

SmartEnCity Academy for Zero Carbon Transition: Lesson 3

Session starts at 2 PM

TOWARDS SMART ZERO CO₂ CITIES ACROSS EUROPE

VITORIA-GASTEIZ + TARTU + SONDERBORG



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691883

SmartEnCity Academy for Zero Carbon Transition

+ SmartEnCity – Towards Smart Zero CO2 Cities across Europe

- + 3 Lighthouse Cities
- + 2 Follower Cities
- + 37 partners
- + 02/2016 - 07/2021 (5.5 years)

+ SmartEnCity Academy

- + online training course for cities, municipalities and smart decision making
- + tailored step-by-step guidance
- + interactive discussions
- + recording of Lessons 1 & 2 at the SmartEnCity website





**More information and updates about the lessons at
<https://smartencity.eu/outcomes/smartencity-academy/>**

**Questions to
info@smartencity.eu**

**Please note that this lesson will be recorded and uploaded to
<https://smartencity.eu>**





Lesson 3: Agenda

Where Are We Now? City Analysis and Diagnosis

✦ **Moderation:** Michele de Santis , RINA Consulting S.p.A.

✦ **Agenda:**

✦ Introduction (Michele de Santis)

✦ Pitches:

✦ SmartEnCity Lighthouse City Sonderborg: Simon Stendorf Sørensen, PlanEnergi

✦ Guest Speaker: Alis Daniela Torres, Climate Action and Smart Cities - Monitoring, Reporting and Verification Expert - Task Force 5. European Covenant of Mayors

✦ SmartEnCity Follower City Asenovgrad: Ivanka Pandelieva-Dimova, Sofia Energy Centre / Georgi Angelov, Asenovgrad Municipality

✦ Panel Discussion & Questions from the Audience





Lesson 2: Speakers



Michele De Santis



Simon Stendorf Sørensen



Ivanka Pandelieva-Dimova



Alis-Daniela Torres





SmartEnCity Academy Lesson 3: The SmartEnCity Way towards Zero Carbon City: Where Are We Now? City Analysis and Diagnosis

Michele De Santis,
RINA Consulting S.p.A., Lecce, Italy

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The Cities Footprint

+ Cities impacts

- + 75% of the world's natural resources
 - + 80% of the global energy supply
 - + 75% of the global carbon emissions
- + This raises serious questions about the **future sustainability of cities** in terms of energy supply, their role in meeting global carbon emission reduction targets and their ability to participate in the carbon economy (*UNEP, 2013*)



The COP21 – Paris 2015

- ✦ The **COP21** did not just see the unprecedented presence of over 150 heads of state but also the **massive presence of city mayors**
- ✦ Any **agreement resulting from COP21** would need to be implemented at **local level**
- ✦ Cities can play a **central and fundamental role in defining and implementing innovative solutions** to reduce the causes and the effects of climate change both locally and globally



The leading role of Cities in Climate Action

- ✦ Cities and regions have a **unique capacity to address climate change** compared with national governments and offer numerous solutions to advance climate adaptation and mitigation
- ✦ **Cities are well-positioned to experiment and pilot climate action**, often demonstrating greater ambition than national initiatives
- ✦ Low-carbon, climate-resilient **investment provides benefits** such as avoided health costs, better energy security and higher quality of life
- ✦ **Cities have authority over various sectors related to climate action** (e.g. housing, land-use, transport and buildings)



Emissions in cities can be reduced by up to 90% by 2050 (*Coalition for Urban Transitions, 2019*)



**“If you can’t
measure it,
you can’t
manage it”**

Peter Drucker

The need of a City Diagnosis

- ✦ Where are we?
- ✦ Understanding on the socio-economic and sectorial features and status of the city:
 - ✦ energy, building stock, mobility, ICTs, engagement, waste, water, etc.
- ✦ **City indicators** can provide a desirable quantitative approach to this characterization.
- ✦ A carbon **emissions baseline** is the key to perform further strategies and projects towards energy transition
- ✦ It could be considered as a **X-Ray of the City**



Domains to be included

- ✦ **Local conditions**
- ✦ **Energy** supply and consuming patterns
- ✦ **Building stock** and retrofitting needs
- ✦ **Urban mobility**
- ✦ **ICT infrastructures** and services
- ✦ Citizen and stakeholders' **engagement**



Two key parameters to be monitored in the decarbonisation process are: the total amount of CO2 equivalent emissions and the total energy consumption in the city

Collaboration is needed

- ✦ The successful implementation of the Paris Agreement depends from the ability of cities, local stakeholders and communities to rapidly **gather the necessary resources and to develop radically innovative solutions**
- ✦ It is fundamental to define common measuring and evaluation methods, tools, practices to pursue the objective of **promoting the Smart City concept**



Contact



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SmartEnCity Academy Lesson 3: The SmartEnCity Way towards Zero Carbon City: Where Are We Now? City Analysis and Diagnosis

Simon Stendorf Sørensen
PlanEnergi, Denmark

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Sonderborg – baseline and diagnosis

✦ Baseline I

Energy Balance tool from SmartEnCity

- Used to create baseline and diagnosis in Sonderborg
- Used to calculate strategic path in Sonderborg
- Being used by Lecce to create baseline and diagnosis
- Available with English guide for free at www.smartencity.eu



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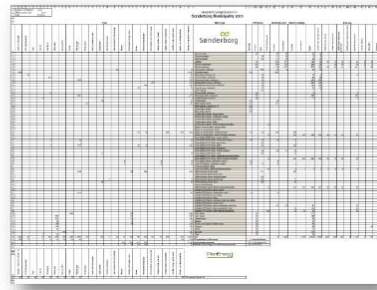
 Anders Michael Odgaard
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Guideline

