Central and Eastern European Sustainable Energy Union - CEESEU

A CEESEN initiative

1st Training Bootcamp June 8 – 10, 2021

Training materials – ConPlusUltra GmbH Austria

CENTRAL EASTERN EUROPEAN SUSTAINABLE ENERGY NETWORK

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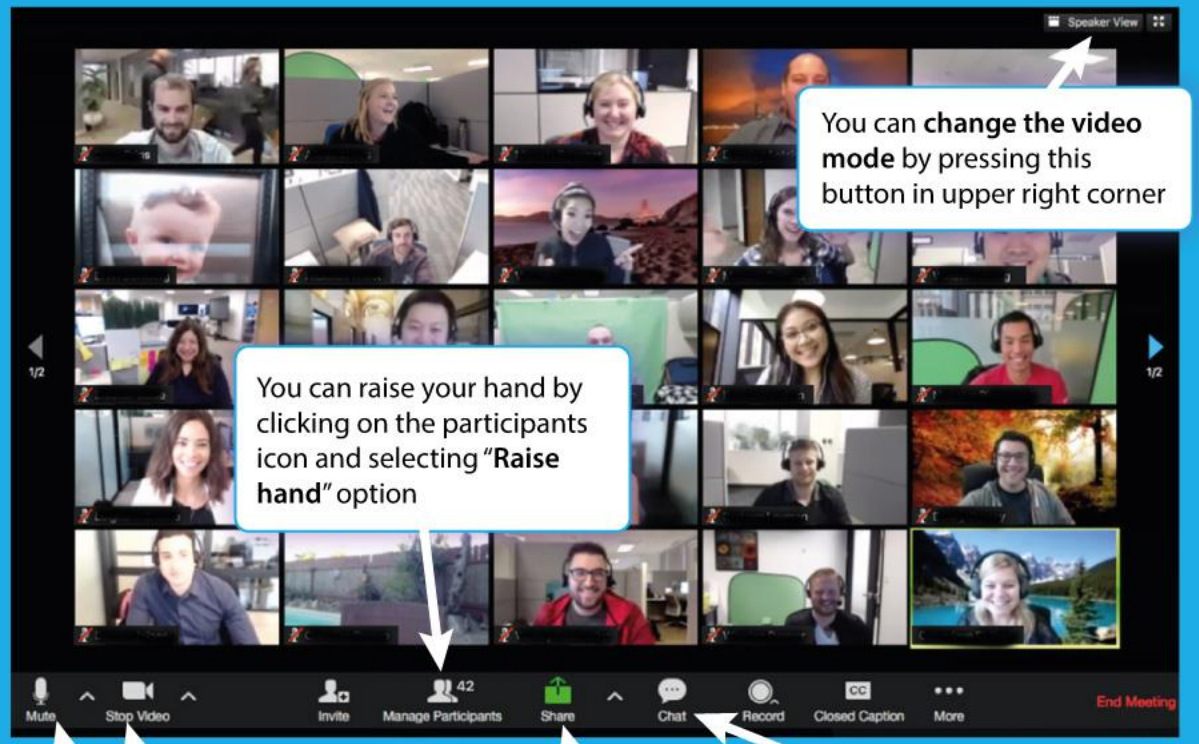
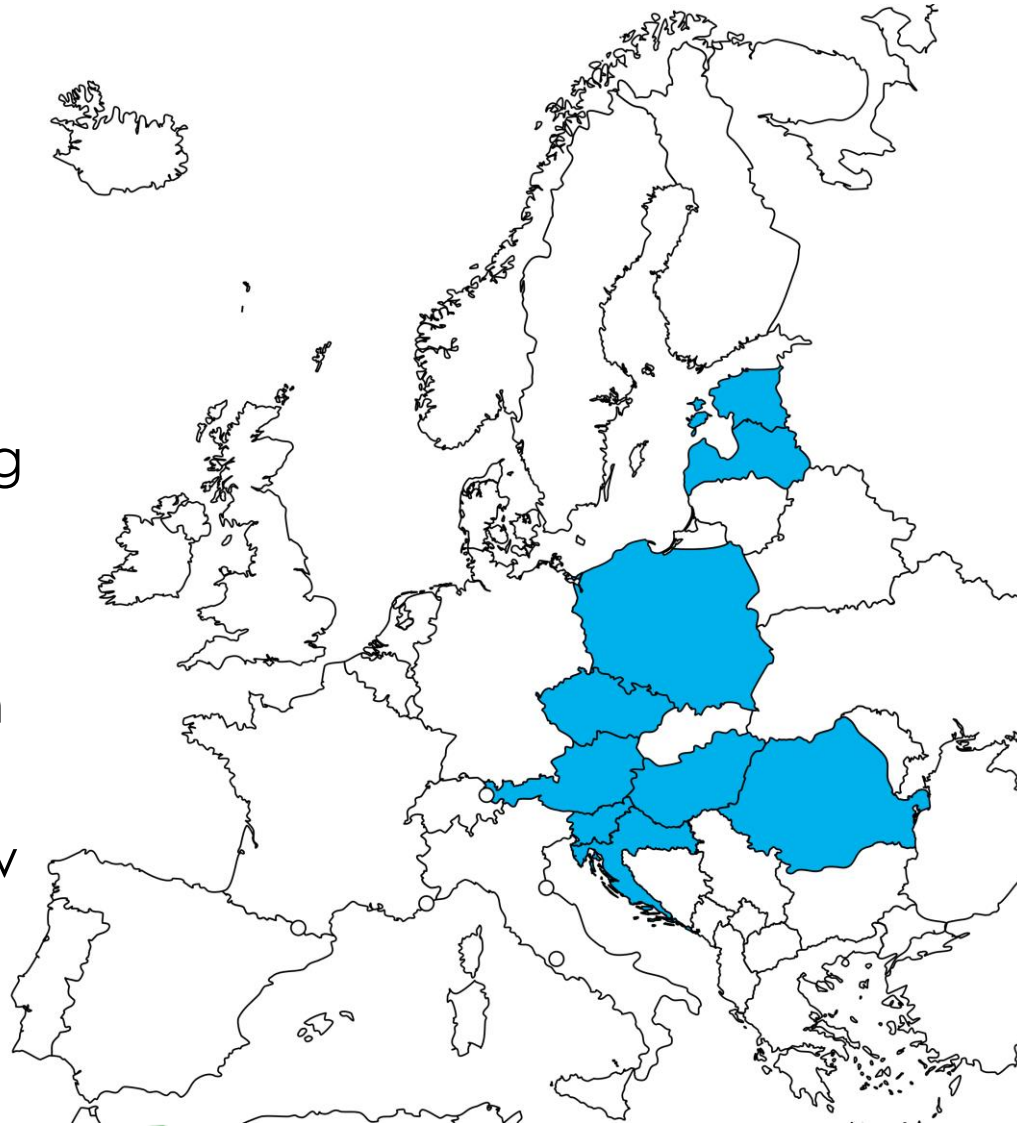


Main objective: build the capacity of public administrators in CEE to develop SECAPs.

- Guide CEE municipalities in engaging with stakeholders and carrying out multi-level governance to develop SECAPs
- Guide CEE municipalities in financing and implementing SECAP actions
- Deliver trainings
- Improve engagement between public administrators in the CEE and with the EU
- Offer guidance to the CoM and other EU actors on how they can better reach and serve the needs of CEE municipalities in the development and implementation of SECAPs.



Training Materials

Overview of SECAP planning process

- Introduction to SECAP concept
- Tools for Practical implementation of SECAP
- SECAP planning and implementation process

Main steps to SECAP development

- Good Practice Examples in SECAP development and implementation. Exercise session.
- SECAP Monitoring and Evaluation concept

Main issues

- Overview of SECAP planning process, including its benefits and difficulties.

- How to translate municipal development strategies into SECAPs, especially local and regional air quality plans and air pollution control programme, land-use planning, risk and vulnerability assessment of climate change related impacts (increased hot summer days, floods, droughts, etc.) and relevant mitigation/adaptation measures.

- Why planning for sustainable urban development? What is a SECAP? Key actors involved; Challenges and benefits faced by Local Authorities; Steps in the elaboration and implementation of SECAPs. Technical training how to set targets, steps and guiding principles in the SECAP elaboration process. Introduction in the submission procedure.

Main issues

- General presentation of "Urban Adaptation Support Tool" and introduction to SECAP Excel Template. Participants information about the existing tool and its usage. Using Urban AST participants define each the main directions of SECAPs in their region and priorities their assumptions.
- Main sections and intervention sectors for RDS and SECAPs, advantages / disadvantages. Abstract guidelines to selection of actions for SECAP with focus on mitigation and adaptation: role of local authorities, scope and focus of actions, mitigation actions sector by sector, concrete steps to successful climate change adaptation.
- Case studies, discussions and brainstorming. Participants will be supported in the consideration of their local situation and potentials/possibilities for SECAP actions. Divide the group in 2-3 breakout sessions to develop in parallel a (a) SECAP vision, (b) SECAP strategy, (c) SECAP action plan.

Global Perspective

- The Issue: Transition to a Low-Carbon Economy

EU Climate and Energy Package 2030

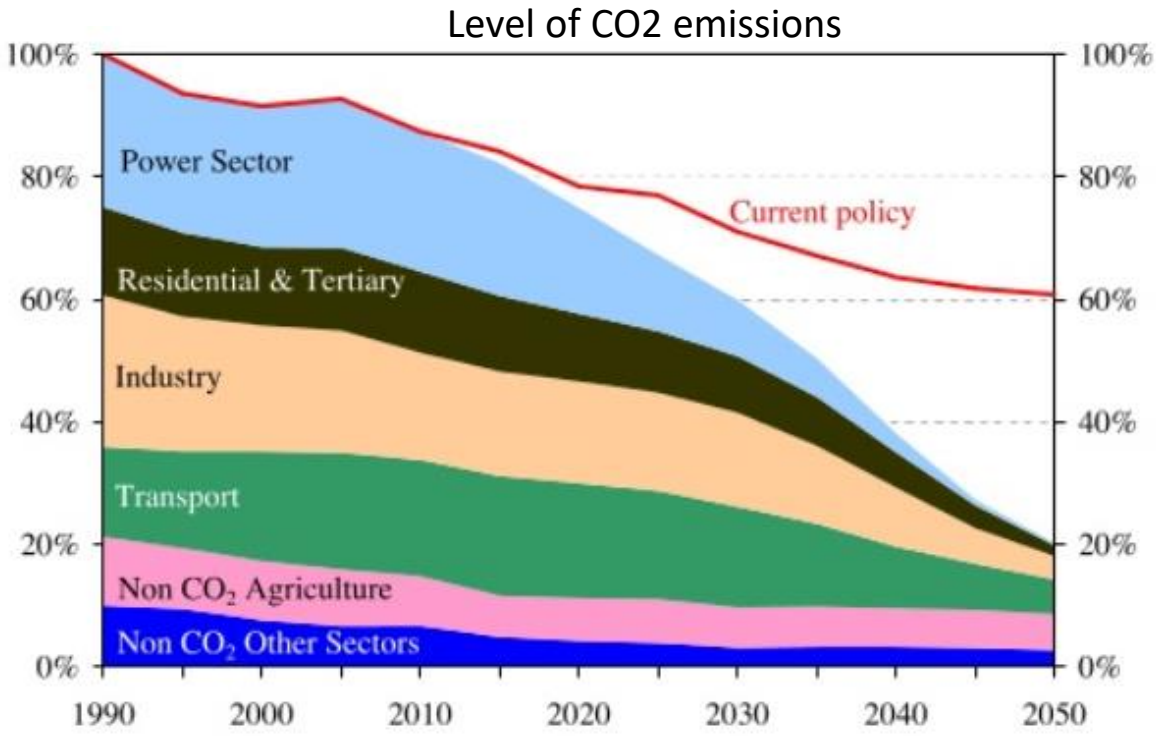
The framework for the European climate and energy policy until 2030 consists of the following main objectives:

- **to reduce greenhouse gas emissions by at least 40% (55%)**
  (compared to 1990 levels)
- **At least 32% share of renewable energies**
- **At least 32.5% improvement in energy efficiency**

EU decarbonisation pathway for 2050

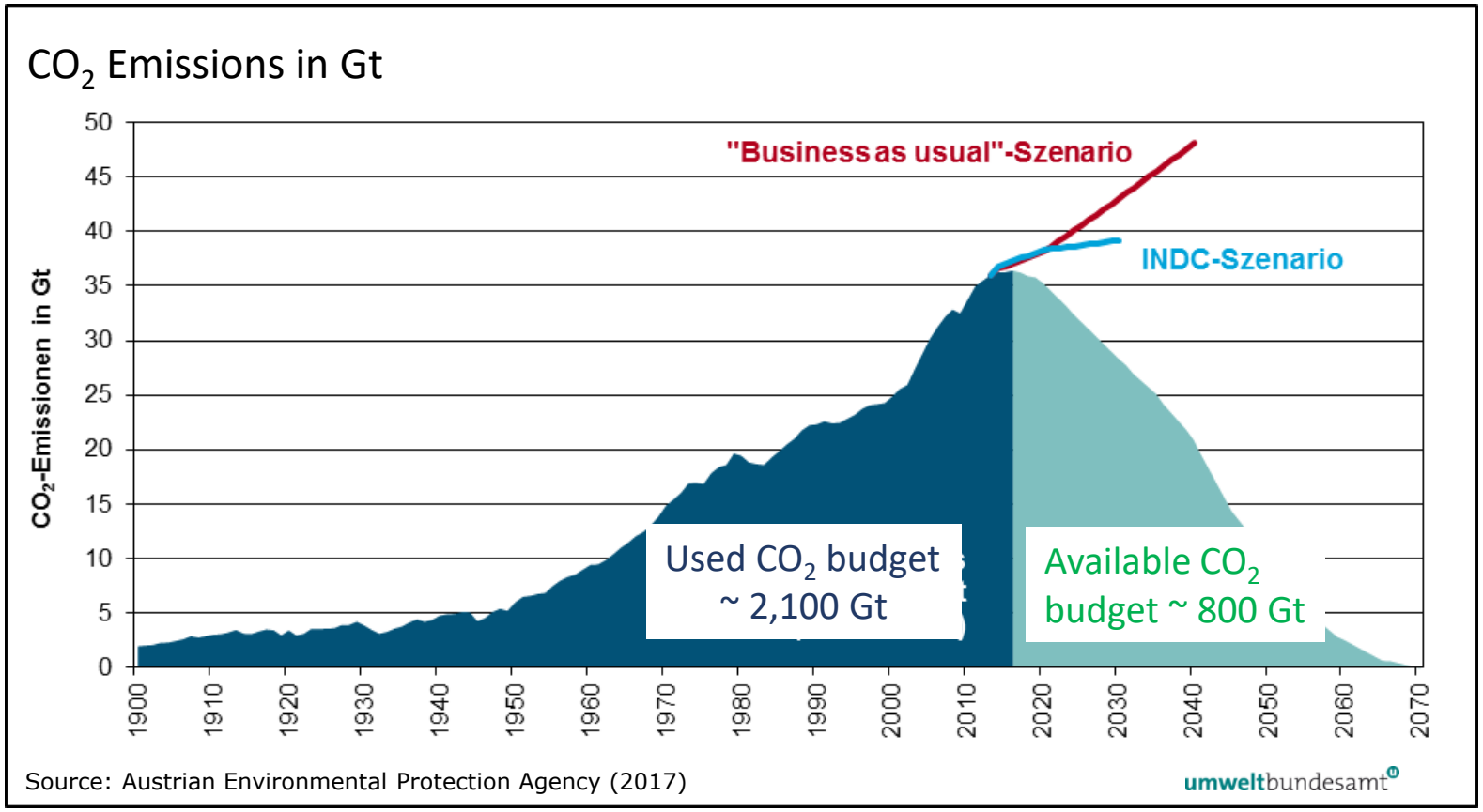
Main elements of the EU Energy Roadmap 2050:

- Reduction of energy sector emissions by 85% by 2050
- Energy costs rising until 2030, coming down thereafter
- 5 scenarios
  - energy efficiency
  - diversified supply technologies
  - high share of renewables
  - carbon-capture & storage
  - no nuclear
- Renewable Energy Sources (RES) to supply more than 50%
- Source: COM(2011)112



Global Development of CO_2 emissions

- **Total used CO_2 budget** vs. **available CO_2 budget**



EU Green Deal

- First climate action initiatives under the Green Deal include:
- European Climate Law to enshrine the 2050 climate-neutrality objective into EU law
- European Climate Pact to engage citizens and all parts of society in climate action
- 2030 Climate Target Plan to further reduce net greenhouse gas emissions by at least 55% by 2030
- New EU Strategy on Climate Adaptation to make Europe a climate-resilient society by 2050, fully adapted to the unavoidable impacts of climate change.

