

## Integrating National Research Agendas on Solar Heat for Industrial Processes

### Project Deliverable 1.4: Intermediate report on coordination with relevant multilateral international organizations

#### D 1.4 – INTERMEDIATE REPORT ON COORDINATION WITH RELEVANT MULTILATERAL ORGANIZATIONS

WP	1
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#### DISSEMINATION LEVEL

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#### NATURE OF THE DELIVERABLE

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## 1. Content of deliverable

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In order to achieve effective coordination and support actions the collaboration with relevant multilateral organizations needs to be coordinated. This is part of the work to be performed in INSHIP Task 1.4. In the Deliverable at hand the progress up to the end of project month M30 (End June 2019) is reported. In order to give an overview of the INSHIP related participation in international and multilateral events the full list can be found in the final chapter of this report.

## 2. Results and discussion

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In the first 30 months of INSHIP, the project and its contents were introduced in various instances by various project partners on an international level in order to promote the project, establish new contacts and open doors for possible future collaborations. In the future and last 18 months of the project these established contacts shall be expanded, aiming at the consolidation of collaborations.

Even within the first 20 months of the project a close collaboration with EERA Joint Programme on Concentrated Solar Power (EERA JP-CSP) was established. A newly defined Sub- Programme 6 "Solar heat for Industrial Processes" was molded according to INSHIP contents and the INSHIP coordinator (Pedro Horta of Fraunhofer ISE) was approved as sub-programme lead at the 3<sup>rd</sup> EERA JP-CSP General Assembly Meeting held in Graz, Austria, on 16<sup>th</sup> January, 2018.

Within the IEA SolarPACES implementing agreement, Task IV is dealing with Solar Heat for Industrial Processes. The INSHIP project has been presented in detail to all participants of the Task IV Meeting adjoint to the SolarPACES annual conference on 25<sup>th</sup> September, 2017 in Santiago de Chile, and has been presented in the Task IV Meeting in Casablanca, Morocco, on 1<sup>st</sup> October, 2018 adjoint to the SolarPACES annual conference 2018 as well.

Another important activity is the definition of a new Task in the IEA Solar Heating and Cooling (SHC) and SolarPACES implementing agreements. After the previous joint Tasks of SHC and SolarPACES on Solar Heat for Industrial Processes, Task 33 "Solar Heat for Industrial Processes" (2003-2007) and Task 49 "Solar Heat Integration in Industrial Processes" (2012-2015) had been completed successfully and had included active involvement by several INSHIP partners, discussions have been initiated to define a new Task on SHIP, again as a joint Task of SHC and SolarPACES. These discussions have led to a Task definition process which is currently ongoing. While the task definition process in principle had been approved by both SHC and SolarPACES Executive Committees, the first draft of the Task Workplan has been recently approved by the Executive Committee of SHC, while the approval by the SolarPACES EXCO is pending. Several partners of INSHIP are part of this task definition process and play an active role in it. Accordingly, INSHIP contents and results are and will be reflected in the Task Workplan.

Besides these main activities, many partners have presented parts of the INSHIP project or the INSHIP ECRJA project as a whole with relevant multilateral international organizations in order to coordinate the INSHIP activities with the respective organisations. The complete list of the coordination with relevant multilateral international organizations can be found in the chapter below.

### 3. Degree of progress

Complete list of the coordination with relevant multilateral international organizations, sorted chronologically (prepared based on feedback from partners).

