Effective use of Stakeholder Management Technology to stimulate system innovation

Initial lessons from a multiple case study of 4DHC in NW Europe

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HeatNet NWE
European Regional Development Fund

EUROPEAN UNION

Amsterdam University of Applied Sciences

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Amsterdam University of Applied Sciences

SES conference, 10 September 2019, Copenhagen

Session 8: Smart Energy Systems analyses, tools and methodologies

Evaluation Team AUAS

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Presentation

Effective use of Stakeholder Management Technology to stimulate system innovation: Initial lessons from a multiple case study of 4DHC in NW Europe

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1. Interreg NWE HeatNet project
2. Evaluation WP leader
3. Effective use of Stakeholder Management Technology
4. Lessons learned
5. Future research

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HeatNet NWE: Transition strategies for delivering low carbon district heat

Pilots: Aberdeen, Boulogne sur Mer, Heerlen, Kortrijk, Plymouth, South Dublin

Objectives:

- to introduce and demonstrate 4DHC
- the development of new institutional and organizational frameworks
- 15,000 t CO_2 saved per annum at its end and future rollout in NWE

Method: pilots, action research, transnational learning

Evaluation WP T.2

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Holistic view

A transition to 4DHC involves a holistic view of a regional integrated smart energy system based on long-term, socio-economic benefits and inclusive sustainable growth.

Financial, Regulatory and Organisational Barriers (FROB's)

In an attempt to enhance insight to overcome the financial, regulatory and organisational barriers preventing the development of 4th generation District Heating and Cooling concepts (DHC) in North-Western Europe (NWE), common barriers are identified, but the issues and solutions are not well understood.

Give local authorities insight

Purpose of this research is to give local authorities insight into barriers and solutions in exemplar pilot projects and the way barriers are closely linked to stakeholders in their geographical, political, and cultural context in NWE.

Action research

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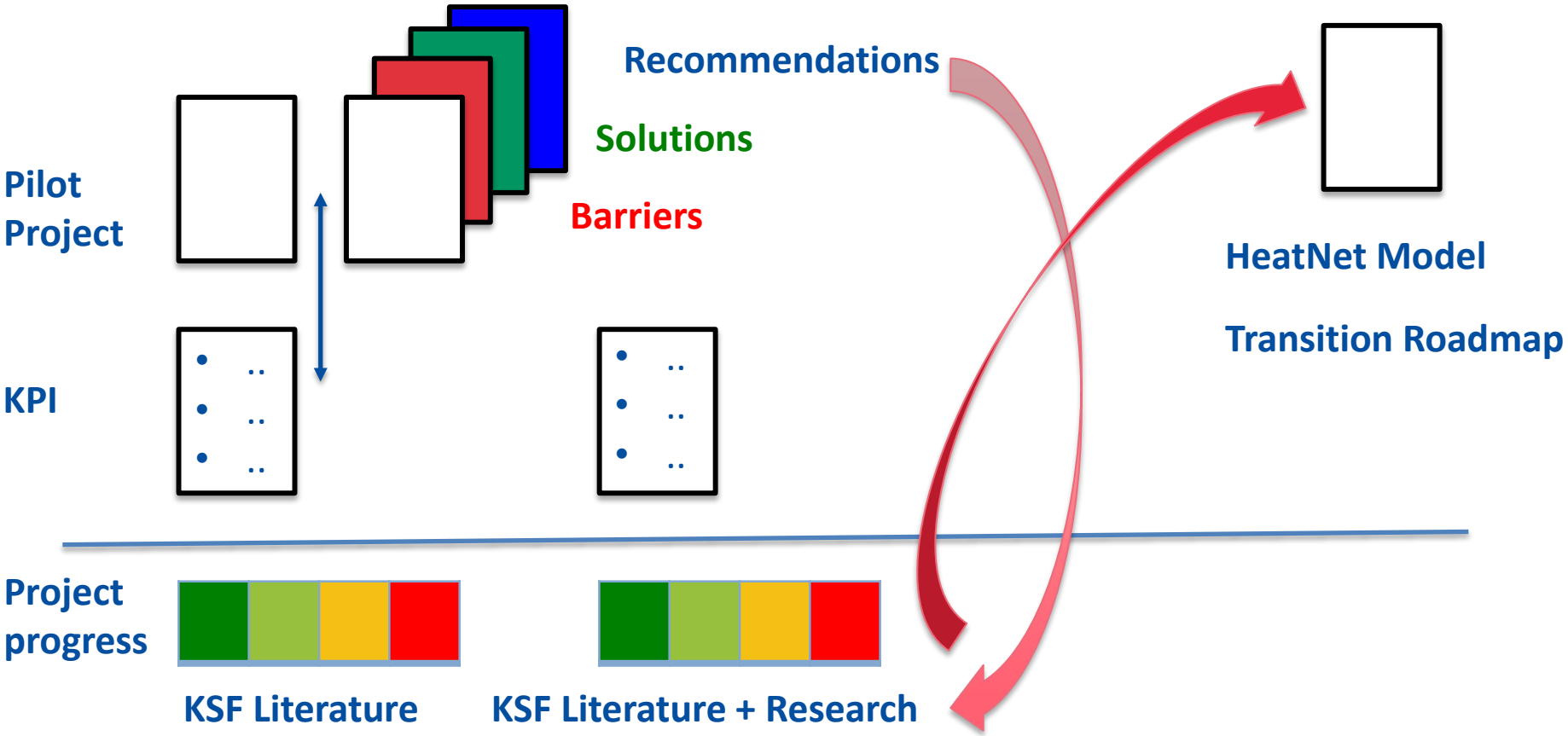
Before Heerlen	Heerlen	Boulogne sur Mer	Kortrijk	Aberdeen	Plymouth	S-Dublin
2016-2017	02-2017	09-2017	03-2018	09-2018	03-2019	09-2019