The need for Planning

- For an effective and sustainable development, planning is essential to establish future actions and priorities.
- The plan, when based on national regulations and stemming from Local Authority reality, is credible to funders and essential to ensure funding

Respond to the challenges facing Local Authority (Municipalities)

- Energy crisis and cost of energy
- Greenhouse gases / global warming has negative effects on environment and sustainable growth
  - Rise in temperature and a deficit of water
  - Scarcity of springs and low groundwater level
  - Irregular precipitation along seasons
- High cost of damage of global warming

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Which challenges are you facing in terms of energy planning in your city/municipality?

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Which challenges are you facing in terms of energy planning in your city/municipality?

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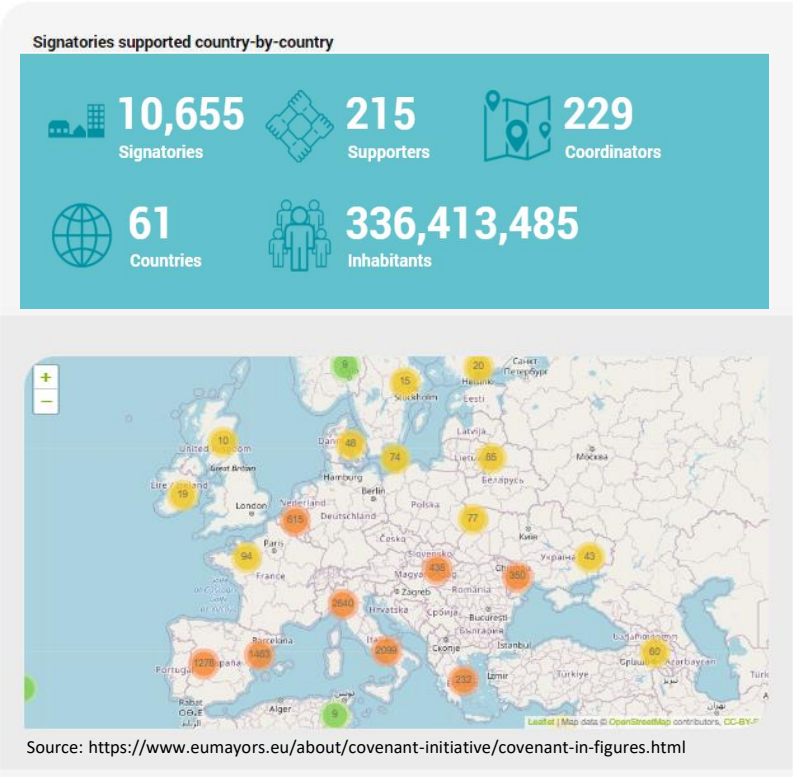
The Covenant of Mayors Initiative (CoM)

- The world‘s biggest urban climate and energy initiative
- CoM brings together thousands of local and regional authorities voluntarily committed to implement climate and energy objectives

https://www.eumayors.eu/

Covenant of Mayors for Climate & Energy



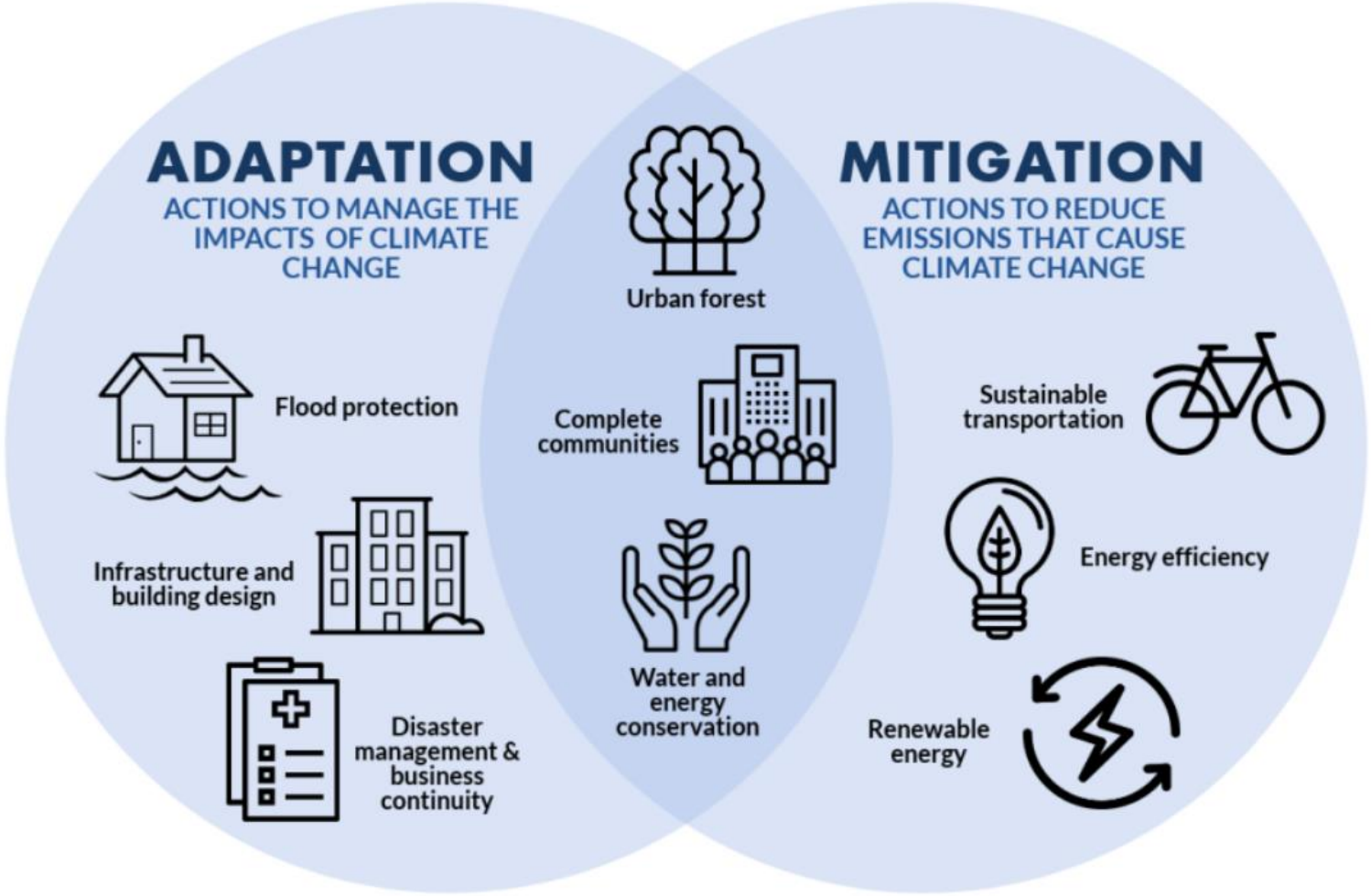
Source: https://www.eumayors.eu/about/covenant-initiative/covenant-in-figures.html

CoM Pillars

Commitment

- At least 40% (55%) CO_2 reduction in their respective territories by 2030
- Increased resilience to the impacts of climate change
- Increased cooperation with fellow local and regional authorities within the EU and beyond to improve access to secure, sustainable and affordable energy

Climate Change ADAPTATION vs. MITIGATION



Source: CITY OF WATERLOO CORPORATE CLIMATE CHANGE ADAPTATION PLAN

Signatories' commitments

ANNEX I

THE COVENANT OF MAYORS STEP-BY-STEP PROCESS & GUIDING PRINCIPLES

A COMMON ROADMAP FOR A SHARED VISION:

In order to meet their mitigation and adaptation targets, Covenant of Mayors Signatories commit to a series of steps:

STEPS \ PILLARS	MITIGATION	ADAPTATION
1) Initiation and baseline review	Preparing a **Baseline Emission Inventory**	Preparing a **Climate Change Risk and Vulnerability Assessment**
2) Strategic target setting & planning	Submitting a **Sustainable Energy and Climate Action Plan (SECAP)** and mainstreaming mitigation and adaptation* considerations into relevant policies, strategies and plans within two years following the municipal council decision	
3) Implementation, monitoring and reporting	**Report progress** every second year following the SECAP submission in the initiative's platform	

** The adaptation strategy should be part of the SECAP and/or developed and mainstreamed in (a) separate document(s). Signatories can opt for the format of their choice – see the "adaptation pathway" paragraph hereafter.*

What targets shall be set?

EU Member States, regions and cities are at different stages of their energy transition.

It is up to the signatories to define their mid-term targets towards climate neutrality (by 2050).

Covenant of Mayors for Climate & Energy EUROPE

55% of GHG reduction by 2030

80% of GHG reduction by 2050

Climate neutrality by 2050

National targets (and minimum targets) coming in 2022!

Overview of SECAP planning process

- Introduction to SECAP
- SECAP Step-by-Step

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Does your community/municipality already have a SEAP/SECAP (or similar municipal energy plan/strategy)?

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Does your community/municipality already have a SEAP/SECAP (or similar municipal energy plan/strategy)?

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If yes, what is the focus of the strategy?

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If yes, what is the focus of the strategy?

0 1 3

Both strategies

77%

Climate change mitigation

23%

Climate change adaptation

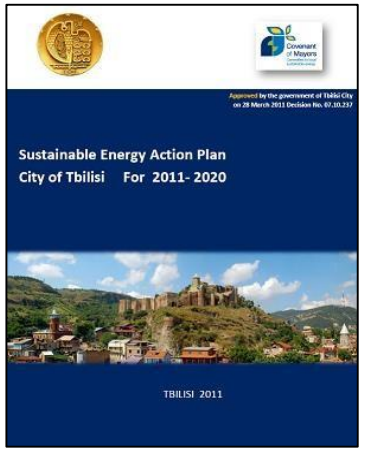
0%

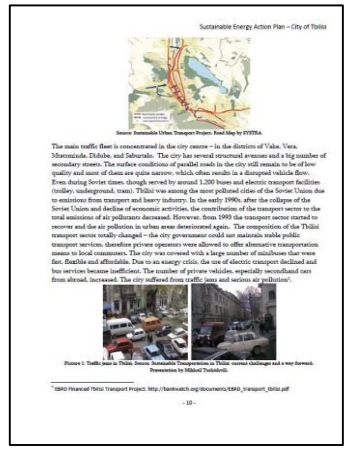
Sustainable Energy and Climate Action Plans (SECAP)

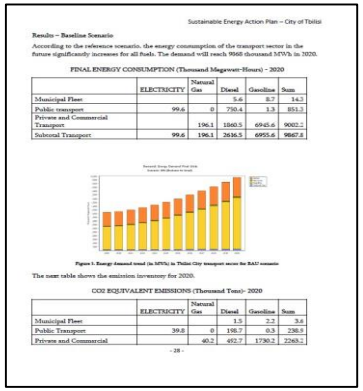
What is a SECAP?