Energy balance tool

For creating local energy strategies

January 2017



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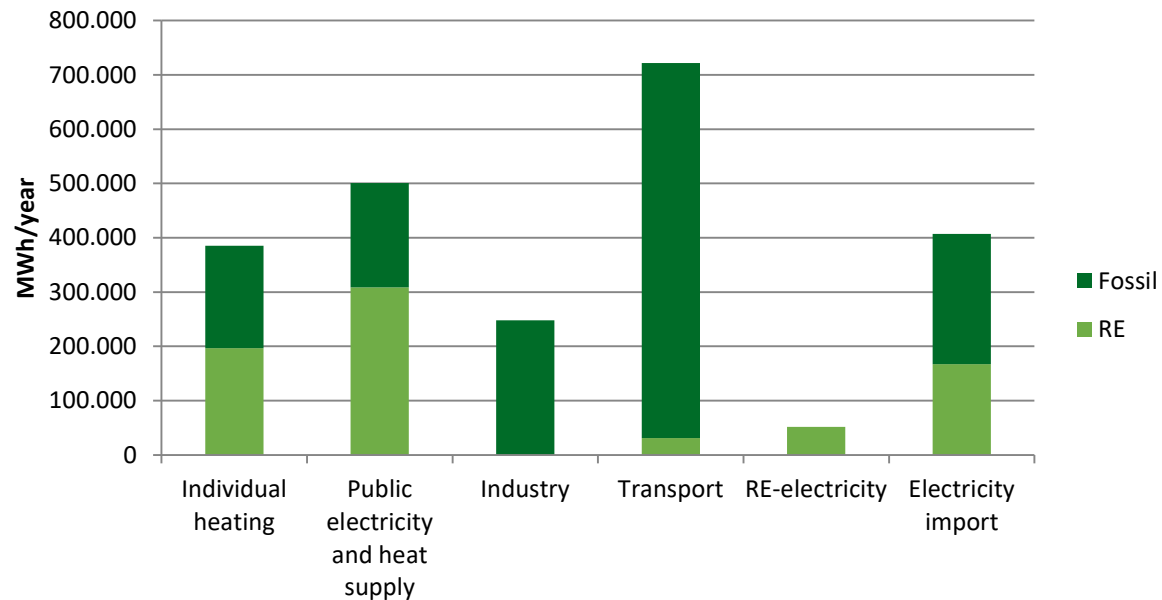
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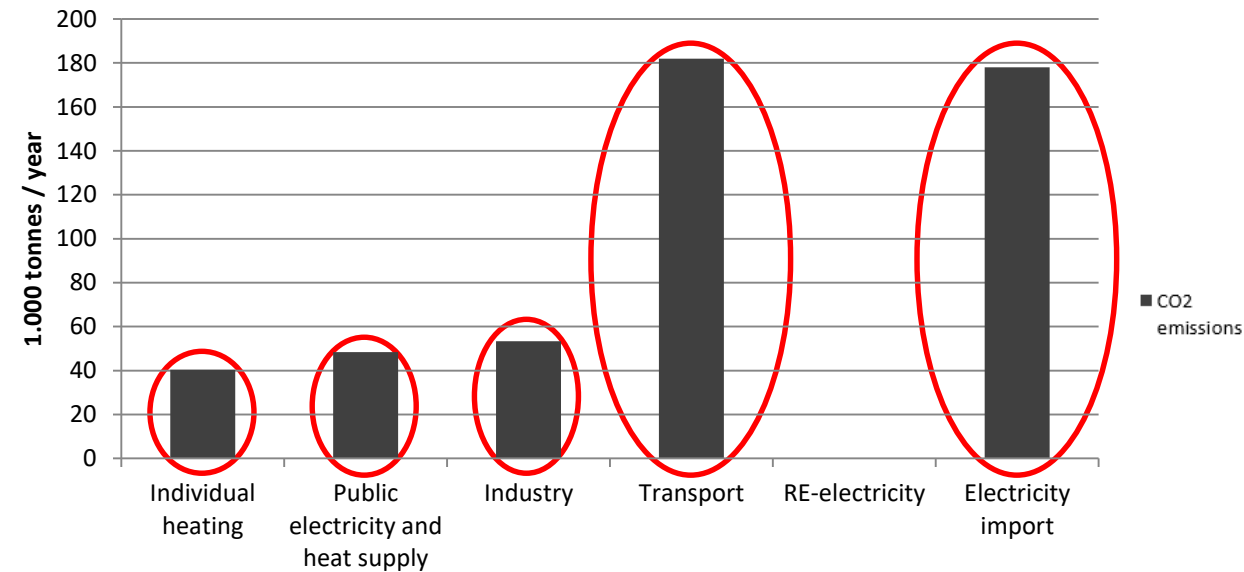
Sonderborg – baseline and diagnosis

+ Baseline II

Energy consumption Sonderborg Municipality (2015)



CO₂-emissions Sonderborg Municipality (2015)



