INSHIP

EUROPEAN COMMON
RESEARCH AND INNOVATION AGENDA

Horizon 2020
European Union funding
for Research & Innovation

Main objectives and Structure

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Introduction

INSHIP – Integrating National Research Agendas on Solar Heat for Industrial Processes

H2020 LCE-33-2016 (RIA), GA: 731287
01.01.2017 – 31.12.2020 (48 months)
Coordination: Fraunhofer ISE

INSHIP aims at the **definition of a European Common Research and Innovation Agenda (ECRIA)** engaging major European research institutes, with relevant and recognized activities **on Solar Heat to Industrial Processes** into an integrated structure

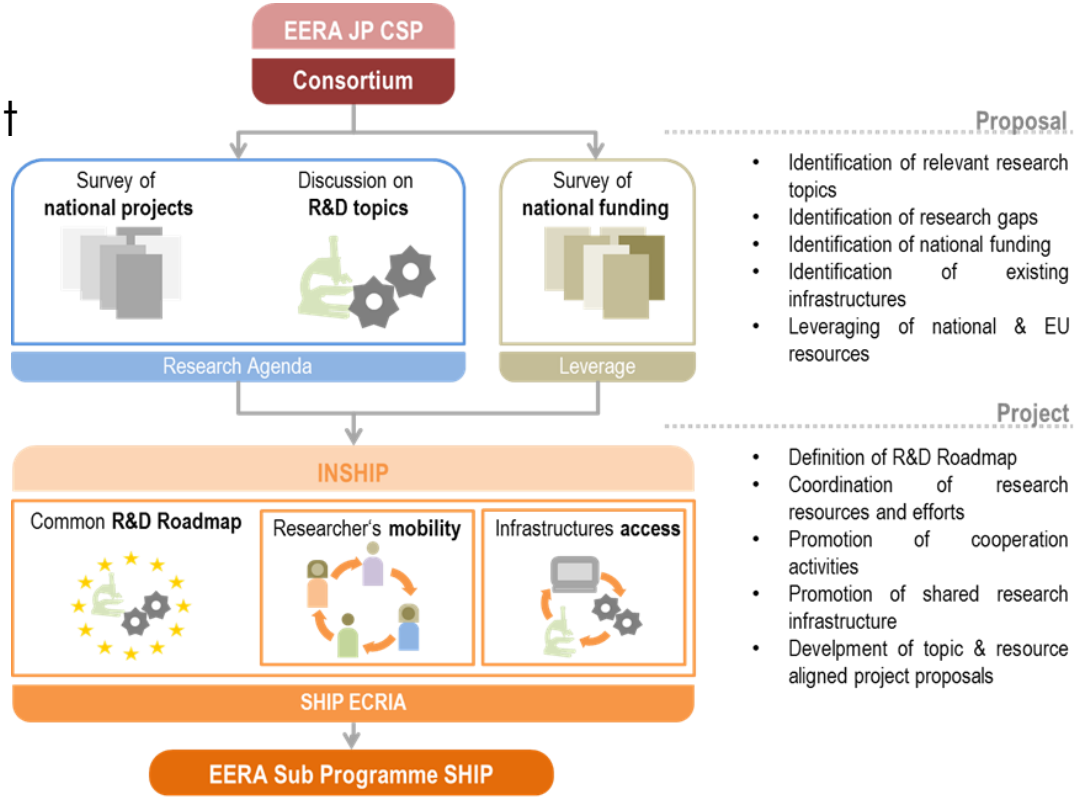
- coordination objectives
- coordinated R&D activities (TRLs 2 to 5)

Concept

INSHIP focus

1) **definition of an ECRIA** consolidating existing EU and national resources **towards a SHIP R&D Roadmap**

2) **operationalization** through the engagement of a wide range of EU R&D institutions, **in coordinated R&D developed through researcher's mobility and infrastructure access schemes**



