Week 3

“Inclusive decision making – Facilitating an inclusive energy transition”

MoT1452: Inter- and Intra-Organizational Decision-Making

May 6th, 2024

Teaching team

Module manager:

Dr. Jenny Lieu

The amazing co-teaching facilitation team:

Aditya Chhetri, Anggi Paramitha Siregar, Devano Yehezkiel Adipradhana, Giovanni Nian Gani Meghana Kotha, and Pavlo Topalli

TU Delft

Update groups & workshop rooms

- Class D (Group 1 - Group 5): **TPM-Hall D (31.A0.250) - w/ Meghana & Aditya**
- Class E (Group 6 - Group 11): **TPM-Hall E (31.A0.290) - w/ Pavlo**
- Class H (Group 12 - Group 17): **TPM-Hall H (31.A1.210) - w/ Devano**
- Class I (Group 18 - Group 22): **TPM-Hall I (31.A1.250) - w/ Giovanni**
- Class F (Group 23 - Group 27): **TPM-Hall F (31.A1.020) - w/ Anggi**

Agenda

9:45-9:55: Introduction to teaching team, lecture format & overview of assignments by

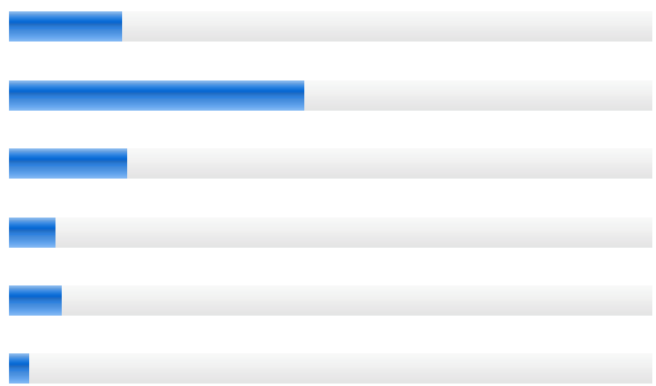
9:55- 10:30: Lecture on “Inclusive decision making – Facilitating an inclusive energy transition” Dr. Nthabi Mohlakoana (Q&A)

10:30-10:45 Assignment 3 explanation & attendance quiz; Questions / break

11:00-12:45 In-class group work & self reflection: run by facilitator (groups listed on bright space)

Survey results from last week:

Which concepts did you find the most interesting?



System 1 & 2 thinking	17	(17,35 %)
Super wicked problems	45	(45,92 %)
Human systems approach to wicked problems	18	(18,37 %)
Risk and uncertainty framing	7	(7,14 %)
All of the above	8	(8,16 %)
None of the above	3	(3,06 %)

Checkpoints/submission dates reminders:

- Team Contract: Frist draft submit by May 1st *(required for group report)*
  - Fill in buddy check (May 1st) – short questionnaire on Brightspace (not anonymous so both parties are accountable for their comments)
- 1st submission group paper topic proposal 1-2 pager (May 21st) *(required for group report)* – you can submit your proposals earlier
  - Fill in buddy check (May 21st)
- 2nd presentation & feedback of nearly final draft (June 10th)
- 3nd submission of draft plagiarism check (June 11th)
- 4th final submission (June 17th)
  - Fill in buddy check (June 18th)

Class D – Aditya & Meghana

- Few responses mention that they faced difficulty in understanding the wicked problem and also framing it in a way that can be understood due to the complexity of the actors.
- People seem happy with the group dynamics and diversity; they mention that the teams fostered inclusivity and productive teamwork.
- There seems to be a trend of wanting to explore complex issues further and learning from the collaborative problem-solving process. Good enthusiasm to understand wicked problems, but confusion prevails in many responses.
- Several participants acknowledged a tendency towards tunnel visioning on solutions like technology, highlighting the importance of considering broader perspectives and addressing underlying issues. Some confusion persists about whether the solution should be technological or a policy initiative.
- Despite some obstacles, teams appear genuinely happy and look forward to working on the report once more details are out – we should probably publish them soon.

