



## CITIES and what's next

# How triple-helix cooperation's can challenge and help society speed up the climate-transition

## CITIES final conference

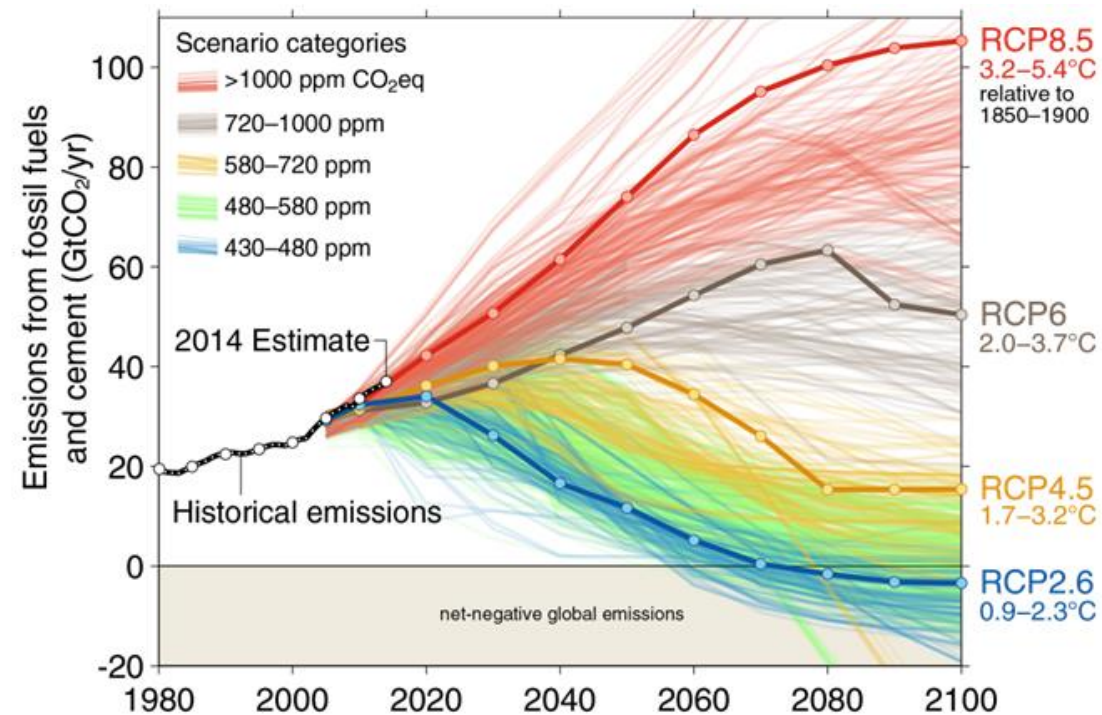
## 9. November 2020

## Peter Rathje, ProjectZero



# Future life on our planet is at risk

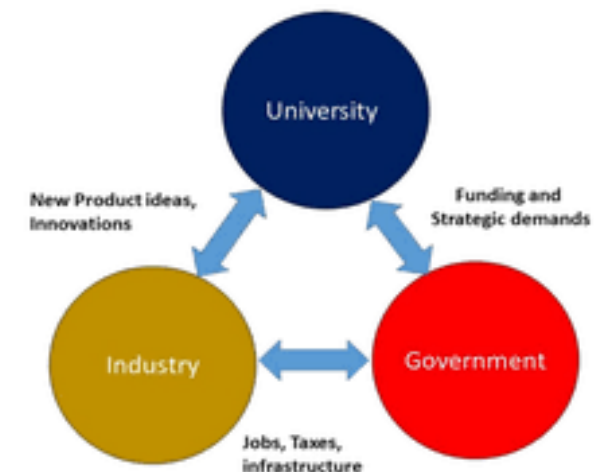
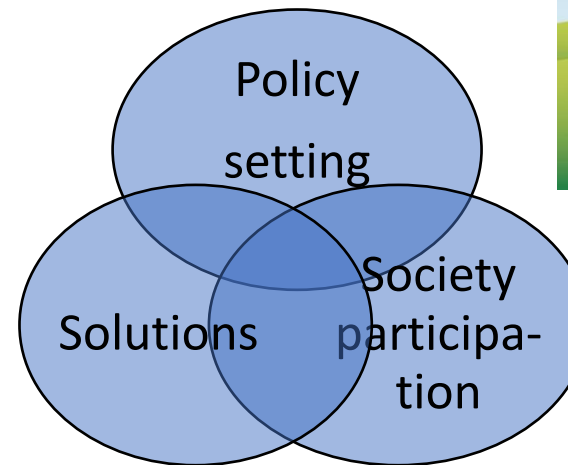
- and society is waking up



