WORKSHOP: Technical training on how to set Targets for the Global Covenant

The European Commission's science and knowledge service

Joint Research Centre

European Commission

The European Commission's science and knowledge service

Joint Research Centre

Sustainable Energy and Climate Action Plan Action

Silvia Rivas Calvete

Godoy Cruz , Argentina
27 September 2017

European Commission

COVENANT PILLARS

- At least 40 % CO2 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

3

Signatories commitments

GLOBAL COVENANT of MAYORS for CLIMATE & ENERGY

ANNEX I

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

A COMMON ROADMAP FOR A SHARED VISION:

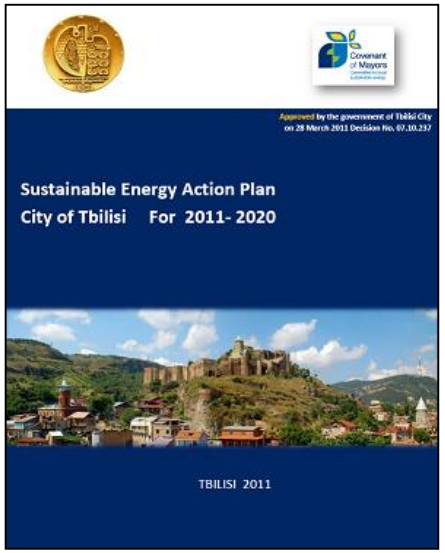
In order to meet their mitigation and adaptation targets, Covenant of Mayors Signatories commit to a series of steps:

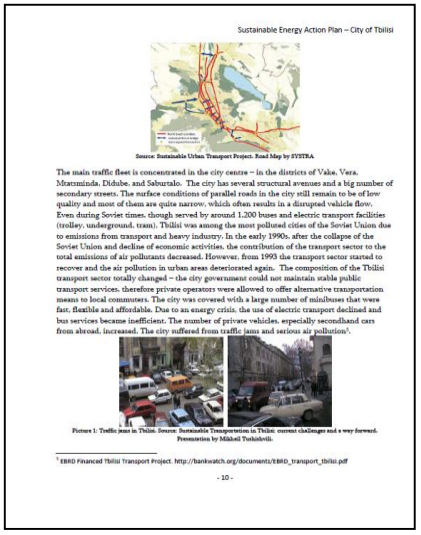
STEPS \ PILLARS	MITIGATION	ADAPTATION
1) Initiation and baseline review	Preparing a **Baseline Emission Inventory**	Preparing a **Climate Change Risk and Vulnerability Assessment**
2) Strategic target setting & planning	Submitting a **Sustainable Energy and Climate Action Plan (SECAP)** and mainstreaming 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	

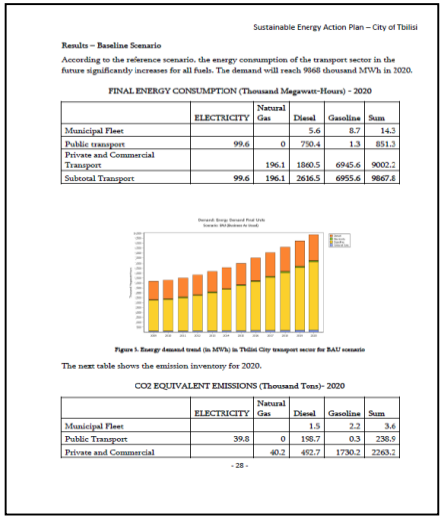
** The adaptation strategy should be part of the SECAP and/or developed and mainstreamed in (a) separate document(s). Signatories can opt for the format of their choice – see the "adaptation pathway" paragraph hereafter.*

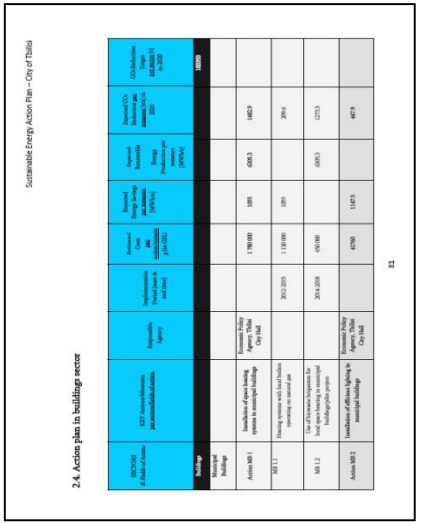
4

European Commission









What is a SECAP?

Its nature is threefold:

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

GLOBAL COVENANT of MAYORS for CLIMATE & ENERGY

European Commission

What is a SECAP?

It is a document describing

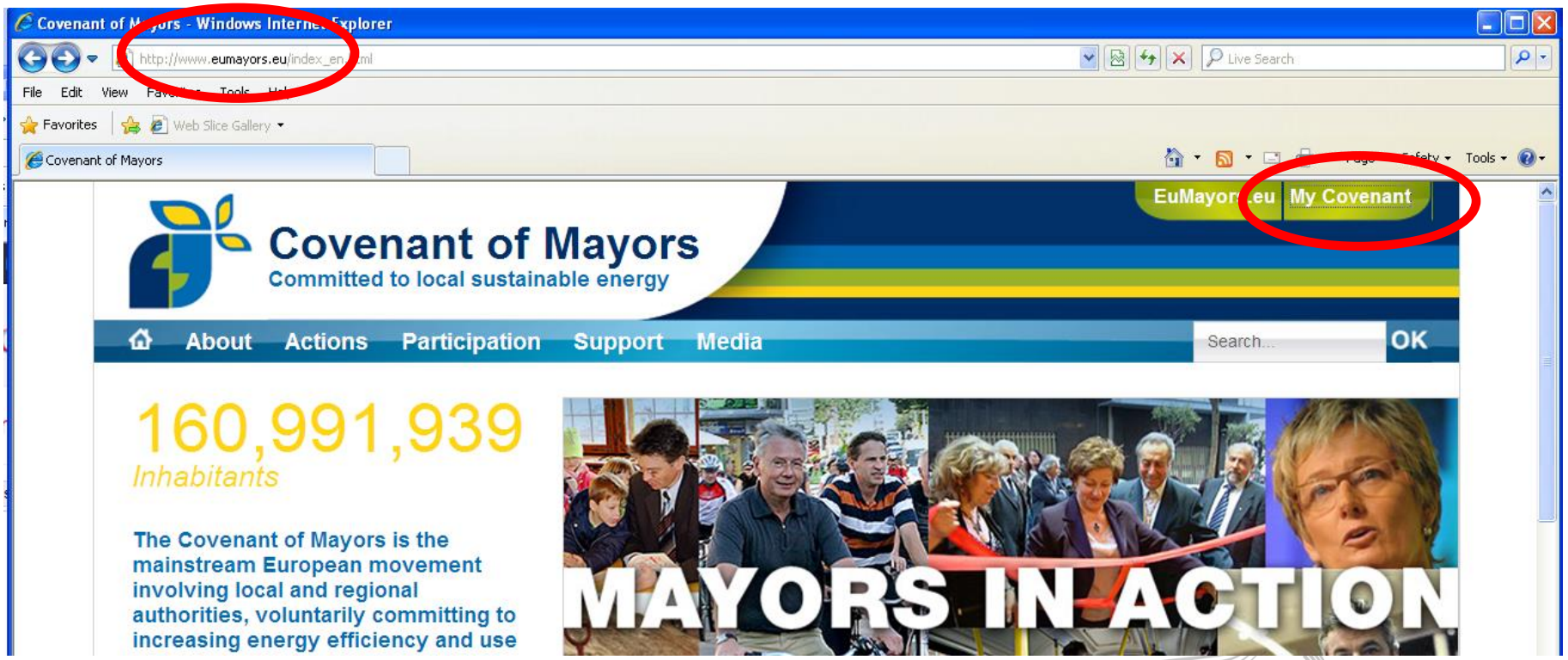
a set of actions, energy related towards :