Sonderborg – baseline and diagnosis

✦ Diagnosis I – Inclusive systems perspective

8 segments in focus

Owner-occupied housing

Housing associations

Private rental

Passengertransport

Businesses

Heavy transport

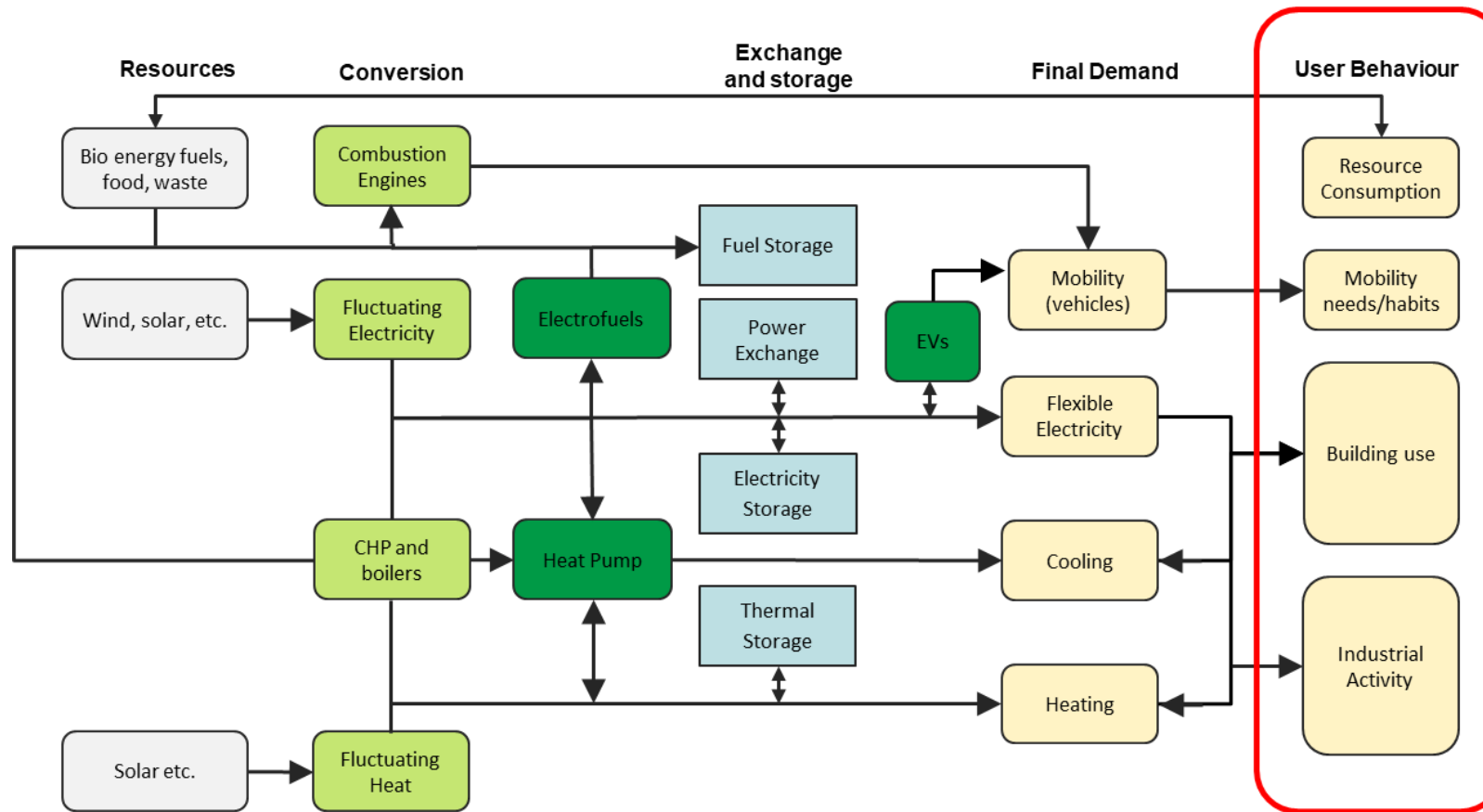
Agriculture

Energy



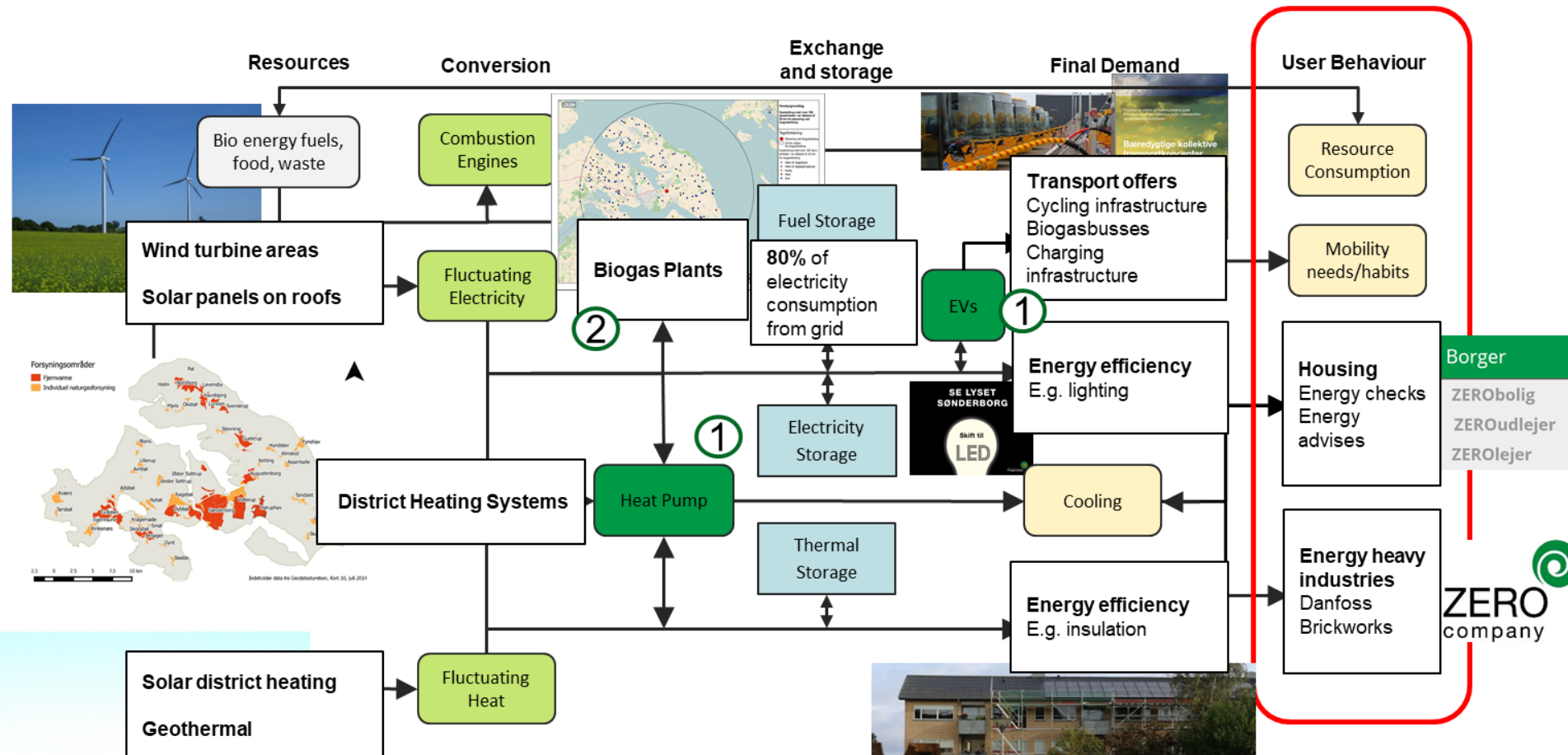
Sonderborg – baseline and diagnosis

✦ Diagnosis II – Inclusive systems perspective



Sonderborg – baseline and diagnosis

✦ Diagnosis III – Inclusive systems perspective



Sonderborg – baseline and diagnosis

✚ Diagnosis IV – Inclusive systems perspective

Owner-occupied housing

Housing associations

Private rental

Passengertransport

Businesses

Heavy transport

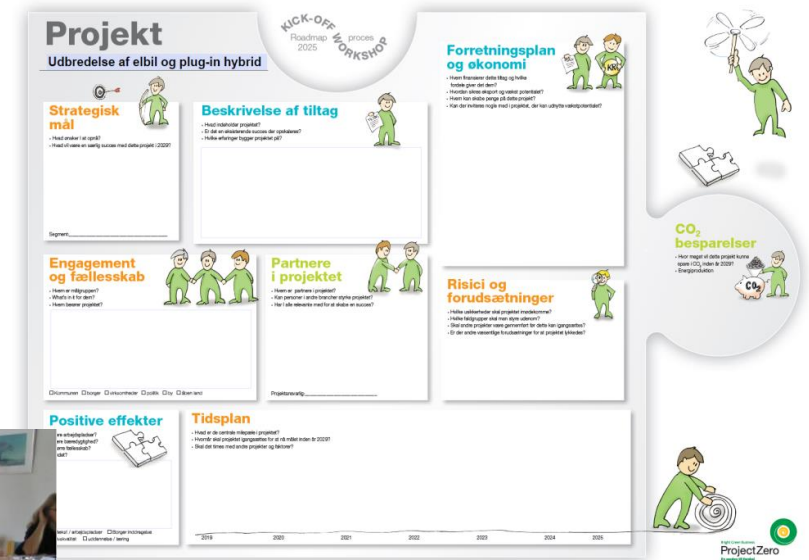
Agriculture

Energy



8 segments

City administration, experts