Stakeholder Identification

First impression of the context of the pilots

A tool to know who will be interviewed

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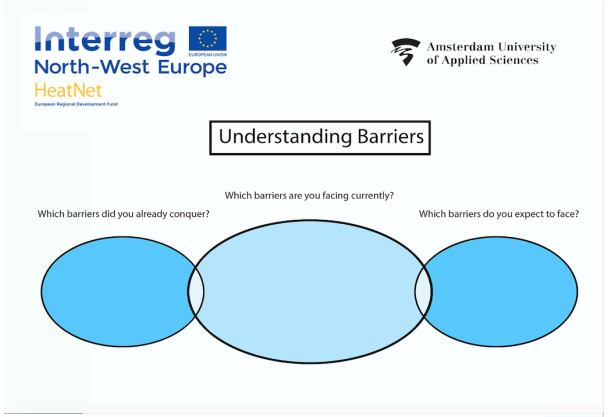
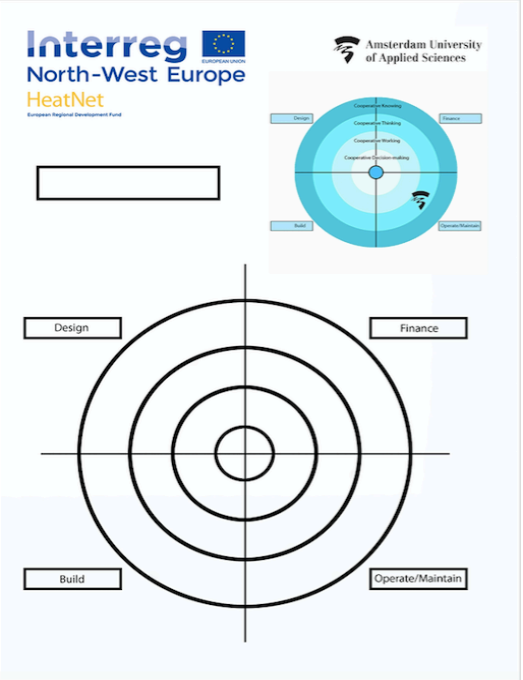
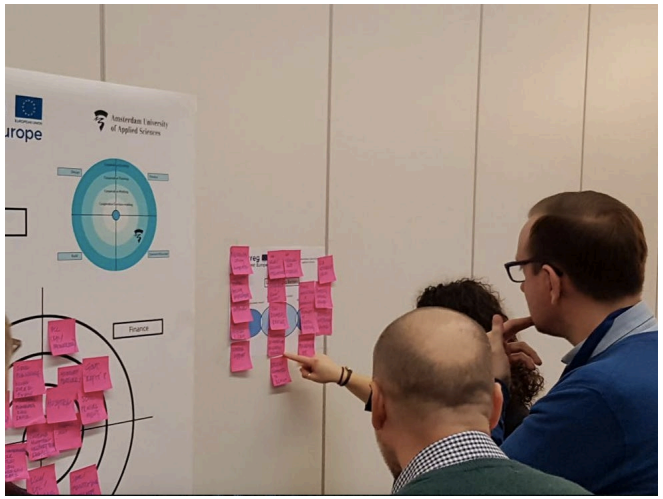


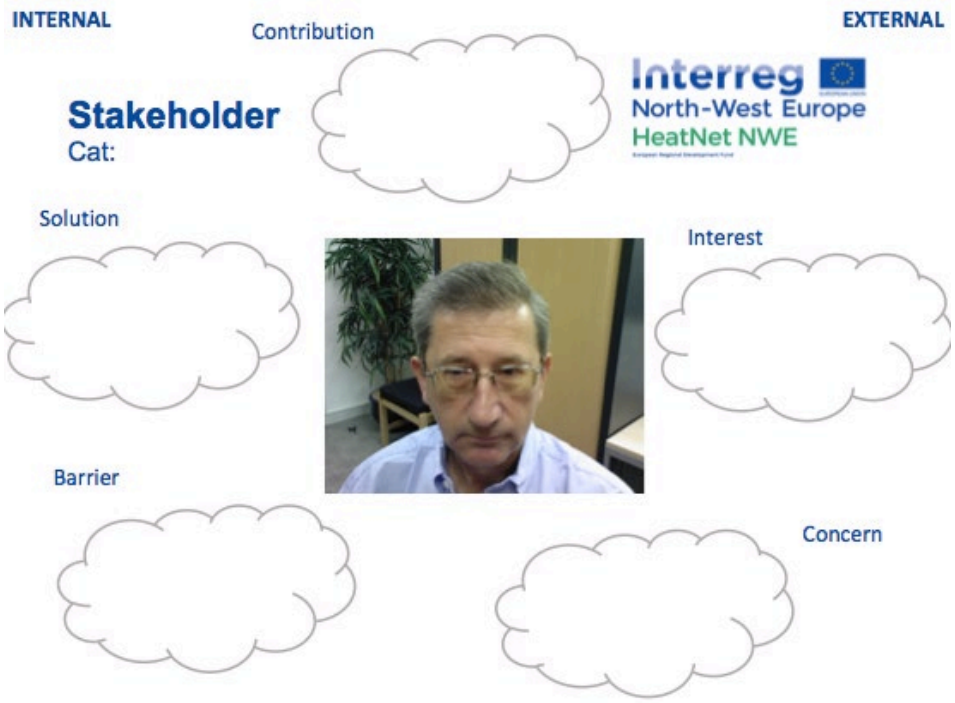




Intro of persona

Towards an in depth analysis
To empathize with actors in local context
A systematic manner to describe CIC and BS

If we want to understand solutions and barriers and realize best practices, we need a new way to uncover the connection between 4DHC, stakeholders, their contribution, interest, and concerns to discover barriers and solutions in a local context.