1. **a set of actions, energy related towards the reduction of the total GHG emissions on the municipality by a % by a due date**
2. **a set of actions towards enhance the resilience and adaptation t climate change of the municipality**

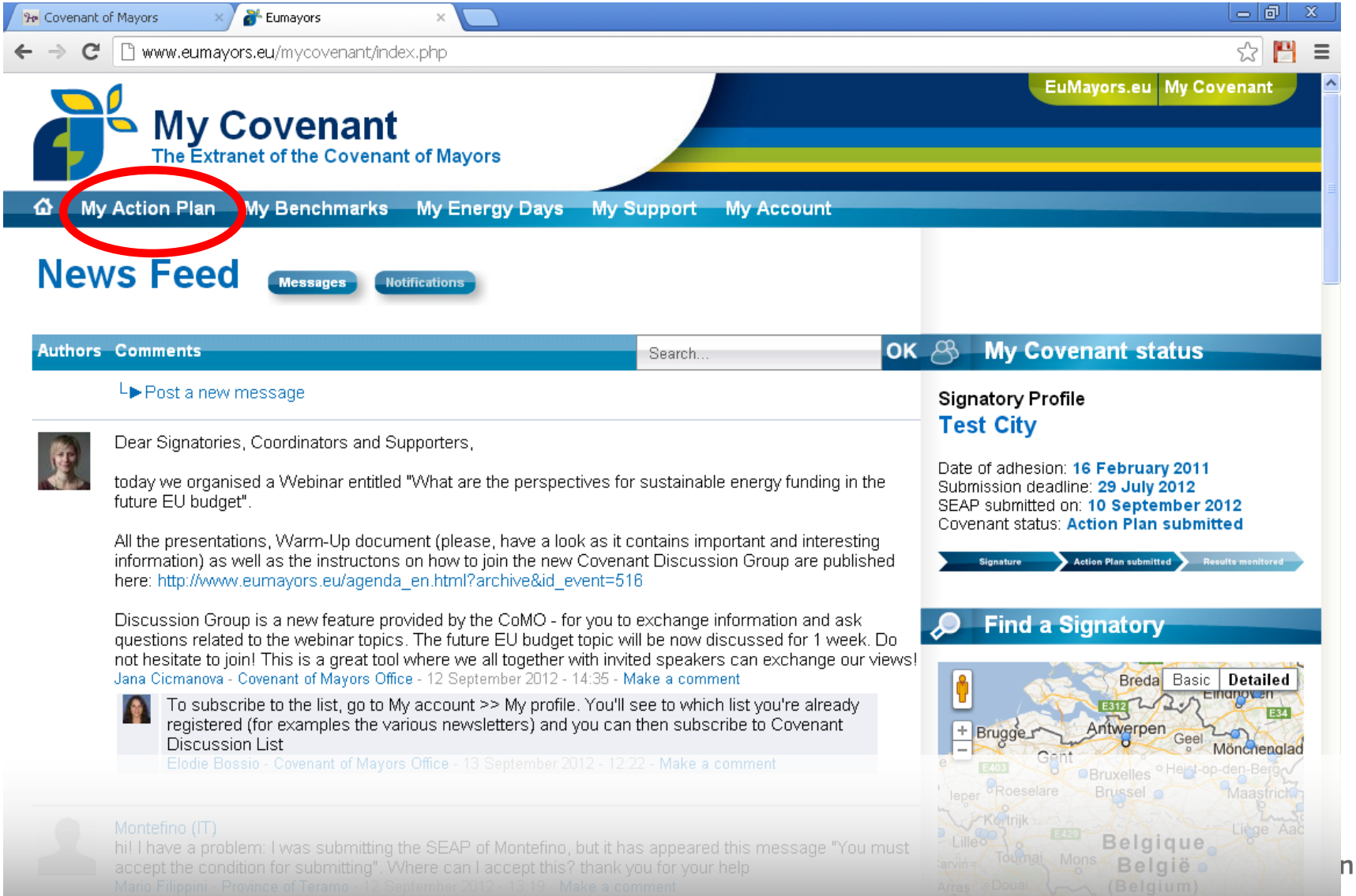
Apart from the document, the signatory is asked to provide a summary on a online template