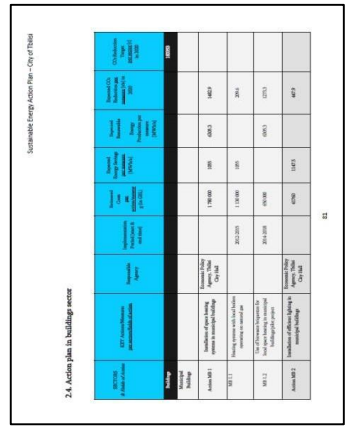
- A political document
- A technical document, reference for the implementation and monitoring of the actions
- A communication and promotion instrument for the stakeholders

➢ ***So it is a tool to implement the Local Authority (Municipality) climate and energy objectives***



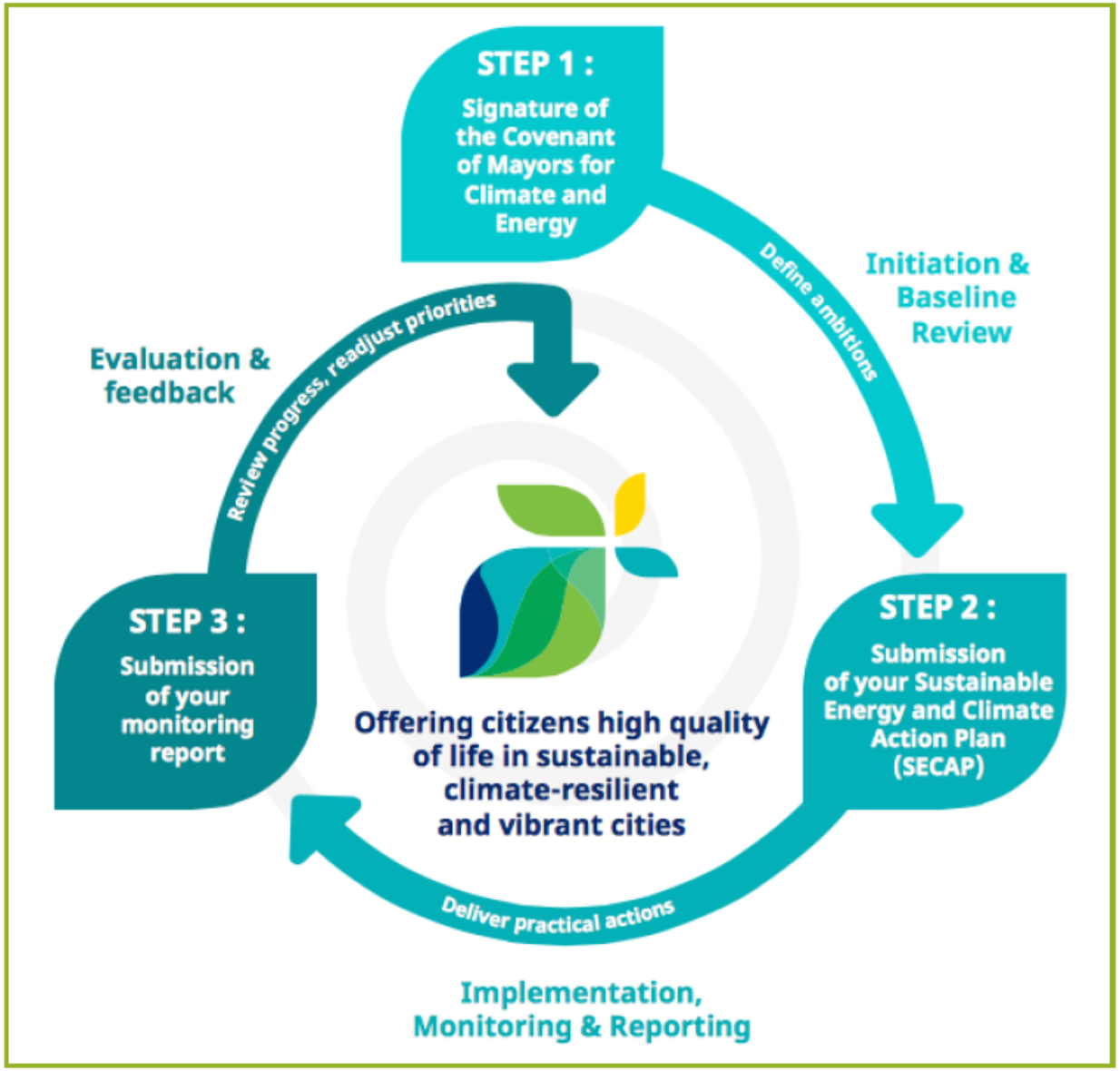






European Commission

The SECAP Process – main steps



The SECAP Process – main steps

Initiation

- **Step 1: Political Commitment and signing of the Covenant**
- **Step 2: Mobilize all municipal departments involved**
- **Step 3: Build support from stakeholders**

Boot camp – Day 2 & 3

Planning

- **Step 4: Assessment of the current framework: Where are we?**
- **Step 5: Establishment of the vision: Where do we want to go?**
- **Step 6: Elaboration of the plan: How do we get there?**
- **Step 7: Plan approval and submission**

Boot camp – Day 1 & 3

Implemen-tation

- **Step 8: Implementation activities**

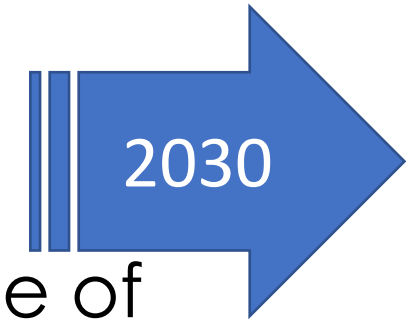
Boot camp – Day 1

Monitoring & Reporting

- **Step 9: Monitoring**
- **Step 10: Reporting and submission of the implementation report, Review**

Boot camp – Day 1 & 3

Time horizon – until 2030

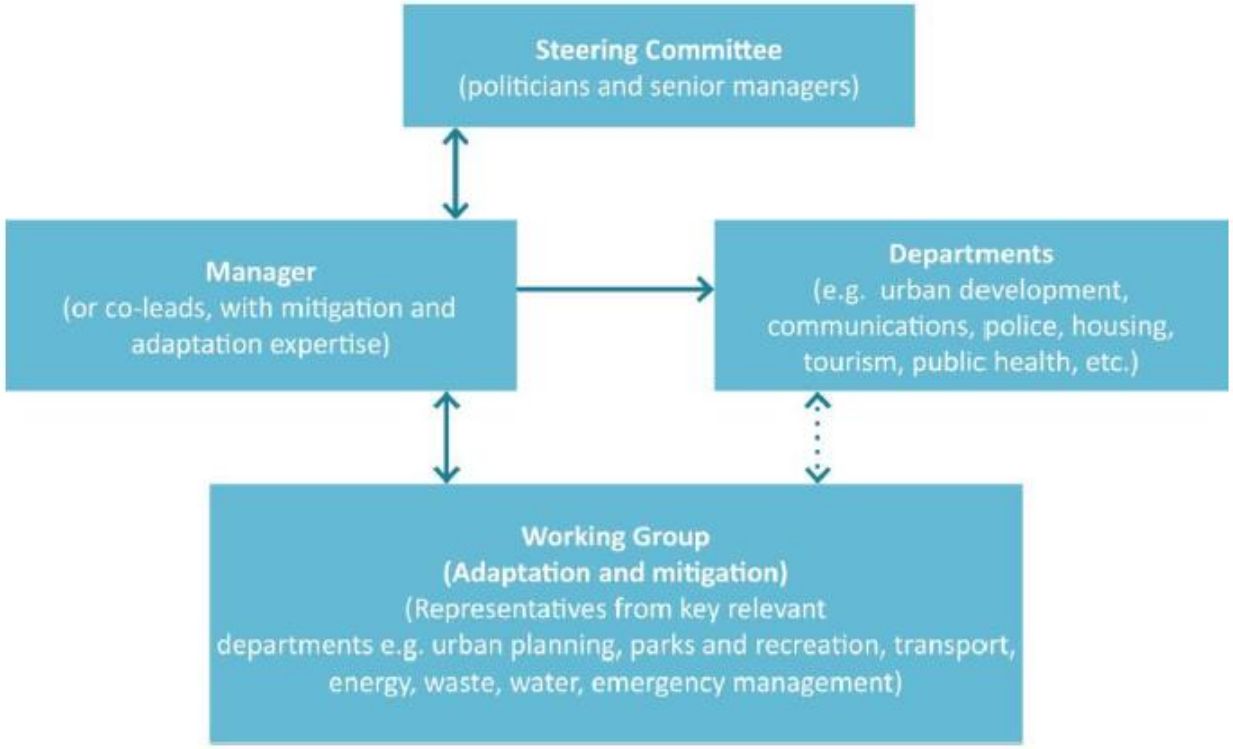


- The time horizon of the Covenant of Mayors is 2030.
- The SECAP therefore needs to contain a clear outline of the strategic actions that the local authority intends to take in order to reach its commitments by 2030.
- The SECAP may cover a longer period, but in this case it should contain intermediate values and objectives for the year 2030.
  - A vision, with long-term strategy and goals until 2030 and/or beyond, including firm commitments
  - Detailed measures for the next 3-5 years, which translate the long-term strategy and goals into real actions.

SECAP – Organizational Structure

- Set up (or adapt) an organizational structure for your SECAP
- There are guiding questions which you can ask yourself:

Possible organizational structure:



SECAP documentation and submission requirements

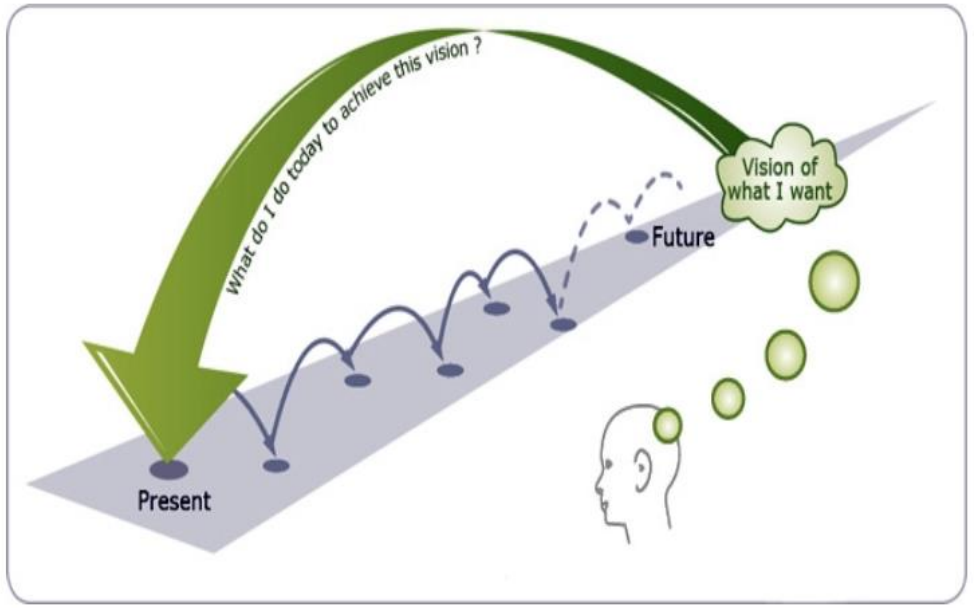
- The SECAP official document must be approved by the municipal council (or equivalent decision-making body)
- uploaded in national language via the 'My Covenant' on-line password-restricted area:
- http://mycovenant.eumayors.eu/
- Covenant signatories will be required, at the same time, to fill in an online SECAP template in English.

What is a SECAP?

- **Basically, it is a document describing**
  - the current situation (baseline) in the community/municipality
  - a strategy/plan how to achieve energy and climate related goals in the future (e.g. -55% of CO2 emissions by 2030)
  - a program for implementation:
    - a set of actions, climate/energy related towards the reduction of the total GHG emissions on the municipality by a % by a due date
    - a set of actions enhancing the resilience and adaptation to climate change of the municipality

SECAP Process

- **Sections in the SECAP**
  1. Strategy (incl. Vision, Objectives, Targets)
  2. Baseline Emission Inventories (BEI)
  3. Climate Change Risk and Vulnerability Assessment
  4. Mitigation and Adaptation Actions and measures until 2030 (Action Plan)
  5. Energy Poverty



„From VISION to STRATEGY to IMPLEMENTATION“

SECAP Contents

Section	Content
Strategy	Covers the overall strategy, figures on the attribution of staff and financial capacities, and the identification of barriers to the implementation of (previous) actions.
GHG Emissions Inventory	Covers the amount of final energy consumption and associated GHG emissions by energy carrier and by sector in the monitoring year, including the results of the GHG emissions accounting processes, based on existing methodologies. GHG emissions shall be reported from at least three main sectors, namely stationary energy, transportation, and waste.
Target Setting	Includes the city-wide emissions reduction targets defined
Risk and Vulnerability Assessment	Captures the information that has been gathered to date on the climate vulnerabilities, hazards, and impacts, which are each broken down by sector.
Reporting on progress: mitigation and adaptation actions	Reports on the implementation status of key mitigation and adaptation actions, incl. an optional scoreboard for self-assessment.
Energy Poverty Plan	Covers the energy poverty or energy access plan (note: optional at the time of writing).

SECAP reporting requirements

	Registration stage	SECAP	Monitoring Action Reporting	Monitoring Full Reporting
	Year 0	Within 2 years	Within 4 years	Within 6 years
Strategy	✗	✓	✓	✓
Emission Inventories	✗	✓ *(BEI)*	✗	✓ *(MEI)*
Mitigation Actions	✗	✓	✓ *(min. 3 Benchmarks)*	✓
Adaptation Scoreboard	✓	✓	✓	✓
Risks and Vulnerabilities	✗	✓	✓	✓
Adaptation Actions	✗	✗	✓ *(min. 3 Benchmarks)*	✓

Overview of SECAP planning process

- SECAP Development

SECAP Development Process

Vision

- Stating the development goal of the region / municipality / organisation
- Aim at development scenarios beyond business as usual

Baseline

- Analysis of present energy status (energy and emission balances for different sectors)
- Identification of potentials, challenges and barriers

Objectives and Targets

- Translate the vision into more specific priorities
- Based on indicators selected in the baseline review

Action Plan

- Identify priority areas for reaching the vision
- Concrete mitigation and adaptation measures
- Answering what, who, how and when

Vision Development

Vision

- The vision for a sustainable future is the guiding principle of the local authority's SECAP work
- The vision needs to be compatible with the Covenant of Mayors' commitments, i.e. it should imply that the 40% (55%) GHG emission reduction in the 2030 target will be reached (at the minimum) and that the city will gradually become resilient and adapted to the impacts of Climate Change.
- The vision should be realistic but still ambitious
  - Scenarios provide the basis for long-term decision-making considering future plans in "todays" decisions
  - Depending on the "SECAP vision", policy objectives of the municipality's development scenarios can be compared and an optimal solution can be found.