Type of event	Beneficiary/ Partner	Event title	INSHIP connection	Date	Place	Audience	Addressed countries
Meeting (Steering Committee)	Fraunhofer ISE, CIEMAT, EERA Aisbl, JP-CSP members	16th EERA JP CSP Steering Committee Meeting	JP after STAGE-STE, Integration of INSHIP activities	2017.01.12	Belgium, Brussels	~30	International
Meeting (General Assembly)	Fraunhofer ISE, CIEMAT, EERA Aisbl, JP-CSP members	2nd JP CSP GA Meeting	Integration of INSHIP activities	2017.01.13	Belgium, Brussels	~50	International
Workshop	FBK	ENEA's perspective on the development of Concentrating Solar Thermal (CST) technologies		2017.03	Italy, Rome	scientific community (>200)	International
Meeting (Stakeholders)	CENER	SolarKeyMark Network meeting	Solar Certification network meeting	2017.03.07	Germany, Freiburg	Industrial Stakeholders (20-30)	Germany
Conference	CEA	Symposium ES9—Surfaces, Coatings and Interfaces in Concentrated Solar Energy Applications, MRS Spring meeting		2017.04	USA, Phoenix (AZ)		International
Conference	CEA	RS2 workshop, Reliability Of Solar Materials And Systems		2017.05	France, Marseille		International
Symposium	Fraunhofer ISE	Symposium Solarthermie 2018	Presentation of INSHIP project	2017.05.10. - 12	Germany, Bad Staffelstein	200	International

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Conference	ETHZ	13th SOLLAB Doctoral Colloquium on Solar Concentrating Technologies	ETHZ's work related to INSHIP Task 4.3 (solar fuels) was presented, in the form of a presentation titled "Ceramic volumetric receivers for high-temperature solar process heat: investigating the potential of anisotropic morphology"	2017.05.15.-17.	Germany, Berlin	Doctoral students and researchers from partner institutes of the SFERA consortium. Around 40 participants.	International
Meeting /Steering Committee)	Fraunhofer ISE, CIEMAT, EERA Aisbl, JP-CSP members	17th JP CSP Steering Committee Meeting	discussion of new sub-programme 6 on Solar Heat for Industrial Processes	2017.07.10	Spain, Madrid	~30	International
Conference	CEA	Smart Energy Systems and 4th Generation District Heating		2017.09.	Denmark, Copenhagen		International
Meeting (Coordination)	Fraunhofer ISE	ECRIAs - Coordination Meeting	Presentation of INSHIP project, discussion of concept 'ECRIA'	2017.09.13	Belgium, Brussel	~10	International
Conference	IMDEA, CENER	SolarPaces 2017	IMDEA: Solar Fuel Production for the Transportation Sector (WP4)	2017.09.26.-29.	Chile, Santiago de Chile	Scientific Community (>2000)	International
Conference/IEA Task Meeting	Fraunhofer ISE	SolarPaces 2017 and Task IV Meeting	Presentation of INSHIP project	2017.09.26.-29.	Chile, Santiago de Chile	Task IV participants (SHIP stakeholders ~20)	International
Meeting (GA)	Fraunhofer ISE, CIEMAT, EERA Aisbl, JP-CSP members	EERA JP CSP 3rd General Assembly Meeting	Presentation and implementation of SP6 (linked to INSHIP), election of INSHIP coordinator, Pedro Horta,	2018.01.16.-18.	Austria, Graz	EERA JP CSP members ~50	International

as SP6 leader							
Meeting (Stakeholders)	CRES	SolarPACES 94th Executive Committee meeting	Project presentation and so far results' discussion	2018.03.20.-23.	Germany, Aachen	(20)	International
Conference	CEA	5th International Solar District Heating Conference		2018.04	Austria, Graz		International
Conference	UNIPA	12th International Symposium on Supercritical Fluids		2018.04.22.-25.	France, Antibes	>200	International
Meeting (Stakeholders)	CRES	Stakeholders meeting for Solar Thermal Systems' Energy Labelling	Project presentation and so far results' discussion	2018.05.16.-18.	Belgium, Brussels	(30)	International
Conference	AEE	Addressing the Energy-Water Nexus through R&D Planning and Policies	Solar thermal energy and waste water management in industrial processes	2018.05.28.	Belgium, Brussels	50	EU
Meeting (Stakeholders)	CENER	SolarKeyMark Network meeting	Solar Certification network meeting	2018.06.03	Spain, Madrid, AENOR	Industrial Stakeholders (20-30)	Spain
Workshop	CRES	Solar Heat Europe-ESTIF Technical Committee 312 Solar Thermal systems and components	Project presentation and so far results' discussion	2018.06.06.-08.	Belgium, Brussels	(25)	International
Seminar (technical)	CRES, DUTH	Technical Seminar on "Solar Heating and Cooling", organized by Democritus University of Thrace (DUTH)	Project presentation and so far results' discussion	2018.06.19	North Macedonia (FYROM), Skopje	(30)	North Macedonia (FYROM), Greece, Cyprus, Albania
Conference	IMDEA	CIES 2018	Solar Fuel Production for the Transportation Sector (WP4)	2018.06.20.-22.	Spain, Madrid	Scientific Community (> 200)	International