Class E – Pavlo

- People seemed to understood that wicked problem are characterized by multifaceted complexities and that even if you try to create a solution for this, this solution may cause other problems. This realization made some students feel overwhelmed and "helpless". In addition, the networks of stakeholders with their different interests increase the complexity of the problem and influence the decisions made.
- Individuals had already fixed ideas of what they wanted to work on, however the discussion with their teammates led them to be more active listeners and good progress on reaching consensus. They related this process with System 1 – System 2 thinking.
- There was some difficulty in formulating the wicked problem and reaching an adequate level of abstraction (e.g. "misinformation about healthy nutrition")
- Overall some reflections were quite deep already. People observed and looked back at themselves and their actions. However, others were still focused on how they found the content of the course/workshop or the difficulty

Class H – Devano

- The groups have several approach to determine the wicked problem, some of them started by listing the potential wicked problem and do elimination to choose the best options. There are also a group that go into the general problem and look into a specific wicked problem inside it. Therefore, various groups has varies approach to choose their wicked problem.
- A student expressed that the selection of wicked problem on the workshop has to do with the intra decision making organization. The student learns the potential of bias in the decision making method and the challenge to comes up with the consensus within the group to select the best wicked problem.
- The former group 15 that was only 2 members, does not attend the class due to personal issue and don't have enough understanding of the definition of wicked problem and cannot choose whether discuss the wicked problem with the group. Therefore, their reflection does not explain so much regarding their reflection on wicked problem, but more about their process and group conditions. (I don't give the score yet and would like to discuss it with Jenny)
- Some of the students finds the discussion of the wicked problem as an interesting topics, and many of them are surprised with their findings after discussion the case of wicked problem: there are a lot of example of wicked problem out there. And one problems may related to other problems. Some of them also reflect that this perspective is beneficial for engineers as well.
- Some students still do "summarizing their activity" and not incorporate reflectivity on it.

Class I – Giovanni

- Some students understand the wicked problem based on the characteristics mentioned in the lecture slide, but defining the wicked problem is another challenge. Some groups have difficulties on which way they should take first, bottom-up (which technology aspect first) or top-down (which social aspect first). This concern can be reflected on one of the student reflections (Folkert Strauss)
- Some students also realized that it is not enough to use engineering mindset, like setting up clear boundaries, to define the wicked problem due to the multiple dimensions and actor involved, which they need to expand their thinking (can be seen on Sam de Paauw reflection)
- Some other students tried to reflect on the wicked problem by bringing in another concept that is not mentioned during the lecture, which named Overton Window but did not really elaborate how this concept would strengthen or weaken the wicked problem concepts or his learning experience. (See Francisco Salas Gomez)
- A student wondered, while wicked problems should be complex, if there is an (presumably) an “easy” fix, such as banning technology, would it not be classified as a wicked problem?
- Overall, most of the students had a hard time defining the wicked problem for their group work, as they tried to validate their idea through TA’s opinion. Probably a framework to select or define wicked problems would help them to not get lost on too many options. (maybe by using 5 whys like in DBPM but making sure it goes back to the first apparent problem?)

Class F – Anggi

- A few groups described how they collectively explored the wicked problem options and the challenges they faced to reach a consensus. On the other hand, a few groups just picked the first ideas suggested by a few members without exploring other ideas further. This way of working pleased some people but made a few others uncomfortable.
- The diversity of the group helped the students to have broad perspectives and a better understanding of technology-related wicked problems.
- Students found the lecture helped them understand wicked problems more easily. However, some struggled to select and scope their wicked problems and identify the factors surrounding them, especially the decision-making process (this can be specified further to avoid confusion).
- Different approaches to defining the problems were found: starting from the problem first, finding the decision-making process/solution first, and defining the process first.
- Overall, constructive discussion atmospheres were captured, indicating the collaboration and contribution everyone brought to the table.
- Some students misunderstandingly elaborated on their wicked problem in their reflections