Structure

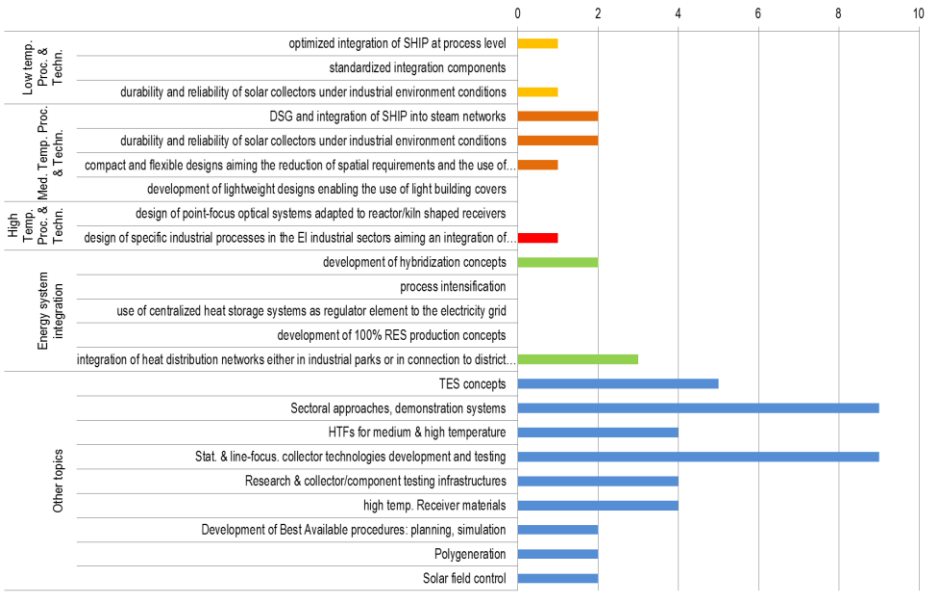
Ensuring a coordination of efforts around specific research activities, the project is structured in:

- **Coordination and Support Actions**
  - WP 1: coordination
  - WP 6: infrastructures & Joint Research
  - WP 7: alignment of policies and dissemination
  - WP 8: networking

- **Coordinated Projects (R&D)**
  - WPs 2-4: low, medium and high temperature technologies/processes
  - WP 5: integration in the energy system

R&D objectives

Definition of Research gaps based on survey of 52 concluded and ongoing SHIP projects*



Concrete objectives:

- Promote available low and medium temp. technol. (TRL >5) through develop. solutions (TRL 2-5) for solar integration
- develop solar thermal technologies aiming high temperature processes (TRL 2-5)
- integration of SHIP in the overall energy system

* Austria, Cyprus, France, Germany, Greece, Italy, Portugal, Spain, Switzerland and Turkey

Coordinated Projects

WP2: Technology and applications to low temperature SHIP (80ºC to 150ºC)

- Task 2.1 - Solar technology for low temperature SHIP
- Task 2.2 - SHIP applications in drying processes
- Task 2.3 - Durability and modularity
- Task 2.4 - Dynamic solar field and system control

WP3: Technology and applications to medium temperature SHIP (150ºC to 400ºC)

- Task 3.1 - Solar driven steam generation
- Task 3.2 - Balance of Plant concepts
- Task 3.3 - Durability and reliability
- Task 3.4 - Compact and building envelope integrated solar field concepts

Coordinated Projects

WP4: Technology and applications to high temperature SHIP (400°C to 1500°C)

- Task 4.1 - Solar metals production for the metallurgical industry
- Task 4.2 - Solar lime production for the cement industry
- Task 4.3 - Solar fuel production for the transportation sector
- Task 4.4 - High-concentration optics for high-temperature solar reactors

WP5: Hybrid energy systems and emerging process technologies

- Task 5.1 - Process integration and storage management
- Task 5.2 - Emerging process technologies (process intensification)
- Task 5.3 - Hybrid energy supply systems
- Task 5.4 - Industry parks and heat distribution networks
- Task 5.5 - 100% RES branch concepts

Coordination objectives

Alignment of efforts and resources at European level

Concrete objectives:

- coordination of cooperation between EU research institutions participating in INSHIP
- alignment of SHIP related national research and funding programs, seeking synchronization with EC programs
- acceleration of knowledge transfer to the European industry in the context of the SET-Plan and other relevant initiatives such as SEII, EMIRI, KIC-InnoEnergy, etc.
- expansion of the joint activities offering researchers and industry a comprehensive portfolio of research capabilities
- to become the reference organization promoting and coordinating the international cooperation in SHIP research from and to Europe

Coordination and Support Actions

WP1: ECRIA Consortium Coordination

- Task 1.1 – Project management and coordination
- Task 1.2 – Background and foreground IP pooling
- Task 1.3 – Follow-up SHIP structure
- Task 1.4 – Coordination with relevant international organizations