Conference	ETHZ	ASME 2018 12th International Conference on Energy Sustainability	ETHZ's work related to INSHIP Task 4.3 (solar fuels) was presented, in the form of a presentation titled "Heat Transfer and Fluid Flow Analysis of a Volumetric Ceramic Solar Receiver for High-Temperature Processing"	2018.06.24.-28.	USA, Lake Buena Vista (FL)	Industry and Scientific Community. >500 participants	International
Conference	AEE	EMS - European Membrane Society Summer School	Membranes Development for Industrial Applications	2018.06.25.-29.	Netherlands, Enschede	50	International
Workshop	EC, INEA	H2020 2nd Coordinator's Workshop on Concentrated Solar Power	Project presentation, H2020 CSP discussion	2018.06.26	Belgium, Brussels	~20	International
Meeting	CENER	18th EERA JP-CSP Steering Committee Meeting	Presentation of EU GCC CSP Initiative	2018.07.	Cyprus	~30	Cyprus
Meeting (Steering Committee)	Fraunhofer ISE, CIEMAT, EERA Aisbl, JP-CSP members	18th EERA JP CSP Steering Committee Meeting	Presentation of SP6 (linked to INSHIP)	2018.07.03.-04.	Cyprus, Nicosia	EERA JP CSP members ~50	International
Conference	AEE	CHISA/PRES 2018	Recovery of valuable substances by treatment of liquids from the Printed-Circuit-Board industry with Membrane Distillation/Renewable and highly efficient energy systems through innovative combination of solar thermal and heat pump systems/ Innovative financing and	2018.08.	Czech Republic, Prague	>500	International



			evaluation of energy efficiency and renewable energies in industry/ Design of Direct Contact Membrane Distillation (DCMD) Modules for Electroplating Industry				
Conference	CEA	16th International Symposium on District Heating and Cooling, DHC2018		2018.09.	Germany, Hamburg		International
Conference	UNIPA	Desalination for the Environment: Clean Water and Energy		2018.09.03.-06.	Greece, Athens	(>200)	International
Conference	CEA	4th International Conference on Smart Energy Systems and 4th Generation District Heating		2018.10.	Denmark, Aalborg		International
Conference	IMDEA, CENER, METU, Fraunhofer ISE, DLR	SolarPaces 2018	IMDEA: Solar Fuel Production for the Transportation Sector (WP4) METU: Presented paper "Development of View Factor Correlations for Modeling Thermal Radiation in Solid Particle Solar Receivers Using CFD-DEM". This is fundamental work supports T5.2 activities to develop a novel dense granular flow receiver for SHIP	2018.10.02.-05.	Marocco, Casablanca	Scientific Community (>2000)	International