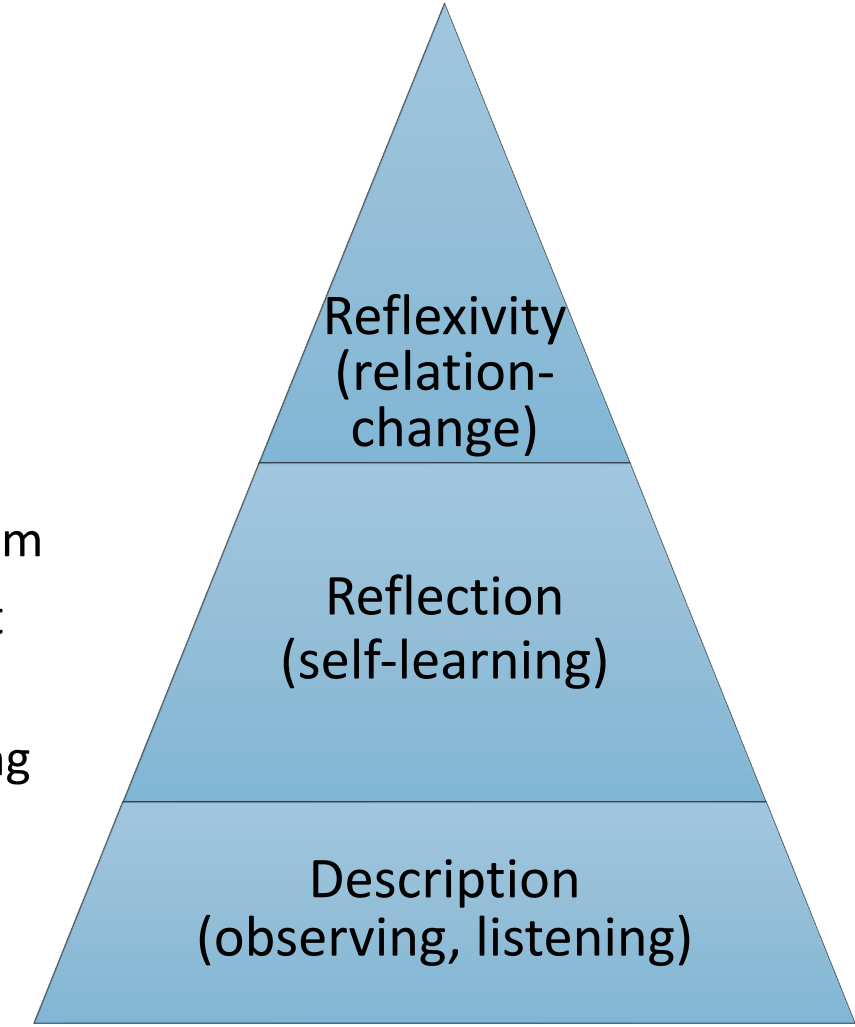
Overall learning from your group project (1)

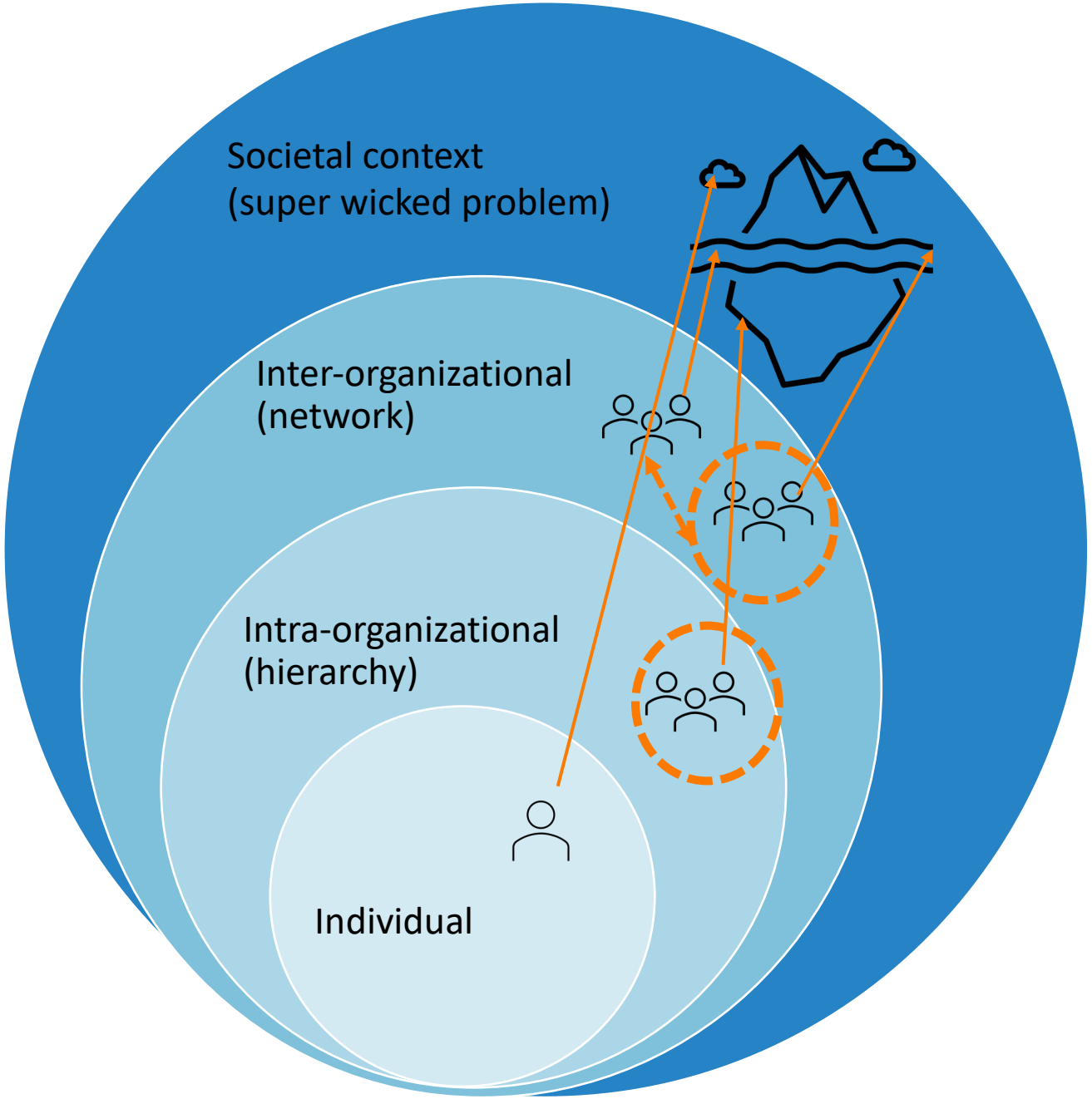
- Many of you understood the (super) wicked problem concept
- Most found the concept challenging to narrow down a topic.
- There are two general approaches to selecting the wicked problem:
  - Identify a social-technical problem then the technology/'solution'
  - Identify the technology applied in society then determine the wicked problem it addresses
- Process of working:
  - Some were comfortable with ad-hoc group discussions
  - Some created structure and assigned roles to tackle the wicked problem
  - Some wanted to have a framework provided to work on the assignment

