

# Energy management in the European agro-food sector

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**On behalf of the INDUCE project consortium**

# Energy Transition Studies – R&D line Social Innovation

- What interests us?
  - Why do people behave as they do?
  - How do people and groups of people take decisions?
  - How can we motivate sustainable decision-making?
- Which work inspired our participation in the present project?
  - Green by Choice, Green by Design: Demand and supply in process technology
  - Green Wedge: How can process technology suppliers be better salesmen?



# Capacity building in industry and services

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**H2020 Call:** “Staff trainings and capacity building programs to enhance corporate policy towards energy efficiency, energy culture (motivations, behaviour change, mitigation of perceived risks and barriers) and sustainable supply-chain initiatives.”

If this is what we want...

- Energy savings receive structural attention (as part of the KPIs)
- From conscious decision making to habits and routines
- Capex as well as low-cost and no-cost investments (Good Housekeeping)

Then this is what we need!

- Knowledge of company culture and current practices
- Knowledge of how to make use of these factors to realize the above
- Capacity building and training aimed at cultural and behavioural change

# Energy Management System

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- Energy policy
- Plan, do, check, act (Deming cycle)
- Measurable results (EnPIs)
- Annual Audit
- Evaluation conform ISO50001

# Why the agro-food sector?

SECTOR	Variation in energy consumption
Coke and refined petroleum	-9.216 kTOE
Pulp, paper and paperboard	-7.849 kTOE
Food and beverage	-4.000 kTOE
Machinery	-3.500 kTOE
Non ferrous metals	-1.500 kTOE
Non-metallic minerals	-1.227 kTOE
Iron and steel	7.479 kTOE
Chemical and pharmaceutical	23.696 kTOE

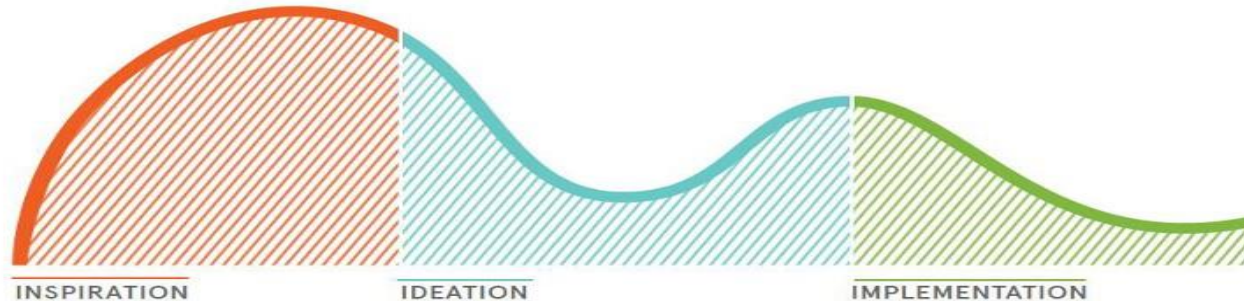
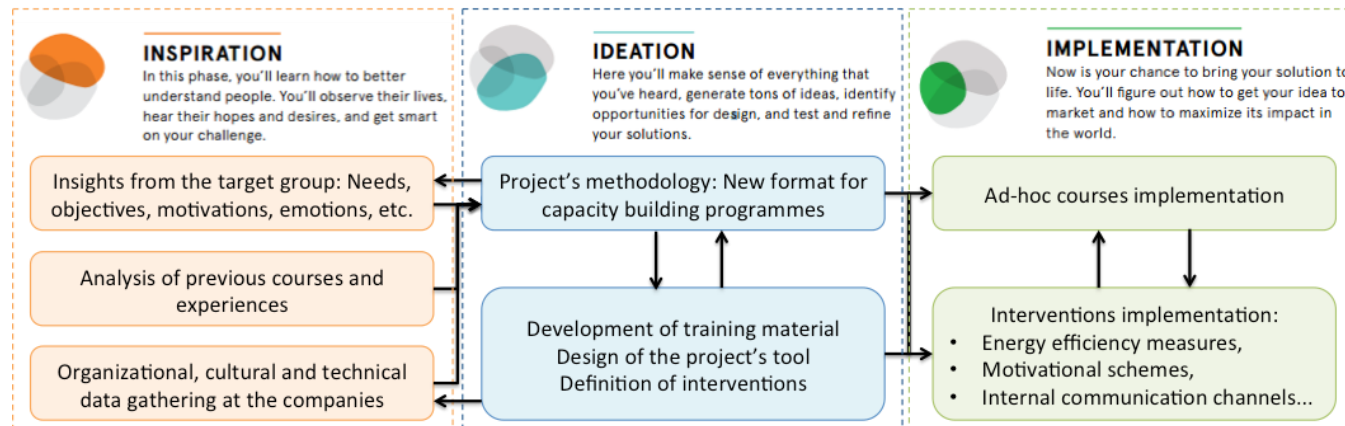
*Source:* “Study on energy efficiency and energy saving potential in industry and on possible policy mechanisms”, Report for the European Commission Directorate-General Energy, 2015”. ICF Consulting Limited

