@ciemat.es
Juan Francisco Trigo Escalera, Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (CIEMAT),
juanfrancisco.trigo@ciemat.es
Laurence Polain, Service Public de Wallonie (SPW), laurence.polain@spw.wallonie.be
Julie Marlier, Service Public de Wallonie (SPW), julie.marlier@spw.wallonie.be
Elsie De Clercq, Agentschap voor Innovatie door Wetenschap en Technologie (IWT), edc@iwt.be
Sara Van Overmeire, Agentschap voor Innovatie door Wetenschap en Technologie (IWT), svo@iwt.be
Anna Ostapczuk, Narodowe Centrum Badan i Rozwoju (NCBR), anna.ostapczuk@ncbr.gov.pl
Małgorzata Świdarska, Narodowe Centrum Badan i Rozwoju (NCBR), malgorzata.swiderska@ncbr.gov.pl
Kaan Karaösz, Türkiye Bilimsel ve Teknolojik Arastirma Kurumu (TUBITAK), kaan.karaoz@tubitak.gov.tr
Ismail Dogan, Türkiye Bilimsel ve Teknolojik Arastirma Kurumu (TUBITAK), ismail.dogan@tubitak.gov.tr
Otto Bernsen, Ministerie van Economische Zaken, Landbouw en Innovatie / RVO, otto.bernsen@rvo.nl
Stathis Tselepis, Kentro Ananeosimon Pigon ke Exikonomisis Energeias (CRES), stselep@cres.gr
Christian Inglis, Innovate UK, Christian.Inglis@innovateuk.gov.uk
Leonidas Antoniou, Research Promotion Foundation (RPF), lanto@research.org.cy
Ioanna Sergidou-Loizou, Research Promotion Foundation (RPF), iloizou@research.org.cy
Adriana Agrimi, Regione Puglia, a.agrimi@regione.puglia.it
Dario Tornabene, Regione Sicilia, dario.tornabene@regione.sicilia.it
Fabio Montagnino, Regione Sicilia, fmontagnino@consorzioarca.it
Theodor Zillner, Bundesministerium für Verkehr, Innovation und Technologie (BMVIT), theodor.zillner@bmvit.gv.at
Ulrike Rohrmeister, Bundesministerium für Verkehr, Innovation und Technologie (BMVIT),
Ulrike.Rohrmeister@bmvit.gv.at
Elvira Lutter, Klima- und Energiefonds, elvira.lutter@klimafonds.gv.at
Gernot Wörther, Klima- und Energiefonds, gernot.woerther@klimafonds.gv.at
Tobias Walla, Swedish Energy Agency, tobias.walla@energimyndigheten.se

ABSTRACT: SOLAR-ERA.NET is a network that brings together more than 20 RTD and innovation programmes in the field of solar electricity technologies in the European Research Area. The network of national and regional funding organisations has been established in order to increase transnational cooperation between RTD and innovation programmes and to contribute to achieving the objectives of the Solar Europe Industry Initiative (SEII) through dedicated transnational activities (especially transnational calls). SOLAR-ERA.NET is an EU funded FP7 project running from 2012 to 2016. Through the support of the funding organisations, more than 100 MEUR shall be mobilised for transnational RTD and innovation projects. Preliminary results are presented for the first sets of transnational calls that have been carried out so far.

Keywords: R&D and Demonstration Programmes, Photovoltaic, Funding and Incentives, Strategy

1 INTRODUCTION AND CONTEXT

SOLAR-ERA.NET is a European network of national and regional funding organisations and RTD and innovation programmes in the field of solar electricity generation, i.e. photovoltaics (PV) and concentrating solar power (CSP) / solar thermal electricity (STE). SOLAR-ERA.NET shall contribute to reaching the objectives of the Solar Europe Industry Initiative (SEII) by carrying out the coordination and support actions for the implementation of

the SEII between national and regional RTD and innovation programmes.