Intro of a conundrum

A tool for a better understanding of the puzzle

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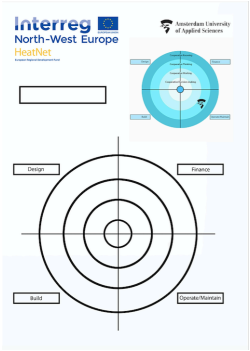
Solutions

Interests

Barriers

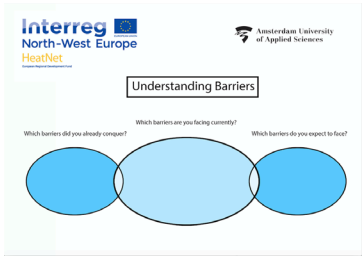
Pilot Diaries



Impacts
First- order
Second-order
Third-order
Impact Analysis

Contribute

Interviews



Identification

Concerns

Affects

Organisation
Project

Stakeholder

Analysis

Effects

Engagement

Management

Classification

(**WHAT IS THE FLOW?** Take five minute to address this conundrum.)

Statement 1

A tool to convince participants every barrier is connected with a stakeholder

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In any complex systems engineering project a comprehensive and rigorous stakeholder analysis is essential as a first step.

(Take one minute to think about this statement.)

Example
Conundrum Solution

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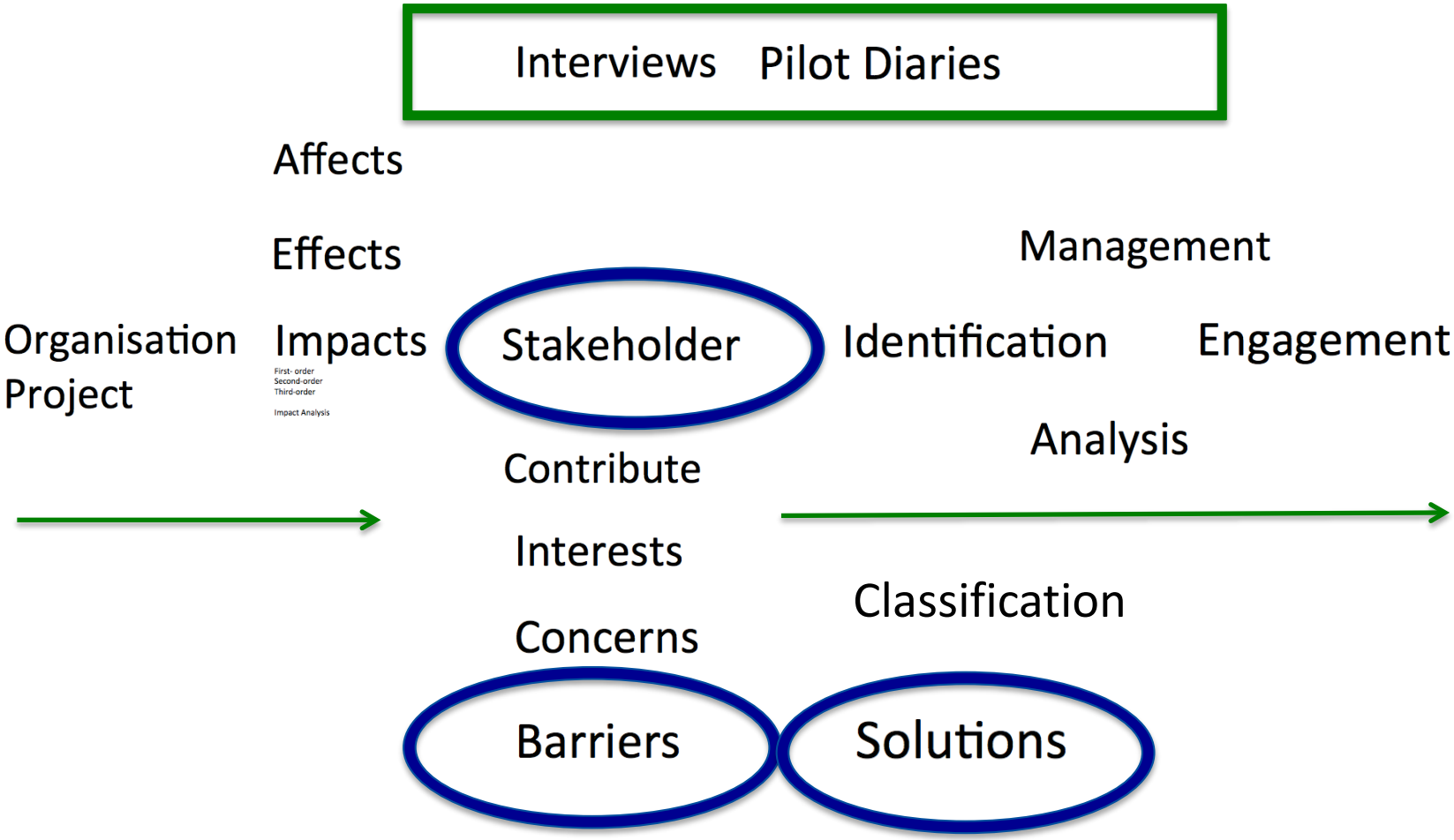

(Take five minute to think about this solution of the conundrum.)

Urban Planner

Urban and Regional Planning – University of …..

Has been doing his job for 22 years. Likes the way things are.

Has no direct colleagues to ask questions about Energy Management.

Colleagues from same age.

Feels like he is too old to learn about Energy Management.