Commitments of the CoM Signatory

Vision

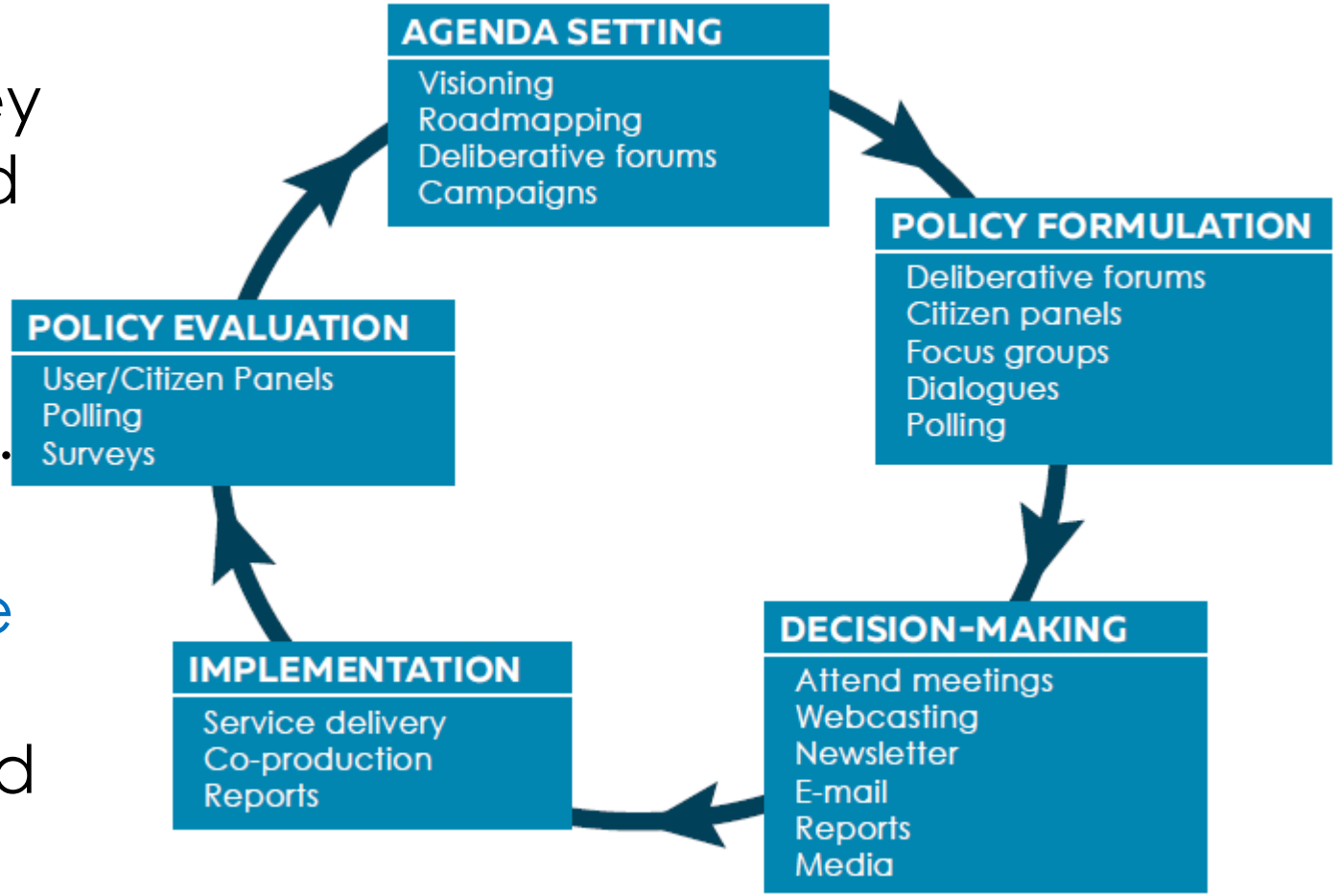
	EU-28
Target	40% by 2030
Reduction target	Absolute terms [tCO_2]
as compared to BEI emissions	Relative terms [tCO_2/capita]
as compared to BAU emissions	**Not allowed**
Base year	1990 recommended
Key sectors	CoM EU key sectors

new goal 55% (transition period)

Implement stakeholder engagement

Vision

- Engagement strategies should be established for primary stakeholders to ensure that they are involved appropriately and most efficiently.
- This includes both formal and informal forms of engagement.
- Regular interaction with stakeholders should take place at key points in the roadmapping process or based upon some other relevant timeframe to ensure that they continue to be engaged.



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Which stakeholders are most relevant to get involved in the local energy strategy development?

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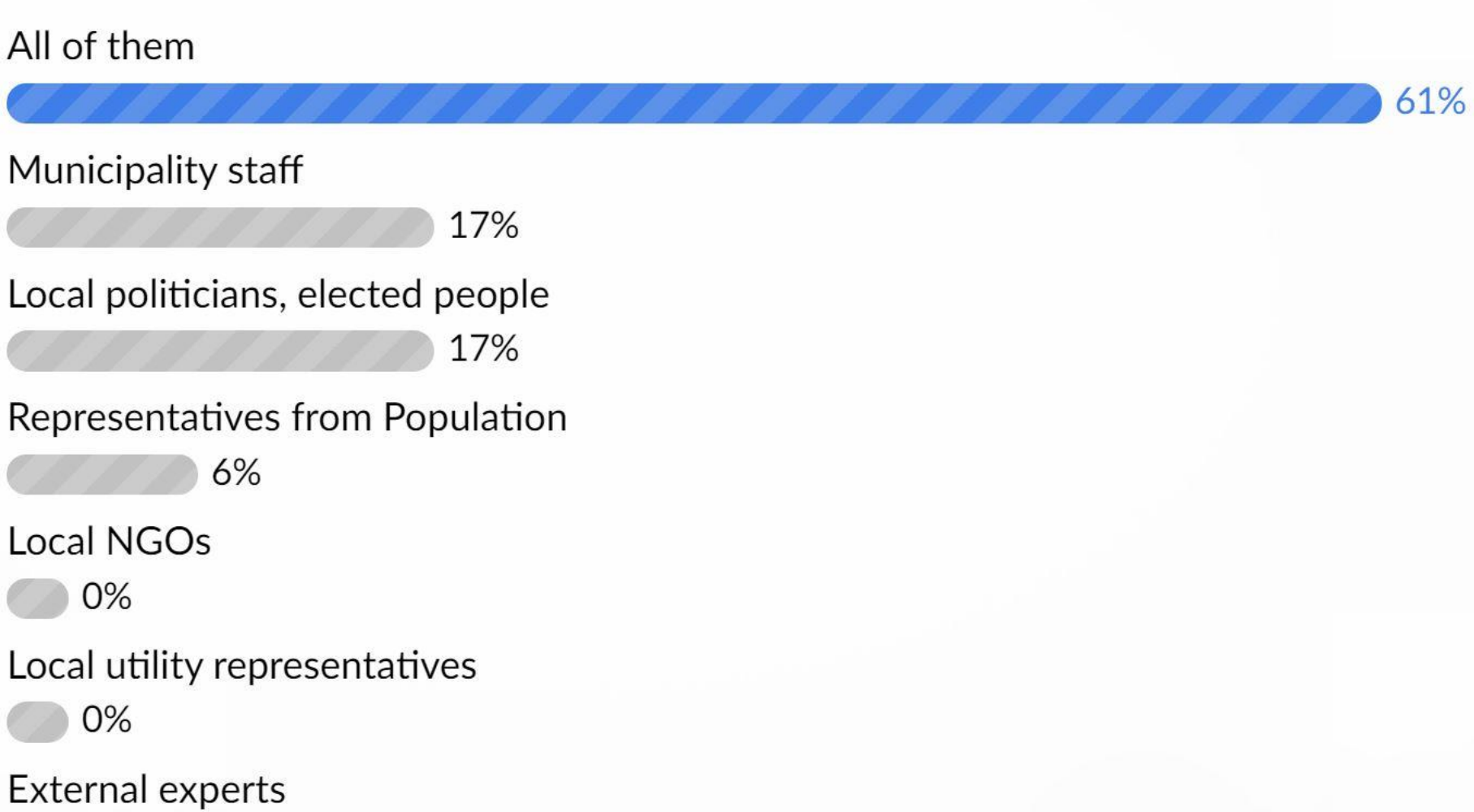


Stakeholders in the ‚Vision' development

Vision

- Local government decision makers for the sectors energy, environment, infrastructure, businesses, regional development and economics
- Utilities: Energy producers, distributers, infrastructure providers and regulators
- Energy sector decision makers: particularly from industries that produce or consume large amounts of energy (e.g. electricity, natural resources, agriculture and energy-intensive industry)
- Experts: Scientific, engineering, policy, social science and businesses
- NGOs engaged in research and advocacy in low-carbon energy.

Creating an energy vision

Vision

Typical Visioning process

- Define core "visioning team"
- Define possible points of entry based on baseline analysis
- Plan different energy scenarios and projections for your region
- Test the scenarios with key stakeholder groups – involve all relevant entities (public authorities, industry representatives, researchers, NGOs, …) and get them on board
- Go for a consensus with your stakeholder groups

Examples of ‚Visions‘

Vision

Växjö (Sweden):

- "In Växjö, we have the vision that we will live and act so as to contribute to sustainable development where our consumption and production are resource-effective and pollution free." And "The vision is that Växjö shall become a city where it is easy and profitable to live a good life without fossil fuels."

Lausanne (Switzerland):

- "Our 2050 vision is a reduction by 50% of the CO2 emissions on the city's territory."

Tenerife (Spain):

- “I would implement ecological principles in cities; they could be covered with green. Lots of more trees and vegetation everywhere. That does help against heatwaves. The air would be cooler due to all those green areas. Air pollution would improve too, because trees consume CO2. In addition the more green areas the more permeable zones we’d have in the cities, since land absorb water. We are talking about super powerful drainage systems. And it would avoid flooding, for example. It's not just a matter of temperature” (vision for adaptation, stated in a focus group with citizens in the Municipality of San Cristóbal de La Laguna).
- “Unless we change energy production, turning on the air conditioning means increasing the pollution a lot due to the power plants” (vision for maladaptation to heatwaves, stated in a focus group with citizens in the Municipality of San Cristóbal de La Laguna).

Emission Inventories & Climate Risk and Vulnerability Assessment

- To provide an analysis of the current situation, the SECAP is based on a:
  - **Baseline Emission Inventory (BEI)**

    Dedicated to the amount of final energy consumption and associated CO2 emissions by energy carrier and by sector in the base year allow for defining comprehensive set of actions for climate mitigation.
  - **Climate Risk & Vulnerability Assessment(s) (RVAs).**

    allow for defining comprehensive set of adaptation plans for climate change.
- These elements serve as a basis for defining a comprehensive set of actions that local authorities plan to undertake in order to reach their climate mitigation and adaptation goals.

Baseline Review

Baseline

- A comprehensive baseline needs an assessment of:
  - where the local authority currently stands and how it performs: the state of energy production and consumption
  - Reference to the CO_2 emission (equivalent)
  - why the end users use energy the way they do: the driving forces of energy demand
  - what is stalling development at the moment: the barriers which need to be overcome
  - policy options and potential impact: the response that new policies should enable
- The Baseline review requires adequate resources to collate and review the relevant data sets.

Baseline Review

Baseline

	Calculation of according energy indicators
• Population and demographic data	• *cap/km²* • *Grade of urbanisation* • *kWh/ cap*
• Economic sectors and sector's development paths	• *kWh/GDP* • *kWh/ GDP_{sector}*
• Energy supply and demand	• *kWh absolute* • *% of different energy sources* • *Primary energy factors electr./heat* • *Energy self-sufficiency rate*
• Available (energy) infrastructure	• *% of region supplied with electr., direct heat, natural gas, etc.*
• Renewable energy potentials depending on geography and climate	• *kWh/m² forest* • *kWh/m² agricultural area* • *kWh/m² for solar* • *W/m² wind power*
• Energy efficiency potentials per sector	• *% savings potential per sector*
• Energy and environmental policies and regulations	

Baseline Emission Inventory (BEI)

Baseline

- **Activity Data:** Activity data quantifies the human activity occurring in the territory of the local authority.

- **Baseline year:** Baseline year is the year against which the achievements of the emission reductions in 2030 shall be compared.

Two main factors to decide about the base year

- The availability of information on that year
- Then the best results could be obtained for BAU

Baseline Emission Inventory (BEI)

Baseline

Baseline emission inventory
QUANTITATIVE APPROACH

How to calculate the emissions?

It is just a multiplication!

Emissions = Activity data x Emission factor

Ex: MWh of natural gas consumed

Value in t CO2 / MWh

Table A

Data relevant to the particular situation of the local authority need to be found

x

Emission Factor

Most emission factors can be found in tables (Guidebook, IPCC)

= Table B (emissions)

MEI: Monitoring emission inventory Emissions inventory reported for a different year

(using SECAP template)

SECAP template

Table 31: Emissions inventory per sectors in the Municipality of

Sector		Electricity	Heating / Cooling	Natural gas	LPG	Heating fuel	Diesel	Petrol	Lignite	Coal	Othe fossi fuels
BUILDINGS, EQUIPMENT/PLANTS & INDUSYRTRIES											
Municipal buildings, equipment / buildings		234	0	0	0	212	0	0	0	0	0
Tertiary (non-municipal) buildings, equipment / buildings		89	0	0	0	124	0	0	0	0	0
Residential buildings		11117	0	6	159	47	0	0	0.4	0	0
Public lighting		622	0	0	0	0	0	0	0	0	0
Industry	HE-ETS	0	0	0	0	0	0	0	0	0	0
	ETS (not recommended)	0	0	0	0	0	0	0	0	0	0
Subtotal		12063	0	6	159	383	0	0	0.4	0	0
TRANSPORT											
Municipal vehicles		0	0	0	0	0	21	4	0	0	0
Public transport		0	0	0	0	0	0	0	0	0	0
Private and commercial transport		0	0	0	0	0	17796	3285	0	0	0
Subtotal		0	0	0	0	0	17817	3289	0	0	0
OTHER											
Agriculture, forestry and fishing		485	0	0	0	0	0	0	0	0	0
OTHER NON – ENERGY RELATED											
Waste management											
Waste water management											
Other non-energy related											
TOTAL		12548	0	6	159	383	17817	3289	0	0	0

Elaborating the BEI

Baseline

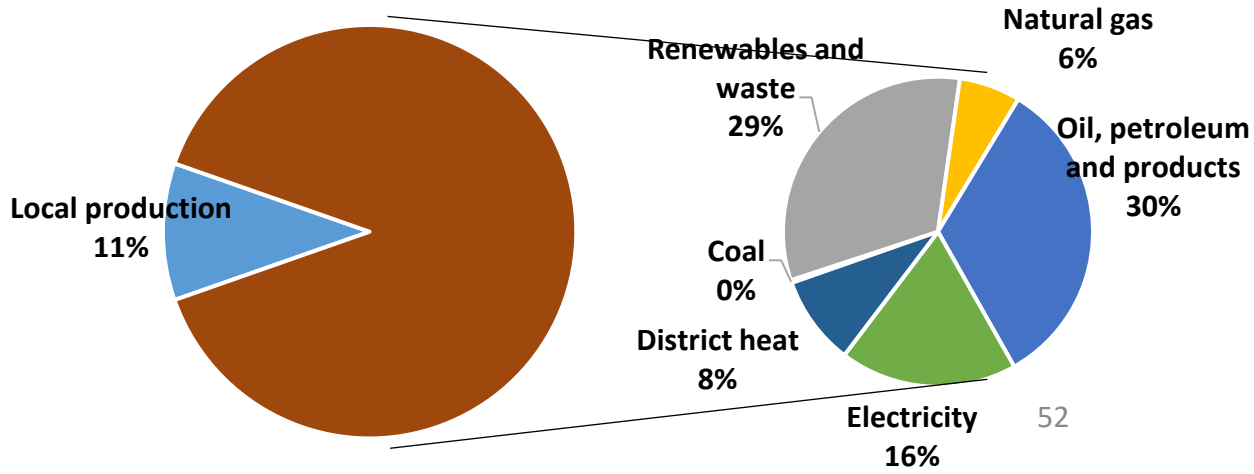
- The BEI has to be relevant to the local situation, i.e. within the territory of the local authority
  - based on energy consumption
  - energy production data
  - mobiliy data etc.
- Data sources and methodology to be consistently used over the years
- BEI must cover at least the sectors in which the local authority intends to take action to meeting emission reduction targets
- Keep records on data collection!

