

SCALing European Resources with industrial symbiosis

Blueprint for sectoral cooperation on Skills: Industrial Symbiosis and Energy Efficiency

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Sustainable Process Industry through Resource and Energy Efficiency

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Project in Brief

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SCALing European Resources with Industrial Symbiosis

SCALER aims to provide mechanisms to promote a wider application of industrial symbiosis in the European process industry, by developing action plans and adapted solutions to industrial stakeholders and communities.

Consortium

Financing:

Horizon 2020|SPIRE-13-2017

Total budget:

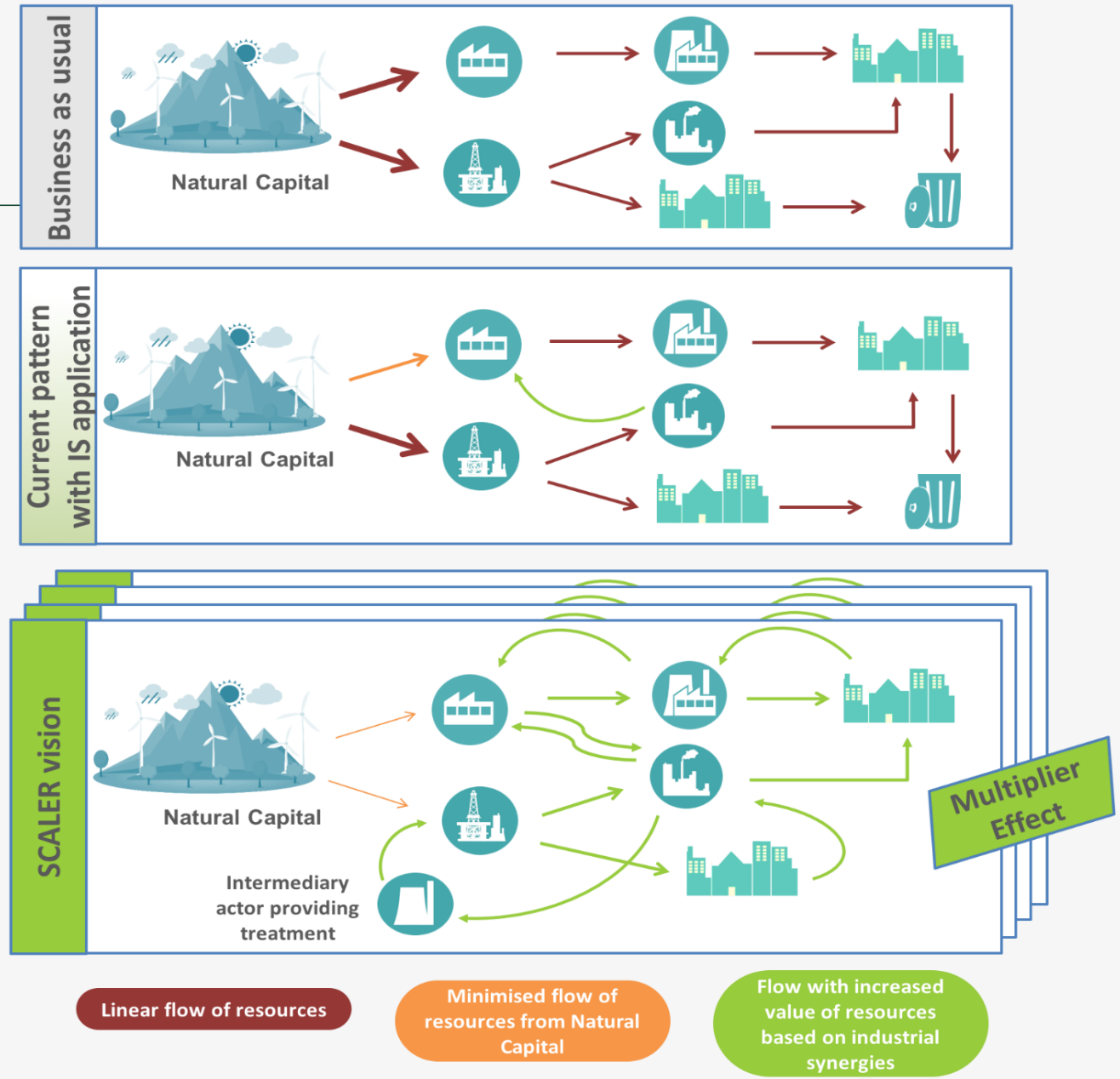
EUR 1.049.481,25

Duration:

Nov-2017 | April-2020

Project vision

Project vision



SCALING EUROPEAN RESOURCES WITH INDUSTRIAL SYMBIOSIS

SCALER Approach and Methodology

SCALER Approach and Methodology

1st Phase

How to unlock a wide implementation of industrial symbiosis, through the identification of success and failure cases, best practices, incentives, tools and methods.

2nd Phase

Evaluate the potential and associated impacts: Map and characterise promising synergies, evaluate the environmental, economic and social impacts.

3rd Phase

Action plan for industrial symbiosis in Europe: Identify future scenarios, produce recommendations and ready-to-use practical guides for implementation.

Dissemination & Communication

Stakeholder consultation and engagement

Knowledge transfer

Wide dissemination of results

Expected Results

Expected Results

- Identification of **requirements and needs of the process industries** regarding resources, water and energy potential synergies identification and implementation, namely in sectors within SPIRE and represented by project-supporting entities.

- Identification of **practices and key enabling technologies to overcome barriers** preventing the spread of industrial symbiosis and of key intermediaries to support flow exchanges realisations.

- **Tested and validated tools & methods** to provide pathways on understanding and applying industrial symbiosis for companies, sectorial associations and local/regional entities.

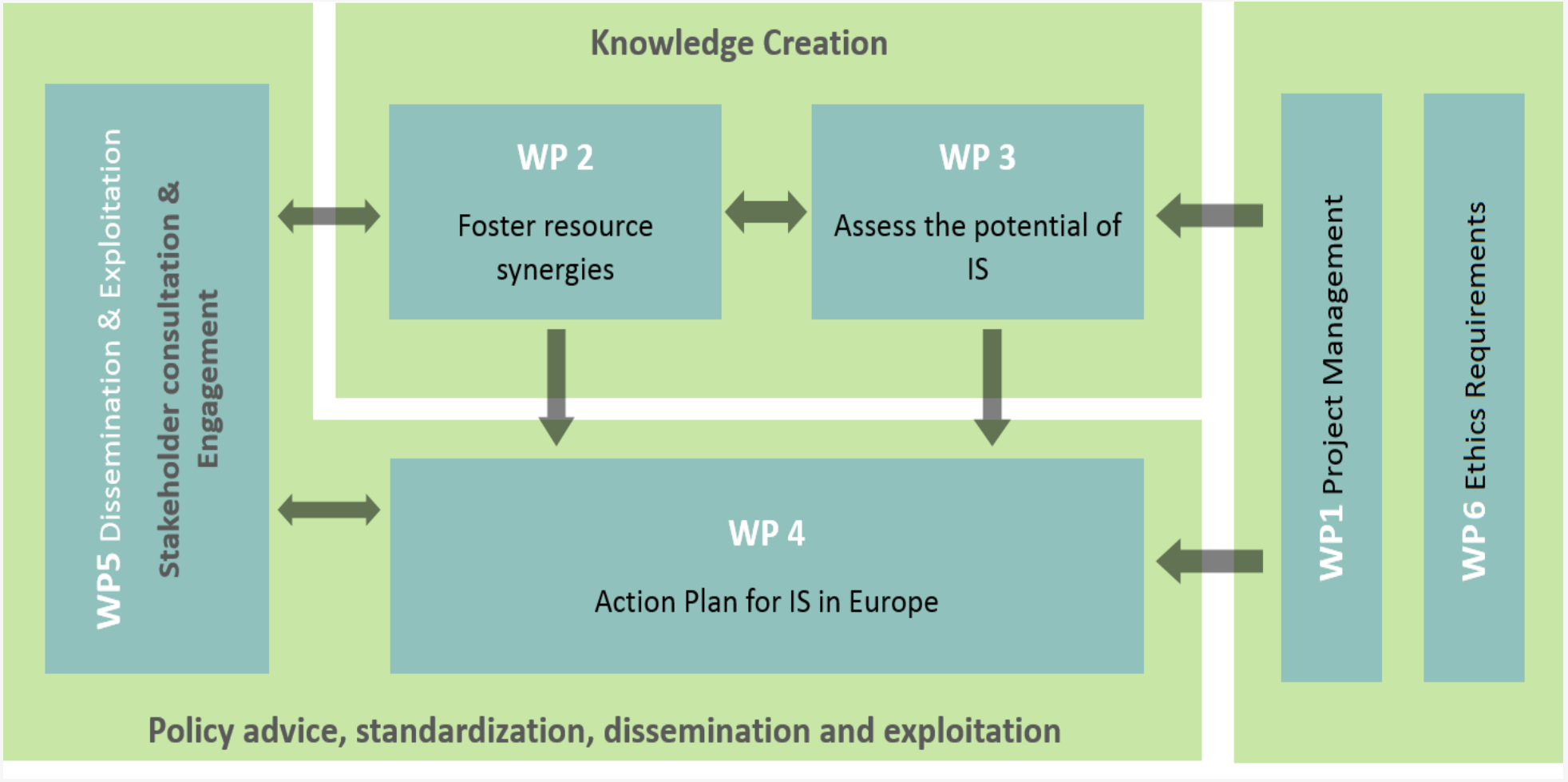
- Creation of a **multi-disciplinary community with interest on industrial symbiosis** and actively working towards its wider implementation at local, regional and European level.