Lacks knowledge on energy related challenges / Energy Transition.

INTERNAL

EXTERNAL

Contribution

Stakeholder

Cat:

Solution

Interest

Barrier

Concern

Our Journey Part 1
Overview first round of interviews

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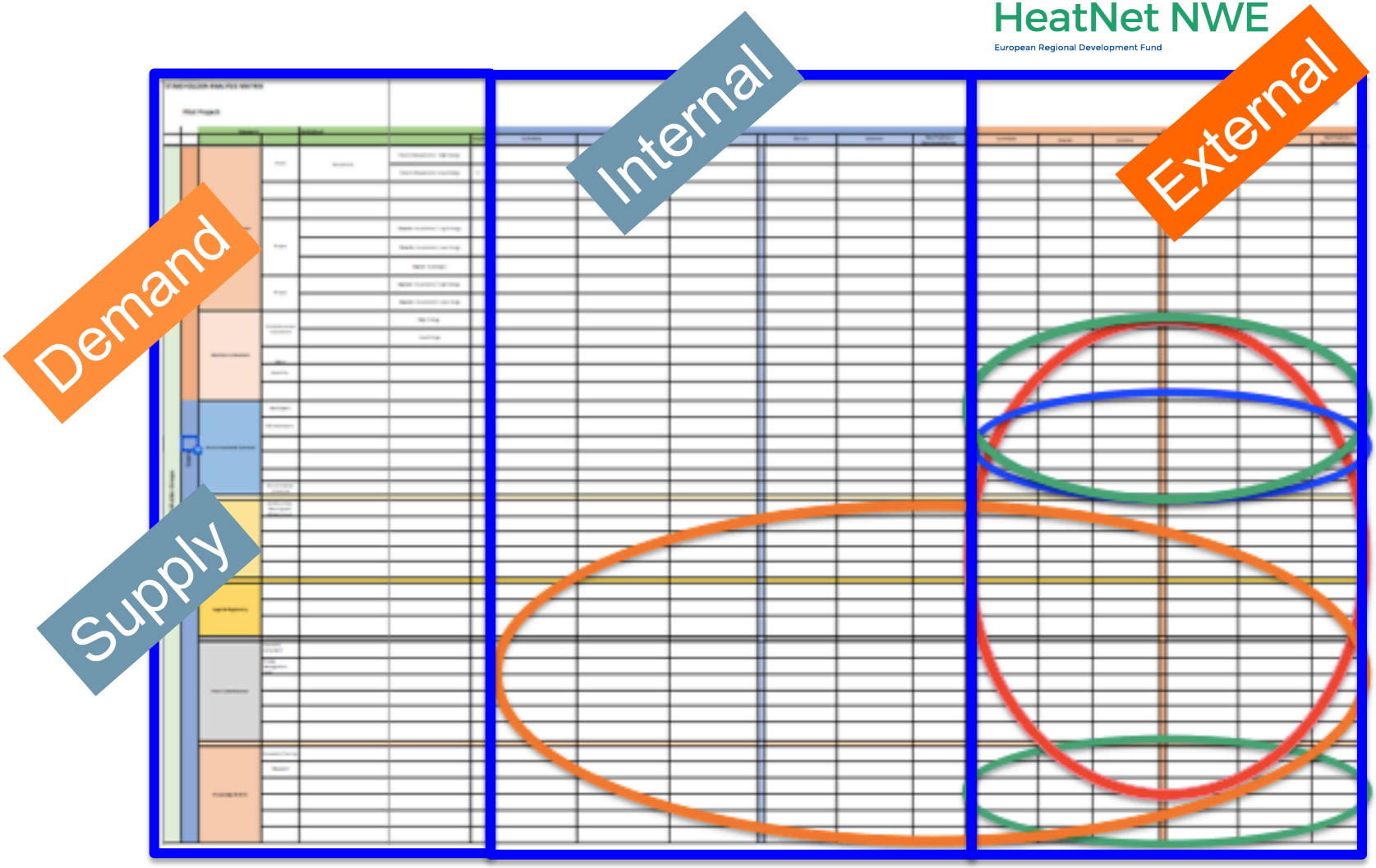
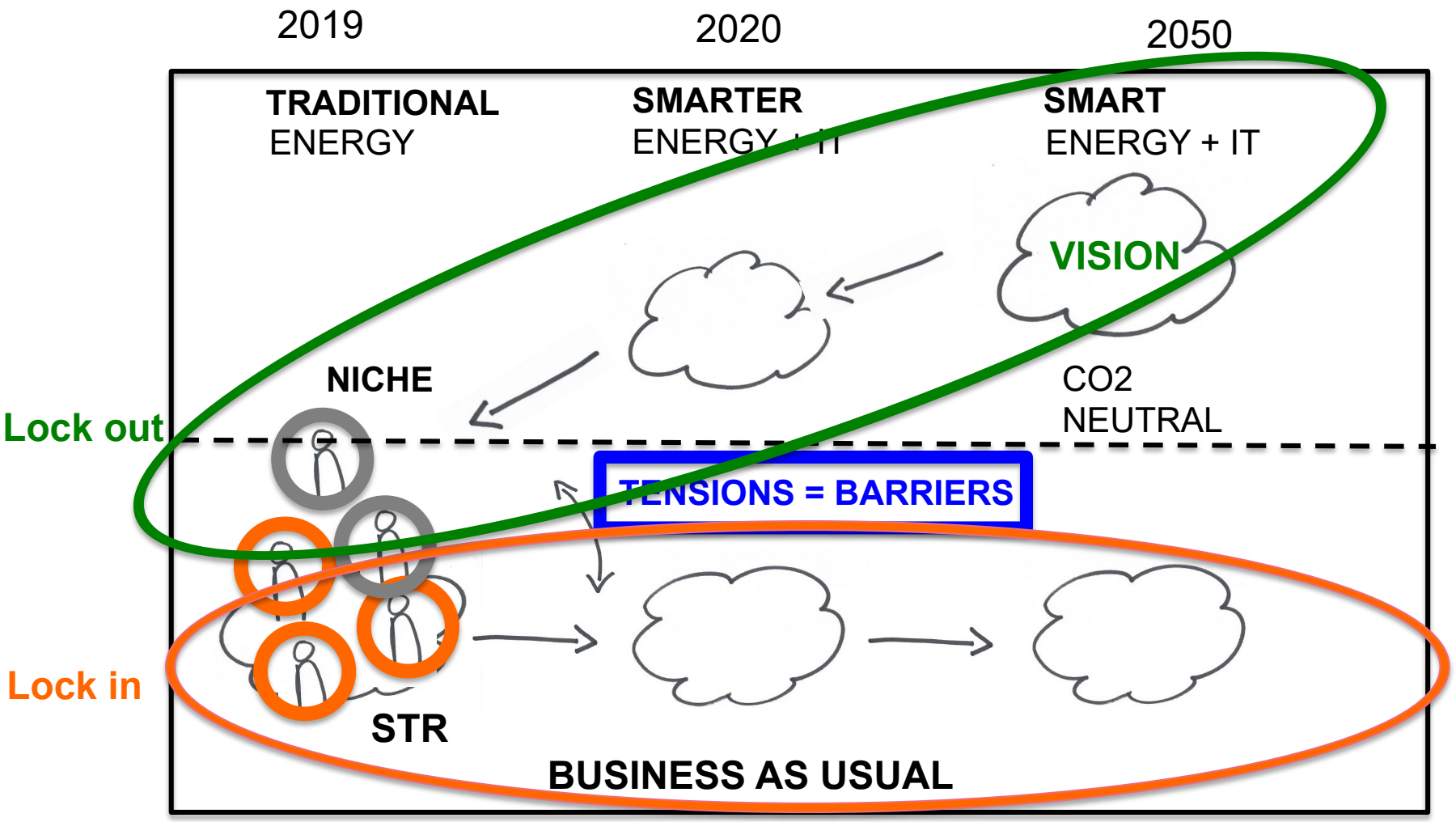


