FLEX 4 FACT

Horizon Europe Project FLEX4FACT – Industrial flexibility platform for sustainable factories

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Innovative solutions

- A digital tool supporting the definition of pathways for increased renewable penetration in industrial sites,
- Digital twins of 5 different manufacturing processes from real use cases of the industrial partners of FLEX4FACT,
- A digital module for including the energy vector in the planning & control of the manufacturing process,
- A cloud platform allowing industrial sites to participate in the energy market.

42 months
from June 2022
to November 2025

23 partners
from Norway, Spain, Germany, Italy and Ireland

€ 18 million
co-funding by the European Union

5 pilots to
demonstrate the platform solutions

Expected impacts

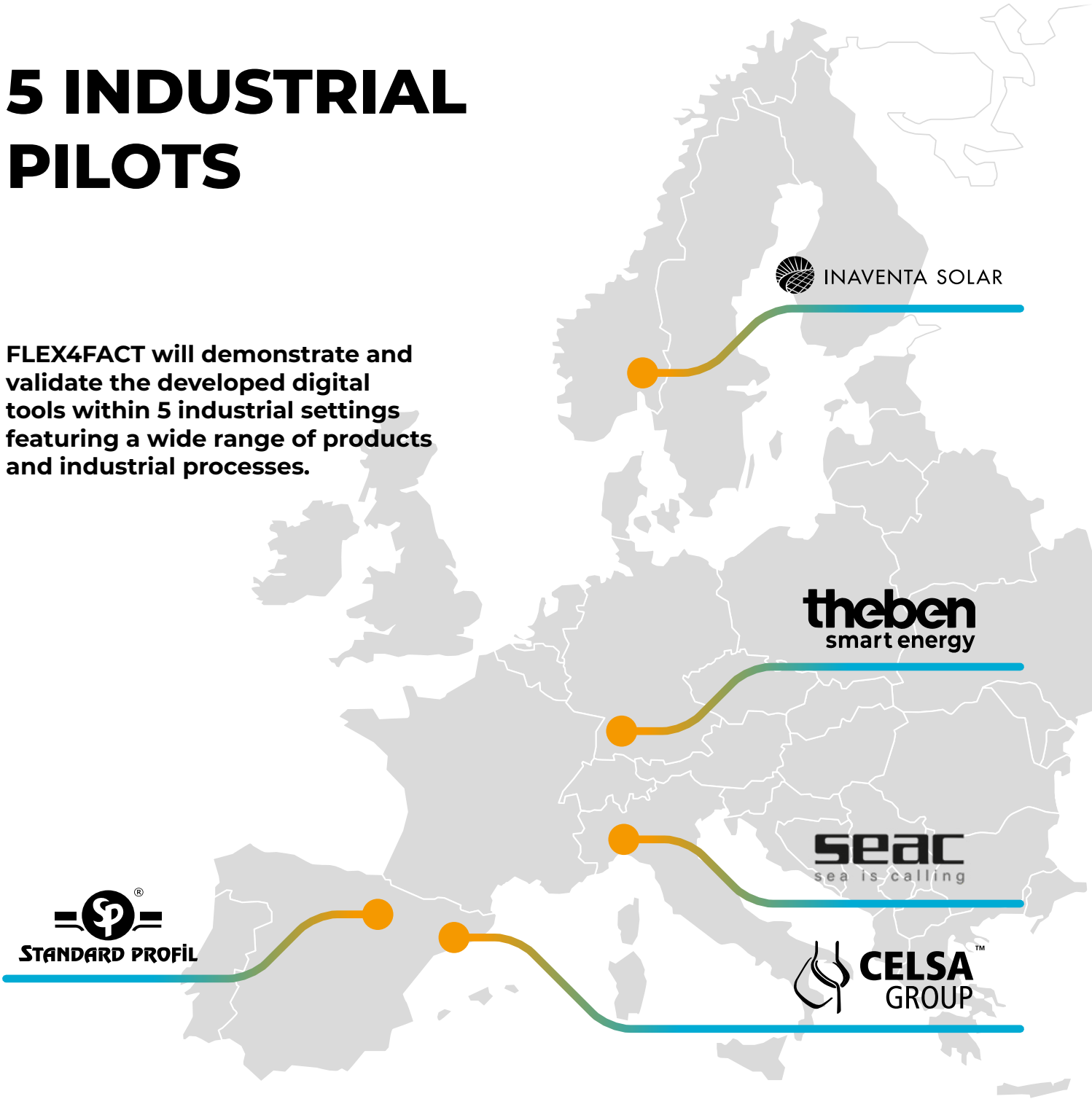
- Reduction of production costs in energy intensive industries and increased uptake of renewable,
- Creation of more and better jobs by increasing the level of digitalisation in factories,
- Reduction of CO2 emissions, leading to more liveable and cleaner industrial cities and better health,
- Strong European science in the field of digitalisation and automation of manufacturing processes,
- Trained and skilled EU workforce boosting the digital industry transition.

Main objectives

- Develop cost-efficient solutions and tools to make production processes more flexible,
- Develop digital twins of the industrial processes to achieve greater energy flexibility during operation, Valorise the excess of energy streams in industrial processes,
- Leverage energy flexibility by offering demand response services to external agents,
- Demonstrate and validate the digital tools within five industrial settings,
- Foster the creation of energy communities involving industrial, commercial and residential stakeholders.

5 INDUSTRIAL PILOTS

FLEX4FACT will demonstrate and validate the developed digital tools within 5 industrial settings featuring a wide range of products and industrial processes.



STANDARD PROFIL → SPAIN	Automotive sealing systems	Extrusion process with focus on several production lines	Make the production line more flexible, use hydrogen mixed with natural gas as fuel for gas ovens, and investigate the installation of renewable plants	 *Production hall of Standard Profil.*
INVENTA SOLAR → NORWAY	Solar collectors	Extrusion lines, welding lines and borehole systems	Cover more than half of the heat demand by self-generated heat, reduce scrap from the production process, and reduce the energy consumption of the factory	 *Production of solar collectors in a converted barn.*
THEBEN → GERMANY	Electronic switches	Different production lines including one for the manufacturing of digital timers	Reduce the energy consumption of the soldering system, the assembly lines and the factory	 *Production line at Theben.*
SEAC → ITALY	Dive and snorkelling equipment	Fins manufacturing machines	Increase the share of self-produced energy, install a solar PV system, and make the moulding process more flexible	 *Snorkelling fin as the product of an injection moulding machine at SEAC*
STANDARD PROFIL → SPAIN	Steel products	Melt shop composed of rolling mills and arc furnaces	Increase the flexibility provision potential of rolling mills and furnaces, and increase usage of hydrogen in steel production process as a replacement for natural gas	 *Production line of wire rods at CELSA.*

Manufactured products · Demonstration site · Description

Consortium

Funded by the European Union

FLEX4FACT Coordinator
SINTEF Manufacturing

FLEX4FACT Tech-Coordinator
SINTEF Energy