and → segment
representatives

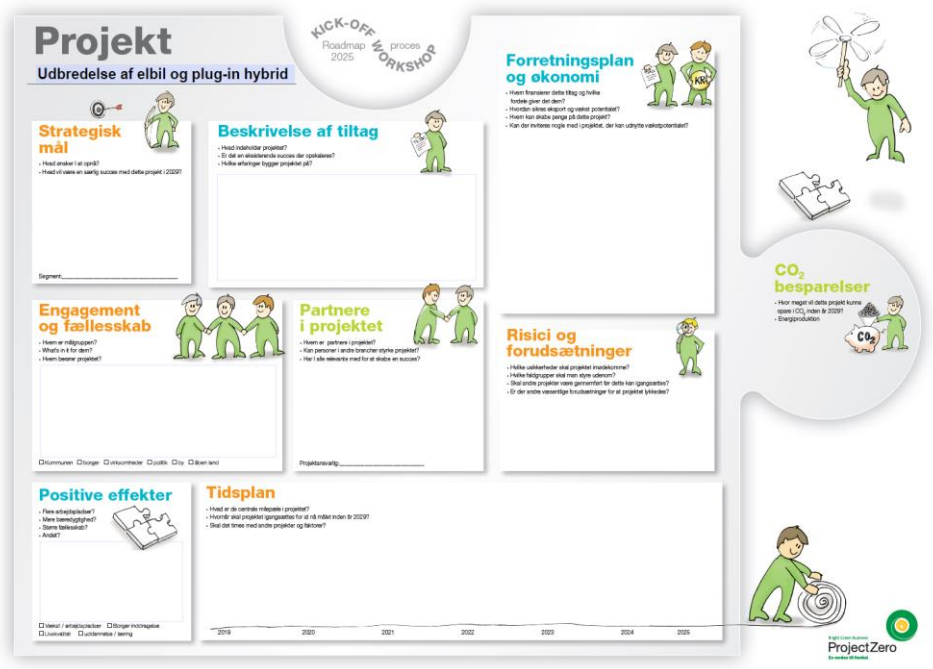


Projects

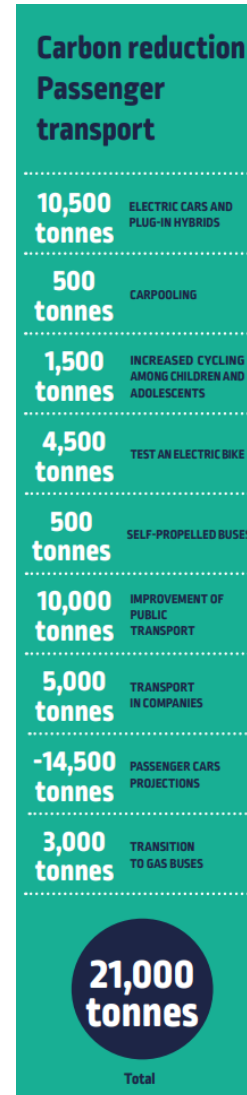


Sonderborg – baseline and diagnosis

❖ Diagnosis V – Calculating strategic path



Project reduction



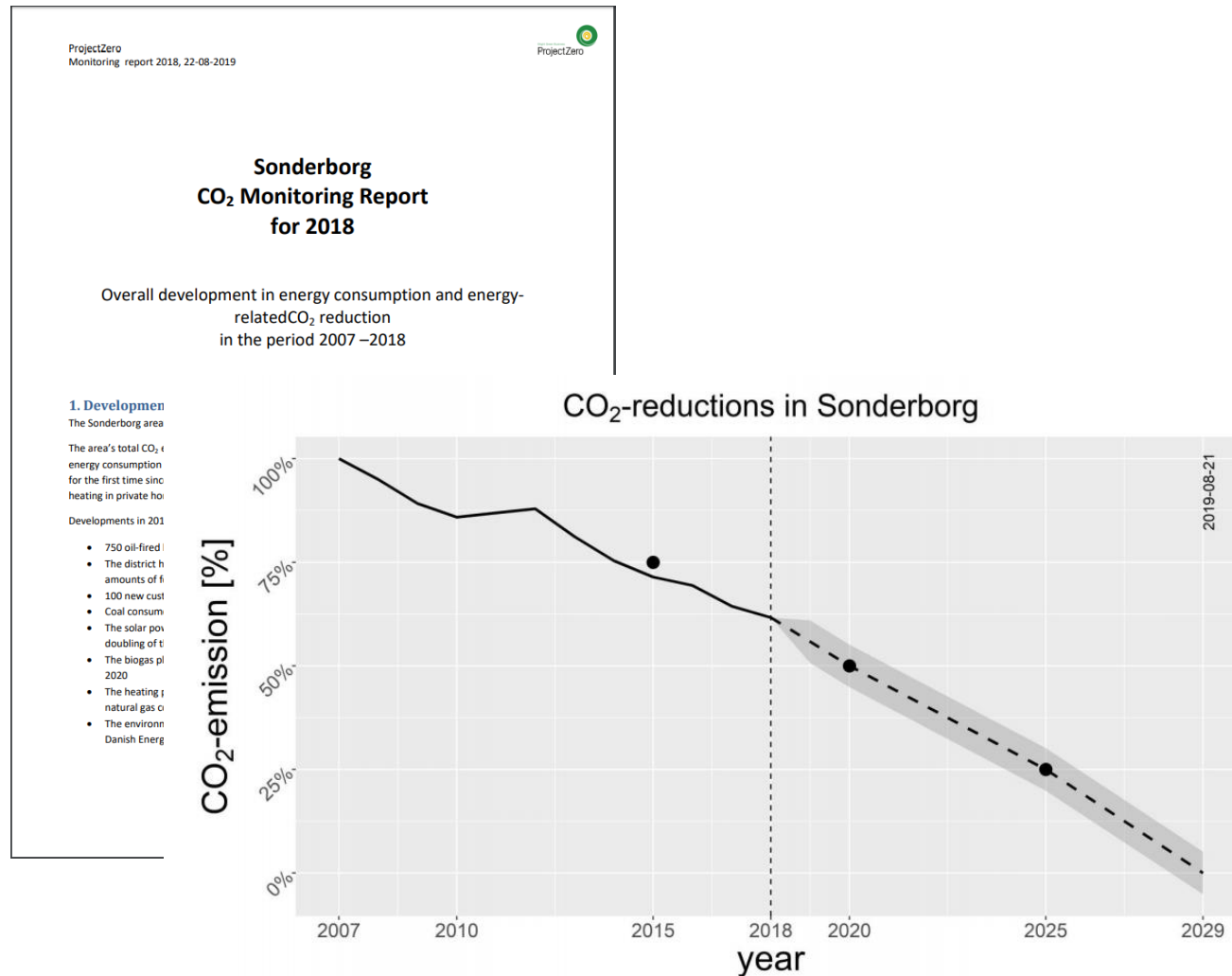
Segment reduction



System reduction (goal)

Sonderborg – baseline and diagnosis

✦ Monitoring and reporting



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PlanEnergi





Covenant of Mayors
for Climate & Energy
EUROPE



COVENANT OF MAYORS FOR CLIMATE AND ENERGY

BY. DANIELA TORRES. EU CoM

TASK FORCE ON MONITORING, REPORTING AND VERIFICATION / EVALUATION

SmartEnCity Academy Lesson 3:

The SmartEnCity Way towards Zero Carbon City: **Where Are We Now? City Analysis and Diagnosis**