Mijnwater Aberdeen Plymouth Kortrijk South Dublin Boulogne sur Mer

Different perspectives

Macro-**Meso**-Micro level



Different perspectives

Macro-**Meso**-Micro level

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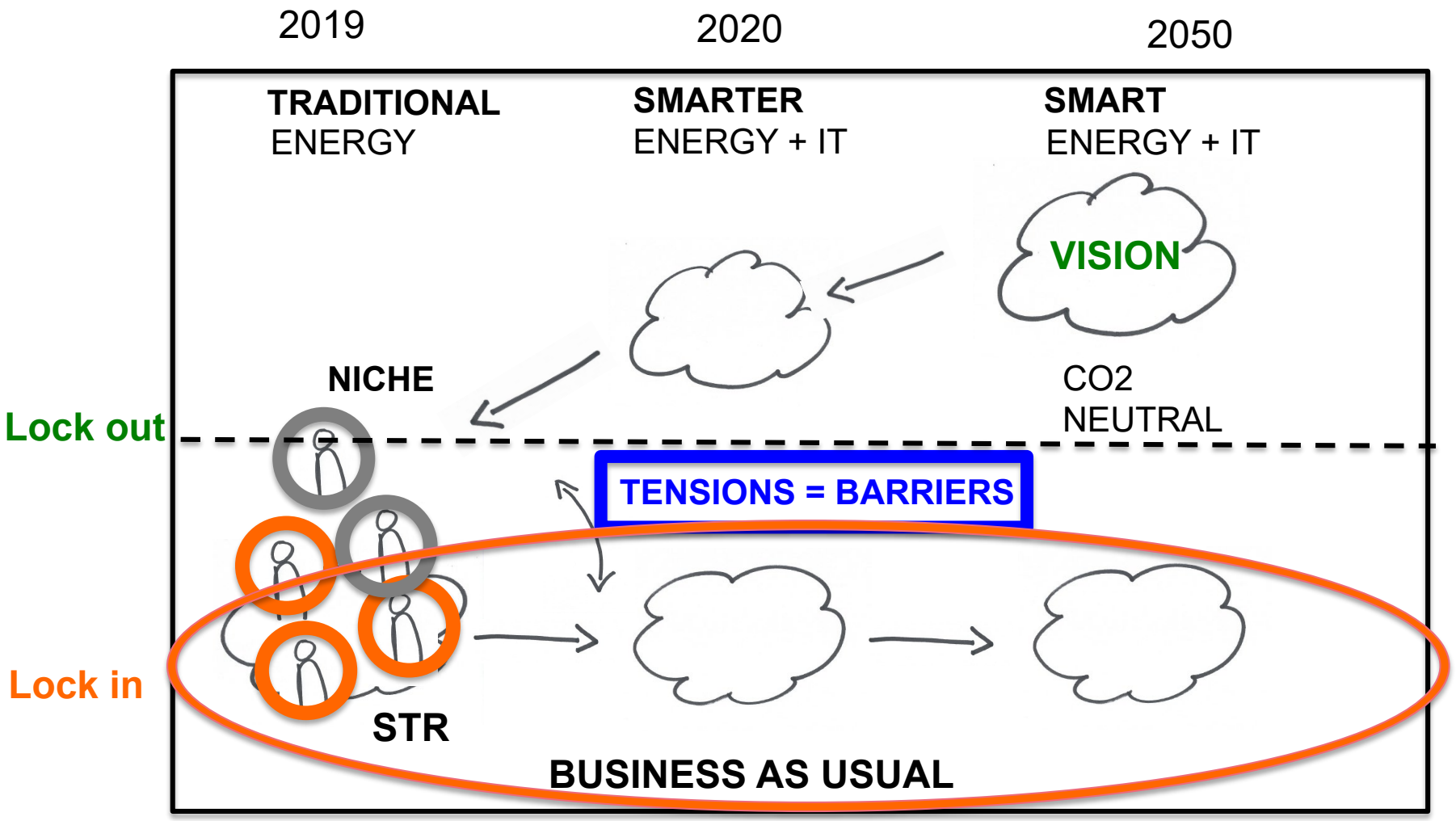

Our insight

Different categories of barriers

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1. Large engineering project

‘ Common’ barriers
e.g. crossing a river or railway, communication, collaboration etc.