# We need to rebuild society

- based on cities and triple-helix approaches

- Cities Act While Nations (still) Talk
- Cities frame local stakeholders
  - Citizens, business, public institutions, local decision-making power, ...
- But Cities need answers ...
  - Solutions
    - What are the best solutions?
  - Policy setting
    - Which political framework will support solutions?
  - Society participation
    - How do we engage society stakeholders?
- Triple-helix cooperation's can help Cities and society **overcome complexity**
- The CITIES-project itself has been **supporting** many such transitions, however also **challenged** by making the CITIES triple-helix partnerships work inside the project



# How triple-helix challenged the CITIES- project

and helped the project overcome barriers ....

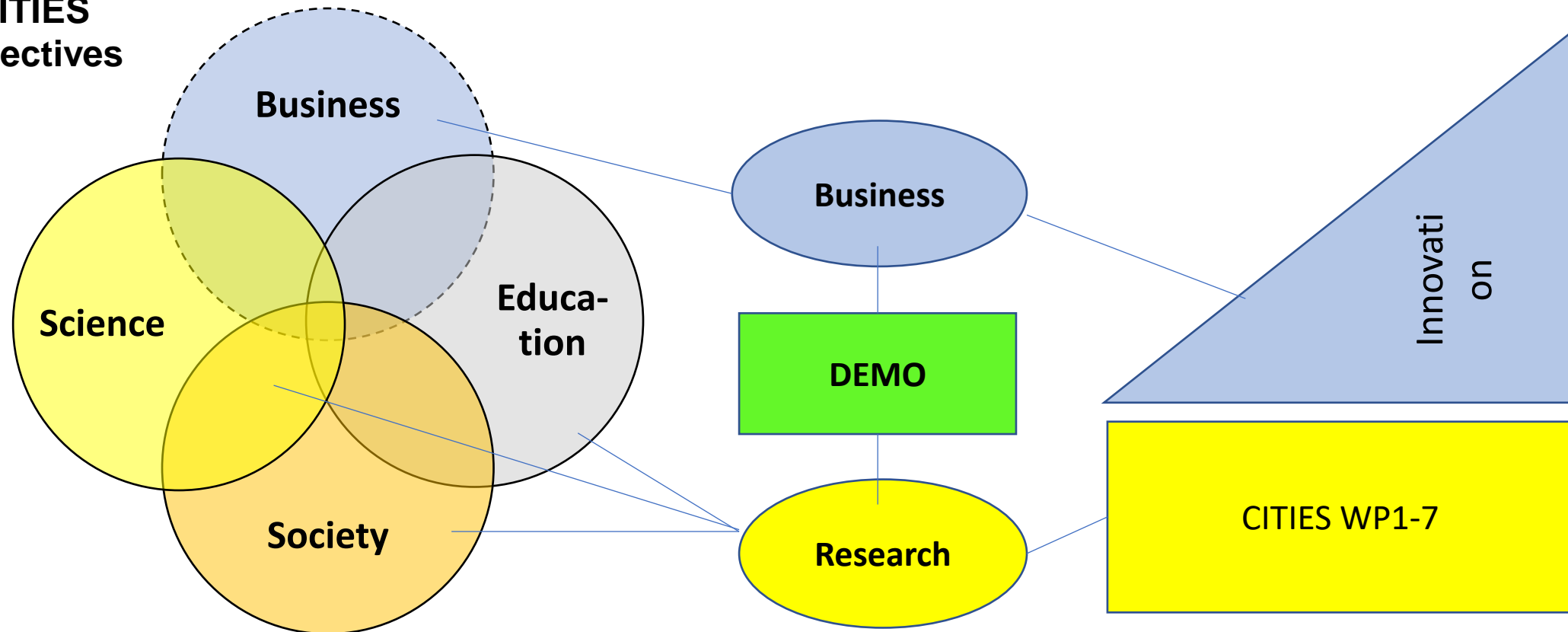


# Business affected CITIES

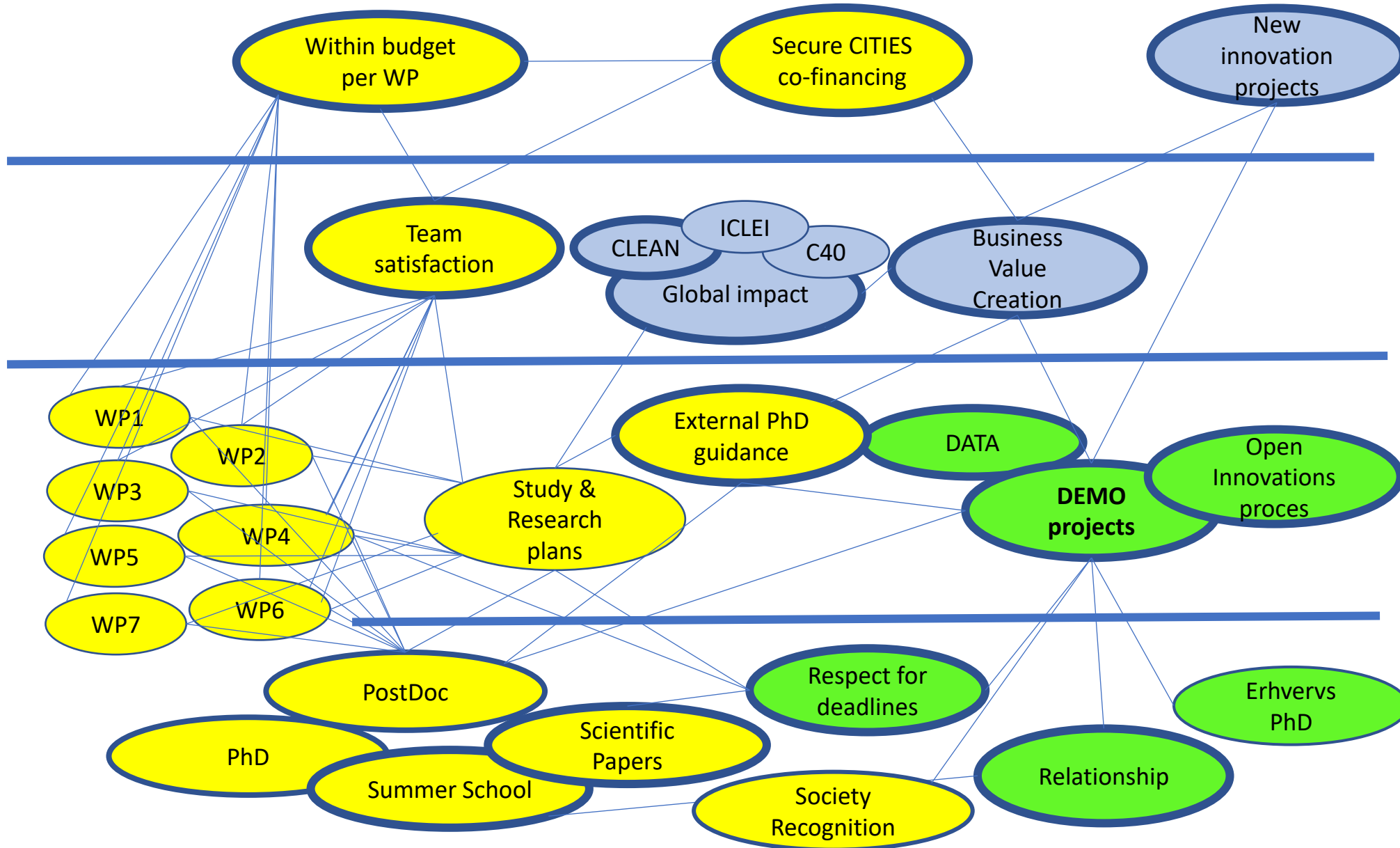
= became enabler for new business innovation & growth