The SEII is a joint initiative of the industry sector, EC and member states and is embedded in the European Strategic Energy Technology Plan (SET-Plan) which aims to increase, coordinate and focus EU support on key low-carbon energy technologies in order to achieve Europe's 2020 energy objectives in the future.

2 NETWORK AND MISSION

2.1 Network

As the largest ERA-NET (network in the European Research Area) ever in the solar power field, SOLAR-ERA.NET involves more than 20 national and regional RTD and innovation programmes dealing with PV and CSP. This high level of involvement of most relevant stakeholders provides excellent outreach and allows for a solid coordination needed for an efficient and coherent approach in the highly diverse and versatile RTD landscape.

The network is composed of 19 organisations being programme owners and / or programme managers (see list of authors). Countries and regions participating in the SOLAR-ERA.NET consortium and / or in the first transnational calls are identified in Figure 1. SOLAR-ERA.NET is in principle open to other countries and programmes wishing to join in transnational calls.

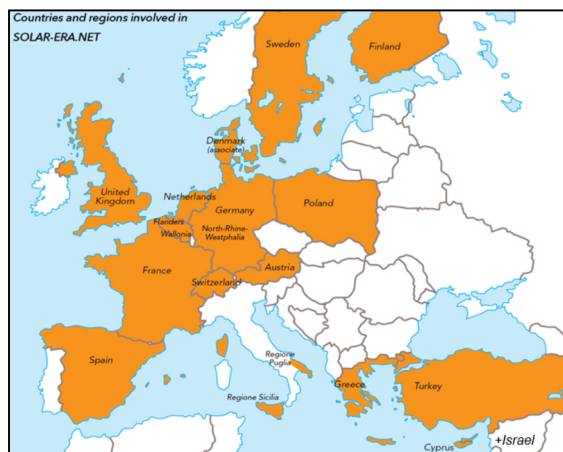


Figure 1: Countries and regions involved in the SOLAR-ERA.NET consortium and / or in the transnational calls

2.2 Missions and goals

SOLAR-ERA.NET has two fundamental missions. As a network supported by the EC within the ERA-NET scheme, the mission is to improve the coordination and cooperation between national and regional RTD programmes. In the context of the Solar Europe Industry Initiative (SEII), the mission of the network is to implement central parts of the SEII on a transnational level and thus contribute to achieving the goals defined in the SEII.

The more specific and essential goals and activities of SOLAR-ERA.NET are i) to launch joint calls for RTD proposals by national and regional RTD and innovation programmes and ii) to define and support the best joint activities, strategic information exchange and use of implementation tools.

By identifying and choosing SEII priority topics based on the Implementation Plans for PV respectively CSP for transnational calls, the SOLAR-ERA.NET network shall select and fund industrially relevant transnational RTD and innovation projects in the field of solar electricity

technologies.

In quantitative, financial terms, SOLAR-ERA.NET shall result in a total funding volume by the participating national and regional programmes of approximately 50 MEUR and, in total, expects to mobilise some 125 MEUR for innovative projects.

3 FIRST ACTIVITIES, FACTS AND FIGURES

3.1 Set up of transnational calls

The network started in November 2012. Two sets of transnational joint calls have been carried out so far. 15 countries and regions participated in the first set of transnational joint calls, launched in March 2013, covering 5 PV and 3 CSP topics. The number of countries and regions increased to 17 in the second set of transnational joint calls launched in January 2014. The portfolio of the second joint call grew up to 7 PV and 4 CSP topics.

Call topics in photovoltaics (PV) and concentrating solar power (CSP) are commonly defined by the SOLAR-ERA.NET consortium and adopted by the participating programmes and countries according to their national / regional priorities.