2. ‘CO_2 Reduction’ project

‘Expected’ barriers
e.g. ROI to low, sustainability not that important, lack of shared interest etc.

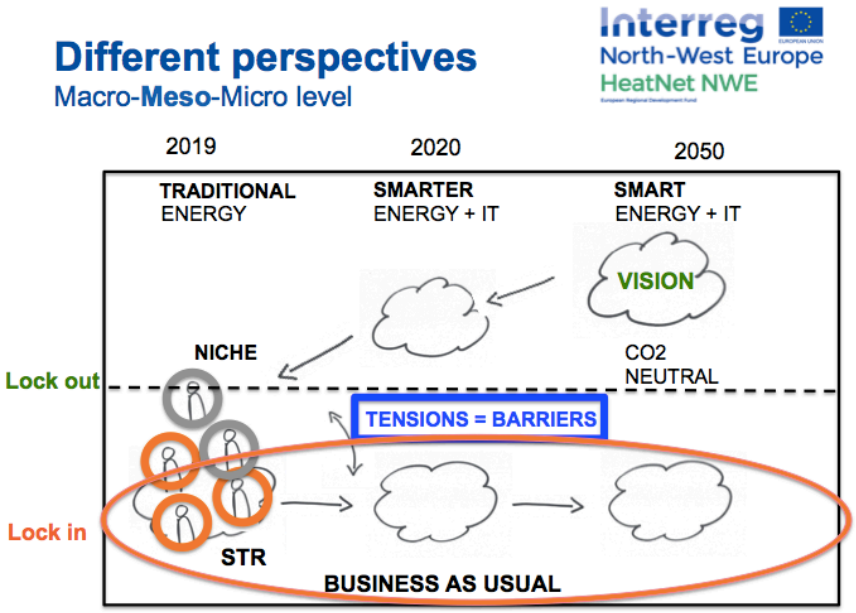
3. Sustainability Transition project

‘Transition’ barriers
e.g. cities often puzzled, knowledge gaps, incumbents are defensive, lack of shared values, private sector short-sighted etc.

STR - Lock in

Traditional System

- **Supply driven**
- Centralized, uni-directional energy system
- Linear
- Static
- **Energy as a commodity**
- Producers pushing out products to passive customers
- **Incumbents are large, single purpose organisations**
- Highly organised
- Capital intensive investments - very long technical lifetime
- 100% asset specific
- Incremental innovation
- **Reinforce power**



Niche - Lock out

Toward a Sustainable Smart Energy System

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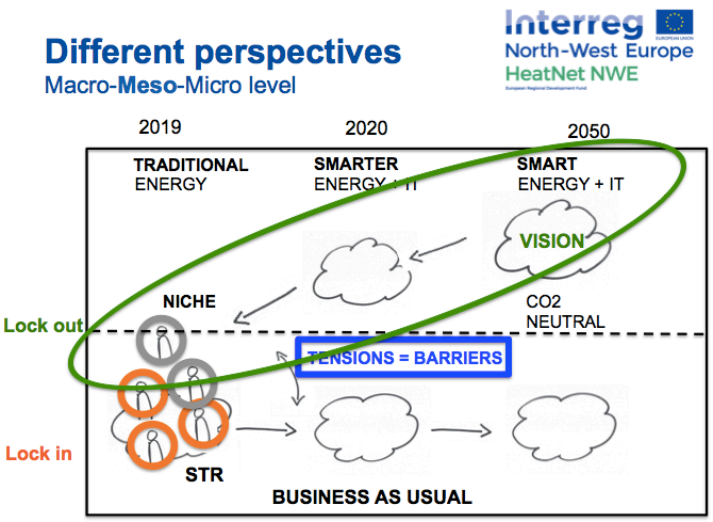

Smart Energy Systems

- **Demand driven**
- Decentralized, multi-directional energy systems
- Integrated (combined and coordinated) grids
- Non-linear
- Dynamic
- **Energy as a service**
- **ICT, intelligent top down and bottom up control**
- Producers, customers and prosumers
- **Many mutually independent, multiple purpose organisations**
- Less organised
- Radical innovation
- **Transformative power**

Lessons learned

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- Future technologies require a more advanced preparation program
- Knowledge gaps have to be closed
- Fundamental shift is needed how businesses are run and how their stakeholders measure success
- Creating shared value is fundamental
- Emphasis on TBL accounting
- We need another mind set and a new life long educational program

If you are a Niche - Act like one!

Future research
My PhD-proposal (Concept text)

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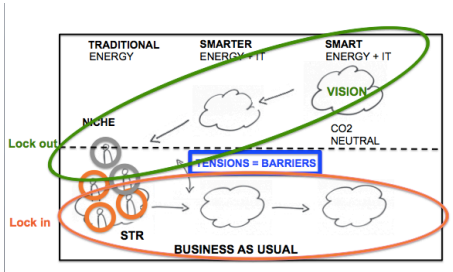
Dynamics in stakeholder analysis: toward a management tool for cities in the energy transition

Todays cities are all subject to rapid change and growing complexity. However, they also face major problems with managing this transition, because transitioning to a new energy system requires the involvement of a wide range of stakeholders that are in constant flux. ……

Therefore, this design-oriented research aims to provide knowledge, insight, and information that can contribute to the design of a stakeholder management tool to empower city authorities to accelerate transitions.