# Research, Training and Networking ECN in 4 countries: NL, ES, DE, FR

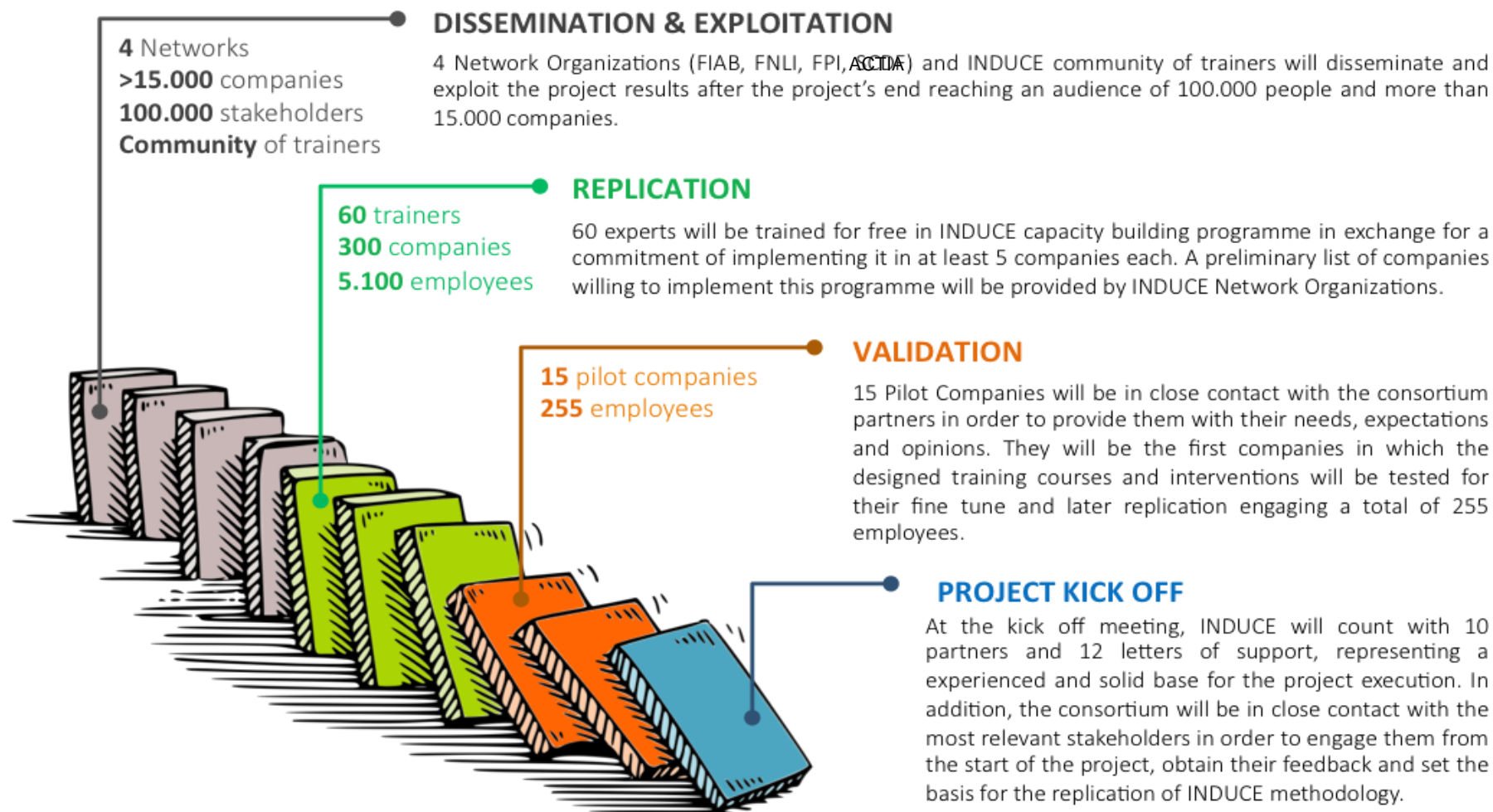
Participant No.	Participant legal name	Participant short name	Country	Organisation type	Role(s) in Project
<b>1 (Coord)</b>	CIRCE – Centro de Investigación de Recursos y Consumos Energéticos	CIRCE	ES	RTD	Research and Training Company for Spain
<b>2</b>	Energy Research Centre of the Netherlands	ECN	NL	RTD	Research
<b>3</b>	Fraunhofer Gesellschaft zur Foerderung der Angewandten Forschung E.V.	FhISI	DE	RTD	Research
<b>4</b>	Spanish Food and Drink Industry Federation	FIAB	ES	Association	Involve network Spanish agrofood
<b>5</b>	Federatie Nederlandse Levensmiddelen Industrie	FNLI	NL	Association	Involve network Dutch agrofood
<b>6</b>	Food-Processing Initiative e.V.	FPI	DE	Association	Involve network German agrofood
<b>7</b>	ACTIA – Le Réseau Français des Instituts Techniques de l'Agro-Alimentaire	ACTIA	FR	Association	Involve network French agrofood and training Company for France
<b>8</b>	KWA Bedrijfsadviseurs B.V.	KWA	NL	SME	Training Company for the Netherlands
<b>9</b>	Ökotec energiemangement GmbH	ÖKOTEC	DE	Large company	Training Company for Germany
<b>10</b>	SYNYO GmbH	SYNYO	AT	SME	General project communication