Note: The assignments provides a starting ground to applying the concepts with feedback- you may need more time to work on the proposal and the report

Overall learning from your group project (2)

- Decision making:
  - Voted to select the problem
  - Developed consensus
  - Focused on the first proposed suggested
  - Agreed with person most knowledgeable on the topic
- Conflicts
  - Some conflicts emerged related to selection of the wicked problem
  - Some conflicts emerged in expectations for the final report result
  - Some did not agree with the assignment outcome but did not mention it during the group and only realised their position during the reflection
- Validation is important
  - from your peers; knowing you are contributing
  - the teaching team to know that you've understood the assignment





Decision-making in a (super) wicked problem context considering a multi–level perspective

Who is included/
Excluded in decision
making processes?

Questions?

Jenny Lieu

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Assignment 3: Reconstructing the 'play of the game' for the decision-making process with actor perspective taking

Based on the lecture concepts, "*reconstruct the play of the game*" in your **decision-making process** by role playing different actors involved in your decision-making process*, as identified in Assignment 2.

If you have not yet selected a decision-making process, then this exercise can help you to do so. Feel free to out some quick research (5 mins) to better understand the actor's perspective, positionality and/or intersectionality.

1. First clarify the **place/location** of your defined *(super)wicked problem* (place/location: city, country, organisation etc.)
2. Clarify your **decision-making process** (this can be a real-life decision-making process or a potential decision-making process)**:** in order to identify the decision-making process, you can pinpoint the potential conflicts that the actors may have and the specific concrete negotiation moment(s) of actors.
3. For each group member, choose **one actor.** Have at least one group member choose an actor that is typically absent from the decision-making process. Then consider your **actor's role** and indicate your *motivations, cognitions* and *resources* in the decision-making process. Ensure each actor has a chance to represent themselves in the decision-making process.
    - You can choose to represent different actor groups (e.g., consumers, technology firm) for an *inter-organisation perspective* and/or different roles in the same actor group for an *intra-organisation perspective* (e.g., CEO in the tech firm or intern in the tech firm).

- Outputs: Write 1 paragraph for each of the 3 points based on this exercise, documenting the outcomes which can be used as inputs to your project proposal. Don't forget to include references in the actual proposals. References are not needed for this exercise.

Inclusive decision making – Facilitating an inclusive energy transition.

Dr Nthabi Mohlakoana
TPM

MOT123A – 06 May 2024

TU Delft

Project description

- Waterwarmth – funded by Interreg – NSR partner countries
- Number of partners – 6 countries; 18 partners
- Provincial and local government, universities, technical companies, energy communities, EU heat pump association
- TU Delft – WP6 – Governance and Innovation
- Transdisciplinary way of working
- Input – co-creation, etc

Project background

- Focusing on Aquathermal Energy (AE) systems and implementation thereof
- Use of surface water for heating and cooling of homes and large buildings
- Focus on the North Sea Region where there is potential and some development of this innovation
- Reasons – Climate change, high energy prices, sustainable energy solutions, regional energy solutions
- To develop potential large-scale AE project sites in the consortium areas – Denmark, Belgium, Netherlands, France

Research questions

1. How can we understand an AE transition in the EU in broader theoretical perspectives addressing sustainability transitions and governing change?