Contact: **e.j.l.van.dijck@hva.nl**



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Thank you!

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Questions

Example CIMO-logic

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Problem- in-context (C)	The field problem of this research is the desire to understand barriers and identify solutions to delivery, and understand the routes of transition to 4DHC
Intervention (I)	The intervention is a series or arrangement of actions in the form of a guide, to facilitate development in of 4DHCin NWE, and to accelerate energy transitions (system innovation)
Mechanism (M)	The primary mechanisms (M) are the ability to (a) analyse the context from a multi-level perspective, (b) to understand the supply- and user context, and (c) to enhance insight to overcome barriers preventing transitions.
Outcome (O)	The desired outcome is a well-prepared local authority i.c. those who are responsible for transition projects on meso-level of socio-technical systems.

Evaluation Workshop

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Quick Start Guide

1. Start at the wall with the **Timeline**. Choose your position in front of the **Timeline**. Then, we will take a picture to document the current situation. Hopefully with some happy and energetic faces. This will take max. 10 minutes.

2. During Session 1 you will be working on a **Stakeholder Analysis**. As you can imagine, the specific context of your pilot provides important information, which will help us with the start of the Evaluation. We're asking you to dig deep and try to come up with some interesting insights.

3. **Understanding Barriers** is a template you can use to plot barriers you already conquer in the past, barriers you are facing currently, and barriers you expect to face in the future.

4. **Parking Place** is a space where you can park all your ideas, questions, remarks, and other issues that are not a part of the **Stakeholder Analysis** or **Understanding Barriers**.

5. At the end of this workshop you will be invited to present your poster in 2 – 3 minutes.

Thank you!

Example
Statement 2

Stakeholders are persons, groups or institutions with interests in a policy, programme or project.

Their involvement may be critical in fully understanding the problem and implementing solutions, they may represent a possible barrier or threat, or they may simply have a democratic right to be involved because project decisions will affect them.

(Take one minute to think about this statement.)