Energy production

Baseline

Differentiate between

- Local energy production facilities
  - Conventional capacities – fossil and nuclear power plants are mostly large scale and well documented by energy providers
  - Renewable production capacities – concentrate on large-scale commercial facilities
- National energy mix
  - Influences primary energy consumption and energy-related CO2-emissions
  - Identify which part of the energy fuel mix can be influenced locally and the imported share
- Assess the energy dependencies on energy imports nationally and internationally



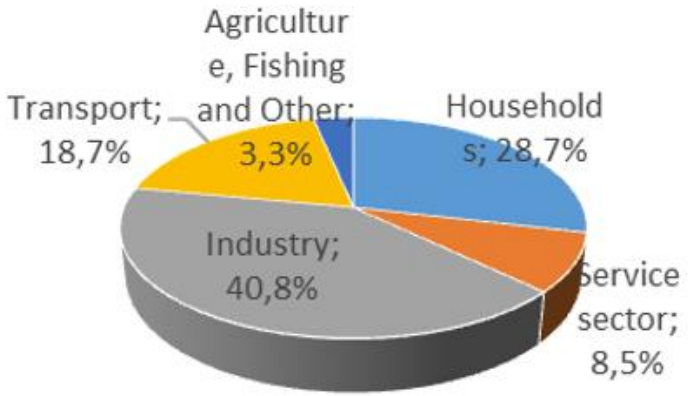
Energy consumption

Baseline

Example of good sources for energy data by economic sector

Final energy consumption

Households	• Household census • Buildings: Data from real estate market and housing corporations, census with year of construction • Heating systems: Data from chimney sweeper assoc., stat from network operators • Electricity: data from electric grid operator
Service sector	• Public services: Inventory of public buildings, energy bookkeeping statistic • Private services: census of enterprises, sector surveys, data from energy providers
Industry	• Census of enterprises • Sector surveys and benchmarks • Data from energy providers
Transport	• Traffic census • Car registration statistics
Agriculture and others	• Individual surveys



Final energy consumption per sector in the region Borsod-Abaúj-Zemplén and Heves (HU)

4 compulsory KEY SECTORS

To be eligible, SECAPs must include:

- The BEI, covering at least 3 out of 4 key sectors
- A list of concrete measures, covering at least the municipal sector and one or more other key sectors

Sectors / Fields of action	
Municipal	√
Residential	√
Tertiary	√
Transport	√
Local energy production	**Recommended**
Land use planning	**Recommended**
Public procurement	**Recommended**
Working with the citizens and stakeholders	**Recommended**
Industries (excl. ETS sector)	**Optional**
Other sectors	**See SEAP guidebook**

Baseline Emission Inventory (BEI)

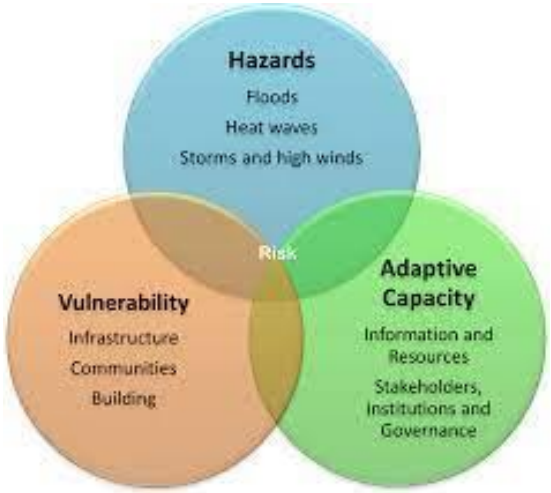
Baseline

BEI – Optional sectors

Risk and Vulnerability Assessment (RVA)

Baseline

- Climate Change Impacts in Cities
  - European cities are heavily vulnerable to the impacts of climate change.
  - Natural disasters (heat, flooding, water scarcity, droughts) do have impacts on:
    - health
    - infrastructures
    - local economies
    - quality of life of inhabitants



- A Climate Change Risk and Vulnerability Assessment (RVA) determines the nature and extent of a risk by
  - analysing potential hazards and
  - assessing the vulnerability that could pose a potential threat or harm to people, property, livelihoods and the environment on which they depend.

SWOT Analysis

Baseline

- Powerful planning tool of strategic planning
- SWOT analysis can help to define priorities when devising and selecting SECAP actions and measures

Strengths	Weaknesses
• No electricity production capacity installed • Geographic position • Transit gas system • Municipal Public utilities for gas distribution	• Public awareness building • Low utilisation of the RES • Availability of relevant energy data • Limited institutional knowledge for low carbon economy
Opportunities	**Threats**
• High potential of regional RES • Available financial resources worldwide • New technologies for EE • Regional initiatives for EE • Establishment of PPP • Regional REN production • Policy Support for reaching energy and climate goals • EE Potential Households • EE Potential Private Sector & Industry • EE Potential Transport	• Climate changes • Political influence • Lack of financial resources for EE measures • Negative demographic trends •

slido

Which sectors do you consider have the most potential for CO2 reduction in your community/municipality?

ⓘ Start presenting to display the poll results on this slide.

Active poll

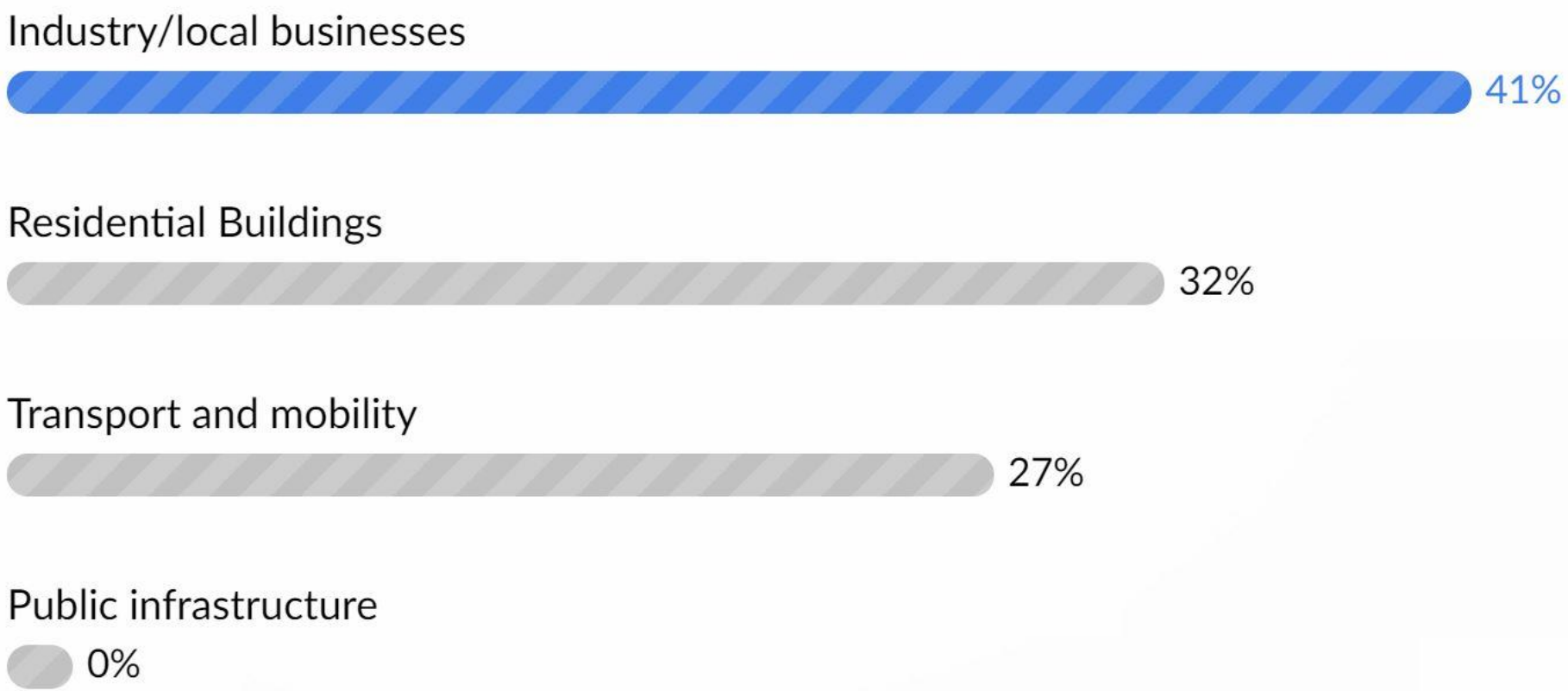
Join at

slido.com

#488 488

Which sectors do you consider have the most potential for CO2 reduction in your community/municipality?

0 2 2



- Questions?

See you in 10 minutes!

Setting Objectives and Targets

Objectives

Once the vision is well established, it is necessary to translate it into more specific objectives and targets, for the different sectors in which the local authority intends to take action.

Essential components:

- Concrete actions and a prioritization for their implementation
- with "SMART" targets and target indicators
- Responsibilities and definition of working groups
- A sufficient time frame for implementation and monitoring
- A plan for sufficient budget and specification of funding sources
- Don't forget about the monitoring and plan additional resources

SMART Targets

Objectives

1. Specific (well-defined, focused, detailed and concrete): What are we trying to do? Why is this important? Who is going to do what? When do we need it done? How are we going to do it?
2. Measurable (kWh, time, money, %, etc.): How will we know when this objective has been achieved? How can we make the relevant measurements?
3. Achievable (feasible, actionable): Is this possible? Can we get it done within the timeframe? Do we understand the constraints and risk factors? Has this been done (successfully) before?
4. Realistic (in the context of the resources that can be made available): Do we currently have the resources required to achieve this objective? If not, can we secure extra resources? Do we need to reprioritise the allocation of time, budget and human resources to make this happen?
5. Time-Bound (defined deadline or schedule): When will this objective be accomplished? Is the deadline unambiguous? Is the deadline achievable and realistic?

Example: Municipality commits to a 55% CO_2 reduction by 2030

Objectives

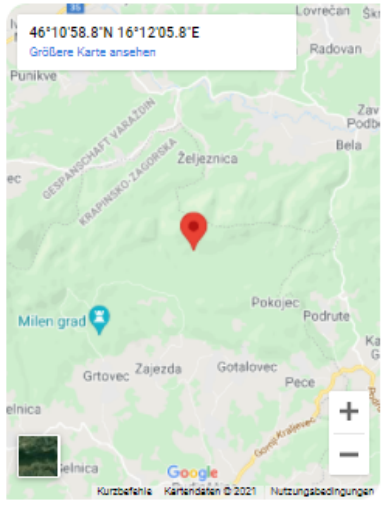
OVERVIEW | BASELINE REVIEW | ACTION PLAN | KEY ACTIONS | SUPPORT

Varaždin

http://www.varazdin.hr

Country	Population
Croatia	47,056

Date of adhesion
24/10/2012



Action plan in a Nutshell

Date of formal approval: 2021-02-22

Submission date: 2021-05-27

Overall CO_2 emission reduction target: 84.64%

Strategy

Long term vision of Varaždin is to reduce CO2 emissions by 2030 by a minimum of 55 %. According to projections of population and energy consumption growth, without the implementation of defined EE measures (BAU), CO2 emission in 2030 in comparison with base 2010 year will decrease by 2.64 % which is not enough to meet the goals. Implementation of all defined measures within SECAP Varaždin by 2030 will result in a decrease of CO2 emissions by 55.62 % compared to the base year. Of the total CO2 savings, the building sector can save up to 60.10 %, the transport sector 46.06 % and the public lightning sector for 57,66 %.

Action plan documents

Title	Language	
Akcijski plan energetski i klimatski održivog razvitka grada Varaždina	HR	Download

Key elements of the action plan

Mitigation actions

Key Actions

The development of traffic infrastructure

Description:

The aim of this measure is to facilitate the acceptance of alternative fuels and modes of transport by users / consumers by strengthening the pedestrian and bicycle infrastructure and the infrastructure for the distribution of alternative fuels.

Sectors:

Implementation timeframe: 2021-2050

CO2 reduction: 9269.69

Rate this benchmark: ☆ ☆ ☆ ☆ ☆ Votes

Modernization of public lighting in the city area

Description:

This measure includes: • installation of energy-efficient and environmentally friendly public lighting and replacement of obsolete luminaires with luminaires that are environmentally and economically compliant with the applicable regulatory framework • establishment of a management and supervision system

Sectors:

Implementation timeframe: 2021-2023

CO2 reduction: 666.28

Rate this benchmark: ☆ ☆ ☆ ☆ ☆ Votes

Improving the water utility infrastructure of the Varaždin agglomeration

Conversion a part of land along watercourses into retentions

Increasing energy efficiency in building sector

Energy renovation of family houses

How to select actions for the SECAP

CoM on a global and regional level is based on three pillars:

- **Mitigation**: minimizing GHG emissions from natural and human-caused processes (mandatory)
- **Adaptation**: preparing for and overcoming the consequences of climate change (mandatory)
- **Energy poverty**: ensuring reliable access to secure, affordable and sustainable energy (voluntary at the time of writing)

SECAP Action Plan development

Based on the common vision **the action plan is developed** including relevant stakeholders

- The Action Plan usually contains a strategic plan that lays out the steps a community/municipality/region will take to achieve specific outcomes and goals.
- It outlines these goals as well as related tasks in the short, intermediate and long term.
- An effective action plan includes individual "SMART" measures/activities to allow tracking of progress towards reaching the set goals.