**CITIES  
Objectives**



# CITIES Balanced Scorecard (2016)



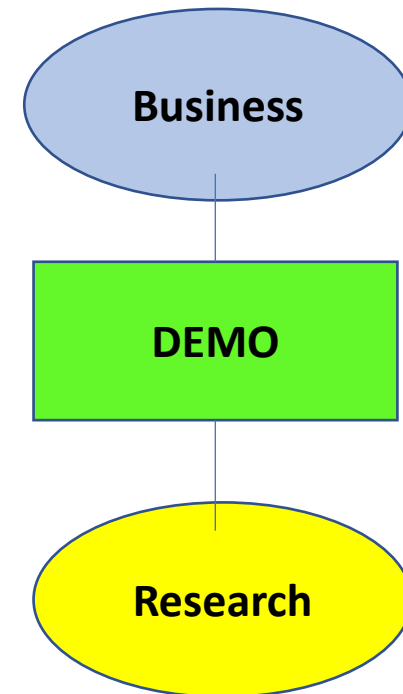


# CITIES's succes criterias

- from research to business and growth



- **The research-project** shall realize defined targets for science, society and education
- **Match company expectations** related to innovation and new business creation
- **Create DEMO demonstration projects**, which connects and create value for companies, research and society
- The business domain meets the research domain and **creates in cooperation new green DEMO scaleable city-solutions**



# 25 CITIES solutions documented

## - ready to help society reduce complexity and make decisions



Energy taxes for the transition to a low-carbon society

Dynamic CO2 based control

Stability of electricity smart meter clusters

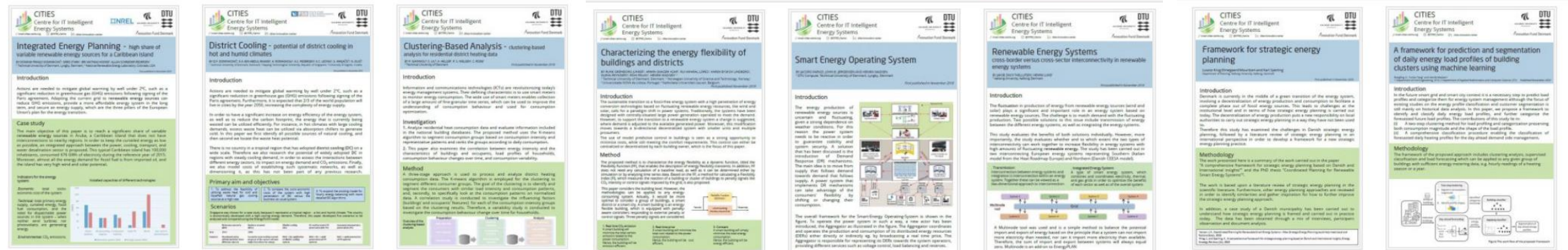
Utilizing thermal building mass

An integrated market for electricity and natural gas

Exploiting flexibility in coupled electricity and natural gas markets

Heat saving strategies in sustainable smart energy systems

Biomass supply planning for large-scale



Integrated energy planning for a Caribbean

Potential of district cooling

Clustering-based analysis of residential district

Characterizing the energy flexibility of buildings and

Smart Energy Operating System

Cross-border versus cross-sector

Framework for strategic planning

Framework for prediction and segmentation



# How CITIES has engaged in urban climate transition

and helped cities, like  
Sonderborg, overcome barriers

....