The SEAP submission

www.eumayors.eu → **MyCovenant**

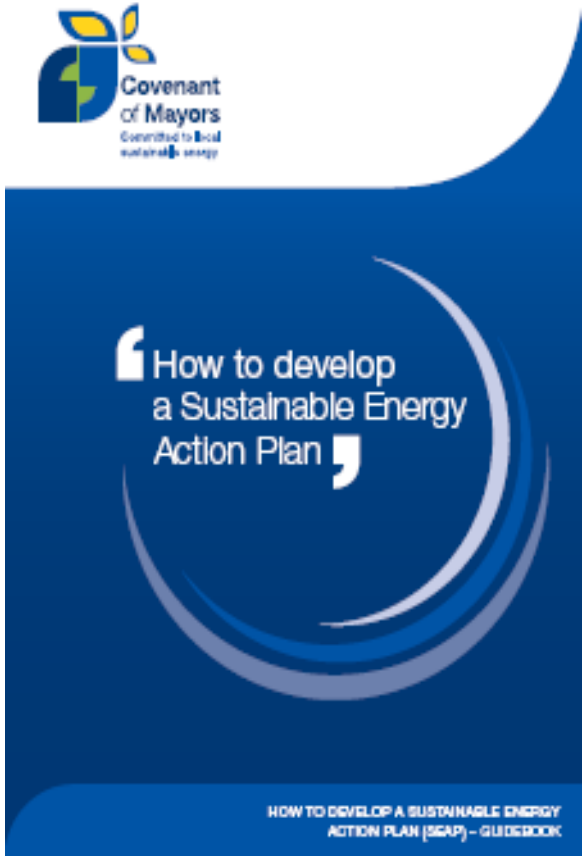


European Commission


Covenant of Mayors
Eumayors
www.eumayors.eu/mycovenant/index.php
EuMayors.eu
My Covenant
My Covenant
The Extranet of the Covenant of Mayors
My Action Plan
My Benchmarks
My Energy Days
My Support
My Account
News Feed
Messages
Notifications
Authors
Comments
Search...
OK
My Covenant status
Post a new message
Dear Signatories, Coordinators and Supporters,
today we organised a Webinar entitled "What are the perspectives for sustainable energy funding in the future EU budget".
All the presentations, Warm-Up document (please, have a look as it contains important and interesting information) as well as the instructons on how to join the new Covenant Discussion Group are published here: http://www.eumayors.eu/agenda_en.html?archive&id_event=516
Discussion Group is a new feature provided by the CoMO - for you to exchange information and ask questions related to the webinar topics. The future EU budget topic will be now discussed for 1 week. Do not hesitate to join! This is a great tool where we all together with invited speakers can exchange our views!
Jana Cicmanova - Covenant of Mayors Office - 12 September 2012 - 14:35 - Make a comment
To subscribe to the list, go to My account >> My profile. You'll see to which list you're already registered (for examples the various newsletters) and you can then subscribe to Covenant Discussion List
Elodie Bossio - Covenant of Mayors Office - 13 September 2012 - 12:22 - Make a comment
Montefino (IT)
hi! I have a problem: I was submitting the SEAP of Montefino, but it has appeared this message "You must accept the condition for submitting". Where can I accept this? thank you for your help
Mario Filippini - Province of Teramo - 12 September 2012 - 13:19 - Make a comment
Signatory Profile
Test City
Date of adhesion: 16 February 2011
Submission deadline: 29 July 2012
SEAP submitted on: 10 September 2012
Covenant status: Action Plan submitted
Signature
Action Plan submitted
Results monitored
Find a Signatory
Basic
Detailed
Breda
Brugge
Antwerpen
Geel
Gent
Bruxelles
Brussel
Roeselare
Kortrijk
Belgique
België
(Belgium)

The SEAP guidebook

- ✓ **Aims at helping municipalities in the development and implementation of their SEAP**
- ✓ **Divided in 3 parts:**
  - **Part I: General info on the SEAP process step-by-step (towards the 20% target by 2020)**
  - **Part II: (Baseline) Emission Inventory**
  - **Part III: Technical measures for energy efficiency and renewable energies**
- ✓ **It can be downloaded from the webpage:** http://www.eumayors.eu/support/library_en.html
- ✓ **Developed with the support of many experts and practitioners**



UPDATE VERSION INCLUDING ADAPTATION TO BE PUBLISHED BEFORE END OF THE YEAR (JRC)

Reporting requirements

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

Overall strategy

First part of the document, helps the signatory in setting the pace

1. COMMON FOR MITIGATION AND ADAPTATION
2. MEDIUM AND LONG TERM TARGETS
3. GENERAL VISION
4. ADMINISTRATIVE PRINCIPLES, STAFF, STAKEHOLDERS..
5. FIRST ECONOMIC INDICATORS
6. FIRST SIGNATORY SELF ASSESMENT

Mitigation actions

Summary of the energy action plan developed and submitte by the signatory

Include actions tackling the CoM sectors, trying to reduce the total emissions by the selected year in at least 40%(EU).

- Actions can be grouped by sectors
- Business and usual approach (BAU)
- Administrative fields
- Economic fields
- Data fields
- Synergies with adaptation ("Adaptigation")

The more accurate , the better
(but just some fields mandatory)

Mitigation actions

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

1. **STEP 1: <u>select the sectors to be tacked</u>**

Based on the results of the BEI and the actual feasibility of implementing the actions (soundness)

2. **STEP 2: <u>set the target</u>**

3. **STEP3: <u>set the actions</u>** in each sector that will allow reaching the target.

For STEP 1

Two key principles

1) The Covenant follows essentially (but not exclusively) a **territorial approach**, looking at the GHG emissions on the territory of the local authority.

2) The focus of the Covenant is on **Final Energy Consumption**

3) The actions ae on energy Efficiency and **promoting** distributed generation from **renewable sources**.

STEP2 Setting the emission reduction target

The local authority can decide to set the overall CO_2 emissions targetin terms of:

- *'absolute' reduction compared to the BEI*

- *'per capita' reduction compared to the BEI*

- *'absolute' reduction compared to a BAU or reference scenario* ***= specific to CoM South and CoM East***

