



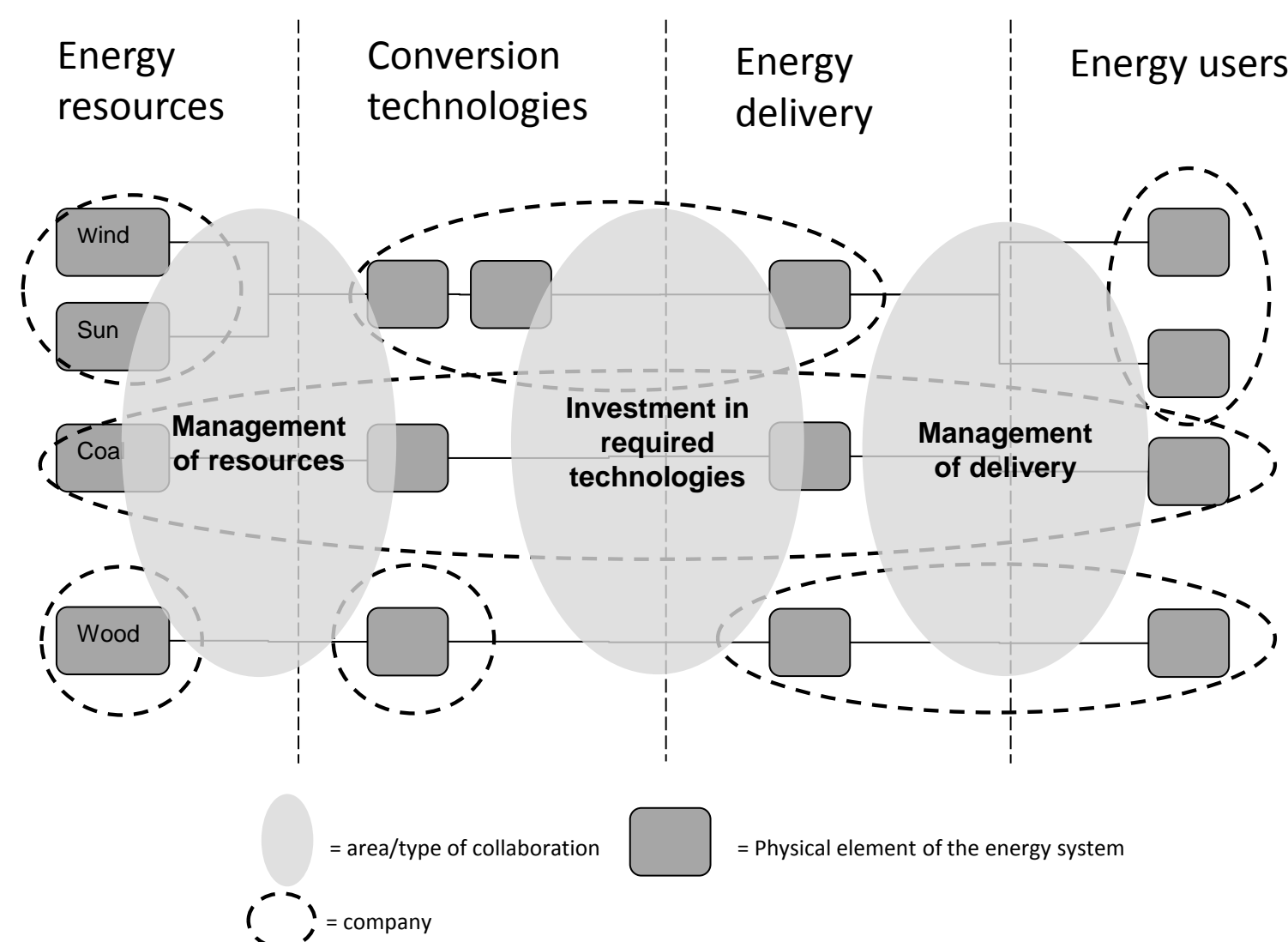
e feu

Efficient Energy Use

Collaboration in Regional Energy Efficiency Development

In *regional context* one opportunity to improve energy efficiency is to *utilize existing and new* energy production technologies within the region *more efficiently* by matching the regional energy demand and supply *more intelligently*.