**ProjectZero**  
SONDERBORG



**Sonderborg's Vision**



# The Sonderborg climate-journey colors society and solutions

- attracts attention and creates green business innovation and growth

## Internationally:



2010

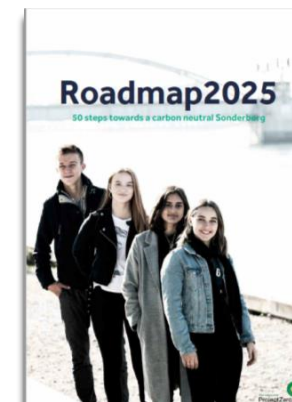
2013

2015

2018

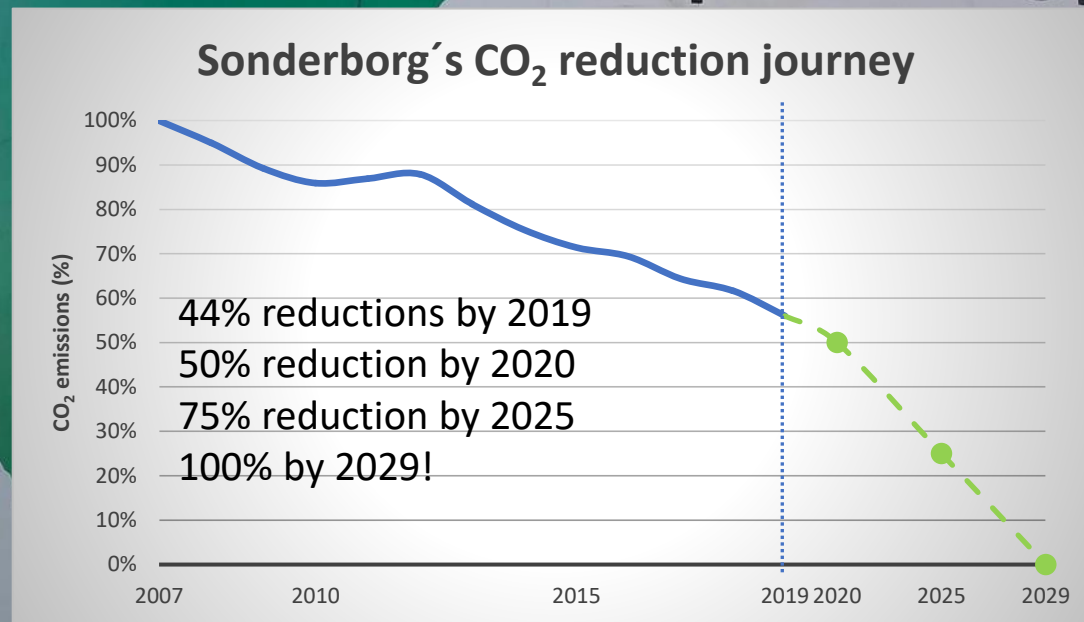
2020

## Sonderborg:





# Sonderborg: 700,000-ton CO2-emissions in 2007 ZERO by 2029

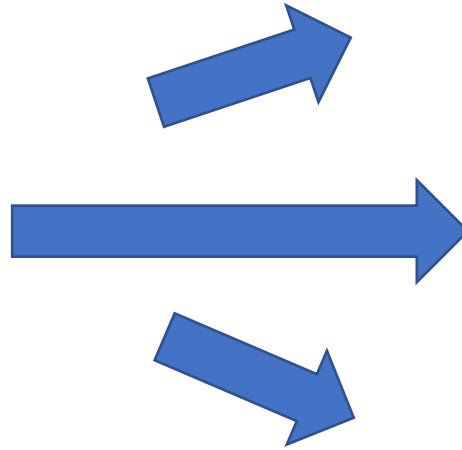




# Lead by examples

- Our participation started with the ZERO+ house, but now the ZERO-mindset has taken over!

The ZERO+ house



- new homes
- new municipal buildings
- new schools
- companies going ZERO+
- shops going ZERO+
- schools going ZERO+
- families going ZERO+
- sports going ZERO+
- urban development going ZERO+

Frank Gehry



The Gehry Harbor Project



# Joint energy planning

- creates a common and shared plan

## Key is motivation and engaging “people”

- City council ownership – endorsement and approval
- 100+ people involved – local experts and stakeholders
- On a joint journey into the unknown future
- Creating relations, partnerships & plans
- Creating a robust local story-telling
- Creating a strong foundation for the implementation

## Predefined Process & Organization

- A structured process – predefined and safe!
  - 8 step model based on SmartEnCity IEP-process
- Segmentation into 8 working groups
- Supported by CITIES knowledge and solutions
- Timeline: April => December 2018