SETTING THE TARGET

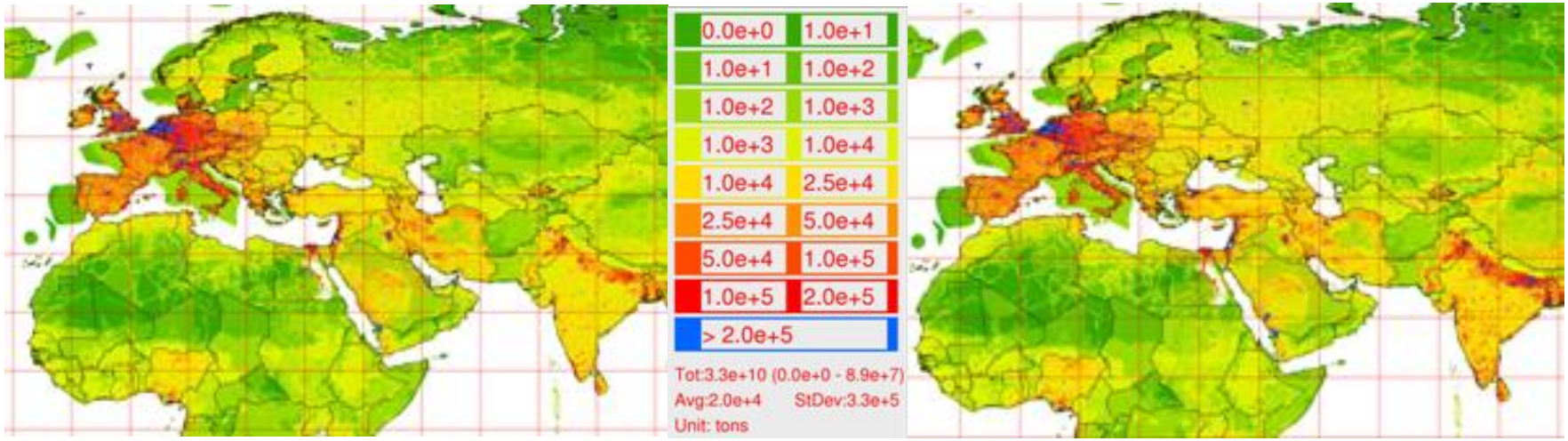
	EU-28	Eastern Partnership Cities	Southern Partnership Cities
Target	40% by 2030	30% by 2030	Beyond the NDCs
Reduction target *as compared to BEI emissions*	Absolute terms [tCO_2]	Absolute terms [tCO_2]	Absolute terms [tCO_2
	Relative terms [tCO_2/capita]	Relative terms [tCO_2/capita]	Relative terms [tCO_2/capita]
as compared to BAU emissions	**Not allowed**	Absolute terms [tCO_2]	Absolute terms [tCO_2]
Base year	1990 recommended	A recent year representative of current situation	1990 recommended or if data is not available more recent year
Key sectors	CoM EU key sectors	As CoM EU + solid waste and waste water recommended	As CoM EU + solid waste and waste water recommended

SETTING THE TARGET

EC-JRC BAU GHG emission projections

Emission inventory projections to 2050 calculated, starting from the base year 2005 with the sector-specific growth rates and technology-based emission factors taking into account different abatement measures per regions, calculated in the frame of the FP7 research project CIRCE (www.circeproject.eu; Doering et al. 2010).

2005 CO_2 emissions



2020 BAU CO_2 emissions

Globally, about 10% CO_2 increase by 2020

SETTING THE TARGET

EC-JRC BAU GHG emission projections

The EC-JRC Business as Usual scenario used to calculate future CO2 and CO2eq emissions explores the situation when no further climate and air pollution policies are implemented beyond what was in place in 2005.

- Calculated **energy consumption** from 2005 to 2050 **is driven by population and economic growth** but not by energy efficiency/climate change policies.

- Existing combustion t**echnologies/abatement** measures per region are assumed **not to change** beyond the year 2005.

SETTING THE TARGET

EC-JRC BAU GHG emission projections

- The projections take into account the **national historical trends from 1990-2005**. They are built for all countries equally with one single methodology, consistently applied.

- The projections are done **for all sectors, energy-related and non-energy related sectors** (Solid waste management and Wastewater treatment). The latter are of particular importance when including non-CO2 gases such as CH4 and N2O.