Expected Results

- Assessment of the **potential economic, environmental and social benefits** of industrial symbiosis at the European level.
- **Ready-to-use implementation guidelines** aiming to support process industries on Industrial Symbiosis, in particular regarding weighting the benefits and risks, and covering the different organizational levels.
- **Recommendations for policy makers** based on the identification of EU-wide regulatory gaps and needs for industrial symbiosis deployment across the EU territory.
- **Innovation Camp on Industrial Symbiosis** to boost engagement, raise awareness and help solve challenges that the European stakeholders are experiencing concerning the implementation of industrial symbiosis.

SCALER workplan

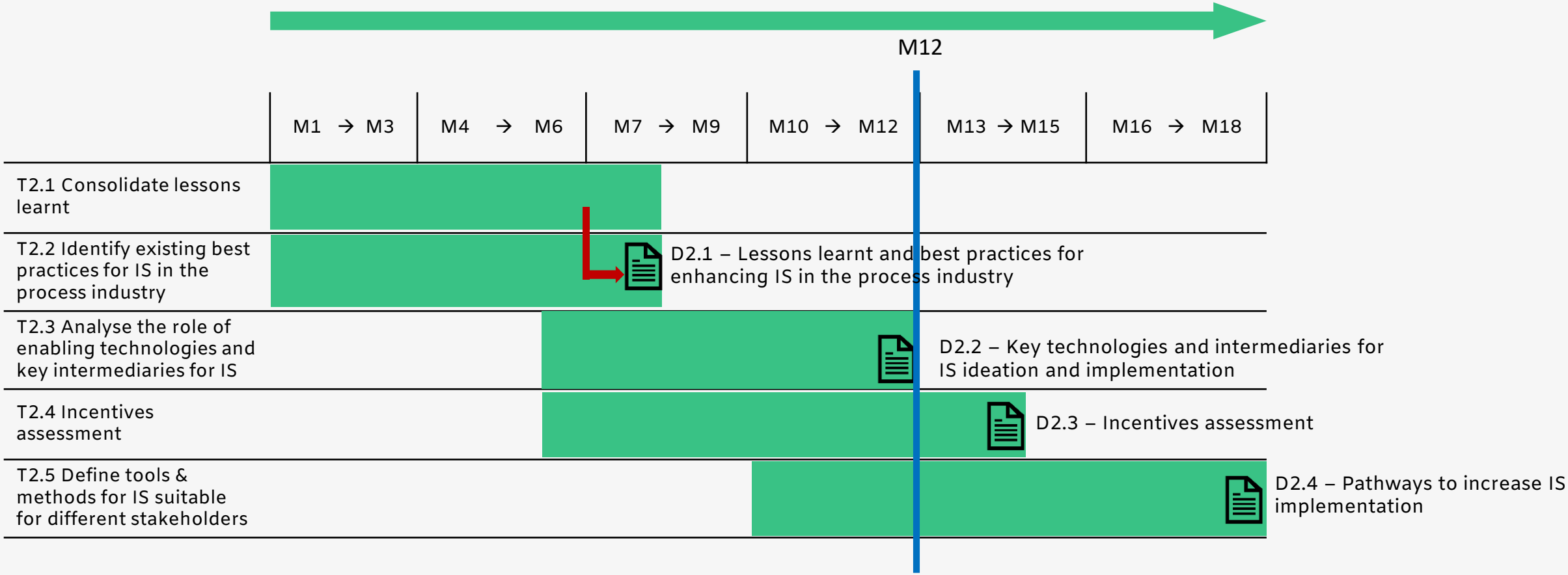
SCALER workplan



WP 2
Pathways to foster resource synergies

SCALING EUROPEAN RESOURCES WITH INDUSTRIAL SYMBIOSIS

WP2 Planning



WP2 – Pathways to foster resource synergies

- Deliverable D2.1 – Lessons learnt and best practices for enhancing industrial symbiosis in the process industry

State-of-the-art literature review, gathering of primary and secondary data and insights from local/regional entities and process industries about best practices for enhancing IS in the process industry.

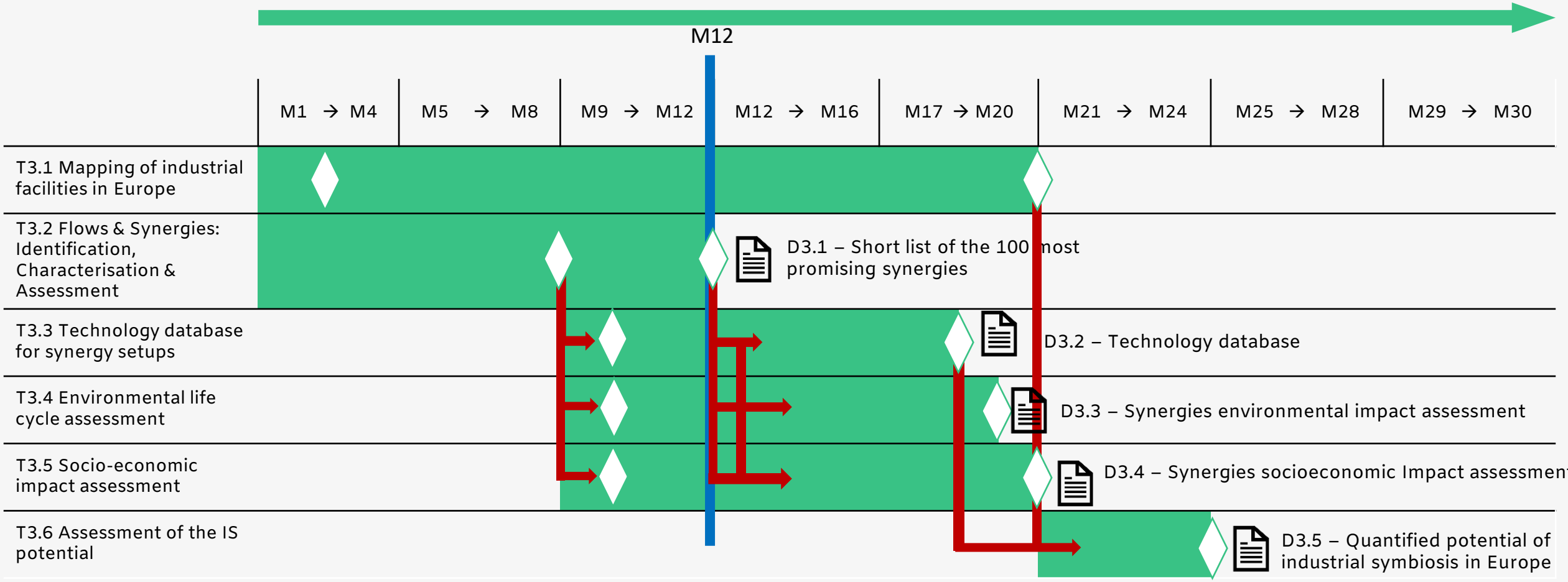
- Deliverable 2.2 (October 2018) Key technologies and intermediaries for industrial symbiosis ideation and implementation