Regional energy collaboration context



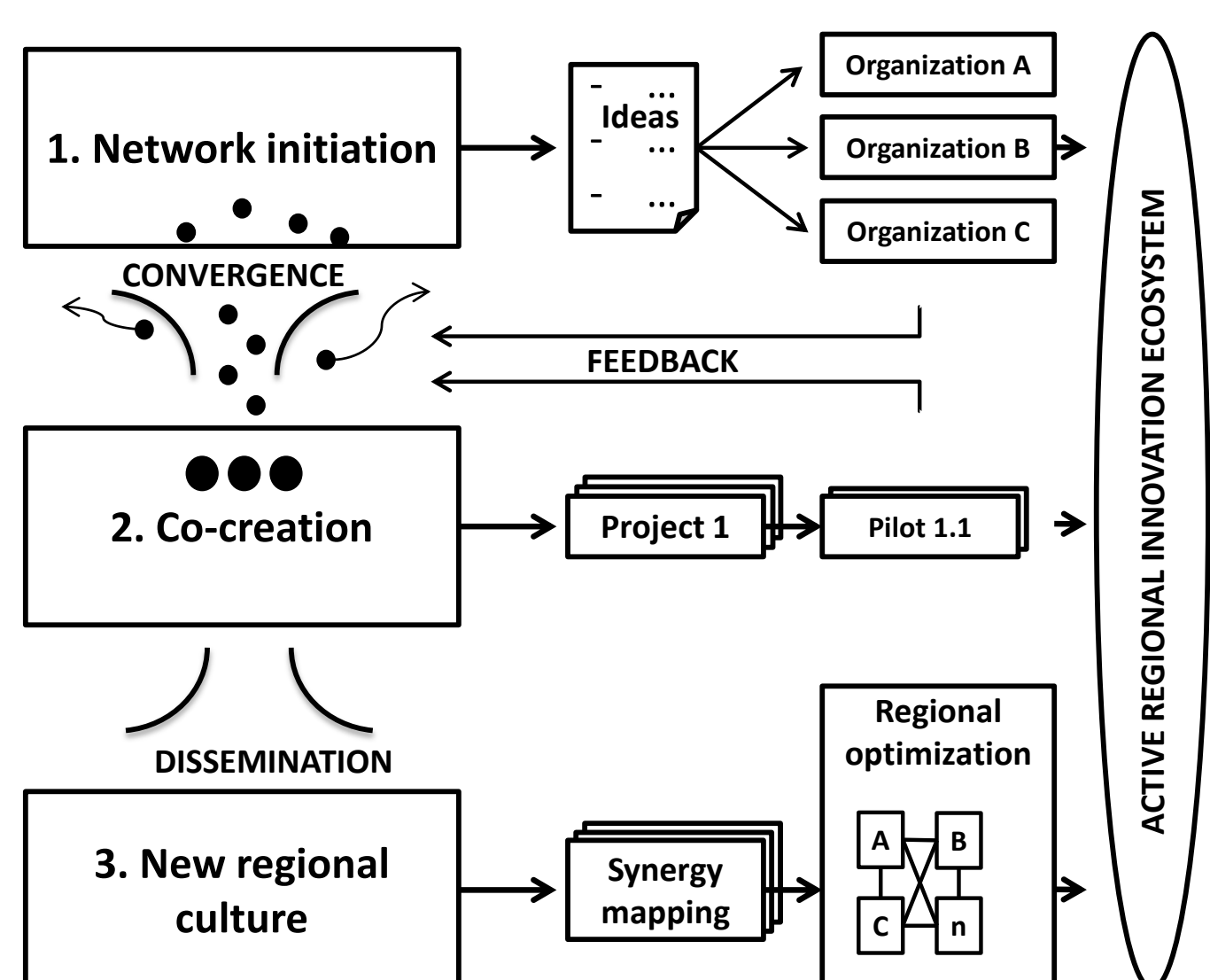
Challenges:

- Different stakeholders within the region manage and develop their energy use/production independently. Regional energy efficiency viewpoint is typically not included in decision making and planning.

Needs:

- Collaborative decision processes between stakeholders to plan and develop regional energy system together with supporting methods and tools are needed.

Developing collaborative approach to regional energy system development



Our approach is based on the theories of learning organizations and co-innovation. The approach has three main phases and it is essential that all key stakeholders are included in the whole process: 1) joint analysis of the current situation, identification of development opportunities and setting mutual targets, 2) joint planning and experimentation of solutions to achieve the targets, 3) establishing workable solutions in everyday practice.

Supporting and barrier factors for collaboration

	Case A	Case B
Case-specific supporting factors	<ul style="list-style-type: none"> Bilateral development of energy systems between stakeholders exists 	<ul style="list-style-type: none"> Collaboration activities exist in other areas between municipalities
Case-specific barrier factors	<ul style="list-style-type: none"> Size difference of the different stakeholders (in energy use) Different planning horizons of the different stakeholders 	<ul style="list-style-type: none"> Municipalities often focus on the efficiency of energy utilization, whereas energy producers would like to extend the focus to the production side too (i.e. the whole energy system) Competition between municipalities Stakeholders' energy consumption relatively low, not enough potential savings appeal
Common supporting factors	<ul style="list-style-type: none"> Energy efficiency is a common goal for all stakeholders Good relationships between personnel in different organizations 	
Common barrier factors	<ul style="list-style-type: none"> Limited resources to initiate and maintain active collaboration Internal energy efficiency development activities dominate external activities Energy efficiency is only one of many goals Lack of leader organization for the collaboration Competing long-term commitments Lack of commitment to joint long-term initiatives 	

Findings

- Regional energy efficiency workshops are a fruitful starting point in creating a shared understanding of the key issues and joint development opportunities.
- Region wide energy efficiency optimization pursuit requires in-depth regional studies, joint master agenda and scenario work.
- Regional giant leap energy efficiency goals could be met only if companies and municipal actors collaborate in long-term - municipal actor's role as an aggregator is pre-eminent, because it has a natural long-term interest in regional development.
- Energy efficiency is only one of many regional energy related goals.

Conclusions

- Identification and selection of a leading organization to promote and facilitate the collaboration between organizations is essential. To make joint efforts happen in a loosely coupled network there has to be some party who takes the lead and tightens the loose couplings.
- The innovation network management principles used in business context work also in regional collaboration. Processes and practices to support the collaboration from the creation of common understanding of the development situation and objectives to setting up joint development projects should be in place.
- Future research: this is calendar time consuming development effort → requires long-term research collaboration to support and follow-up later development steps and achievements.

More info:

VTT Technical Research Centre of Finland Ltd.
 Tapani Ryyänen, Senior Scientist, tapani.ryyänen@vtt.fi
 Markku Mikkola, Senior Scientist, markku.mikkola@vtt.fi



Solution Architect for Global Bioeconomy & Cleantech Opportunities