WP6: Integrated SHIP Research Infrastructures

- Task 6.1 - Mapping of RTD SHIP infrastructures & resources to collaborative framework establishment
- Task 6.2 - Exchange of staff personnel
- Task 6.3 - Definition and implementation of the SHIP Infrastructure Mobility Scheme

Coordination and Support Actions

WP7: Integration of EU resources and Dissemination

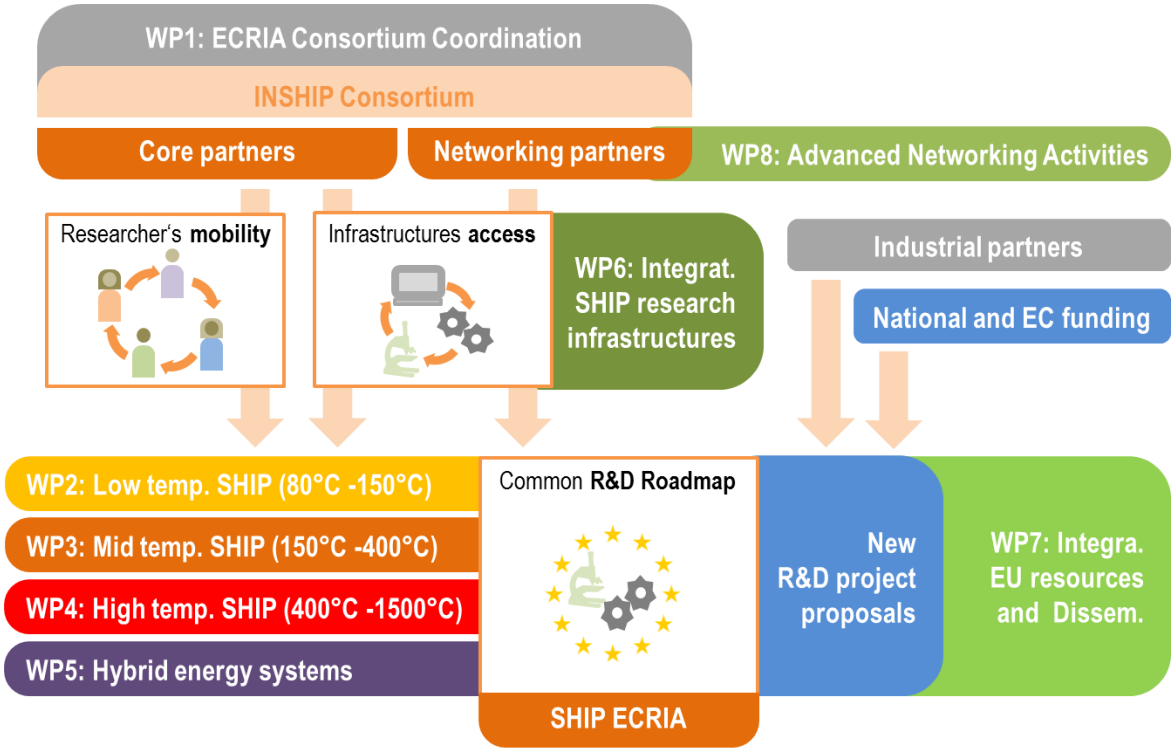
- Task 7.1 – Coordination and alignment of national RTD programmes and objectives in SHIP
- Task 7.2 – Standardisation of collecting national funding contributions
- Task 7.3 – Dissemination of the foreground and exploitation of research results
- Task 7.4 – Coordination with relevant international organizations

WP8: Advanced Networking Activities

- Task 8.1 - Analysis of needed national/regional innovation strategies on SHIP
- Task 8.2 - Assessment of socio-economic impact scenarios of SHIP development in EU
- Task 8.3 - Interaction models between research actors and key stakeholders on SHIP technologies & applications
- Task 8.4 - Joint framework for active collaboration with industry