Part of the

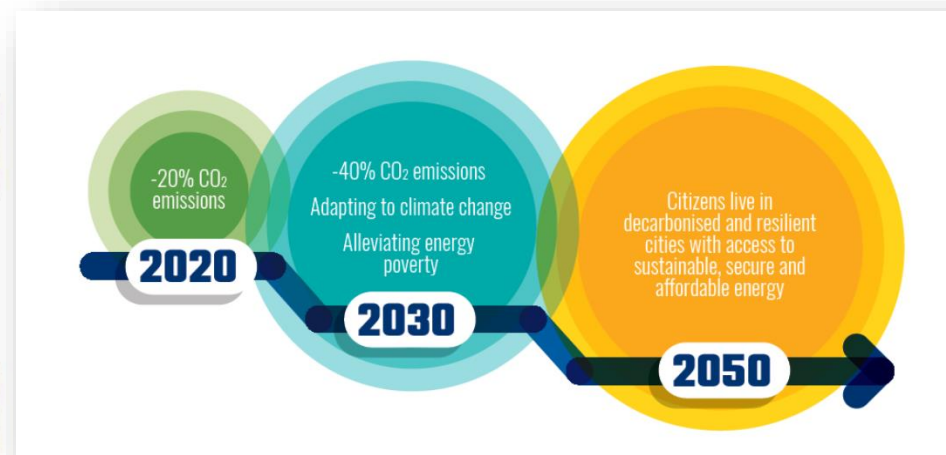
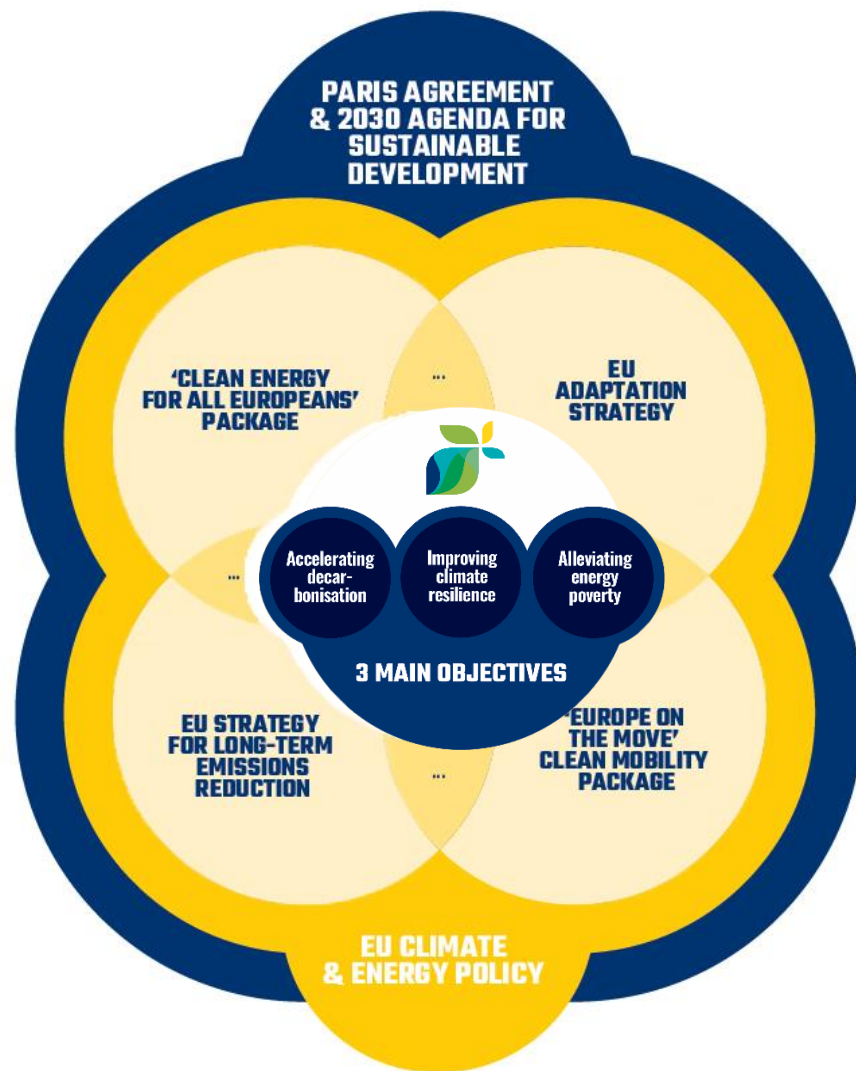


The Covenant of Mayors for Climate & Energy - Europe



As part of the European Covenant of Mayors movement, **cities and towns** are taking **climate and energy action** to secure a **better future** for their citizens.