SETTING THE TARGET

Applying the EC-JRC BAU National Coefficients

Example: Tunisian municipality, Base year 2016, BEI =10000 tCO_2

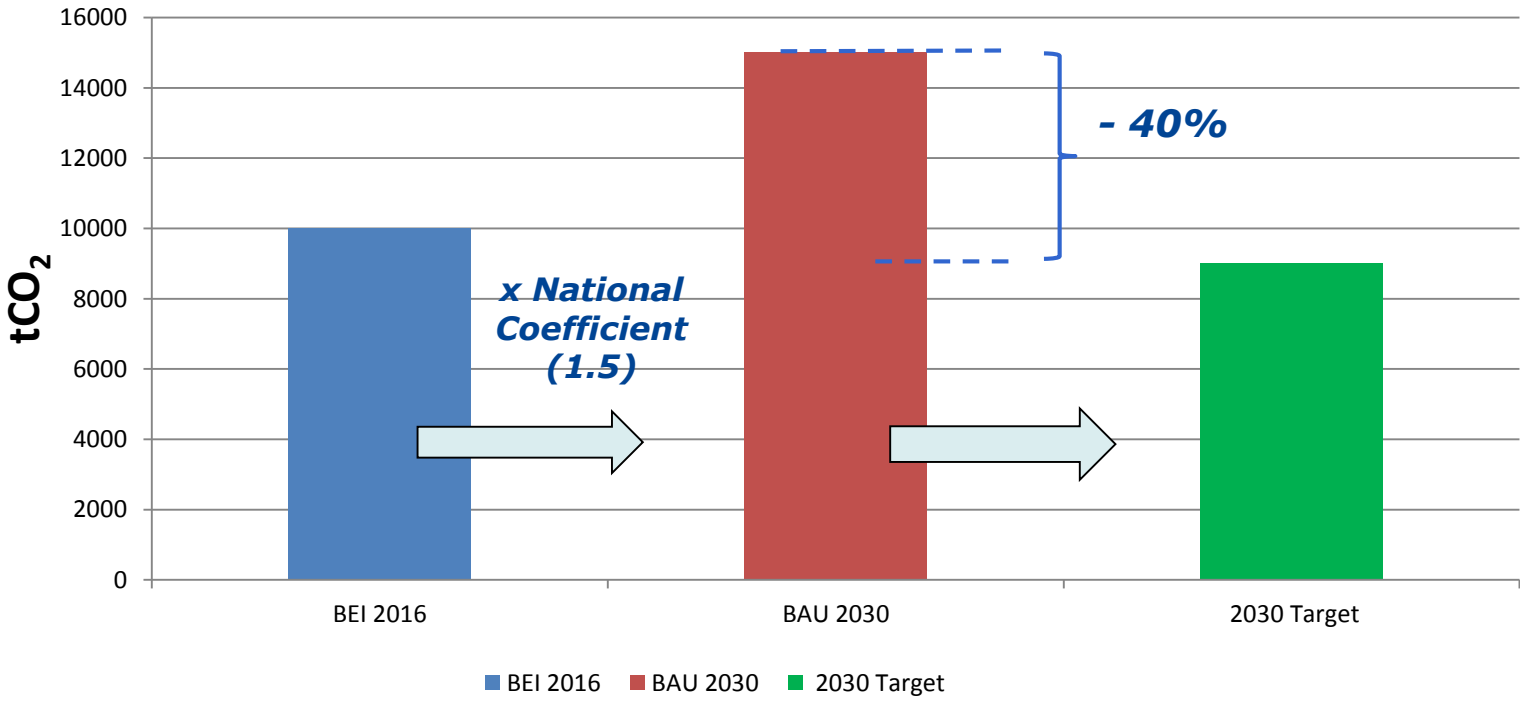
CoM South BAU National Coefficients

	BEI year													
Country	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Algeria	1.08	1.06	1.05	1.03	1.01	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.01	1.01
Egypt	1.22	1.15	1.08	1.02	0.96	0.97	0.97	0.98	0.98	0.99	0.99	0.99	1.00	1.00
Israel	1.47	1.43	1.40	1.36	1.33	1.29	1.26	1.23	1.20	1.16	1.13	1.09	1.06	1.02
Jordan	1.57	1.51	1.46	1.41	1.36	1.33	1.29	1.26	1.22	1.18	1.14	1.10	1.07	1.03
Lebanon	1.53	1.48	1.43	1.39	1.34	1.30	1.27	1.24	1.20	1.17	1.13	1.10	1.06	1.02
Morocco	1.54	1.47	1.40	1.34	1.28	1.25	1.22	1.19	1.16	1.13	1.10	1.07	1.05	1.02
Palestine	1.63	1.57	1.52	1.46	1.41	1.37	1.33	1.29	1.25	1.20	1.16	1.12	1.08	1.03
Tunisia	1.50	1.43	1.37	1.31	1.25	1.23	1.19	1.17	1.14	1.12	1.09	1.07	1.05	1.02

SETTING THE TARGET

Applying the BAU approach to calculate the 2030 target

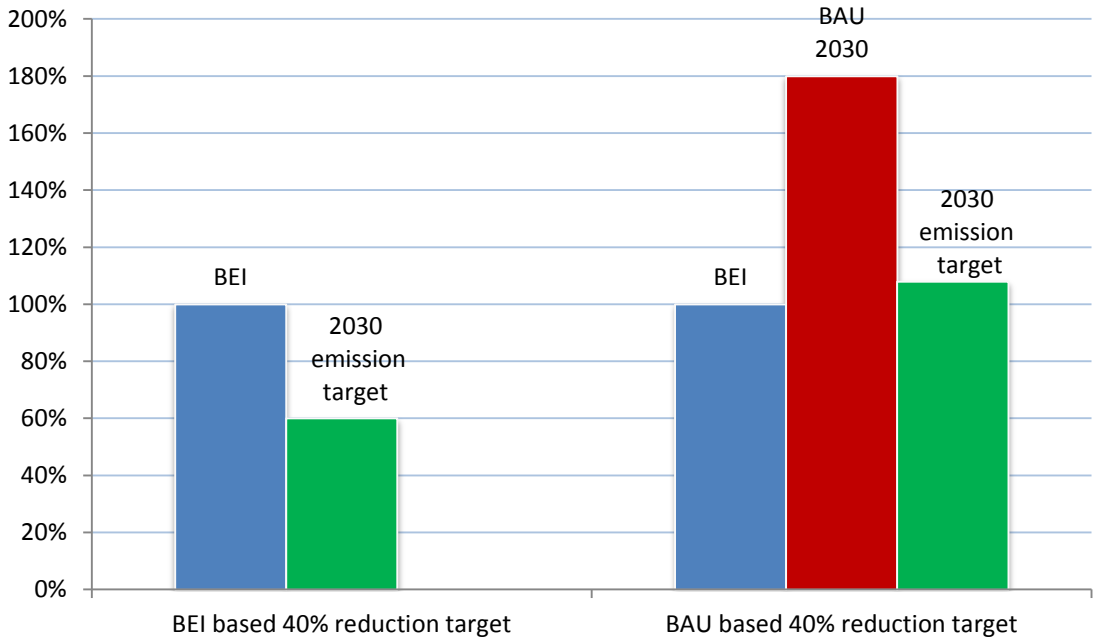
Example: Tunisian municipality, Base year 2016,
BEI= 10000 tCO_2 BAU=15000 tCO_2 2030 target= 9000 (0,4*15000)