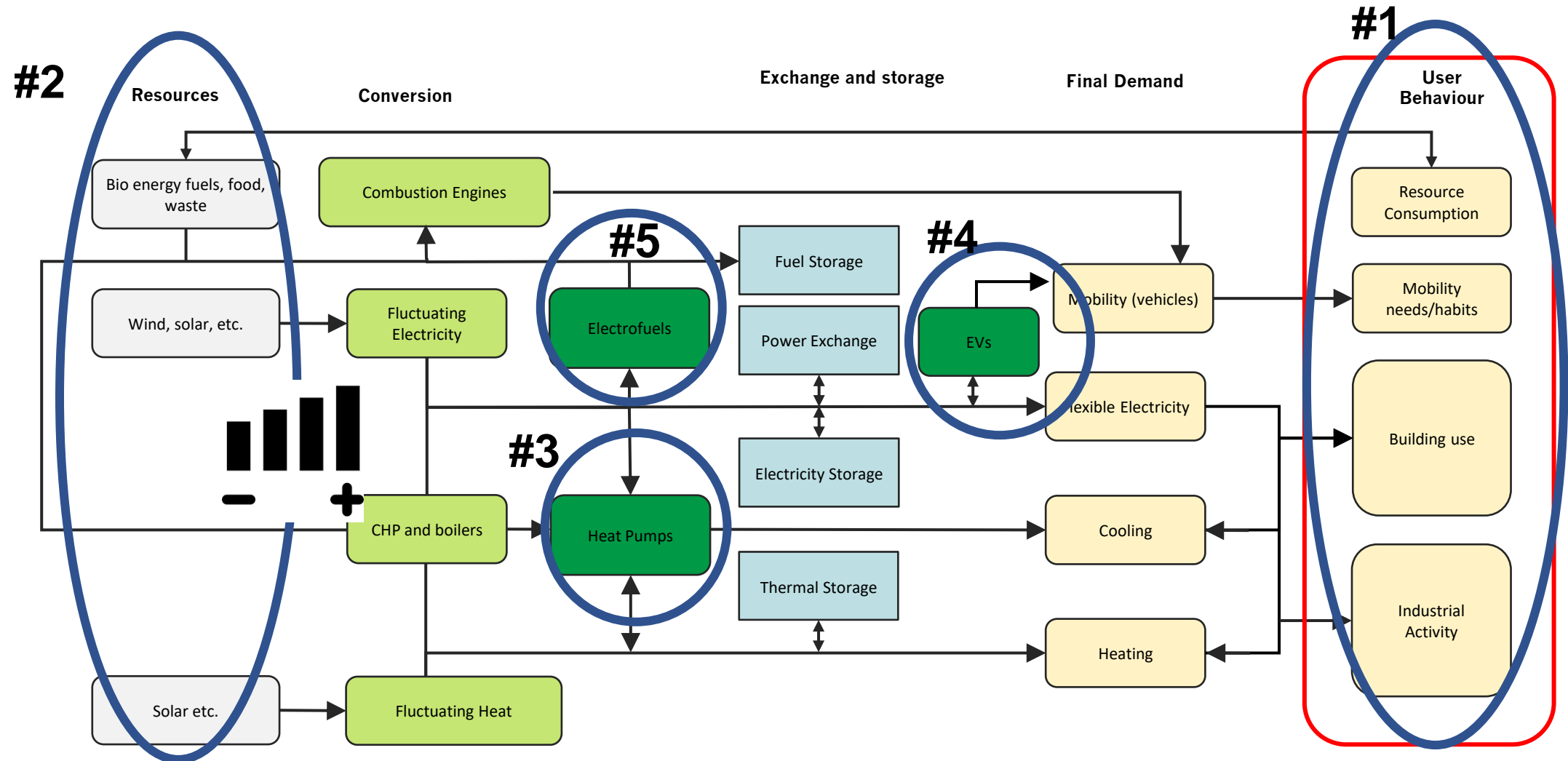
## Implementing and executing Roadmap2025

- Same stakeholders are now busy supporting the execution of the Roadmap and their 52 projects



# Transitioning the energy-system

- by a prioritized approach





# Energy Valley Glansager

- creating a playground for sector coupling and Ptx-solutions

- Recycle- & Reuse of Waste
- District heating production based on solar heat and gasification of waste-biomass
- Wind turbines (Mintebjerg)
- PV-park Glansager (Better Energy)
- Biogas Glansager (Nature Energy)
- **To be integrated into a unique resource-efficient & systemic smart DEMO facility**
- Demonstration & learning Lab for kids and University students