Matching local objectives and EU policy

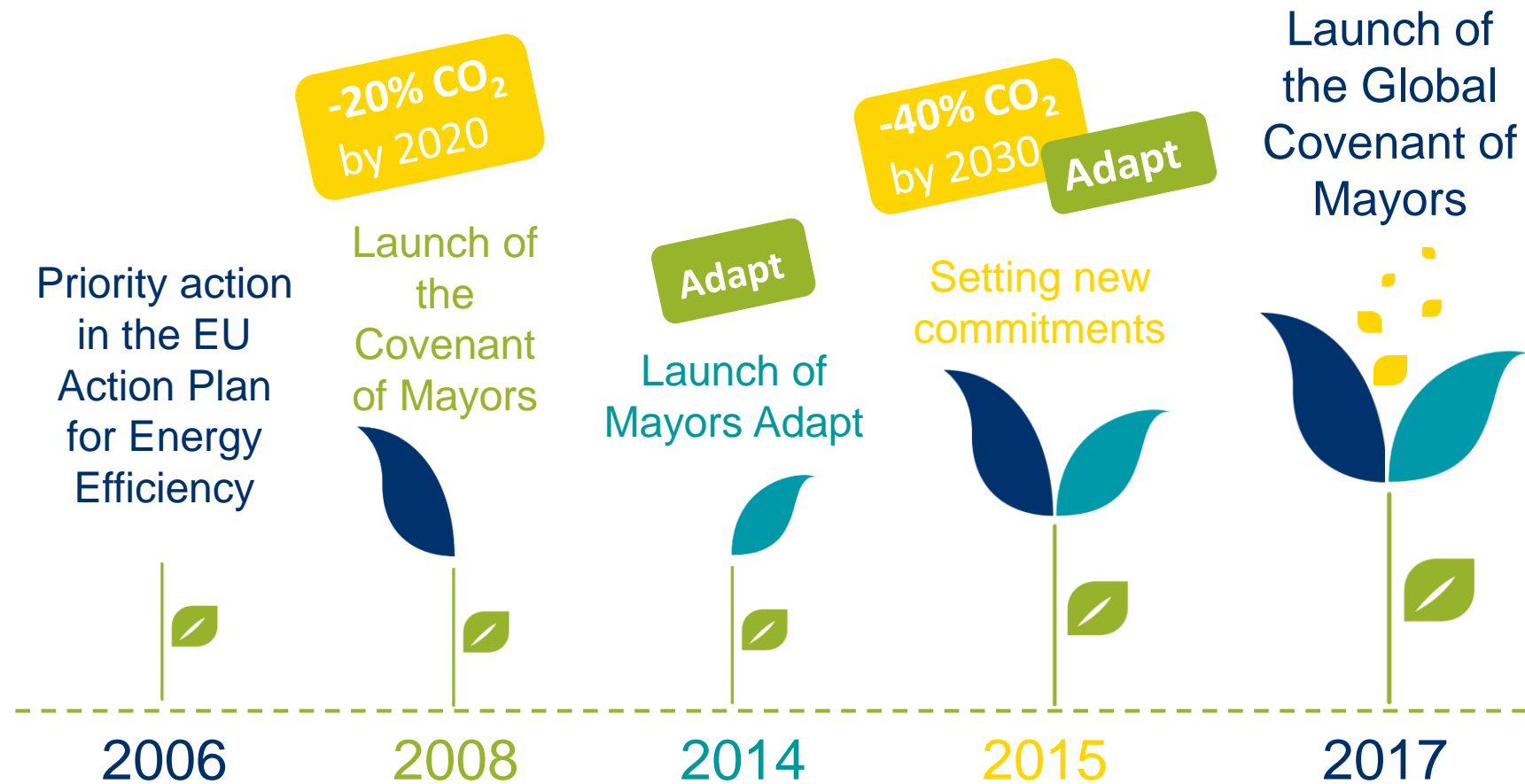


Matching local objectives and EU policy

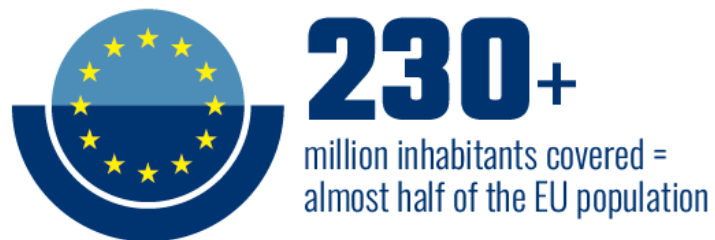


-40%
in CO₂ emissions
by 2030

Evolution of the initiative

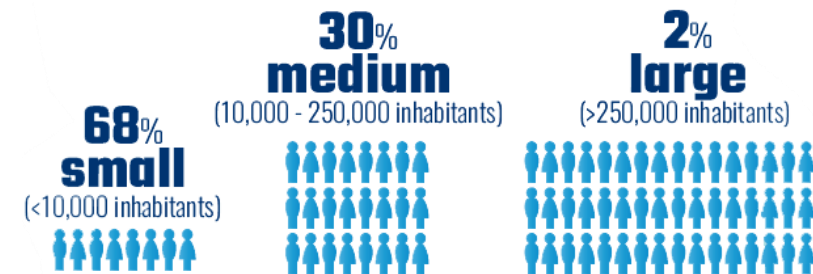


The Covenant of Mayors in Europe

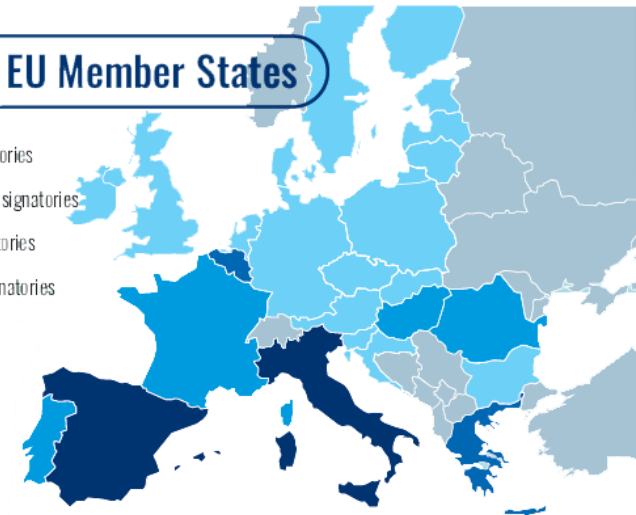


AN INCLUSIVE MOVEMENT

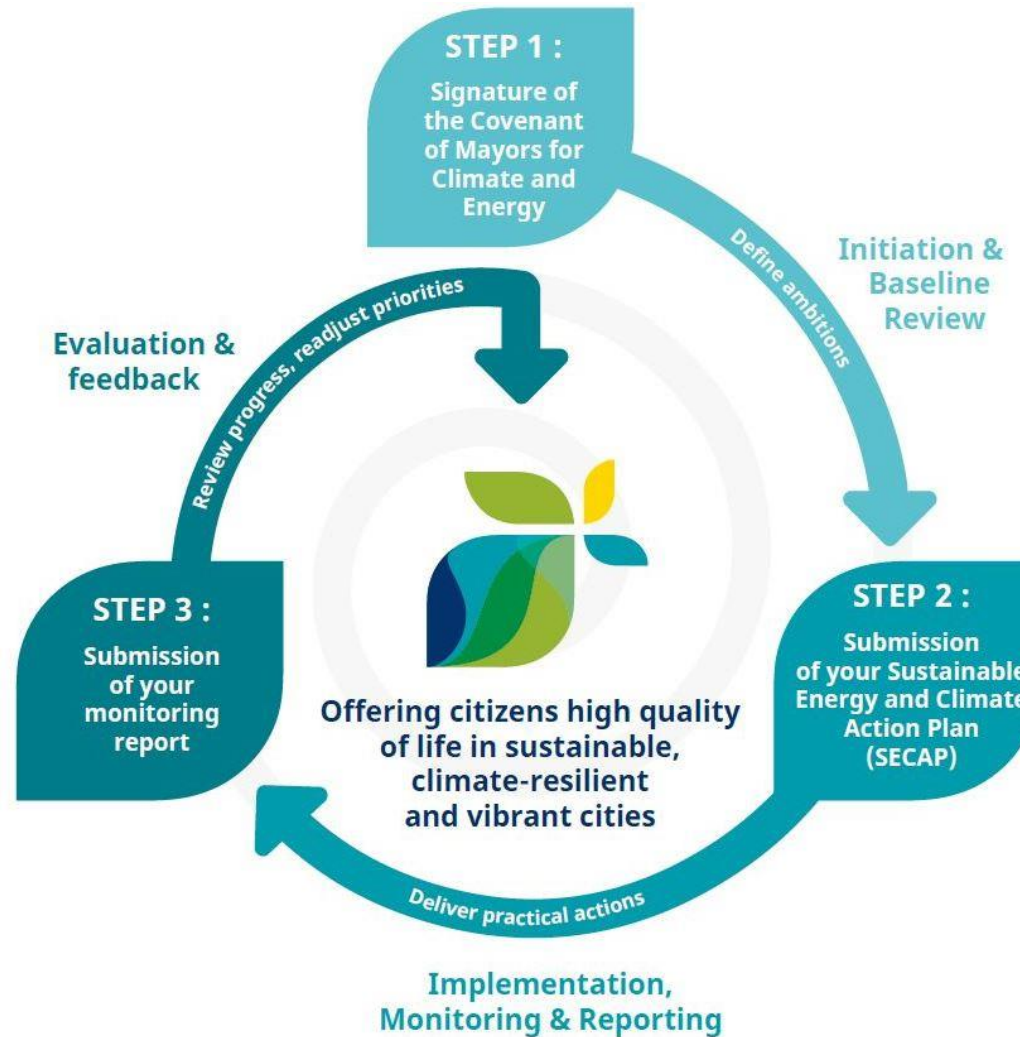
Gathering local governments of all sizes