Gathering of primary and secondary data and insights from local/regional entities and process industries about enabling technologies and key intermediaries to support the implementation of industrial symbiosis.

WP 3

Assessment of potential for industrial symbiosis

WP3 Planning



Task 3.1 - Mapping of industrial facilities in Europe

M1➔M20

Goal

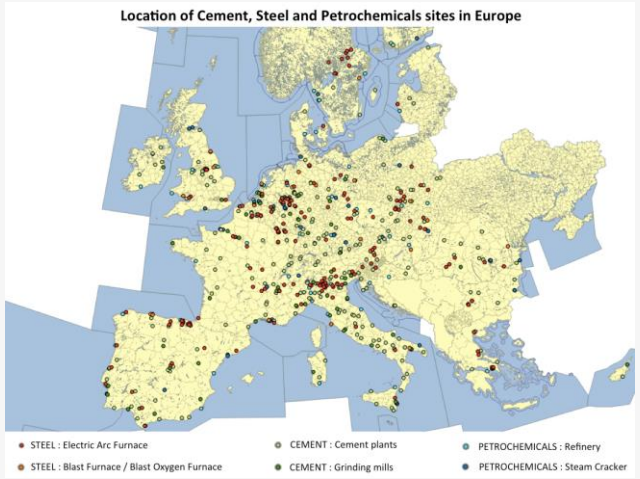
- Locate & map process industry facilities in Europe

Interest for the project

- Define perimeter for the European IS potential assessment (T3.6): sector prioritisation
- Gather industrial facilities information in a database
- Map all industrial sites on a GIS to carry out statistical analyses on distances

Actions

- List the industrial sectors to be analysed in WP3
- Define a data gathering template
- Collect administrative data, GPS coordinates, economic activity details & production flows from various means
- Integrate the data in a GIS



Identification of the facility	
Name of the parent company	**Latitude & Longitude**
Name of the facility	Address
Country	**NACE-code (4 digits)**
Production volume	Main economic activity
Raw material volume	Number of employees
Number of operating hours in year	Complementary information
All Annex I activities of the facility (according to the coding system given in Annex I and the IPPC code where available)	
Activity 1 (main Annex I activity)	Activity N

Task 3.2 – Flows & Synergies : Identification, Characterisation & Assessment

M1→M12

Goal

- Develop a reusable methodology to identify synergies
- **Identify 100 synergies** to quantify the European IS potential

Interest for the project

- The **100 most relevant synergies** identified will be techno-economically, environmentally and socially assessed
- Characterise the input and output flows of each sector

Actions

- Analyse all the sectors defined in T3.1 and develop an I/O database
- Define a taxonomy and an algorithm to automatically identify synergies
- Identify 1000 synergies to be shortlisted (m9)
- Produce D3.1: List of the 100 most promising synergies (M12)

Task 3.3 - Technology Database for Synergy Setups

Deliverable D3.2 – Technology database template & guide for upgrading
Deadline – April 2019

- *Objectives:*

✓ **Identify** the best available and **emerging technics** and **technologies** for IS synergy implementation.

✓ **Assure** their **technica**l and **economic feasibility**.

✓ **Assure** their positive **environmental** and **social impacts**.

- *Inputs :* T2.2 (Best Practices on IS) ; T2.3 (The role of Enabling Technologies) ; T3.2 (most IS promising cross-sectorial synergies).