Development:

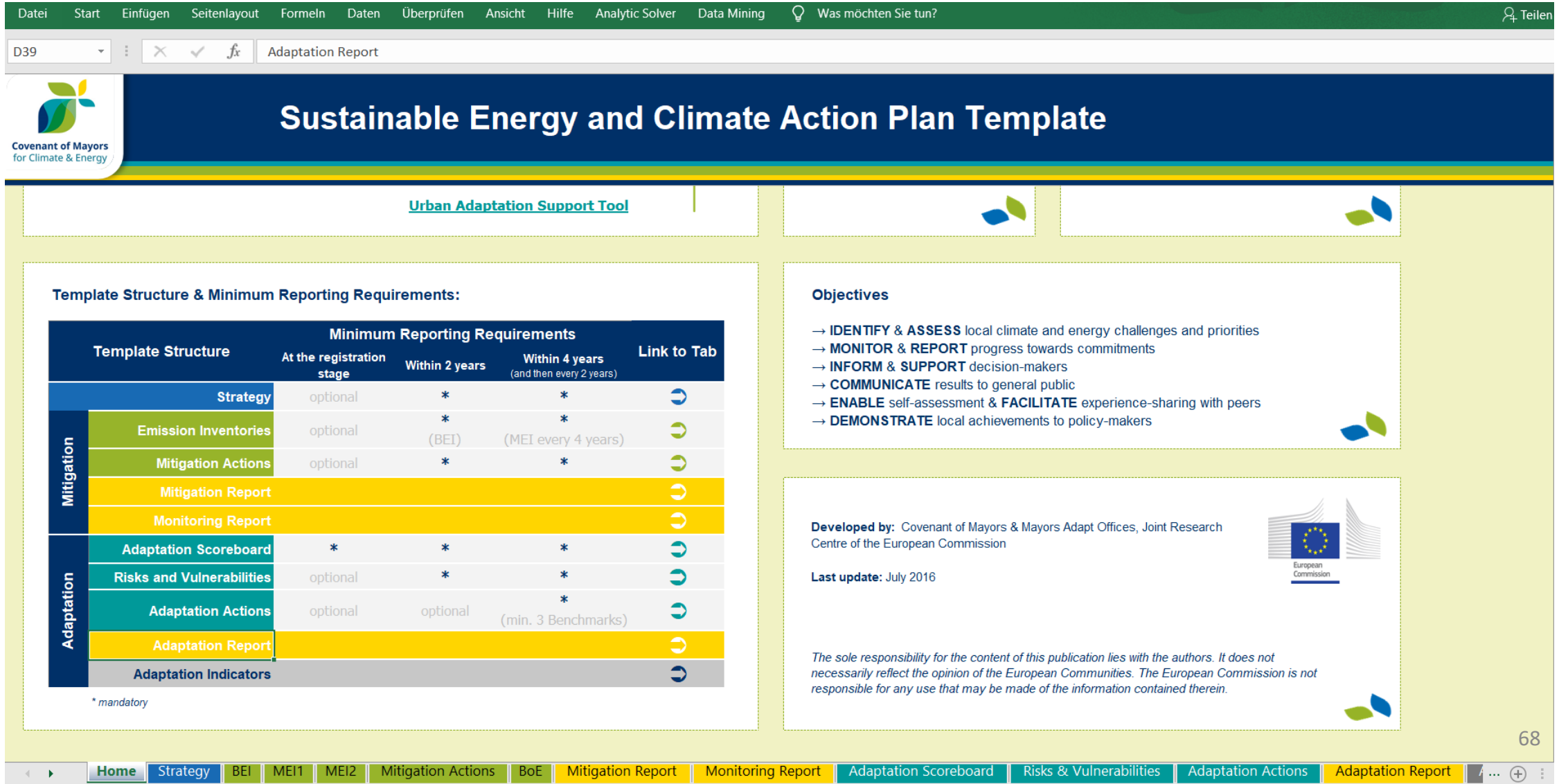
- Based on data analysis and expert judgement
- Broad stakeholder involvement is key
- Analyse current situation in the field of energy and climate and build a systematic plan
- Define major directions to be followed
- Define priority areas in which to concentrate your actions
- finally, be in line with initial defined vision

Tools for Practical implementation of SECAP

- SECAP Excel Template
- Urban Adaptation Support Tool

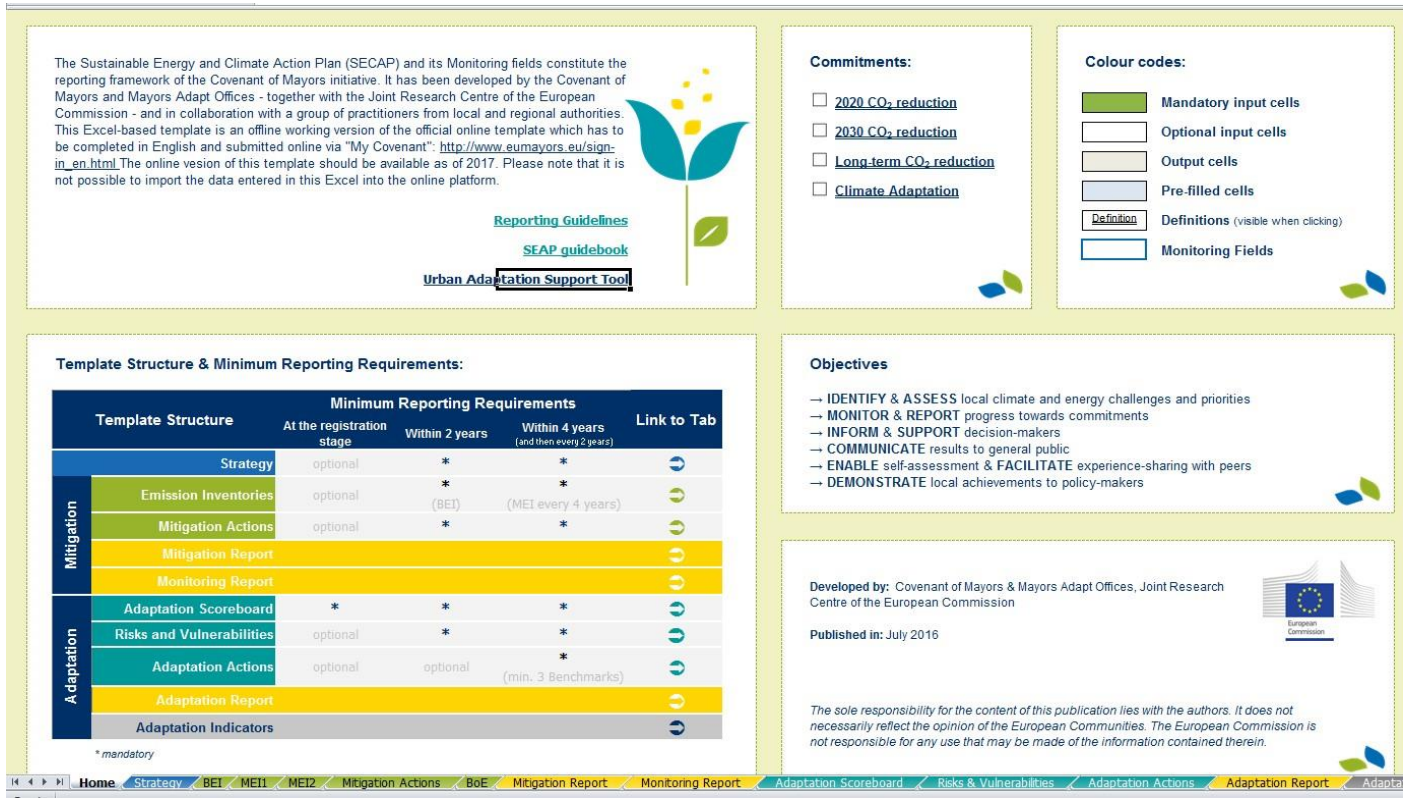
SECAP Excel Template

- SECAP Template is mandatory (English)



Reporting requirements

- SECAPs within 2 years of Signing of CoM
- Action Monitoring – every 2 years



The Sustainable Energy and Climate Action Plan (SECAP) and its Monitoring fields constitute the reporting framework of the Covenant of Mayors initiative. It has been developed by the Covenant of Mayors and Mayors Adapt Offices - together with the Joint Research Centre of the European Commission - and in collaboration with a group of practitioners from local and regional authorities. This Excel-based template is an offline working version of the official online template which has to be completed in English and submitted online via "My Covenant": http://www.eumayors.eu/sign-in_en.html The online vesion of this template should be available as of 2017. Please note that it is not possible to import the data entered in this Excel into the online platform.

Reporting Guidelines
SEAP guidebook
Urban Adaptation Support Tool

Commitments:
- 2020 CO_2 reduction
- 2030 CO_2 reduction
- Long-term CO_2 reduction
- Climate Adaptation

Colour codes:
- Mandatory input cells
- Optional input cells
- Output cells
- Pre-filled cells
- Definition — Definitions (visible when clicking)
- Monitoring Fields

Template Structure & Minimum Reporting Requirements:

	Template Structure	Minimum Reporting Requirements: At the registration stage	Within 2 years	Within 4 years (and then every 2 years)	Link to Tab
	Strategy	optional	*	*	
Mitigation	Emission Inventories	optional	* (BEI)	* (MEI every 4 years)	
Mitigation	Mitigation Actions	optional	*	*	
Mitigation	Mitigation Report				
Mitigation	Monitoring Report				
Adaptation	Adaptation Scoreboard	*	*	*	
Adaptation	Risks and Vulnerabilities	optional	*	*	
Adaptation	Adaptation Actions	optional	optional	* (min. 3 Benchmarks)	
Adaptation	Adaptation Report				
Adaptation	Adaptation Indicators				

* mandatory

Objectives

→ IDENTIFY & ASSESS local climate and energy challenges and priorities
→ MONITOR & REPORT progress towards commitments
→ INFORM & SUPPORT decision-makers
→ COMMUNICATE results to general public
→ ENABLE self-assessment & FACILITATE experience-sharing with peers
→ DEMONSTRATE local achievements to policy-makers

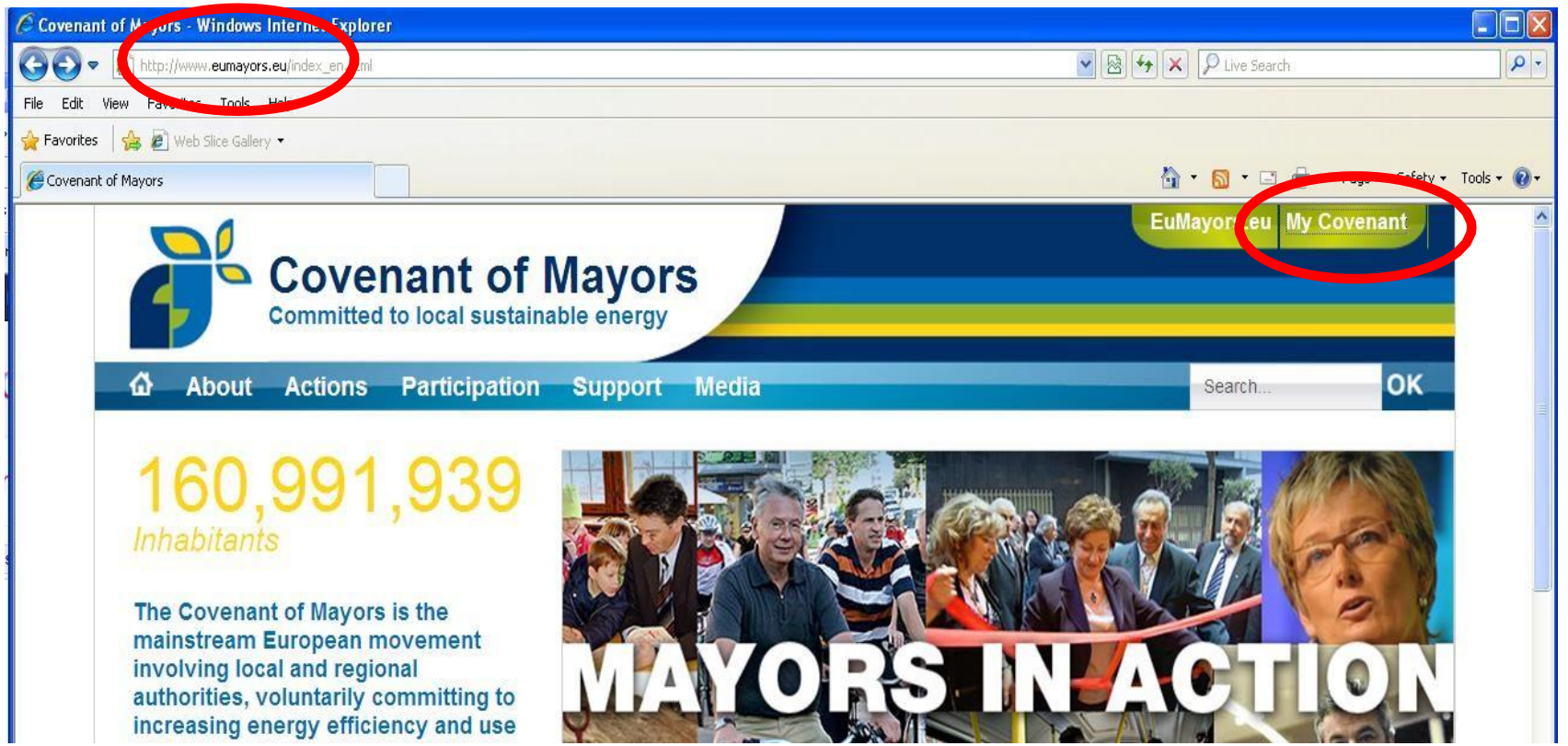
Developed by: Covenant of Mayors & Mayors Adapt Offices, Joint Research Centre of the European Commission

Published in: July 2016

Home | Strategy | BEI | MEI1 | MEI2 | Mitigation Actions | BoE | Mitigation Report | Monitoring Report | Adaptation Scoreboard | Risks & Vulnerabilities | Adaptation Actions | Adaptation Report | Adapta

The SECAP submission

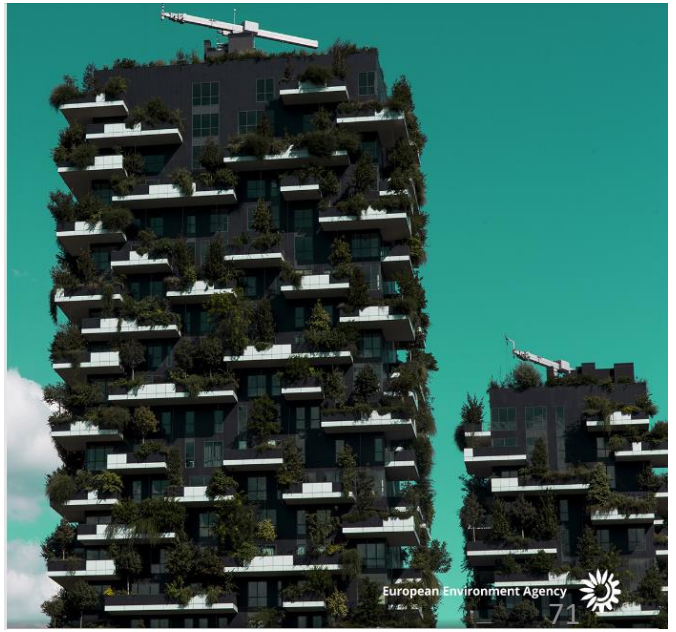
www.eumayors.eu → MyCovenant



European Commission

What is Urban Adaptation?

- Urban adaptation in Europe: how cities and towns respond to climate change
- Adaptation requires an appreciation of the complexity and interrelatedness of urban systems, including the variety of sectors and disciplines at play in our cities.
- Needs for adaptation:
  - Networks for adaptation governance
  - Policy instruments for safe and healthy cities
  - Adaptation across standards and guidelines
  - Foster funding and resource flexibility
  - Planning support tools



- **Urban Adaptation Support Tool**

  - Was developed as practical guidance for urban areas
  - It outlines all the steps needed to develop and implement an adaptation strategy
  - The tool offers valuable support for starting or upgrading adaptation plan
  - The aim is to assist municipalities in developing, implementing and monitoring climate change adaptation plans

  See link:
  https://climate-adapt.eea.europa.eu/knowledge/tools/urban-ast/step-0-0

Urban Adaptation Support Tool

Urban Adaptation Support Tool provides extensive guidance on all phases of adaptation planning, aligned with the EU-CoM.

