

**IEA - IETS TASK XIX
INDUSTRIAL ELECTRIFICATION
CURRENT STATUS**

JONATHAN MONCADA

Industrial
Energy-Related
Technologies
and Systems

iets

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WHAT IS IETS?



Technology collaboration programme of IEA.

- IETS aims to foster international co-operation among OECD and non-OECD countries for accelerated research and technology development of industrial energy-related technologies and systems.

Currently 7 active Tasks (Known before as Annex)

Task XI - Industry-based biorefineries towards sustainability

Task XV - Industrial Excess Heat Recovery

Task XVII – Membrane processes in Biorefineries

Task XVIII - Digitalization, Artificial Intelligence and Related Technologies for Energy Efficiency and GHG Emissions Reduction in Industry

Task XIX - Electrification in Industry

Task XX - Knowledge sharing on Industry Transition Roadmaps

Task XXI - Decarbonizing industrial systems in a circular economy framework

TASK STRUCTURE – CURRENT TERM

Electrification in Industry

Current time frame: [Jan, 2019– Dec, 2022]

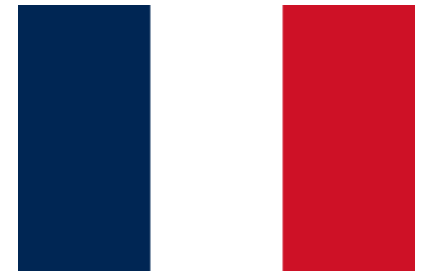
Task Manager: [Jonathan Moncada, TNO, The Netherlands)

Sub-task no	Sub-task title/Basic contents	Sub-task Manager [Name, Org., Country]
1	Mapping of activities	Andrea Ramirez, TU Delft, The Netherlands
2	Enabling a shared view on system aspects of industrial electrification	Jonathan Moncada, TNO, The Netherlands

PARTICIPATION

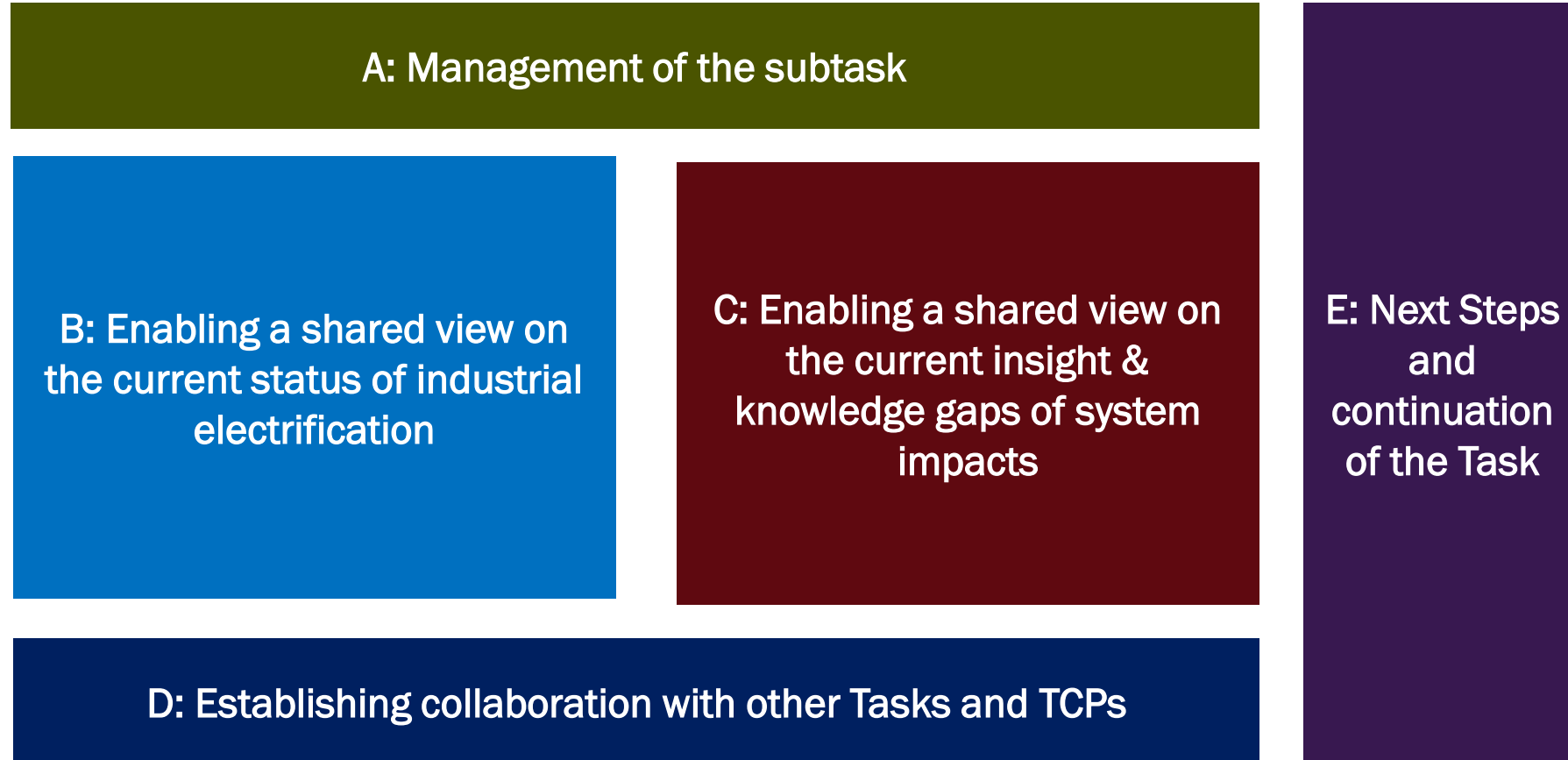
Currently, participation of groups from 8 countries:

- Government organization
- Research organizations
- Industry



STATUS OF TASK 19. INDUSTRIAL ELECTRIFICATION

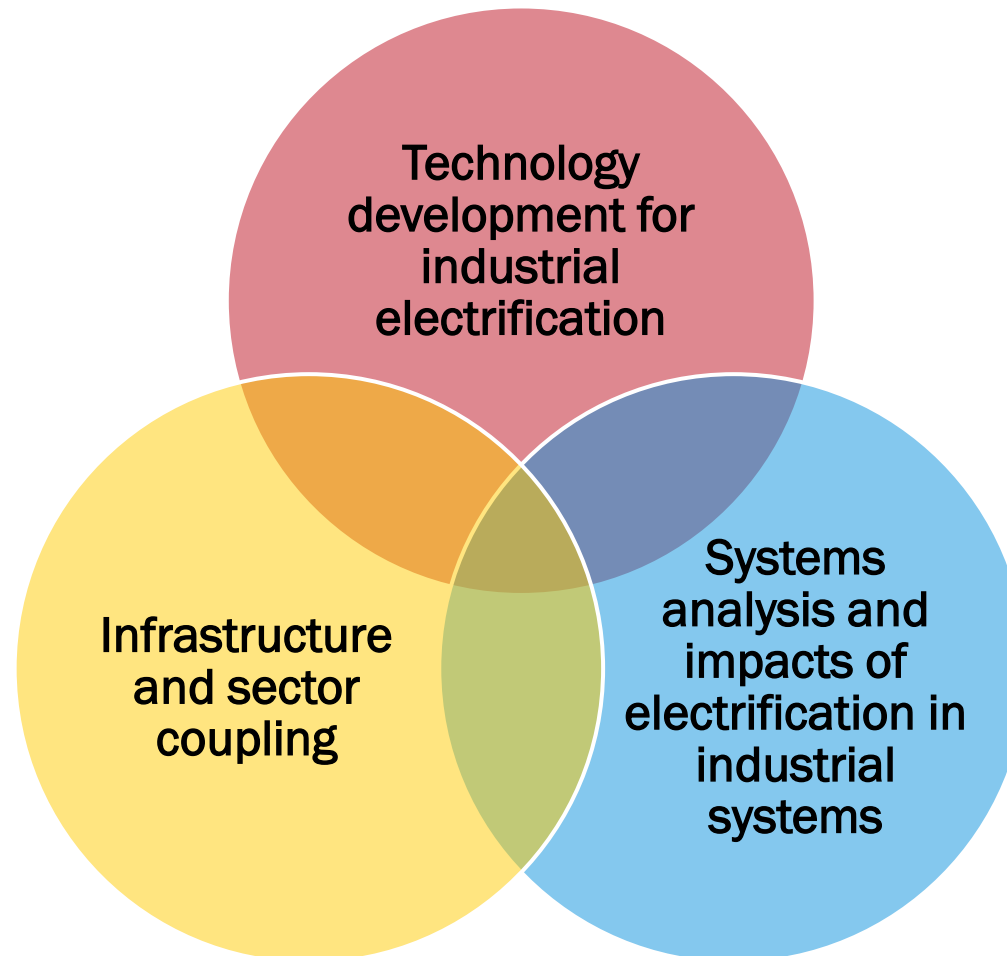
SUBTASK 2, STRUCTURE