# Project USP: Human Centered Design



# Activities and Impact





# Pilot Companies (this far)

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- Spain:
  - Purees and Fruit juice
  - Beer brewery
  - Fragrances and flavours production
  - Organic fruit and vegetables
  - Cookies
- Germany:
  - Sugar factory
  - Beer Brewery
  - Sausages and cold meat products
- France:
  - Winery
  - Frozen pastries
  - Canned food : ravioli/cannellini
- The Netherlands:
  - Sugar: B2B and B2C
  - Vinegar, Syrup, and other liquids
  - Flavour and food ingredients

# Main activities until end of 2018

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- Current best practices and gaps
  - Existing capacity building and training tools, addressing either:
    - Practical aspects/skills (e.g., energy monitoring)
    - Internal economic aspects (e.g., building a business case)
    - Organizational aspects (e.g., how is EE part of the KPIs...)
    - Behavioural aspects (e.g., effective influencing for energy coordinators)
- Benchmarking baseline in each pilot company
  - Energy assessment
  - Assessment of internal barriers, opportunities, and organizational network
  - Assessment of organizational culture, as well as individual beliefs, attitudes, and current behaviours of employees
- Benchmarking baseline for agrofood sector

# OVERVIEW CATEGORIZED CAPACITY BUILDING PROGRAMS

- achieve technical compliance
- insights on economic gains
- strategic decision making, organization structure
- changing behavior of a person or group