Think
about the question

Pair
with your partner

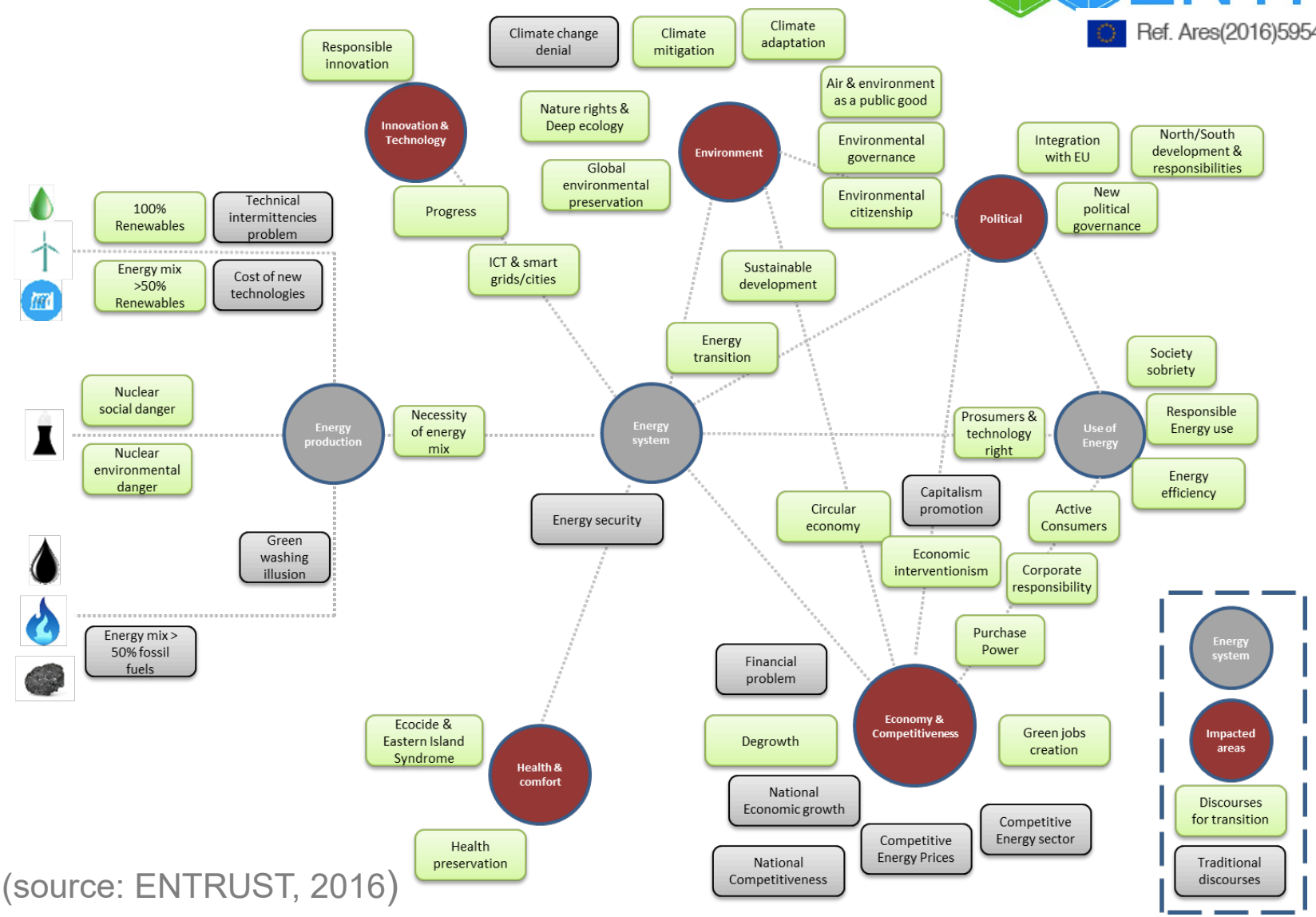
Share
your ideas with others

Stakeholder Characterisation

ENERGY SYSTEM TRANSITION THROUGH STAKEHOLDER ACTIVATION, EDUCATION AND SKILLS DEVELOPMENT

ENTRUST

Ref. Ares(2016)5954205 - 16/10/2016



(source: ENTRUST, 2016)

Household-Familly

Wouldn’t mind a sustainable home, but doesn’t really like to have solar panels on their roof.

Parents are in their 40’s, kids are in the 10 & 13 years old.

Understands the impact of Climate Change, but doesn't take much initiative to do something against it.

Has an average income, but doesn’t want to spend money without thinking about it.

Doesn’t really know what 4DHC is, but isn’t too keen on it because rumor has it that there were technical difficulties

Likes the way they live now. Too busy with work, family and friends to be to interested in sustainability.

Small Building Developer

Works at a company that's developing buildings for almost a century.

Understands that there is a demand for sustainable buildings.

Because the company is pretty small, big risks can't be taken because of financial implications.

Has heard of People, Planet, Profit. Still believe Profit is the most important of all.

Really believes in 4DHC. Would love to develop buildings that use the system.

Is searching for collaborations with other building developers. (To share risk and knowledge)

Project Manager Network operator

Has been working at the company for 6 years. Has been a Project Manager for 20 years.

Environmental Science – University of Antwerp

Really likes the company he is working at. He believes that the company doesn't create any barriers for the implementation of 4DHC.

Can't make many decisions on his own, has to ask his management for permission.

Has to make sure that his project has a positive business case, otherwise he will have a lot of conflict with his manager.

Has a lot of experience in managing sustainability projects within his own country. Has lots of reference material.

STAKEHOLDER ANALYSIS

Pilot Project:

		Category			Individual	Intern						Extern					
						Contribute	Interest	Concerns	Barriers	Solutions	Best Practices / Recommendations	Contribute	Interest	Concerns	Barriers	Solutions	Best Practices / Recommendations
Stakeholder Groups	Demand	Consumer	Business-to-Consumer														
			Business-to-Business														
	Supply	Technical	Environmental & Technical	Developers													
		Regulatory	Governance&Process														
			Legal & Regulatory														
		Financial	Financial & Business														
		Organisational	/														

Legenda

Position	Color
Positive	
Negative	

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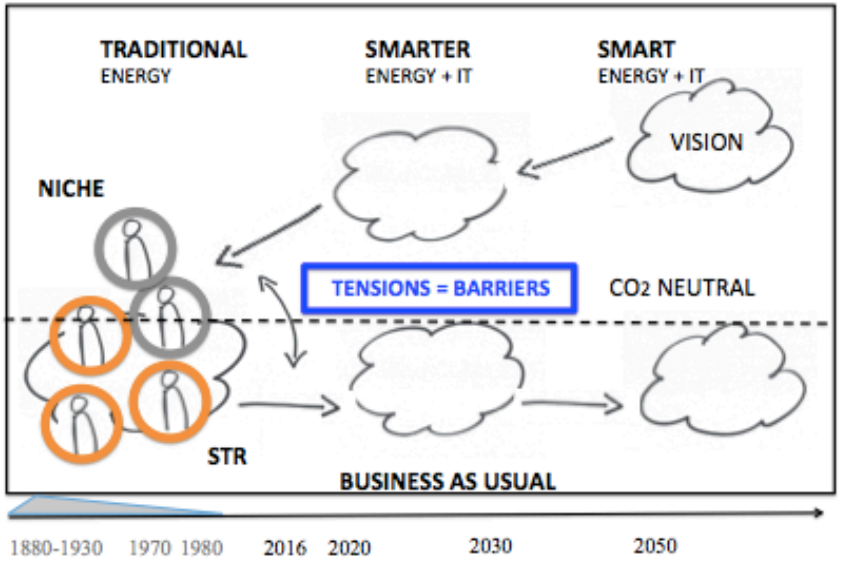
Problem: Common barriers are identified, but the issues and solutions are not well understood.

3 PERSPECTIVES ON 4DHC PROJECTS

1. PILOT

BARRIERS
1. COLLABORATION
2. FUNDING
3. COMPETENTIES
4. TARIFF GAPS
5. LEGISLATION
6. COMMUNICATION
7. TASK ALLOCATION
8. ECONOMIC
9. ADOPTION
10. EMERGING TECH

2. STAKEHOLDERS



3. SYSTEM INNOVATOR

RECOMMENDATIONS
1. SYSTEM THINKING
2. TRANSITION=CHANGE
3. EDUCATION
4. SHARED VALUE
5. IMPACT MANAGEMENT
6. TBL ACCOUNTING
7. POLITICAL INNOVATION
8. STAKEHOLDER ANALYSIS
9. AWARENESS
10. BEST PRACTICES

3 PERSPECTIVES ON BARRIERS

1. Large engineering project
'Common' barriers
e.g. crossing a river or railway.

2. 'CO_2 Reduction' project
'Expected' barriers
e.g. ROI to low, mismatch or a lack of consistency.

3. Sustainability Transition project
'Transition' barriers
e.g. different values or other standards.