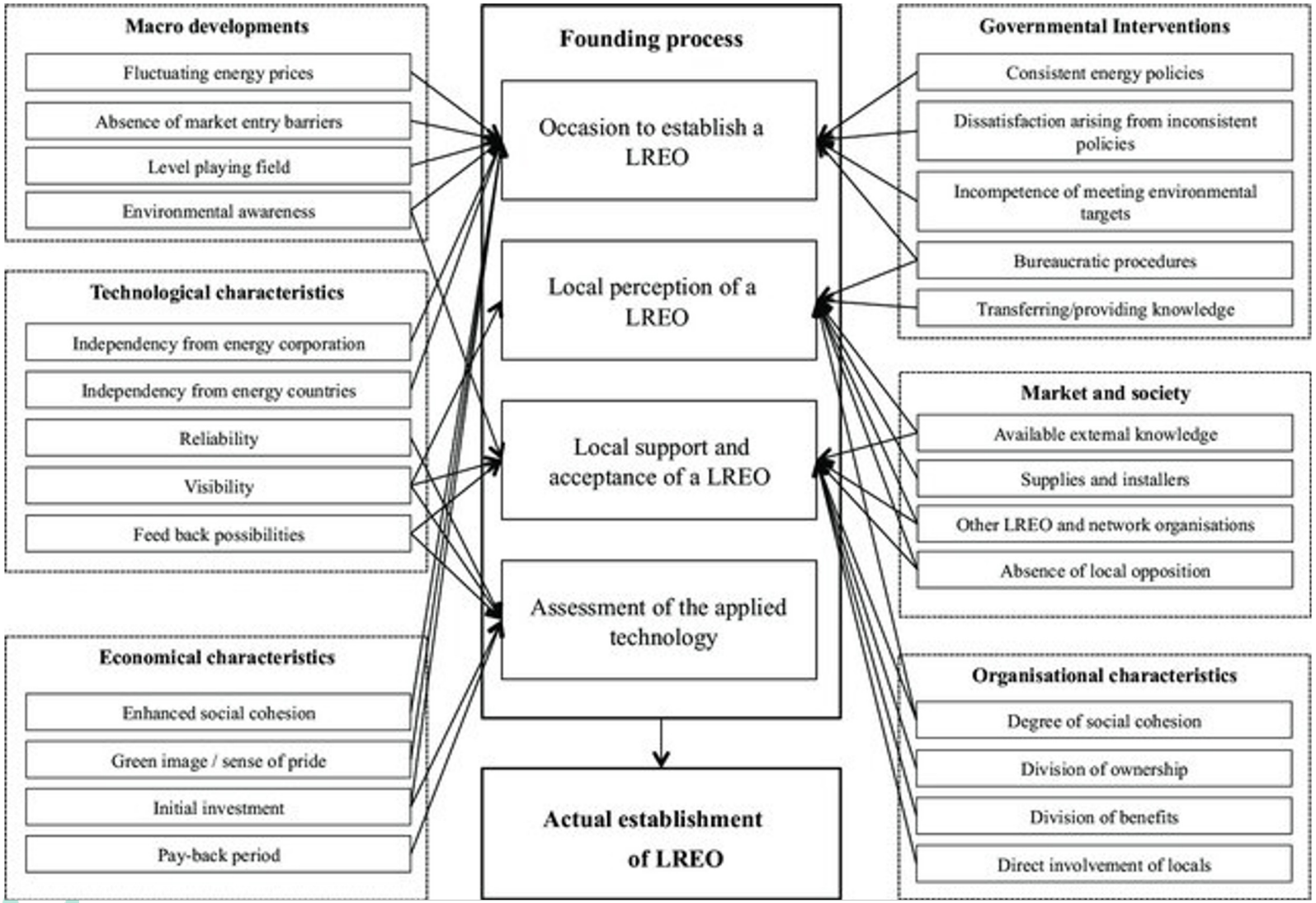
2. Which theoretical frameworks can be used to analyse transformative change and governance in practical AE cases?