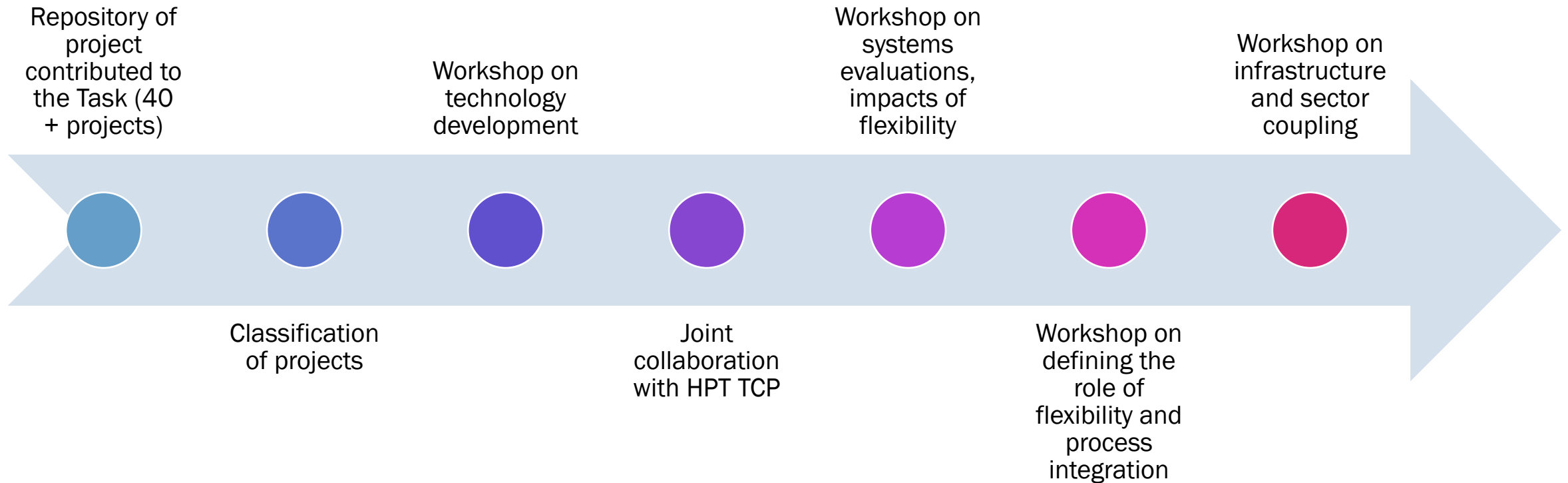
STATUS OF TASK 19. INDUSTRIAL ELECTRIFICATION

SUBTASK 2, STRUCTURE

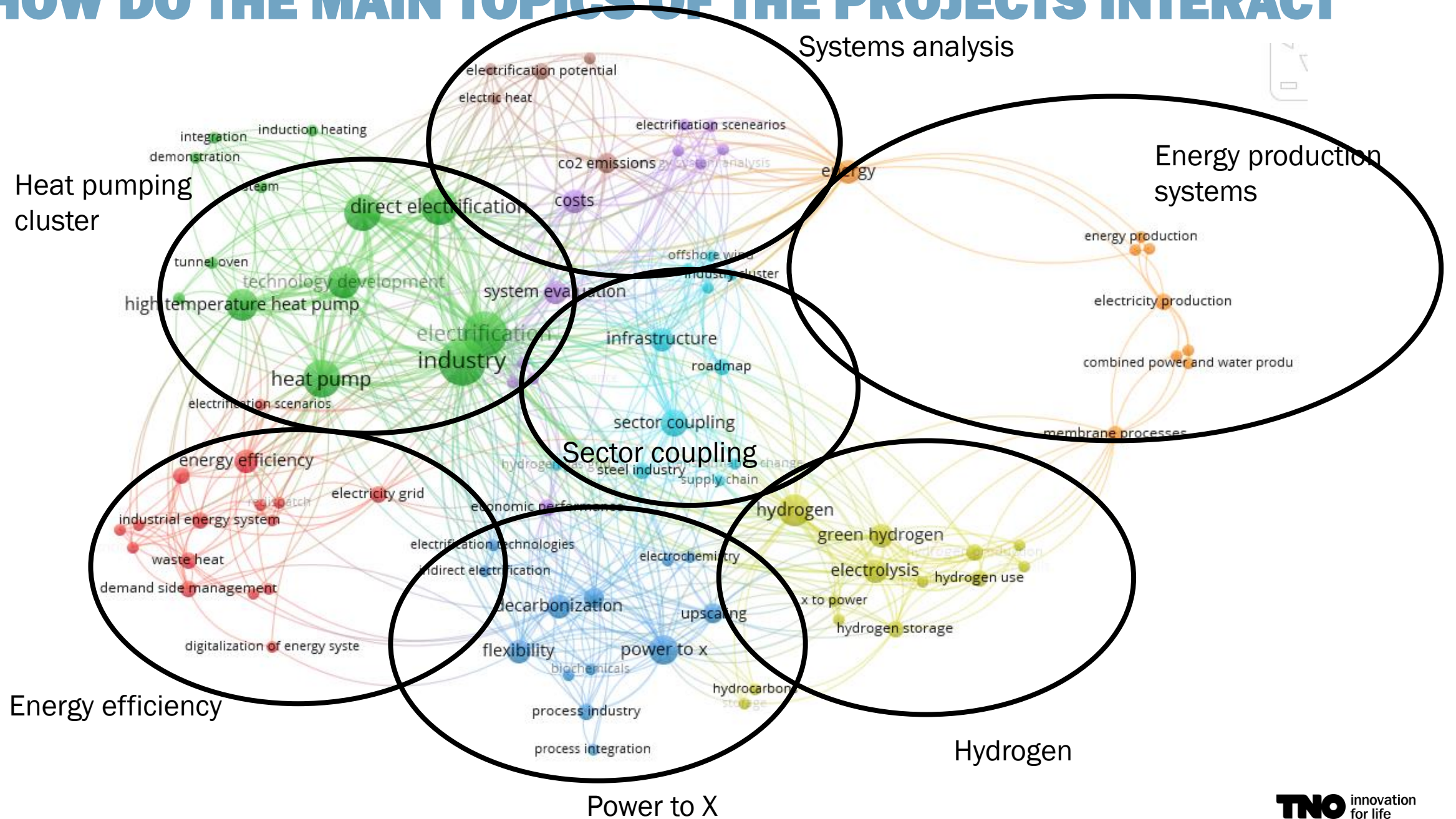
- Three main thematic areas compose activities B and C.