The SOLAR-ERA.NET transnational call PV2 covered the following 7 topics:

- PV2.1 Innovative processes for inorganic thin-film cells & modules
- PV2.2 Dedicated modules for BIPV design and manufacturing
- PV2.3 Grid integration and large-scale deployment of PV
- PV2.4 High-efficiency PV modules based on next generation c-Si solar cells
- PV2.5 Solar glass and encapsulation materials
- PV2.6 Concentrator PV technology
- PV2.7 Si feedstock, crystallization and wafering

The SOLAR-ERA.NET transnational call CSP2 covered the following 4 topics:

- CSP2.1 Cost reduction and efficiency increase in components
- CSP2.2 Dispatchability through storage and hybridisation
- CSP2.3 New fluids for CSP plants
- CSP2.4 Innovative thermodynamic cycles

The transnational call is based on a 2-step/stage-procedure with i) a preproposal and ii) a full proposal stage. Preproposals are checked according to the national / regional regulations and then discussed in the SOLAR-ERA.NET consortium setting up lists of preproposals recommended respectively not recommended for stepping on to the full proposal phase.

Once the full proposals are evaluated by independent international experts as well as by national experts, SOLAR-ERA.NET partners discuss the proposals and agree on a list of projects suggested for funding. The ultimate funding decisions are however taken by the national agencies / ministries.

The transnational SOLAR-ERA.NET joint calls are each allocated with a total public funding budget of approximately 12 million euros provided by the participating national and regional programmes and agencies. The joint call consortium is mainly composed of SOLAR-ERA.NET partners but can be extended by associate partners (like Denmark and Israel in the second set of transnational joint calls). Applicants may also come from other countries (like Ireland and Norway in the second set of transnational joint calls) but they do have to provide their own funding for their participation in the projects.

3.2 Participation in transnational calls

The two transnational SOLAR-ERA.NET calls found good interest in the solar power industry sector and research community. Some 109 preproposals were submitted involving 478 partners from 18 countries. 45 full proposals were submitted.

In the second call, 24 full proposals (21 full proposals submitted in first joint call in 2013) with a total project volume of 24,5 million euros were submitted by the deadline set (15 September 2014).

122 potential project partners (114 potential project partners in first joint call in 2013) can be counted from 18 different countries and regions (15 different countries and regions in first joint call in 2013). Figure 2 shows the number of coordinators and partners in the full proposals submitted by country / region.

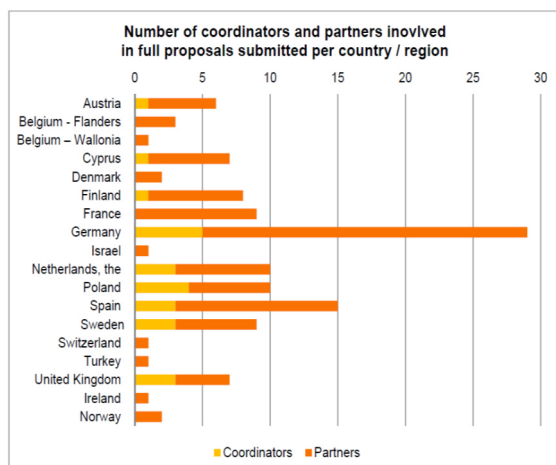


Figure 2: Number of coordinators and partners in full proposals submitted according to the countries / regions participating in the transnational SOLAR-ERA.NET calls PV2 and CSP2

The majority (56%) of the organisations involved in the full proposals submitted belong to the categories of small and medium sized enterprises and large enterprises; research organizations have a share of 42%. Figure 3 shows the share of different types of organizations among the partners being involved in the full proposals submitted.

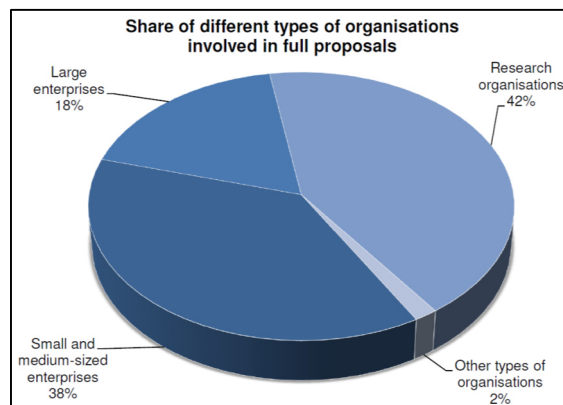


Figure 3: Share of different types of organisations involved in full proposals

Out of the 24 full proposals submitted, 22 were for PV topics and 2 for CSP topics. Table 1 shows the number of full proposals submitted per call topic.