CSA and CP integration

Integration of coordination and research activities

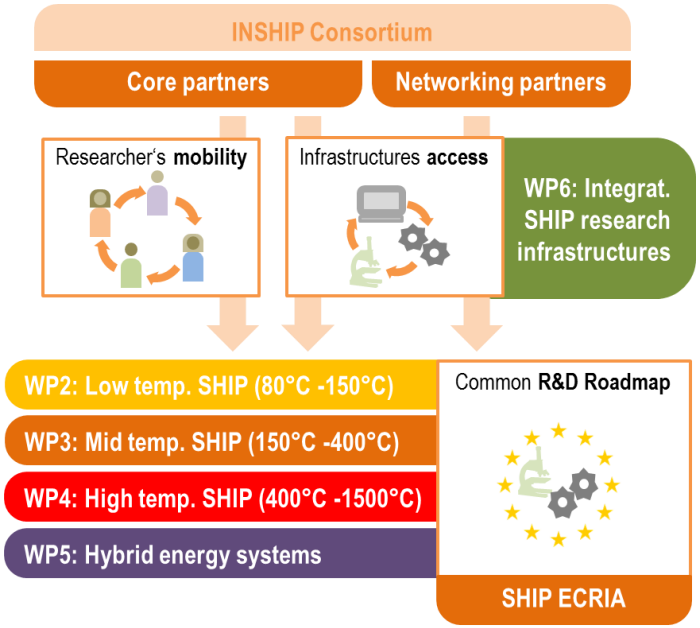


Infrastructure Access

Access by Networking partners to R&D activities & infrastructures

- Development of R&D activities aligned with WPs 2 to 5 topics
- Two Call for Proposals: months 8 and 28
- Additional funding: 185 k€ (1-4 week actions)

- Independent Assessment by Stakeholders Group
- Pre-assessment by related WP leader
- Ranking criteria:
  - alignment with the INSHIP ECRIA
  - engagement of INSHIP partners
  - engagement of industrial partners
  - leveraging of INSHIP contribution (own resources or new project proposals)



Leveraging resources

INSHIP Coordination and Support Actions establish the development of research activities aligned with the ECRIA through direct INSHIP funding or integrating results of ongoing activities, thus leveraging EC funding

- Leveraging at three levels:
- in-kind contributions in the development of Coord.Projects (WPs 2-5) after Researcher's mobility and Networking activities (WP8) through Infrastructure Access

	WP 1	WP 2	WP 3	WP 4	WP 5	WP 6	WP 7	WP 8	TOTAL
Total Person/Months EC	10	41,8	53,3	70	57	34	40,9	24,75	331,7
Total Person/Months Nat. / In-Kind	1	68,5	114	84,5	140,5	58	27	58,65	552,2
TOTAL Men Power (EC + National. Contr. and /or In-Kind) INSHIP									883,9

2.8 M€ In-kind
(2.5 M€ total EC contrib.)

- support of National funding bodies to INSHIP objectives
- ECRIA aligned project proposals from Coord.Projects and Networking engaging available funding resources at both national and European level

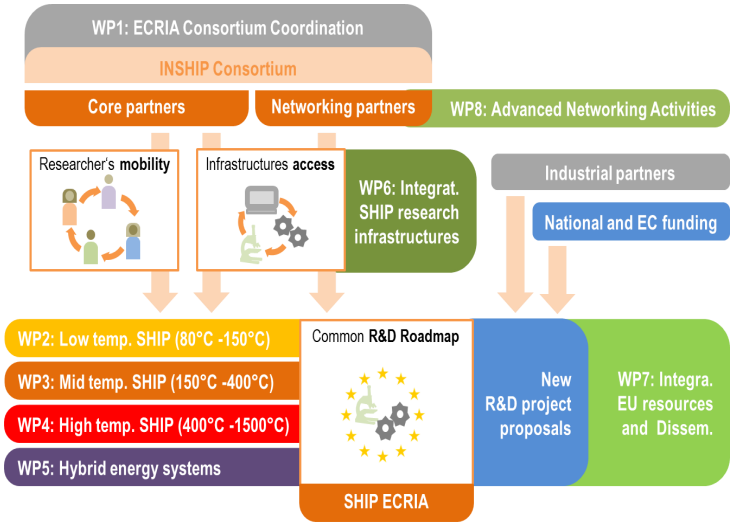
Summary

Definition of a European Common Research and Innovation Agenda (ECRIA) on Solar Heat to Industrial Processes

Technology development R&D activities (TRL2-5) in Coordinated Projects (WP2-5)

Staff mobility and access to research infrastructures (WP6)

Networking, alignment of funding and policies, Dissemination (WP7-8)



Leveraging of EU/national resources aligned with ECRIA objectives