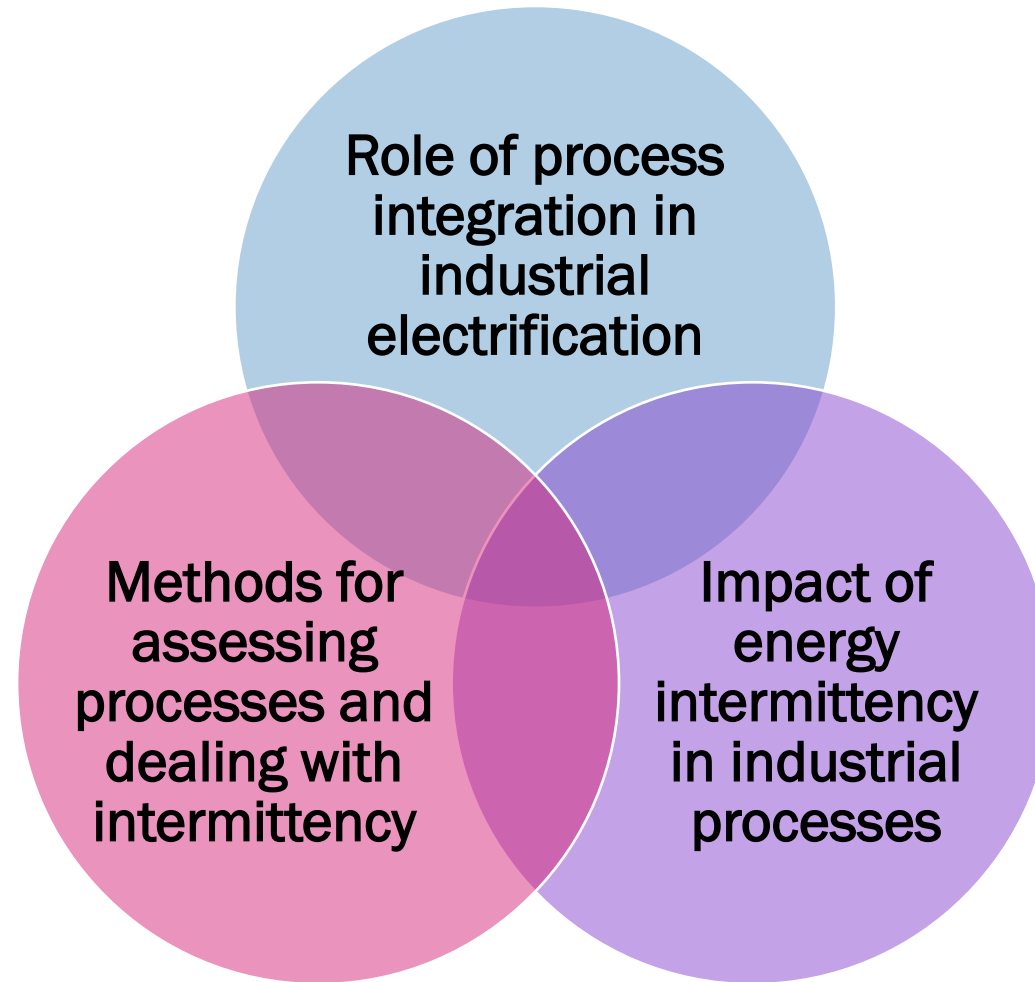
WHAT HAS BEEN ACHIEVED?



HOW DO THE MAIN TOPICS OF THE PROJECTS INTERACT



DEFINING THE ROLE OF FLEXIBILITY AND PROCESS INTEGRATION IN INDUSTRIAL ELECTRIFICATION



DEFINING THE ROLE OF FLEXIBILITY AND PROCESS INTEGRATION IN INDUSTRIAL ELECTRIFICATION

Large scale
production

- There is a consensus that large scale production might be required, implying oversizing and the need for storage (whether inside the industrial site or outside)

Buffering capacity

- There is also the possibility to keep industry running with current continuous processes but including buffering capacities that can stabilize the system.

Transforming
industry

- The need to restructure industry to have new processes that can substitute some of the existing ones. For instance, moving to batch processes or even modular designs.

Context

- Intermittency is fully dependent on the context/region, availability of resources and where electrification is taking place.

DEFINING THE ROLE OF FLEXIBILITY AND PROCESS INTEGRATION IN INDUSTRIAL ELECTRIFICATION

Approaches

- There is still a big gap between top down approaches and bottom up approaches. Top down approaches can lose perspective on the complexity of transforming the industrial sector and what are the consequences at industrial sites, whereas bottom up approaches are more detailed into the process but do not have easy implementation for assessing a large system.

Assessment criteria

- Economic performance is used as the main criteria for making decisions on electrification technologies, which triggers the need of policy interventions to promote technologies that in principle are more expensive than current ones.

Need to learn by doing

- Implementation requires making steps, even if those in some cases end up in mistakes



› **THANK YOU FOR
YOUR TIME**

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