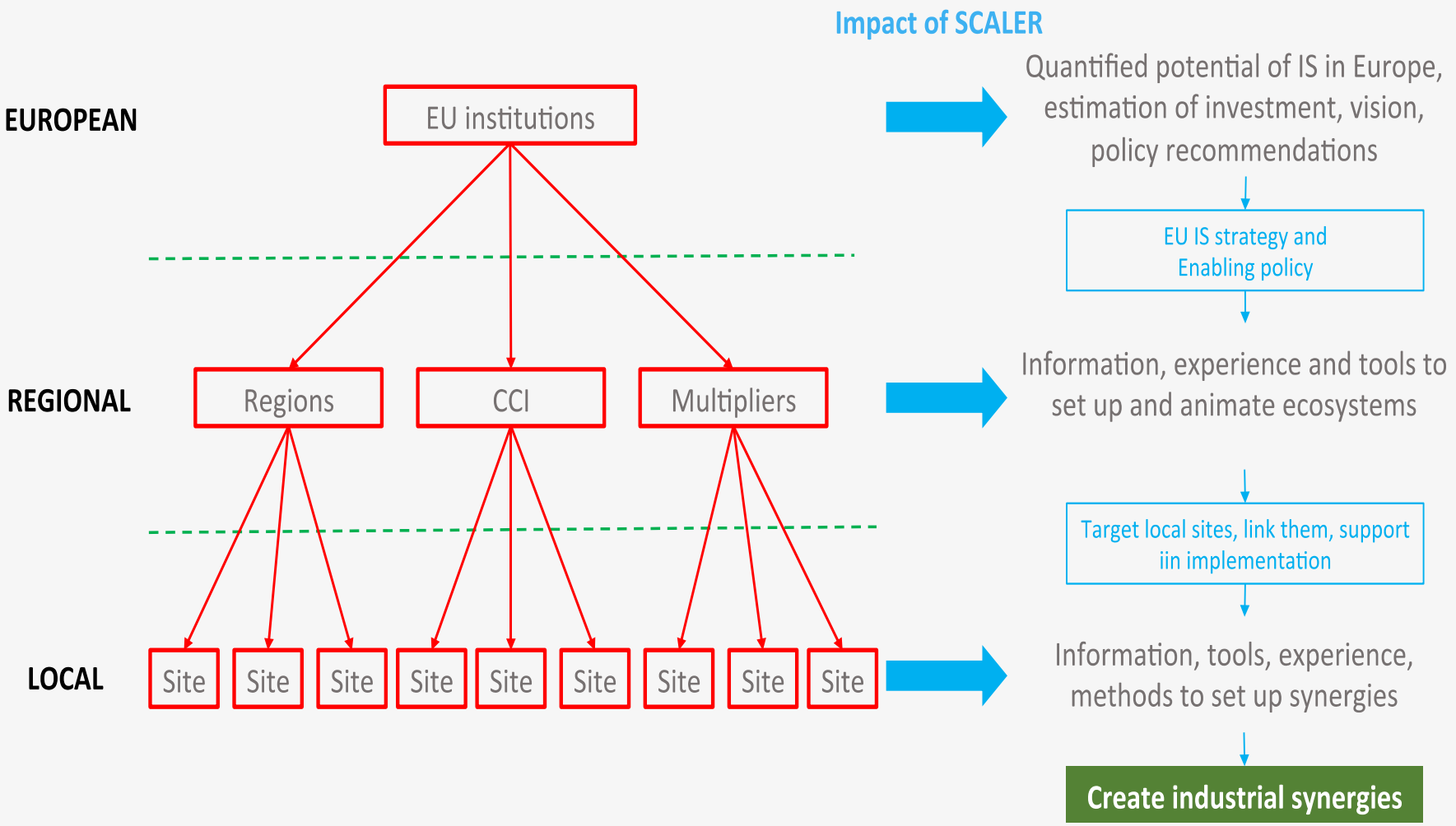
- *Outputs:* T3.4 (Environmental Life cycle assessment); T3.5 (Socio-Economic impact assessment).



SCALER

SCALER Impact

SCALER Impact



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