3. In what ways can theoretical frameworks be used in practical cases?

Proposed Theoretical and Analytical Frameworks

- Multi-Level Perspective (MLP)
- Strategic Niche Management (SNM)
- Contextual Interaction Theory (CIT)
- Governance Arrangements
- Governance of Change
- Community Energy

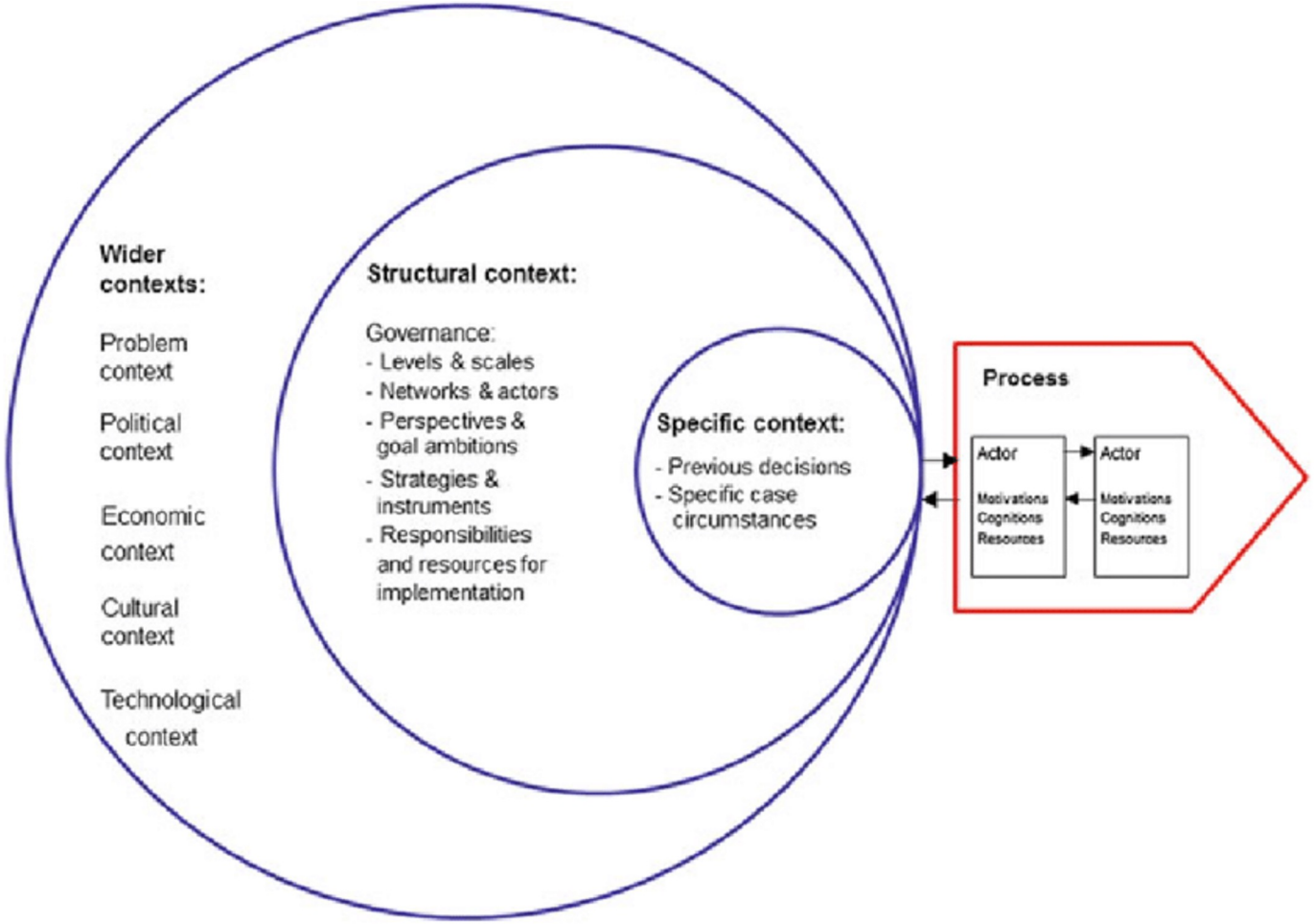
Community energy



7 pillars:

- **The framing of the problem**
- **The timing of policies**
- **The alignment across sectoral boundaries**
- **The selection of policy instruments**
- **The organization of the science-policy interface**
- **The most appropriate form of leadership**

Contextual Interaction Theory (CIT)



Analytical questions:

- What are the substantive or procedural reasons (**motivations**) of actors for being involved and taking certain actions?