BAU 2030 emissions = BEI Emissions x National Coefficient

SETTING THE TARGET

Setting the emission reduction target



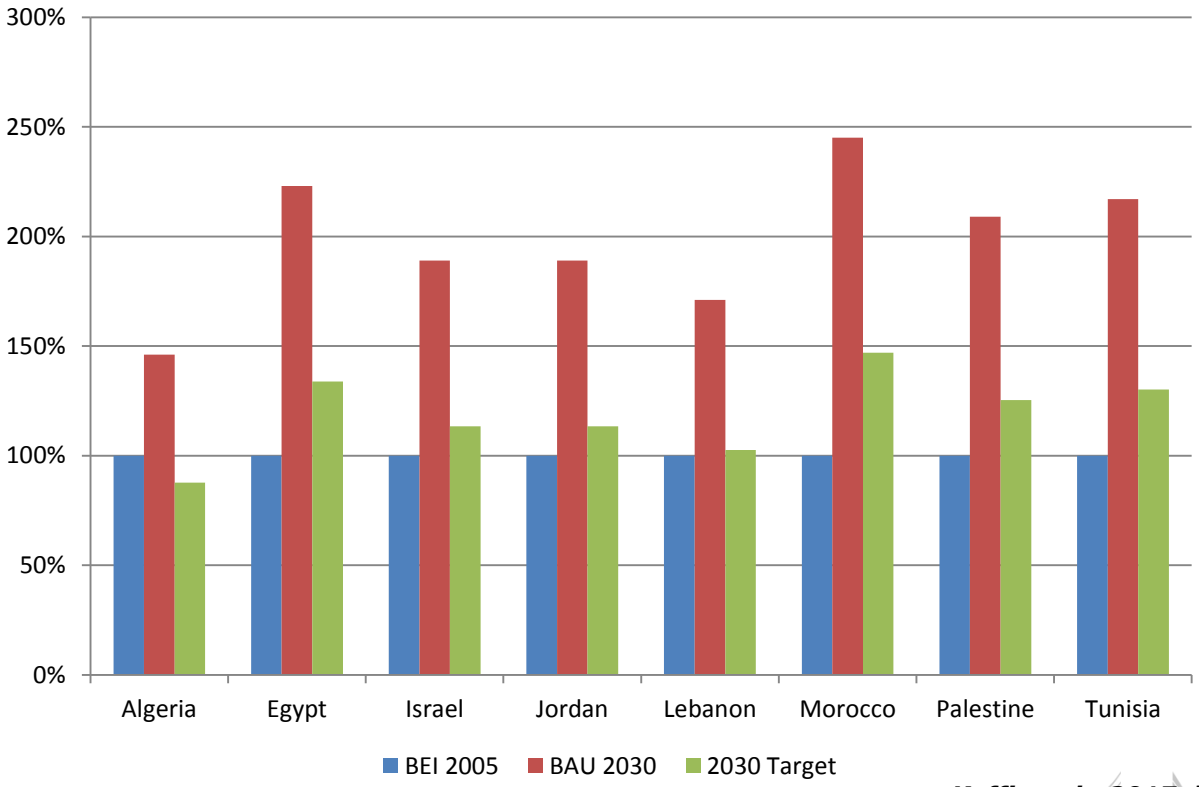
When using a BAU-based approach, the 2030 targeted emissions may be higher than the BEI emissions

BAU versus BEI 40% reduction target

SETTING THE TARGET

The EC-JRC BAU approach applied to CoM South countries

Estimated BAU 2030 emissions (in % of BEI emissions) for 2005 base year



Koffi et al., 2017, in preparation

SETTING THE TARGET

Main recommendations when using the EC-JRC BAU approach

- An accurate BEI in the key sectors is fundamental. As **baseline year is recommended a recent year**, which is representative for the current economic situation and for which reliable statistical data are available.

- **A 'per capita' target is not allowed** because the elaboration of the BAU scenario, general or custom-made for a city, implies already a certain assumption on the population trend until 2030.

SETTING THE TARGET

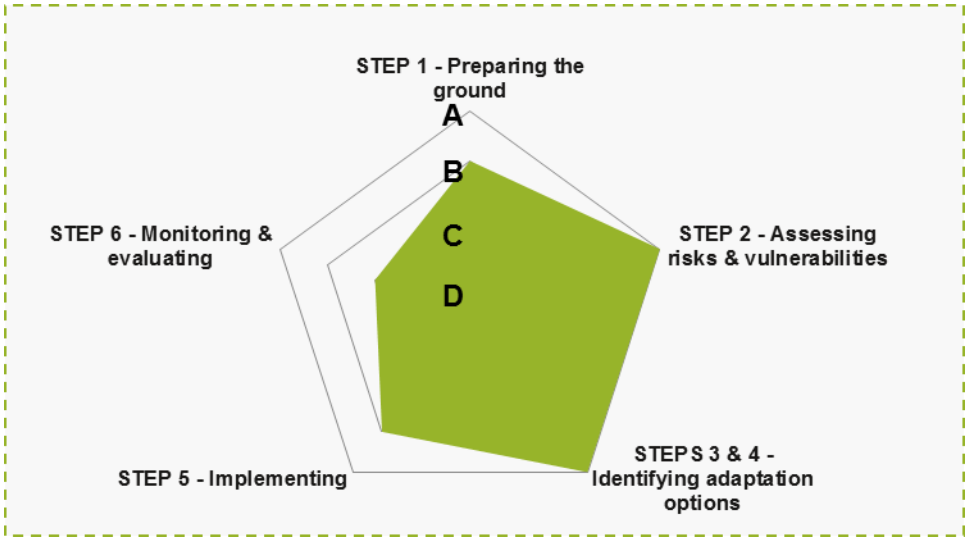
Main recommendations when using the EC-JRC BAU approach

- It is recommended to signatories to use EC-JRC BAU national coefficient (single methodology, consistently applied) rather than developing their own BAU projections

- It is recommended to **monitor the representativeness of the BAU scenario at least once before 2030**. In case of strong deviation between predictions and actual situation, the actions should be revised and the reduction target adjusted.

Adaptation self- assessment
QUALITATIVE APPROACH

Overview of the capacity, status and principals of the Risk and vulnerability study developed



From SECAP of GHENT (Belgium)

RISK and VULNERABILITIES ASSESMENT

Summary of the risk and vulnerability assessment developed and submitted by the signatory

- Qualitative systems
- Drop menu based
- Main sections:
  - Climate hazard
  - Vulnerabilities
  - Impacts

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					
ther [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

From municipality of Bologna SECAP

Adaptation actions

Five key requirements

1. **Identification of current and future climatic hazards**
2. **Identification of critical infrastructure**
3. **Active stakeholder participation**
4. **Avoid maladaptation**
5. **Estimate implementation action costs**

Adaptation actions

Summary of the adaptation actions proposed in the plan

Same scheme as for mitigation
Synergies with mitigation

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.