Table 1: Second set of transnational SOLAR-ERA.NET calls - topics and numbers of full proposals submitted

Transnational SOLAR-ERA.NET call topics	N°
PV2.1 Innovative processes for inorganic thin-film cells & modules	4
PV2.2 Dedicated modules for BIPV design and manufacturing	3
PV2.3 Grid integration and large-scale deployment of PV	2
PV2.4 High-efficiency PV modules based on next generation c-Si solar cells	5
PV2.5 Solar glass and encapsulation materials	3
PV2.6 Concentrator PV technology	3
PV2.7 Si feedstock, crystallization and wafering	2
CSP2.1 Cost reduction and efficiency increase in components	0
CSP2.2 Dispatchability through storage and hybridisation	1
CSP2.3 New fluids for CSP plants	1
CSP2.4 Innovative thermodynamic cycles	0

3.3 Projects initiated and lessons learnt

The first set of transnational joint calls PV1 and CSP1 resulted in a list of 13 projects being suggested for funding. The budget of these projects amounts to 28 MEUR including funding requested of 18 MEUR. This list was agreed on by the SOLAR-ERA.NET joint call consortium in November 2013. Although this list is a result out of common discussions, it is not a legally binding document for all national and regional funding agencies. Applicants do have to fulfill all national and regional requirements as well and some projects find themselves on a waiting list because of oversubscription of initial funding budgets available in some countries or regions.

First projects could already start in spring 2014 and currently 4 projects have green light from all national and regional agencies. Another 7 projects are awaiting the final positive funding decisions about to be taken by all agencies involved. These 11 projects request a total funding of close to 12 MEUR. Two projects got stranded, one of which was the largest project that finally cannot take off due to insolvency of one of the partners. This case reflects the harsh economic situation for the solar sector in general and in some countries in particular. Some delays were caused by longer / late parallel national calls and budget reservation procedures as well as due to shifts of responsibilities from one ministry to another. For the second set of transnational joint calls, different measures were taken to further improve the procedures in the countries having encountered delays.

With respect to the successful projects from the first set of transnational joint calls, relevant information will be provided on the solar-era.net website. By the time of writing this contribution, the full proposals submitted in the second set of transnational joint calls are being evaluated. Successful projects are expected to start from early 2015 on.

4 PRELIMINARY AND EXPECTED RESULTS

4.1 Preliminary results

The first two sets of transnational SOLAR-ERA.NET calls shows good interest and participation of the sector:

- 109 preproposals submitted with total project costs of 145 MEUR and funding requested of 84 MEUR
- 478 partners involved in preproposals
- 17 countries and regions participating in the joint call consortium
- 45 full proposals submitted
- first projects started in spring 2014

Although some delays occurred, SOLAR-ERA.NET is on track, dedicating about 12 MEUR of funding per set of transnational joint calls on innovative PV and CSP projects.

4.2 Expected results

SOLAR-ERA.NET aims at launching joint calls once a year and mobilising substantial resources of more than 100 MEUR for innovative projects.

The project proposals must clearly demonstrate i) potential commercial impact / relevance to industrial and market needs / contribution to the Solar Europe Industry Initiative and added transnational value, ii) scientific and technological excellence and iii) high quality and efficiency of the implementation and the management.

Through these joint calls for RTD and innovation topics in PV and CSP, SOLAR-ERA.NET shall contribute to reaching the objectives of the SEII; namely boosting the development of the PV and CSP sector beyond “business-as-usual,” and of the ERA-NET, while specifically enhancing cooperation between the national / regional programming stakeholders at European level.

REFERENCES

Further information is available on the project website www.solar-era.net.

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