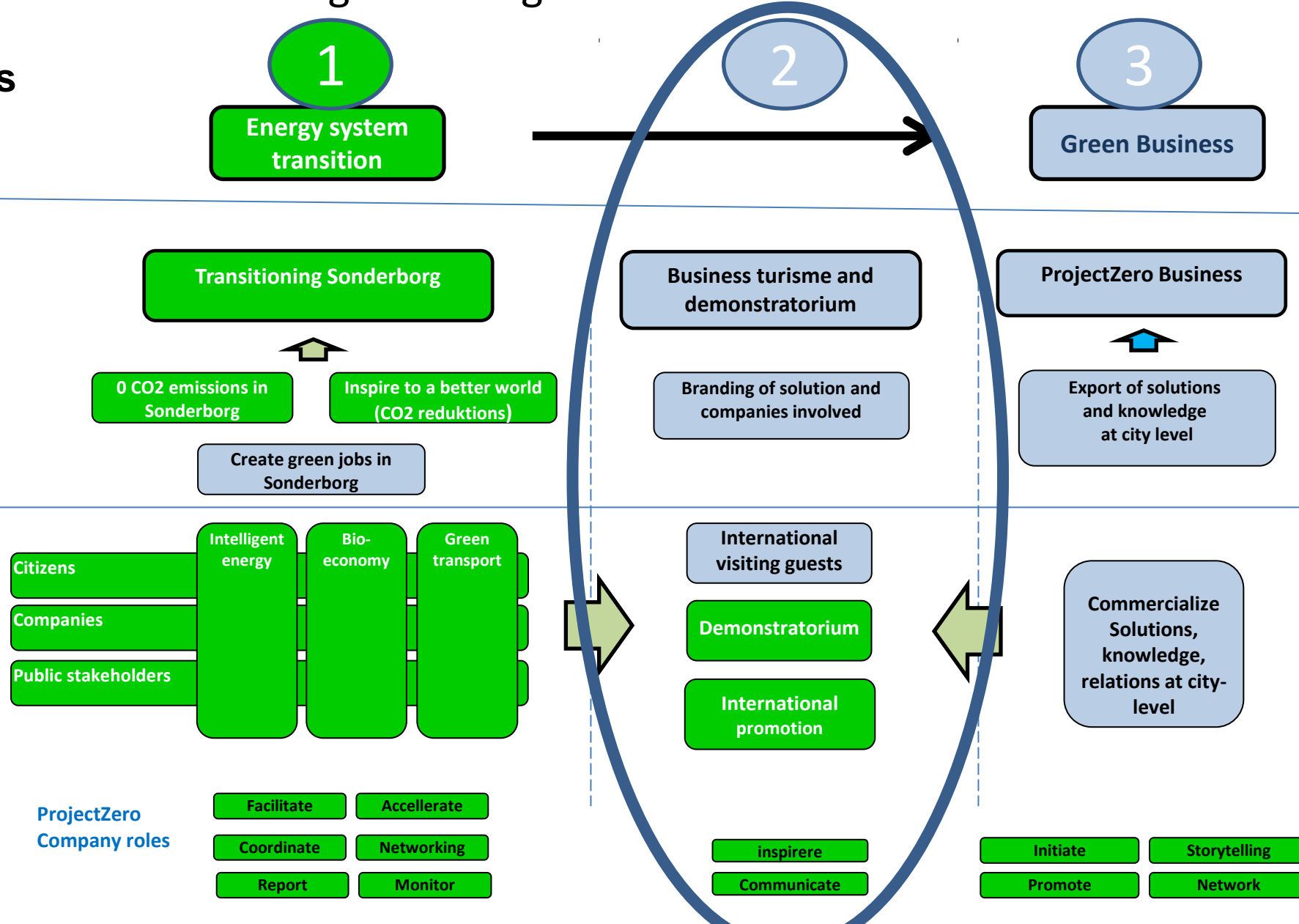




# Integrating climate and new green business creation

- DEMO also here serving as a bridge in between

3 focus  
areas



# Being a CITIES-partners has helped Sonderborg

- Understand the transition at city-level and the “language” spoken
- Establish strong triple-helix relations to research, business partners and key energy stakeholders in Denmark and abroad
- Research and **build demo-projects**
- **Overcome complexity**
- Understand the **value of data and engage in digitalization**, including Center Denmark
- Facilitate the **100% Climate Neutrality climate conference** and stakeholder workshops in Sonderborg
- Create Energibyerne.dk and facilitate discussions at Folkemøde Bornholm
- Apply for **new funded projects**



# Next step CITIES considerations



The CITIES-project like other Triple Helix projects has been complex, but a strong enabler to **create new energy system and society knowledge, demo-projects, new solutions, unlock business and society growth.**

CITIES has documented how society based on CITIES solutions can transition, however **national politicians are lacking behind** Implementing the necessary framework – and in Denmark **a complex tax-system seems** to be the major bottleneck for **real time carbon taxation.**

Today is not the end, but a major milestone achieved before **the city-transition journey continues** into new networks, joint partnerships and projects.

Thanks for letting ProjectZero on board – thanks for a **power- and fruitful cooperation!**





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