From all EU Member States



The Covenant step by step



A reference framework for action



- Consistency and transparency
- Flexibility and adjustability to local realities
- Feedback on action plans
- Promotion and exchange of experience

The screenshot displays the 'Signatories' web application interface, specifically the 'Baseline Review' tab for the city of Espoo, Finland. The interface includes a navigation bar with tabs: OVERVIEW, BASELINE REVIEW (selected), ACTION PLAN, PROGRESS, KEY ACTIONS, and SUPPORT. The main content area is divided into two columns. The left column features a header for 'Espoo' with the ESPOO ESBO logo, followed by a table showing 'Country' (Finland) and 'Population' (243,900). Below this, it shows the 'Date of adhesion' (11/01/2010) and three circular icons for CO2 targets: 2020, 2030, and ADAPT. A map of Espoo is shown at the bottom left. The right column, titled 'Key results of the Baseline review', lists various metrics with expandable sections indicated by plus signs: Baseline year (1990), Baseline emission inventory, Greenhouse gas emissions and final energy consumption per capita, Greenhouse gas emissions, Greenhouse gas emissions per sector, Final energy consumption, Final Energy consumption per sector, Final energy consumption per energy carrier, Local energy production, Risk and Vulnerability Assessment, Status in the adaptation cycle, Risk rating matrix, and Impact rating Matrix.

Supporting signatories



With a capacity-sharing platform and materials:

Resource Library

- good practices,
- case studies, handbooks,
- methodologies, etc.

Discussion Forums,

- Exchange with your peers



www.eumayors.eu

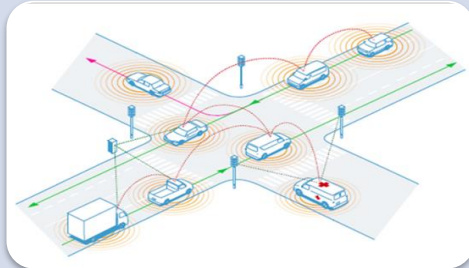
 MY COVENANT



The CoM and Smart Cities



- Smart City solutions contribute to cities plans to reduce energy consumption and GHG emissions



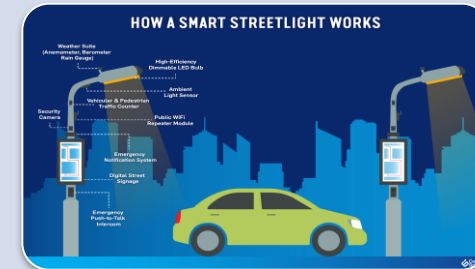
Sustainable Urban Mobility

- Mobility as a Service
- Electric Mobility
- Car/Bike Sharing



Sustainable Districts and Built Environment

- Smart Buildings
- Smart Thermal Grids
- Smart Energy Tenants



Integrated Infrastructures and Processes.

- Urban data Platforms
- Smart Lighting
- Smart Waste Management

Key Take Aways: CoM and Smart Cities



- ✓ Smart city solutions as mitigation, adaptation or energy poverty actions.
- ✓ It is important to assess the energy and climate impacts of smart solutions (methodologies) that contribute to meet city targets by 2030, 2040 and 2050.
- ✓ Cities experience in the SSC Community show that SECAP processes facilitate smart solutions replication.
- ✓ Upscaling smart solutions requires linkages to Urban Sustainability Planning Processes (SECAP, SEAPs, SUMP).

Thank you / Gracias
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Covenant of Mayors
for Climate & Energy
EUROPE

JOIN US!

#TOGETHERTOWARDS2030



SmartEnCity Academy Lesson 3: City Analysis and Diagnosis Follower City Asenovgrad – Experience and Challenges

Georgi Angelov, Municipality of Asenovgrad
Ivanka Pandelieva-Dimova, SEC

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Asenovgrad at a glance

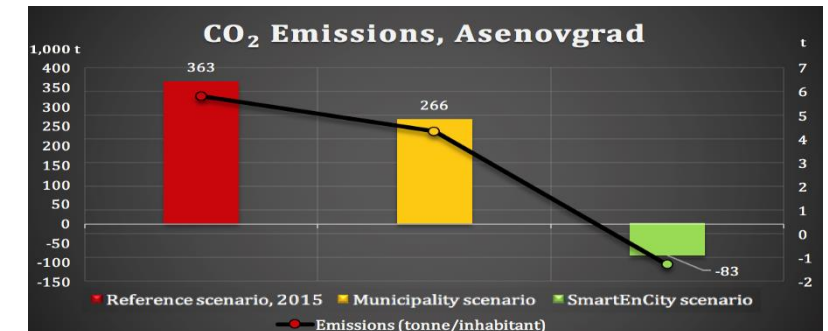
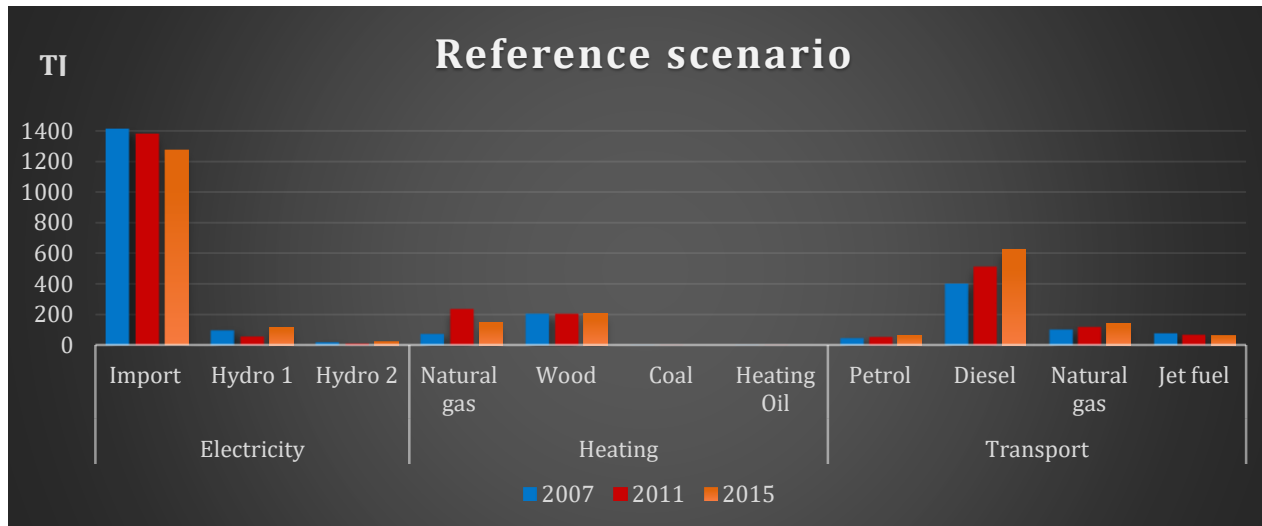
- ✦ **Location:** South-central region of Bulgaria, distance to Plovdiv (the second biggest town of Bulgaria) – 12 km, distance to the capital Sofia – 160 km.
- ✦ **Climate and geography:** along river, transitional and mountainous climate, diverse relief: Thracian Lowland to the North and Rhodope Mountains to the South; Territory 615 sq. km - 41 % forests and 37 % arable land; suitable for agriculture and tourism, rich in water resources including thermal springs
- ✦ **Population:** 68 000 inhabitants;
- ✦ **Budget:** 19 MEuro/annum