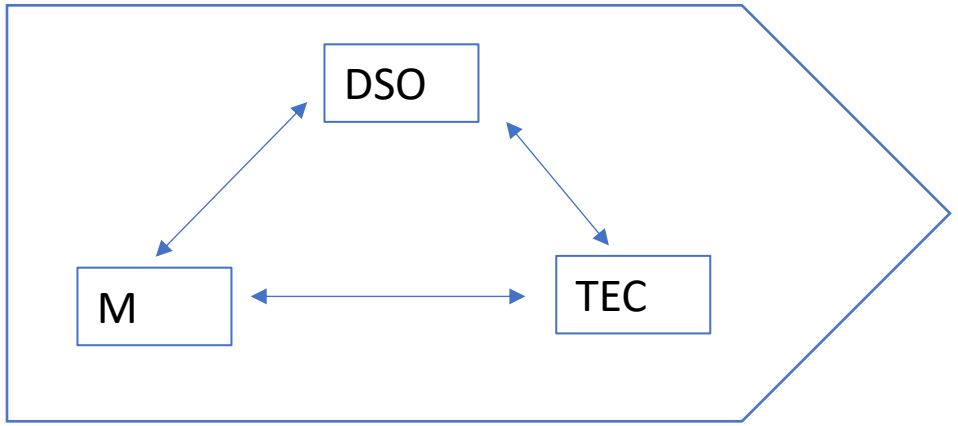
- What are the perceptions (**cognitions**) of actors about the relevance of the project, the urgency, nature and meaning of the problem at stake and potential solutions?

- What is the capacity of actors to act (financial resources, human resources and knowledge) and power to get things done (institutional **resources**)?

CIT continues… Reconstructing “the play of the game”

Wider context:
- Populists winning national elections
- Russian invasion of Ukraine
- Increasing nat. gas prices and inflation
- Increasing impact of climate change
- EU Green Deal

Structural context:
- National program supporting local experimentation with sust. heat
- Multi-level governance system
- Regional energy strategies
- Incumbency
- Unfavourable heat regulatoy framework – Delayed New energy Act



Set of *n* iterative decision-making rounds

- Output: realised AE project (or not)
- Outcome: Affordable green energy (heat/cooling)
- Impact: CO2 reduction, satisfied local citizens, increased wellbeing of community

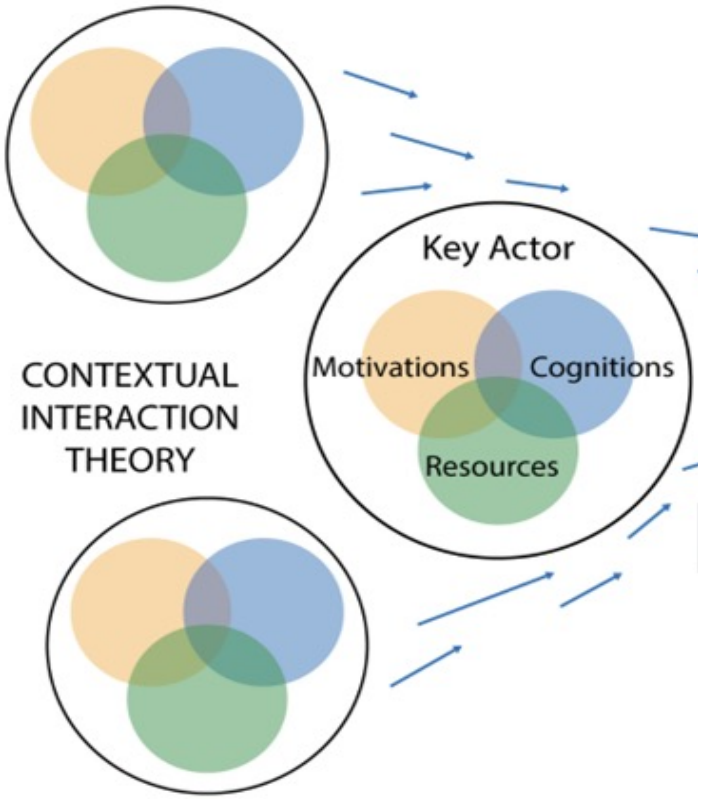
- Use of CIT to reconstruct how decision-making (i.e., actor interactions) takes place over time whilst trying to explain the output, outcome and impact.
- Case study research
- Causal process tracing

CIT: Illustrative case

Let's assume **three actors** in a simplified local case on possible AE project development, **collective action required** in order to realise a working AE business case:
- Thermal energy cooperative (TEC), - Municipality (M), - Distributed System Operator (DSO)

Actor characteristics:

- TEC:
  - Motivation: Green power production; reaping local financial benefits; energy democracy
  - Cognition: Past experiences; Pro-green egalitarian frame of reality
  - Resources: Technical knowhow; mobilisation of support from local residents
- M:
  - Motivation: Low carbon agenda (translation from SECAP), local job creation
  - Cognition: Past experiences; political-realistic, practical frame of reality
  - Resources: Policy instruments (e.g., permits, subsidy, taxation), (human) capacity
- DSO
  - Motivation: Optimal balancing power (or gas) grid, energy security
  - Cognition: Past experiences; technocratic frame of reality
  - Resources: Ownership of distribution energy infrastructure, technical knowhow



Summary of main enablers and inhibiting factors of the Frisian AE system case in The Netherlands.

