EMPOWERING INTERMEDIARIES TO TRAIN AGRO-FOOD COMPANIES IN TACKLING ORGANIZATIONAL, CULTURAL AND BEHAVIOURAL BARRIERS FOR IMPLEMENTING ENERGY EFFICIENCY MEASURES.

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This project has received funding from the European Union’s H2020 Coordination Support Action under Grant Agreement No.785047.
ENERGY (PROCESS) EFFICIENCY: A NO-BRAINER??

Host is sharing poll results

1. What are the greatest challenges you face for higher heat efficiency? (Multiple choice)

1 - Insufficient workforce competencies (internal and/or external)  24%
2 - There is a lack of advanced market-ready technological solutions  43%
3 - Aging technology  19%
4 - Renewable thermal energy has too many limitations  14%
5 - Management and organizational issues  19%
6 - Lack of financing  57%
7 - Inadequate metering and performance monitoring "infrastructure"  10%

Source: UNIDO IWG Workshop #3: Industrial heat solutions to support operational decarbonisation
PROBLEM, RESEARCH & PRACTICE GAP, QUESTIONS

• **Problem:** Smaller emitters (e.g., agrofood sector) face many challenges in adopting energy efficiency measures due to strong resource constraints, but have received relatively little attention in literature.

• **Literature gap:** Literature on drivers and barriers (e.g. Cagno *et al.*, 2012; Trainni *et al.*, 2017) for adoption of energy efficiency measures provides little insight into:
  - Organizational, cultural and behavioural barriers to adoption.
  - The role of intermediaries in tackling these barriers at the companies they advice and train.

• **Role of intermediaries** (energy managers, energy advisors, auditors):
  - Focused on technical and economic drivers/barriers for adoption of energy (process) efficiency measures
  - No attention to strategic advantages of the investment (Multiple Energy Benefits - Cooremans *et al.*, 2011)
    See [www.mbenefits.eu](http://www.mbenefits.eu) – Final Conference May 11th 2021

• **Questions:**
  - What organizational, cultural and behavioural drivers and barriers hamper or stimulate the adoption of energy efficiency measures in companies in the agro-food industry?
  - How can training programs capitalize on these drivers and tackle the barriers?
  - How can intermediaries be empowered in implementing these training programs?
ORGANIZATIONAL, CULTURAL, BEHAVIOURAL = ?

Eight-step change model

Theory of Basic Values

Behaviour Change Wheel
### METHOD

- **Structured interview** – Inventory of EMS actions
- **Survey** for all employees with culture items (PVQ-21)
- **3-5 Semi-structured interviews** employees (workfloor, management)
- **Evaluation survey** training participants
- **Training**
- **Review of existing interventions**
- **Literature review (drivers/barriers)**
- **Expert session**
- **Structured interview** – Inventory of EMS actions
HUMAN-CENTERED DESIGN (WWW.IDEO.ORG)

- Number of Training ideas
- Interviews
- Energy assessment
- Culture survey
- Discuss benefits
- Confirms participation
- First contact
- Co-creation
- Time
What do I know of energy efficiency? And what do my colleagues know?

Quiz
What do I know of energy efficiency? And what do my colleagues know?

Wrap-up
Summarizing ideas for implementation
Evaluation

Ambitions
What is the sustainability policy? And what does it have to do with me?

Learn
Everything about sustainability, energy consumption, processes

Action
Find energy leaks and solutions in your work environment in the energy hunt!

Introduction
Welcome
Expectations
Setting the scene

12:30 - 12:35
12:35 - 12:50
12:50 - 13:05
13:05 - 13:45
13:45 - 14:25
14:25 - 15:05
INTERVENTION EXAMPLE – MANAGEMENT LEVEL

Intervention with the ASAP tool: Aligning Sustainability impact Assessment of Purchasing decisions

Simple tool to help debiasing capital investment decisions by (C-level or sub-C level) decision makers

Ultimate aim: Energy efficiency is a standard procurement criterion

**ASAP tool**

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>0 POINTS</th>
<th>1 POINTS</th>
<th>2 POINTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPACT ENERGY SAVING (INTERNALLY)</td>
<td>Low</td>
<td>Average</td>
<td>High</td>
</tr>
<tr>
<td>AVAILABILITY EE OPTIONS (MARKET)</td>
<td>Hardly</td>
<td>Fair</td>
<td>Good</td>
</tr>
<tr>
<td>PROFITABILITY (FINANCIAL)</td>
<td>Low</td>
<td>Average</td>
<td>High</td>
</tr>
<tr>
<td>ORGANISATIONAL FEASIBILITY</td>
<td>Low</td>
<td>Average</td>
<td>High</td>
</tr>
<tr>
<td>PREVIOUS EXPERIENCE</td>
<td>Not/negative</td>
<td>Neutral</td>
<td>Good/positive</td>
</tr>
</tbody>
</table>
### Table 4. Main impacts of the INDUCE project (source: D5.1)

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>INITIAL IMPACT (OBJECTIVE)</th>
<th>CALCULATED IMPACT&lt;sup&gt;16&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of measures on Energy Efficiency</td>
<td>400</td>
<td>490</td>
</tr>
<tr>
<td>Annual energy savings in primary energy (GWh/year)</td>
<td>106</td>
<td>554</td>
</tr>
<tr>
<td>Costs energy savings (million €/year)</td>
<td>17,4</td>
<td>20</td>
</tr>
<tr>
<td>Investments on Energy Efficiency (Million €)</td>
<td>26,5</td>
<td>21,68</td>
</tr>
<tr>
<td>CO₂ emissions avoided (ktCO₂/year)</td>
<td>13,5</td>
<td>95</td>
</tr>
</tbody>
</table>

<sup>16</sup> assuming 315 companies would have been involved in total
CHALLENGES

• Normal duration of CSA project versus normal duration of project in agrofood company (ah, is that project still running?)

• Data collection across four countries is a challenge (sensitive questions and privacy considerations)

• Get trainers out of their comfort zone (i.e., actively adopt insights from social scientific perspective in their training practice)

• Make companies opt for management trainings (more C-level commitment would have helped)

• Acknowledgement that (management) behaviour is a major factor of influence in the energy transition!
Thank you for your attention!

For more information and project outcomes:

https://www.induce2020.eu/

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References