Asenovgrad Experience (1)

Starting Points:

- ❖ Sustainable Energy Action Plan (since 2012)
- ❖ Integrated Plan for Urban Regeneration and Development (up to 2020)
- ❖ Municipal Development plan (2014-2020)
- ❖ Energy balance and scenarios with the SmartEnCity Energy Balance tool



Asenovgrad Experience (2)

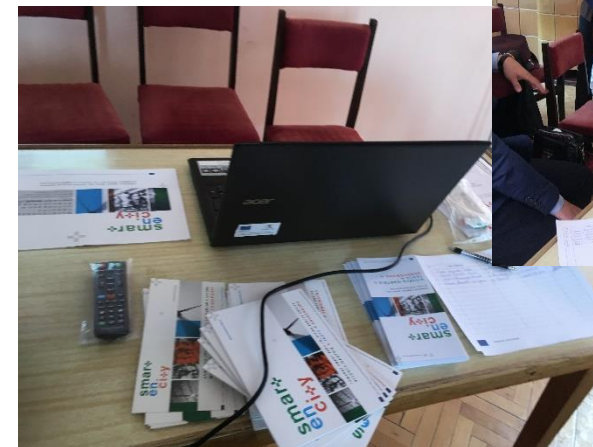
Goals:

- ❖ **Update** - energy transition and climate change plan, based on existing strategic policy documents updated with proven solutions within SmartEnCity suitable for local potential and needs;
- ❖ **Target** – set up energy efficiency and CO2 reduction targets up to 2028 and a vision for 2050;
- ❖ **Merge** - create one strategic urban planning document integrating solutions from different areas – energy, waste management, public infrastructure, transport, etc.
- ❖ **Implement** - prepare a roadmap for implementation with concrete investment projects, dead-lines and funding – foster investment and ensure putting the plan into action.

Asenovgrad Experience (3)


Process (1):

- ❖ Taskforce creation;
- ❖ SWOT Analysis;
- ❖ Stakeholder Involvement through scenario formulation workshop;
- ❖ Scenario Development



Asenovgrad Experience (3)

Process (2):

- ❖ Strategic planning – update on priorities and focus areas of the current strategic documents;
- ❖ Project selection based on city needs;  *we are here*
- ❖ Update with selected project;
- ❖ Roadmap development with projects investments, time-line and sources of funding
- ❖ Adoption by municipal council by the end of 2020

Asenovgrad Experience (4)

Main priorities and focus areas:

- ❖ Utilisation of local biomass potential especially in view of availability of agricultural biomass and biogas as one of the participants was an agricultural cooperative growing cereal crops and breeding pigs.
- ❖ Selection of projects and financing mechanisms best fitted to utilize the local biomass potential;
- ❖ PV installation on public and private residential buildings;
- ❖ Energy refurbishment of street lighting systems;
- ❖ Continuation of refurbishment of remaining public building stock;
- ❖ Continuation of private residential buildings refurbishment and coping with backlog of applications;
- ❖ Transport sustainability through bicycle lane creation;
- ❖ Municipal transport fleet modernisation with lower emission vehicles;
- ❖ Creation of additional parking places in the public space zone;
- ❖ Introduction of e-government

Asenovgrad Experience (5)

Show-case: Building refurbishment

- Public municipal building – 9 educational (schools and kindergartens) refurbished with total investment of 2,1 MEuro;
- Private multifamily residential buildings – 28 buildings refurbished with total investment for over 12 MEuro;
- Promotional campaign for private residential building retrofit for citizens (2015-2019);
- Municipality act as info-point and assessing the eligibility for funding under the national programme.



Asenovgrad Challenges

- ❖ Insufficient administrative capacity– public servants deal with many different issues and cannot focus solely on sustainable energy projects;
- ❖ Coordination among different units within municipality;
- ❖ Data collection for city analysis and baseline – more work for cooperation with local utilities;
- ❖ Difficulties in monitoring and data collection to verify progress;
- ❖ Local elections at the end of 2019 – slow down the whole process by 6 months;
- ❖ Involvement of stakeholders, especially citizens – more work on raising awareness and involvement through campaigns, events and promotional materials;
- ❖ Change of public opinion related to sustainable transport modes.

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ROUNDTABLE DISCUSSION

Engage! Please submit your questions on our
chatbox



SmartEnCity Academy for Zero Carbon Transition

An online training course for cities, municipalities and smart decision making:

+ Four lessons → one more to come!

✦ Lesson 4: Envision and Planning: The SmartEnCity Planning Process

✦ **Date:** September 2020 (exact date tbc)

✦ **Content:** How has the planning process been used in practice? What obstacles needed to be solved? Focus on Lighthouse Cities Tartu and Vitoria-Gasteiz and Follower City Lecce.

✦ **Speakers:**

✦ Merit Tatar, Institute of Baltic Studies, Lighthouse City Tartu

✦ Michele De Santis, RINA Consulting S.p.A, Follower City Lecce

✦ Alberto Ortiz De Elgea Olasolo, VISESA, Lighthouse City Vitoria-Gasteiz



SmartEnCity Academy for Zero Carbon Transition

An online training course for cities, municipalities and smart decision making:

- ✦ **Four** lessons
- ✦ **External professionals** from the Smart City field as guest speakers
- ✦ **Interactive** discussions, **tailored** to your needs & answering your questions:
 - ✦ **Assessment** questionnaire prior to lessons
 - ✦ **Feedback** form after lessons
- ✦ **SmartEnCity Certificate** after successful attendance to all four lessons

Become your city's/organization's ambassador for a carbon free future!

Further support needed? Join the **SmartEnCity Network** at
<http://smartencitynetwork.eu/>

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