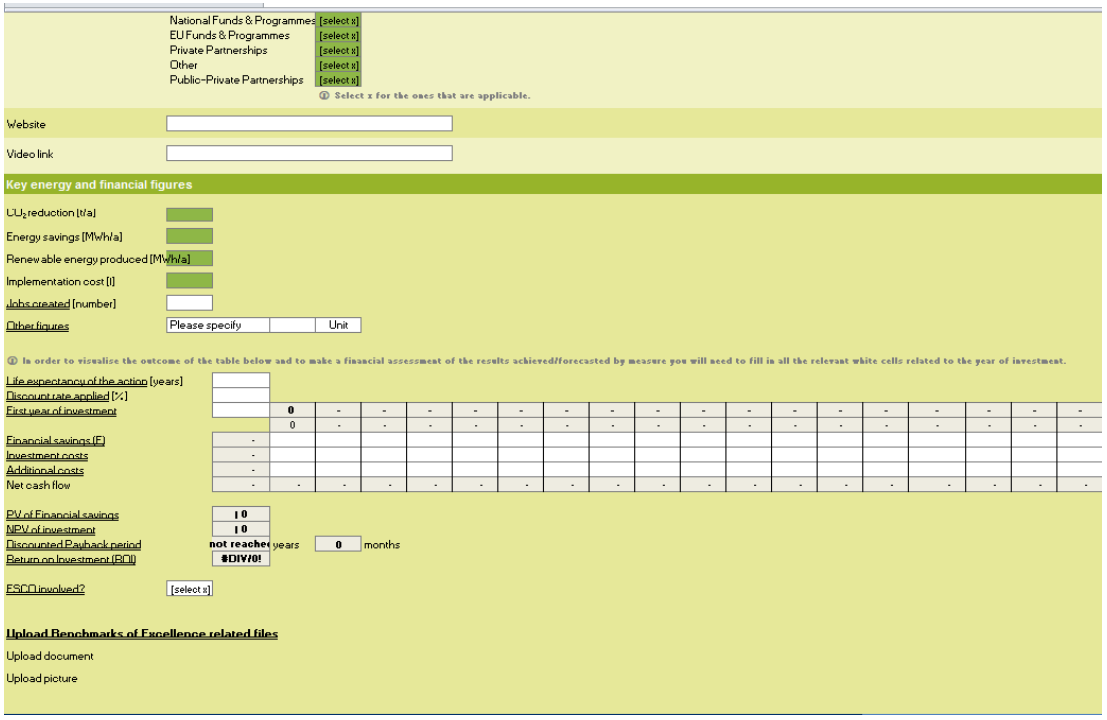
Sector	Title (max. 120 chars)	Short description (max. 300 chars)	Responsible body/department	Implementation timeframe		Implementation status	Select as Key Action (☼)	Sta
				Start	End			
Other	Developing indicators for monitoring, review and risk prevention within the Municipal Strategy for Adaptation 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	2011	Not known	Ongoing	[Please select]	

From municipality of Barreiro SECAP

BOE

Benchmark of excellence

Signatories need to select 3 mitigations measures/actions
On those, a first approach is applied to obtain financial figures to assess the economic potential of the initiative



National Funds & Programmes [select x]
EU Funds & Programmes [select x]
Private Partnerships [select x]
Other [select x]
Public-Private Partnerships [select x]

ⓘ Select x for the ones that are applicable.

Website

Video link

Key energy and financial figures

CO_2 reduction [t/a]
Energy savings [MWh/a]
Renewable energy produced [MWh/a]
Implementation cost [€]
Jobs created [number]
Other figures | Please specify | | Unit

ⓘ In order to visualise the outcome of the table below and to make a financial assessment of the results achieved/forecasted by measure you will need to fill in all the relevant white cells related to the year of investment.

Life expectancy of the action [years]																			
Discount rate applied [%]																			
First year of investment		0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Financial savings (€)	-																		
Investment costs	-																		
Additional costs	-																		
Net cash flow	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

PV of Financial savings | 0
NPV of investment | 0
Discounted Payback period | not reached | years | 0 | months
Return on Investment (ROI) | #DIV/0!

ESCO involved? [select x]

Upload Benchmarks of Excellence related files

Upload document

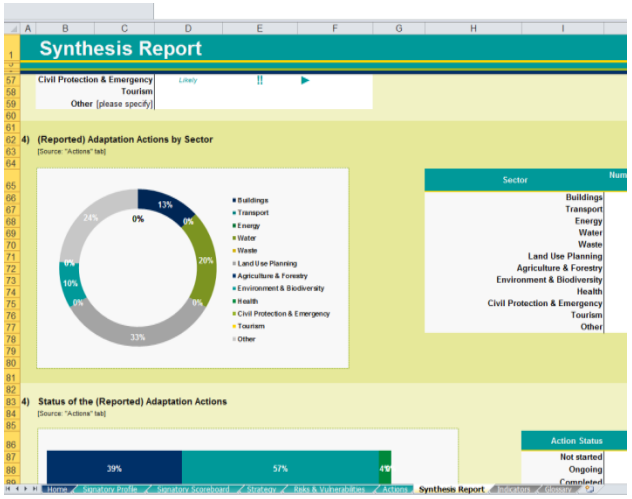
Upload picture

Monitoring reports

For mitigation and adaptation

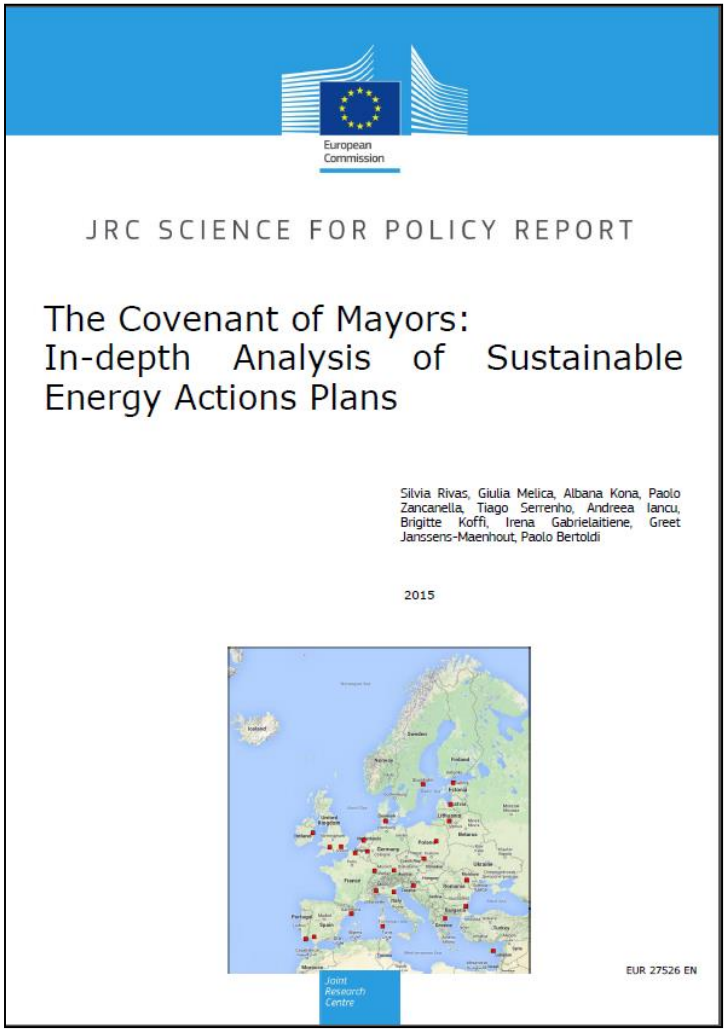
Automatically generated figures showing the progress regarding commitments, estimations and achievements made by the signatory