The tool is a joint initiative of the EU-CoM and the European Environment Agency, part of the Climate-ADAPT platform.

Urban Adaptation Support Tool

Getting started

- About the Urban Adaptation Support Tool
- Climate change impacts on European cities
- Adaptation to climate change in urban areas
- Principles and success factors

Urban Adaptation Support Tool

1. Preparing the ground for adaptation
2. Assessing climate change risks and vulnerabilities
3. Identifying adaptation options
4. Assessing and selecting adaptation options
5. Implementing adaptation
6. Monitoring and evaluating adaptation

Risk and Vulnerability Assessment (RVA)

- Dedicated to the climate vulnerabilities, hazards as well as the impacts and assessments thereof.

  - **Step 1:** The municipalities are called in to assess the impact that each climate hazard type has on a series of Vulnerable/ Impacted sectors, such as:
    - Health,
    - Infrastructure (Energy, Water, Transport, Social),
    - Built environment,
    - Economy (Tourism, Agriculture and Forestry),
    - Biodiversity (Coastal areas, Green zones/ forests).

Risk and Vulnerability Assessment (RVA)

- **Step 2:** Conducting the vulnerability analysis, emphasizing on the potential effects and who gets affected. Analysis is conducted per sector, for all climate hazards.

	Receptors	Extreme weather event	Potential effects	Who/What is affected
Population	Public Health	Extreme heat	- Deaths due to cardiovascular diseases - Spread of vector born and infectious diseases - Altered allergic pattern - Heat stress	Everyone, but especially elderly people, babies, children, workers in outdoor environments and sensitive groups of people
		Droughts	- Asthma and cardiovascular diseases - Accumulation of trace elements	All people living or working in the area
		Sea level rise	- Asthma and respiratory allergies - Water-borne diseases - Forced migration and mental health impacts	All people living or working mainly in the coastal area
		Storms	- Casualties and deaths	All people living or working in the area
		Floods	- Injuries and deaths - Water-borne diseases - Asthma and respiratory allergies	All people living or working in the area

Risk and Vulnerability Assessment (RVA)

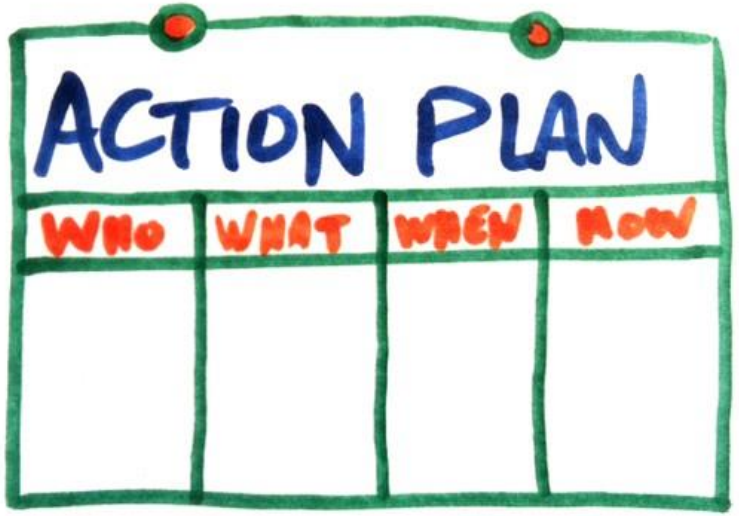
- **Step 3:** Conducting the risk assessment analysis, emphasizing on the future risks and the level of impact. Analysis is conducted per sector, for all climate hazards.

	Receptors	Weather Sensitivity	Future Risk	Impact
Population	Public Health	Extreme heat	- Increased number of deaths - Reinforcement of heat stress - Increased infectious diseases - Altered allergic patterns	High
		Droughts	- Increased allergic incidents - Decreased air quality - More respiratory problems	High
		Sea level rise	- Increased incidents of asthma and pneumonia - Increased water-borne diseases - Limitations to the healthcare access	High
		Storms	- Limitations to the healthcare access - Increased numbers of injuries and deaths	High
		Floods	- Limitations to the healthcare access - Increased numbers of injuries and deaths	High

SECAP planning and implementation process

What is an Action Plan?

An "**implementation programme**" – at least with a **set of defined actions** all aimed at the achievement of the roadmap goals.



Essential components:

- **Concrete actions** and a **prioritization** for their implementation
- SECAP-specific: **Mitigation** and **Adaptation** actions
- with **"SMART" targets** and target indicators
- **Responsibilities** and definition of working groups
- A sufficient **time frame** for implementation and monitoring
- A plan for sufficient **budget** and specification of funding sources
- Don't forget about the **monitoring** and plan additional resources

Integrative approach encompassing regional priorities

Other disciplines to be considered:

- Environmental protection
- Natural resources management
- Mobility and freight traffic

Overarching principles:

- Political commitment
- Financial sustainability
- Social coherence

Thematic focus

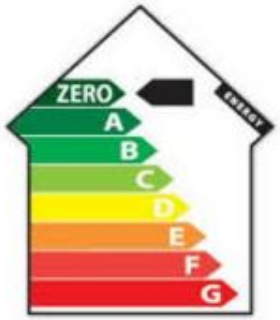
Energy supply
- increase renewables' share

Energy efficiency
- buildings
- production
- transport

Awareness, communi-cation

Action Plan

Action Plan – focus on implementation



Identify financing opportunities

- European Structural and Investment Funds
- National funding programs
- Private sector investment
- Alternative financin[illegible]es:
  - On Bill Financ[illegible]
  - Energy Perfor[illegible]ance contracting
  - Soft Loans, guarantees
  - Crowdfunding
  - Green Municipal Bonds

Topic of Bootcamp #2

Success factors:

- Start project implementation as soon as possible - use initial enthusiasm
- Present benefits/profits of energy savings and REN production (financial, regional economy) and generate awareness
- Inform target groups and actors on a regular basis about progress and results
- Get people to identify with the topic - "our project"
- Plan regular meetings of project stakeholders
- Monitor success of individual projects concerning their effectiveness and actual savings generated

Energy monitoring & evaluation

- **ALWAYS keep in mind:**
  - Don‘t forget about monitoring
  - the „M“ in „SMART“
  - evaluating the progress of achievement of the Action Plan
  - Find out about benefits achieved AND
  - Communicate them!

- Some MYTHS and TRUTHS:

If you can’t measure it, you can’t improve it.
(Peter Drucker)

Without data you are just another person with an opinion.
(W. Edwards Deming)

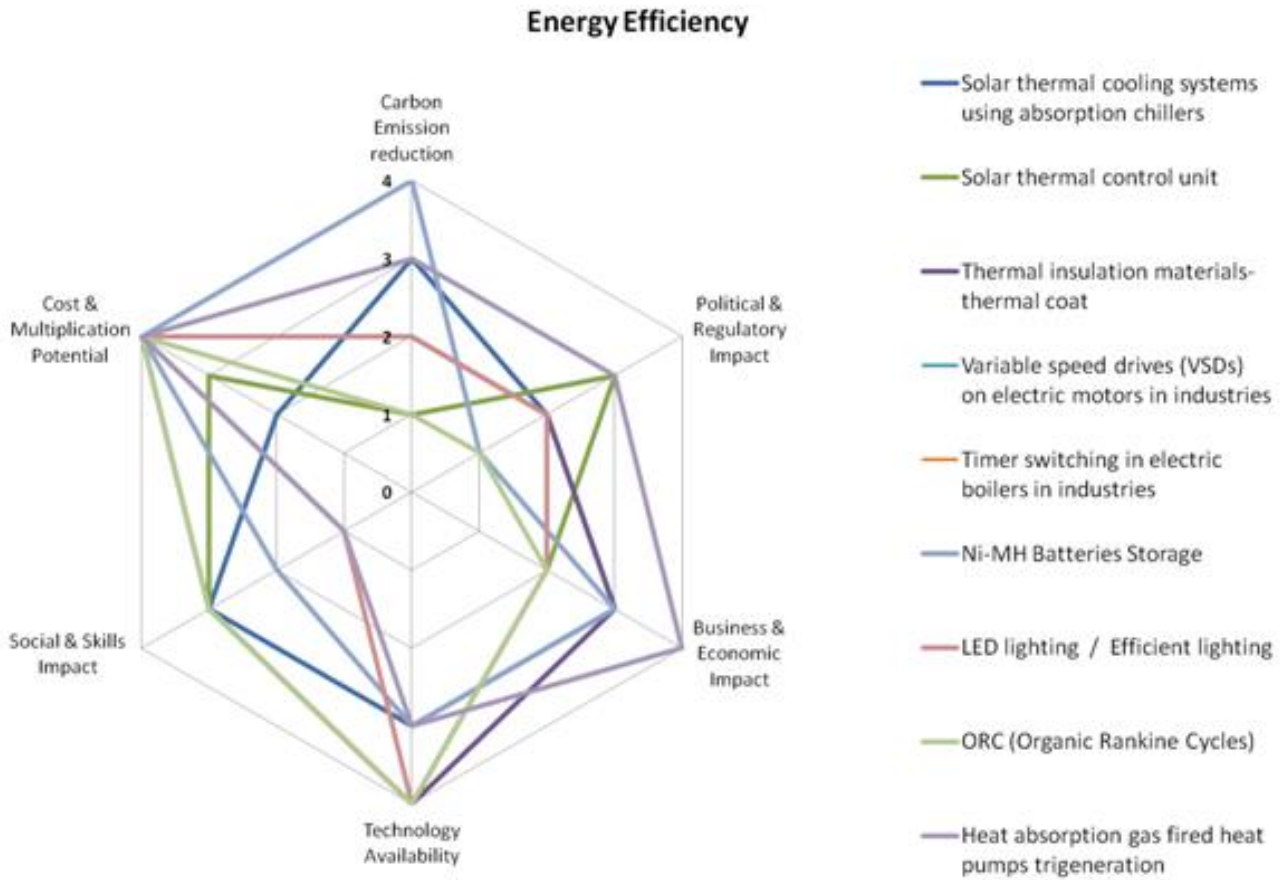
The most important things cannot be measured.
(W. Edwards Deming)

Public presentation – acceptance of Energy Roadmap and Action Plan

Energy monitoring & evaluation

Presentation and visualisation of results

- Potentials depending on several influencing factors can be displayed in the form of a radar chart.
- Each side of the star represents one influencing variable.
- The distance from the centre to the border of the star is proportional to the influence of the variable on the overall potential.



Source: Climate technologies (2016), http://www.climatechnologies.eu/project

SECAP Action Plan – 4 Steps

Summary of the energy action plan to be developed and submitted by the signatory





- STEP 1: **select the sectors to be tackled**
  - Based on the results of the BEI and the actual feasibility of implementing the actions (soundness)
- STEP 2: **set the target**
- STEP 3: **set the actions** in each sector that will allow reaching the target.
- STEP 4: **define responsibilities** and **monitoring** requirements (incl. the relevant indicators)

Mitigation actions

Mitigation measures are mandatory in order to:

- contribute effectively to these higher goals by delivering greater GHG savings,
- align with the current EU and national energy and climate policy frameworks,
- ensure their own eligibility for established and new funding mechanisms and support schemes,
- take advantage of the best available technologies and investment instruments (e.g. EU Recovery Funds)
- avoid the need for upgrades soon after projects are implemented.

Mitigation actions

Ambitious emissions reduction measures to be considered must include:

- deep renovation of buildings, including to positive energy levels,
- optimization and/or automation of control systems,
- integration of city districts into smart grids,
- ensuring that heating and cooling is supplied sustainably
- systematically extending pedestrian zones and introducing cycling superhighways,
- widespread charging infrastructure for electric vehicles (EV)
- innovative, mitigation-oriented land-use planning of carbon sinks, forests and agriculture,
- biogas capture from waste and wastewater treatment plants.

Example: Action Plans

Action Plan 1: Building rehabilitation programme

- Activities: assessment, improved design, tendering, award, implementation
- Responsible: Building management authority XYZ
- Implementation plan: 2017-2022
- Financing: Municipality x%, state grant x%, private sources x%
- Indicators: XX MWh thermal savings, XX MWh electric savings, XX t CO2

Action Plan 2: Electricity savings in homes

- Activities: Distribute energy meters, promote EE appliances, implement competition
- Responsible: Local utility, NGO, municipality support
- Implementation Plan: 2020-2025
- Financing: Municipality x%, utilities x%
- Indicators: XX MWh electric savings, XX t CO2

Action Plan 3: Renewable Energy Investments

- Activities: bioenergy sources assessment, development of supply chains with local farmers, pilot installation, roll-out program for single-family houses/small businesses
- Responsible: Biomass association, Chamber of Agricult, Municipality, NGO
- Implementation Plan: 2018-2030
- Financing: national grants x%, local chamber x%, soft loans x%
- Indicators: XX projects implemented, XX MW new capacity installed, XX MWh of renewable heat provided from the region

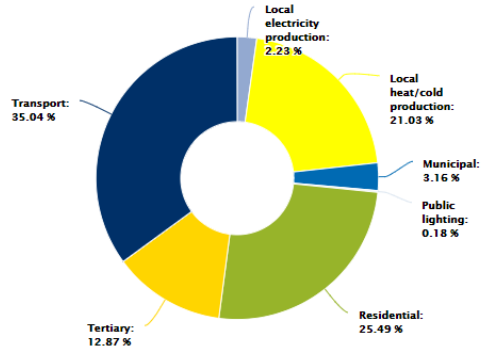
Estimated GHG emission reductions

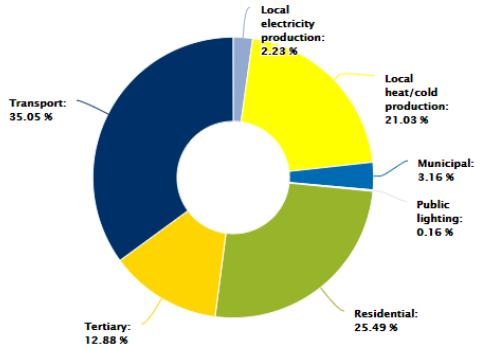
- Mitigation actions will lead to calculated CO_2 savings