			applications, including for the metallurgical (T4.1) and cement (T4.2). Fraunhofer ISE: participation in TaskIV meeting and SHIP related conference sessions				
Conference	AEE	ISEC	Innovative financing and evaluation of energy efficiency and renewable energies in industry/ Green automotive industry - facing challenges and opportunities of solar heat on the way towards "green" production	2018.10.04	Austria, Graz	>500	International
Workshop	CRES	Solar Smart Specialization Partnership Meeting- SolarCV project dissemination event	Presentation of INSHIP project during CRES presentation titled "CST related activities in Greece"	2018.10.11	Belgium, Brussels, Directorate General Joint Research Centre	(20)	International
Meeting (Review)	Fraunhofer ISE, CIEMAT, EERA Aisbl, JP-CSP members	EERA JP CSP review meeting	Presentation of SP6 (linked to INSHIP)	2018.10.18	Belgium, Brussels	~10	International
Conference	CYI	The Decarbonising of the Energy Sector in the Mediterranean and Middle East – The Role of CSP	INSHIP project presentation and results	2018.11.29. - 12.01.	Cyprus, Nicosia	Funding and Scientific Community (>200)	Cyprus, International

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Seminar (web)	AEE	Membrane Distillation, a thermally driven separation water treatment technology	Membrane Distillation using waste heat and/or solar process heat	2018.12.04.	Online	30	International
Conference	UNIPA	13th SDEWES Conference		2018.30.09.-4.10.	Italy, Palermo	(>200)	International
Meeting (General Assembly)	Fraunhofer ISE, CIEMAT, EERA Aisbl, JP-CSP members	EERA JP CSP 3rd General Assembly Meeting	Presentation of SP6 (linked to INSHIP)	2019.01.08.-10.	France, Chambery	EERA JP CSP members ~50	International
Workshop (European)	Cyl, IMDEA, FBK	INSHIP ECRIA Workshop: a European common RTD strategy for the support of Solar Heat for Industrial Processes	Cyl: project presentation IMDEA: WP7	2019.02.20.-21.	Belgium, Brussels	Ciy: Scientific Community (~50) IMDEA: Industrial Stakeholders (50-100)	International
Conference	CENER	CSP Focus China	INSHIP connection (CSP industry)	2019.03.	China, Beijing		China
Meeting (Stakeholders)	CENER,	SolarKeyMark Network meeting	Solar Certification network meeting	2019.03.05.	Sweden, Stockholm, RISE	Industrial Stakeholders (20-30)	Sweden
Conference	CENER	ISH 2019	INSHIP connection (Heating trade fair)	2019.03.11.-15.	Germany, Frankfurt		Germany
Meeting (Stakeholders)	DLR, Fraunhofer ISE, CIEMAT, CRES, AEE	Task Definition Meeting SolarPACES/SHC SHIP	1st definition meeting of a joint Task Between IEA SolarPACES and SHC.	2019.04.11.	Germany, Köln	Designated Operating Agents and Subtask Leaders	International
Conference	UNIPA	14th International Conference on Chemical and Process Engineering		2019.05.26.-29.	Italy, Bologna	(>200)	International
Conference	CEA	Proc. Of ECOS 2019 - The 32nd Int. Conf. on Efficiency, Cost, Optimization, Simulation and Environmental Impact of Energy Systems		2019.06.	Poland, Wroclaw		International

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Conference	FBK	Nanoinnovation	(in-kind ADAM project)	2019.06.10.-11.	Italy, Rome	scientific community (>200)	International
Symposium	AEE	Symposium Solarthermie 2018	Finanzierung und Umsetzung von Energieeffizienz und Erneuerbaren in der Industrie	2019.06.14.	Germany, Bad Staffelstein	200	International
Conference	AEE	Solar thermal conference: the impact of EU and R&D funding	SolarBrew: Solar Brewing the Future	2019.09.04.	Belgium, Brussels	50	EU
Workshop	CENER	IEA-Task16 PVSEC 3rd Expert meeting	INSHIP connection (Solar resource forecasting)	2019.09.17.-19.	Switzerland, Rapperswil		Switzerland
Workshop	AEE	Energy Day	Solar Energy in Industrial Water and Wastewater	2019.11.15.	Portugal, Lisbon	100	International