Mitigation report. City of Pamplona, Spain



Adaptation report. City of Ghent,Belgium

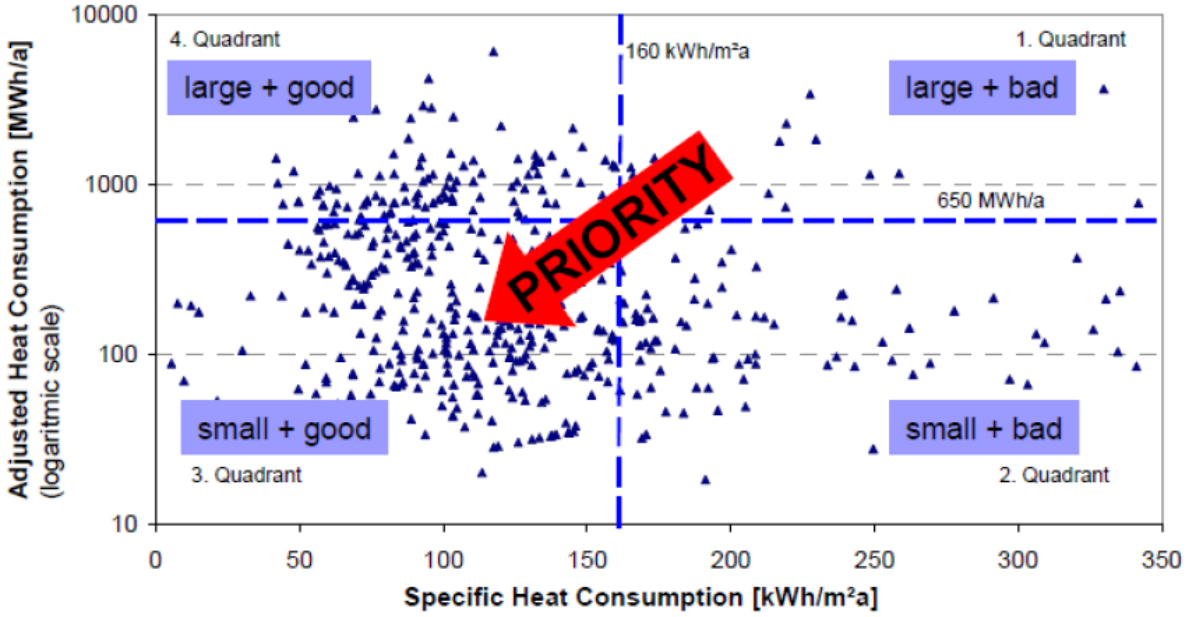
Examples to be inspired



European Commission

Example- building sector
Munich (1,4 million inh.): Energy saving concept

50 % of the city's municipal buildings stock examined to identify potential for energy savings



Highest priority given to the renovation of properties in quadrant 1: high relative saving potential, but also a high absolute saving potential.

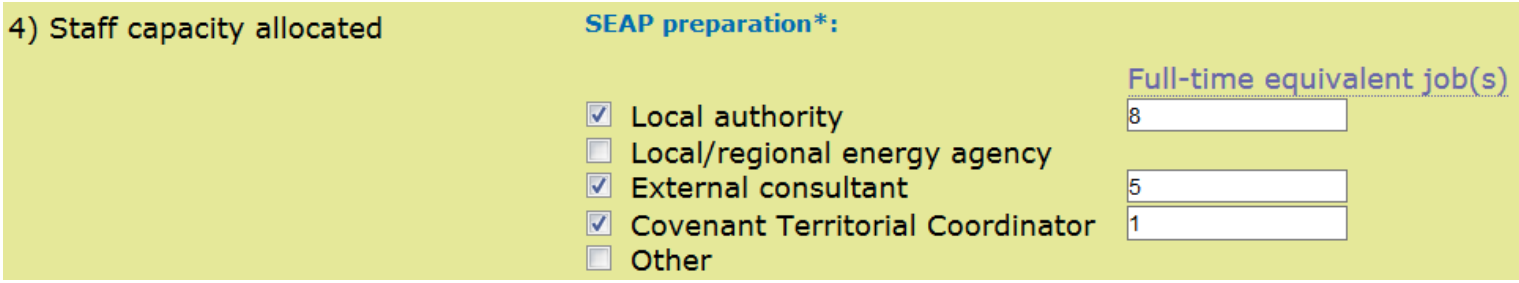
Example transport

Stockholm (830000 inh.):

- *90 % of buses will be powered by renewable fuels before the end of 2020*
- *100% of newly registered private cars should be independent of fossil fuels by 2020*
- *The bus fleet will be fossil fuel-free by 2025*

Finantial figures and commitments

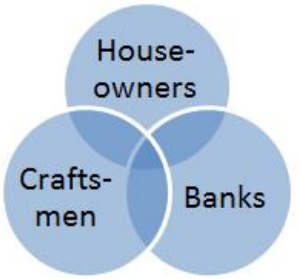
Example



In each municipality/city, different civil servants are involved in CoM. In total 1 FTE is reached by each participating municipality/city with less than 15.000 inhabitants for SEAP preparation and implementation. Municipalities and cities with more than 15.000 inhabitants reach 2 FTE.

Example stakeholders involvement
Sonderborg (75000 inh.): Project ZERO

Shift in focus in the elaboration and implementation of their plan:



From: the municipality initiating and proposing actions consulting the stakeholders
To: the municipality takes the role of a partner together with all interested parties in developing a vision for the local community

Public-private partnership called ProjectZERO:
ZEROcarbon community by 2029:
CO_2-neutral growth and sustainable urban development

Stay in touch

Silvia.rivas-calvete@ec.europa.eu

EU Science Hub: *ec.europa.eu/jrc*

Twitter: *@EU_ScienceHub*

Facebook: *EU Science Hub - Joint Research Centre*

LinkedIn: *Joint Research Centre*

YouTube: *EU Science Hub*