Landscape event	Factors influencing the social-technical system	Aspects of the social-technical system	Enabling or Inhibiting?
Climate change – COP21 **Paris Agreement 2015**			Enabling – COP21 transposed in national Climate Agreement supporting adoption of renewable energy – also indirectly via the 'Green Deal Aquathermie' which was part of the Climate Agreement's 'Green Deals' package – and similarly via the Regional Energy Strategies (RES) empowering regional governance of energy transitions
Earthquakes in the Groningen region – since 1986 but a serious issue since 2012			Enabling – raised attention phase out natural gas use. Heat transition has been on the agenda since 2018 with enabling (national) programs on experimentation with neighbourhood approaches ('PAW'), heat pump adoption and thermal insulation adoption. Moreover, key to the heat transition policy is decentralised control via municipalities getting a coordination role, formulating TVHs (heat visions) and local heat tr. implementation plans
Culture of citizens wanting green energy systems themselves **Energy cooperatives?**			Enabling – Over years citizens have become more knowledgeable, aware and capable of mobilising resources to green (local) energy systems themselves. This is in part also a response to government and market failure to successfully encourage green energy transitions – momentum for the rise of community energy (per 2010)
Russian invasion in the Ukraine in 2022 – ongoing war			Enabling – surging gas prices are creating a window of opportunity for heat pump and thermal insulation adoption (which led to surging market demand and long waiting lists in supply).
	Partial reimbursement for surging gas prices (following Russian invasion)	(Sectoral) policy	Inhibiting – (partial) reimbursement works as a disincentive for households and other end users to invest in heat pumps and AE, because the price difference is made smaller
	Restrictive legislation	Sectoral policy	Inhibiting - restrictive legislation and regulations that cause hindrance when permits are required to apply AE. What makes things even more difficult is dependence on permit systems in different sectoral policy silos

Summary of main enabling and inhibiting factors of the Swedish household AE system development case

Landscape event	Factors influencing the social-technical system	Aspects of the social-technical system	Enabling or Inhibiting?
Oil crisis (early 1970s)	Policies		Enabling
	Technology & market development		
Environment and climate focus	Policies	Carbon tax/trading scheme	Enabling
	Policies	Nitrogen & Sulphur taxes	Enabling
	Technology & market development	Technology development in AE systems	Enabling
	Technology & market development	Better geothermal heating and DH technologies	Inhibiting (AE competition with other heating systems)
Geo-physical aspects	Technology	Close proximity to water sources (e.g., rivers, lakes)	Inhibiting
Administrative	Market development	Efficient local permitting processes	Enabling

Conclusion on using theoretical frameworks

Answered three research questions:

1. AE projects and cases can be understood from different theoretical perspectives and can be subdivided in three academic disciplinary approaches: (1) innovation and transition; (2) governance and policy; (3) community energy.
2. For governance and policy, three theoretical perspectives were retrieved and considered useful: contextual interaction theory (CIT), governance of change (GoC) and governance arrangements (GA).

   For community energy, an overview of several theoretical and empirical approaches to community energy (CE) and community energy systems (CES) were presented.
3. The Swedish case showcased the relevance of MLP highlighting several incumbent regime barriers impeding AE development and scaling. This served as explanation why AE in Sweden is currently a small niche market contributing little to transformative and environmental change of domestic heat systems.

   The Dutch regional case of Fryslân primarily served to showcase the use of CIT to highlight the importance of multi-actor agency influencing decision making in implementation processes of AE in regional cases.

Examples of unsuccessful RE projects

Hluleka – Eastern Cape, South Africa

- Mini-hybrid system – Solar PV and Wind for 210 households
- Coastal village – far from the electricity grid
- Decision-making about the installation of a solar-wind hybrid system
- Insufficient stakeholder engagement: Beneficiaries, municipalities, government (and funders)

Examples of failed RE projects

KwaZulu-Natal, South Africa

- 6000 stand-alone PV systems for rural households
- Villages far from the grid
- Lack of long-term planning by government and technology suppliers
- Lack of funds to maintain systems
- Low levels of employment

Key take-aways

- Inclusive decision-making is important for energy transition projects.
- Using relevant theoretical frameworks can reveal actor roles and ensure inclusive decision-making.
- Inclusive decision-making contributes to **procedural justice** and **recognition justice –** important elements for a just energy transition.

Thank you