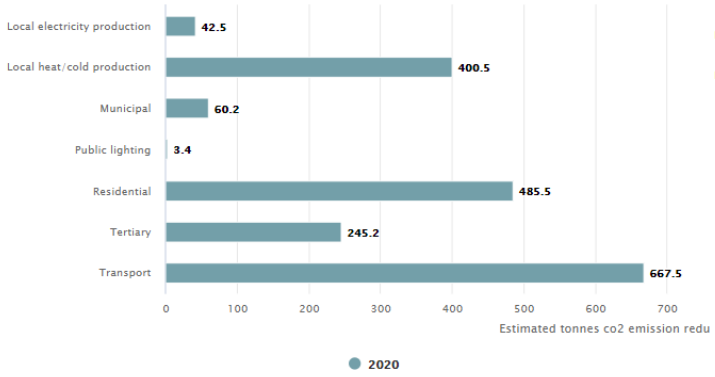
Mitigation actions

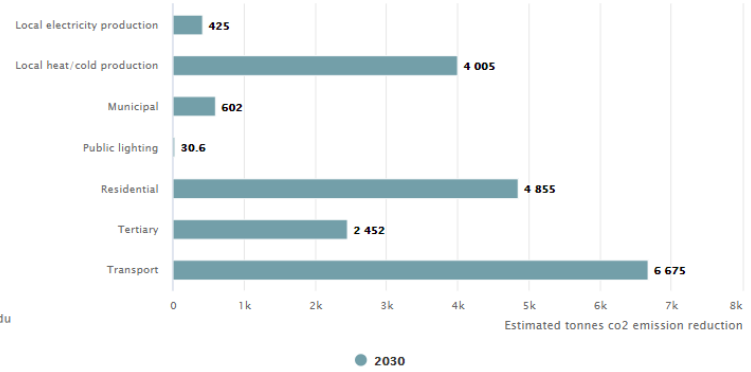
Time	Reduction target	Estimated tonnes CO2 reduced
2020	20	1904.8
2030	40	19044.6
Long term	0	

Estimated greenhouse gas emission reduction per sector









Adaptation self- assessment QUALITATIVE APPROACH

- Overview of the capacity, status and principals of the 'Risk and vulnerability assessment' developed
  - Identify climate hazards for the city
    - Heat waves on human health
    - Droughts on water management
    - Floods, storms etc. on city infrastructure, buildings, agriculture etc.
  - Select vulnerability indicators
  - Assess vulnerability score

Climate Hazard Type	Current hazard risk level	Expected change in intensity	Expected change in frequency	Timeframe	Risk-related indicators
Extreme Heat	Low	Increase	Increase	Long-term	
Extreme Cold					
Extreme Precipitation	Moderate	Increase	Decrease	Medium-term	
Floods	Moderate	Increase	Increase	Medium-term	Pluvial flooding
Sea Level Rise	Moderate	Increase	Increase	Medium-term	
Droughts					
Storms	Moderate	Decrease	Decrease	Medium-term	Severe wind, rain storm
Landslides					
Forest Fires					
[please specify]	[Drop-Down]	[Drop-Down]	[Drop-Down]	[Drop-Down]	

rows that do not concern your local ⓘ To be completed for the climate hazards that concern your local authority only. ⓘ Click here to see examples of risk-related indicators

Adaptation actions

- Summary of the adapatation actions proposed in the plan
- Same scheme as for mitigation (look for synergies)

Adaptation Actions

500 characters left

2) Adaptation Actions

ⓘ List your adaptation actions in the table below. Actions can be comprehensive or representative, taken from one or more of the documents cited by the local authority in the section above.

Sector	Title (max. 120 chars)	Short description (max. 300 chars)	Responsible body/department	Implementation timeframe		Implementation status	Select as Key Action (✡)	Sta
				Start	End			
Other	Developing indicators for monitoring, review and risk prevention within the Municipal Strategy for Adaptation to Climate Change (EMAAC)	It allows you to frame the future response to all kinds of events, impacts and vulnerabilities identified for the municipality.	Municipality of Barreiro	2016	Not known	Ongoing	[Please select]	
Water	Monitoring and analysis of the Tagus-Sado aquifer, incorporating the potential impacts arising from climate change (lack of scenarios and / or contamination of the aquifer - only producer of drinking water in the region)	Regional study in order to assess / monitor the Tagus-Sado aquifer for research on the potential effects of climate change on groundwater	Municipality of Barreiro	2016	Not known	Ongoing	[Please select]	
Other	Education and awareness of adaptation to climate change in schools and for the general population	Awareness of the impacts generated by the climatic events that affect the municipality of Barreiro, and better perception of the type future vulnerabilities, responses and adaptation needs the most significant (sea level rise, excessive rainfall, strong winds and heat waves).	Municipality of Barreiro	2016	Not known	Ongoing	[Please select]	
Land Use Planning	Systems of water retention basins, the	Promoting a naturalized infrastructure in some cases with double function, retention of rainwater and leisure, will allow for a sustainable solution	Municipality of Barreiro	2016	Not known	Ongoing	[Please select]	

10 key elements to keep in mind when preparing a SECAP

1. Formal adoption of the plan by the municipal council (or equivalent decision-making body)
2. Definition of clear mitigation and adaptation target(s) / goal(s)
3. Sound assessment of the local situation (based on the Baseline Emission Inventory (BEI) and a Climate Change Risk and Vulnerability Assessment (RVA) outputs)
4. Comprehensive measures addressing the key sectors of activity – as identified in the signatory's assessments (BEI & RVA)
5. Strategies and actions until 2030

10 key elements to keep in mind when preparing a SECAP

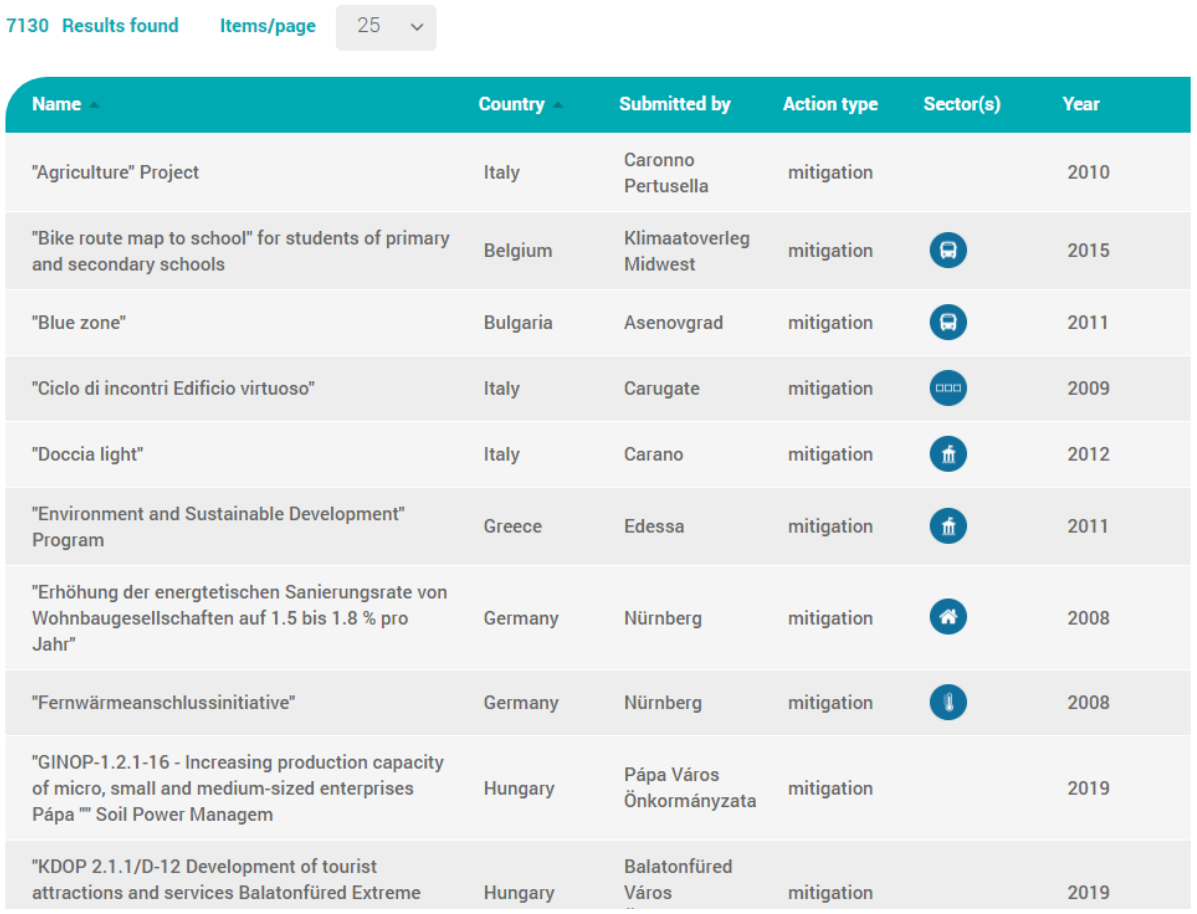
6. Mobilization of all municipal departments involved
7. Engagement of citizens and stakeholders
8. Financing
9. Monitoring and reporting
10. SECAP submission and filling the template

Key elements of a successful SECAP

- Build support from stakeholders and citizen participation: if they support the SECAP, nothing should stop it!
- Secure a long-term political commitment
- Ensure adequate financial resources
- Do a proper GHG emissions inventory as this is vital
- Make a Climate Change RVA, based on an analysis of the local/regional trends of various climate variables and city socioeconomic and biophysical specificities
- Integrate the SECAP into everyday management processes of the municipality: it should not be just another nice document, but part of the corporate culture!
- Ensure proper management during implementation
- Make sure that staff has adequate skills, and if necessary offer training
- Learn to devise and implement projects over the long term

Good practice examples

- See https://www.eumayors.eu/plans-and-actions/good-practices.html



7130 Results found Items/page 25

Name	Country	Submitted by	Action type	Sector(s)	Year
"Agriculture" Project	Italy	Caronno Pertusella	mitigation		2010
"Bike route map to school" for students of primary and secondary schools	Belgium	Klimaatoverleg Midwest	mitigation		2015
"Blue zone"	Bulgaria	Asenovgrad	mitigation		2011
"Ciclo di incontri Edificio virtuoso"	Italy	Carugate	mitigation		2009
"Doccia light"	Italy	Carano	mitigation		2012
"Environment and Sustainable Development" Program	Greece	Edessa	mitigation		2011
"Erhöhung der energtetischen Sanierungsrate von Wohnbaugesellschaften auf 1.5 bis 1.8 % pro Jahr"	Germany	Nürnberg	mitigation		2008
"Fernwärmeanschlussinitiative"	Germany	Nürnberg	mitigation		2008
"GINOP-1.2.1-16 - Increasing production capacity of micro, small and medium-sized enterprises Pápa "" Soil Power Managem	Hungary	Pápa Város Önkormányzata	mitigation		2019
"KDOP 2.1.1/D-12 Development of tourist attractions and services Balatonfüred Extreme	Hungary	Balatonfüred Város	mitigation		2019

Joint SECAPs

- A group of adjoining Covenant of Mayors´ signatories are allowed to elaborate one common SECAP.
- Two options:
  1. Joint SECAP Option 1:
     - 2 or more local authorities willing to implement one or several joint actions, but remaining individually committed to the 2030 target.
     - In this case cities can submit one single SECAP document approved by the municipal council (or equivalent decision-making body) of each of the municipalities
  2. Joint SECAP Option 2:
     - a group of small- and medium-sized municipalities or an urban agglomeration, like a metropolis with its suburbs
     - In this case, the group is registered as one signatory and has to submit only one SECAP document, approved by the municipal council (or equivalent decision-making body) of each of the local authorities

Upgrading existing SEAPs to SECAPs

- Since 2015, Signatories Global Covenant of Mayors for Climate and Energy (GCoM) pledge to prepare, implement, monitor and report on SECAPs

- Challenge to upgrade existing SEAPs to Sustainable Energy **and Climate** Action Plans (SECAPs), by aligning with new emissions-reduction targets and timeframes, and integrating adaptation measures

- **Major components of SECAP:**
  - A framework to reduce CO2 and other greenhouse gas (**GHG**) **emissions** by at least **40% by 2030.**
  - A strategy to **adapt** to the impacts of climate change affecting the area.
  - A comprehensive local **action plan** bringing together the above streams by outlining integrated measures, clear responsibilities, financing, etc. to achieve them.
  - Clear **monitoring** and **reporting** plans to ensure effective implementation.

Tools and resources

Title	Focus	Summary
Guidebook 'How to develop a Sustainable Energy and Climate Action Plan (SECAP)' – Parts 1,2 and 3	SECAP development	The JRC's How to develop a Sustainable Energy and Climate Action Plan (SECAP) is an in-depth 3-part guide to creating a SECAP. Part 1 covers the overall process, Part 2 covers municipal assessments (e.g. emissions and risks), while Part 3 covers technical issues, measures, policies and financial mechanisms.
The Covenant of Mayors for Climate and Energy Reporting Guidelines	SECAP development	The EU-CoM has set up Reporting Guidelines which provide step-by-step guidance: Step I covers the filling of their templates; Step II addresses uploading documents; and Step III explains their checking system for the mitigation parts.
Toolbox of Methodologies - Climate and Energy	Adaptation & Mitigation	ICLEI's Toolbox of Methodologies - Climate and Energy compiles, in a searchable format, numerous energy and climate resources (in many languages) from multiple projects, especially on mitigation.
Good Practices	Adaptation & Mitigation	The CoM offers a database of Good Practices about climate actions implemented by Signatories, Coordinators and Supporters, as well as examples of approved action plans from across Europe.
AMIA (Adaptation and Mitigation Integration Analysis)	Adaptation & Mitigation	C40's AMIA tool enables cities to methodically identify potential interactions between climate adaptation and mitigation measures, highlighting opportunities and conflicts, along with supporting case studies to guide decision-making.

Tools and resources

Urban Adaptation Support Tool	Adaptation	ClimateADAPT's Urban Adaptation Support Tool outlines all the steps needed to develop and implement an adaptation-only strategy with reference to guidance materials and tools.
European Climate Risk Typology	Adaptation	The European Climate Risk Typology is an interactive online map to describe, compare and analyse climate risks across Europe, particularly useful during the early stages of assessing vulnerability and risks.
IVAVIA (impact and vulnerability analysis for critical infrastructures and built-up areas)	Adaptation	IVAVIA is a 7-module methodology to assess climate-related risks and their effects. It provides guidance on how to gather and structure data for your assessment; to quantify and combine vulnerability indicators; to assess risk; and to present outcomes.
Adaptation Options Library	Adaptation	The Adaptation Options Library is a searchable database of key adaptation measures to enable either a basic review of available options, or an even deeper dive via its complete database.
Resilience Maturity Model	Adaptation	The Resilience Maturity Model is a database of policies to help define a city's stage of resilience 'maturity'. It can be used during multiple phases of a resilience-building process, from a baseline review through to reporting, and is especially useful for engaging diverse stakeholders.
C40 Cities Climate Change Risk Assessment Guidance	Adaptation	C40's Cities Climate Change Risk Assessment Guidance helps cities conduct a climate risk assessment in line with the Global CoM and the C40 Climate Action Planning Framework. It provides the methodology and components of their assessment approach.

Thank You!

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