



Quick Reference Guide

Monitoring SECAP implementation

Why is monitoring important?

Establishing a monitoring process is an important part of the Covenant of Mayors commitments, which allows you to **measure progress toward the targets** set in your Sustainable Energy and Climate Action Plan (SECAP). It enables you to **track the impacts of the actions** included in your plan and compare estimated impacts to what is actually achieved in terms of energy savings, renewable energy production, CO₂ emissions reduction, and efforts to improve resilience to the impacts of climate change. Assessing the implementation status of the actions and their effects also allows you to determine whether the action is performing well and to identify corrective measures, in case specific actions are not delivering their expected impacts. Monitoring is furthermore an important exercise to help **understanding the barriers to the implementation of your action plan** and determine the cause of failure to implement specific measures. It is also a good opportunity to **identify and document best practices** or success stories to be shared with other stakeholders, for instance using the online Catalogue of Good practices (formerly referred to as Benchmarks of Excellence). In addition, you can also identify **new opportunities for action** and assess side benefits that arise from the implementation of your SECAP actions. Monitoring energy consumption, CO₂ emissions, vulnerability to the impacts of climate change, and adaptation actions allows you to understand whether you are **on track to reach the target** and to identify factors that affect results, such as weather or population changes.

How to carry out a monitoring process?

The monitoring process should be defined at the time of preparing your action plan and can be further refined as it is an ongoing process. Some elements to take into account when ensuring an effective monitoring process are listed below.

Tips for a successful monitoring process

- Assign a dedicated person to coordinate the process, and if deemed necessary establish a team or committee to meet periodically.
- Identify the data to be collected and consistent methods for data collection.
- Identify the data sources, including departments and external stakeholders that will be able to provide data.
- Establish the frequency of monitoring.
- Ensure that the data collected is reliable and comparable over time.
- Define monitoring indicators and set specific benchmarks to compare their performance.
- Define a communication plan to communicate results to policy makers and other stakeholders and tailor the information to address each audience.
- Ensure a link between the results of the monitoring report and the municipal budget planning cycles, so that any adjustments to your action plan can be incorporated, if necessary.

What are the minimum Covenant reporting requirements?

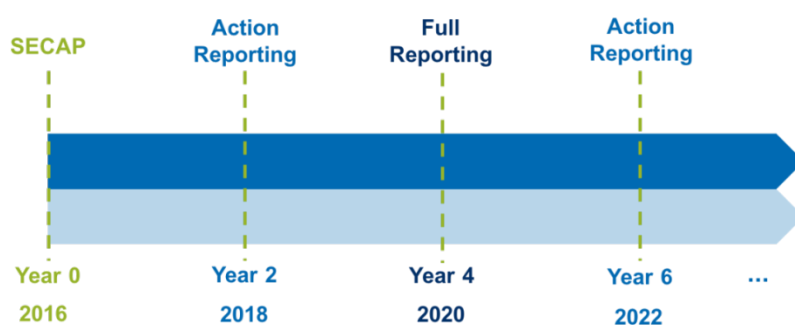
By signing up to the Covenant of Mayors, you have committed to submitting **a monitoring report at least every second year** after submission of the Action Plan for monitoring and evaluation purposes. This commitment is translated in the **submission of a monitoring template** via the restricted website area "[My Covenant](#)". Uploading a monitoring report remains optional. Failure to submit a monitoring template in two successive periods, i.e. after four years, results in termination of the membership to the Covenant of Mayors.

The table below shows the parts of the reporting template that are to be completed for each reporting stage:

Parts of the Reporting Template		Reporting Requirements		
		Within 2 years	Within 4 years	Within 6 years
MITIGATION	Strategy <i>Report any changes to the initial strategy as well as updated information on human and financial resources.</i>	✓	✓	✓
	Emission Inventories <i>Provide final energy consumption and CO₂ emissions data by energy carrier and by sector for a recent monitoring year.</i>	✓ (BEI)	✗	✓ (MEI)
	Mitigation Actions <i>Provide information on and from a mitigation-related Action Plan, including individual actions.</i>	✓	✓ (min. 3 Key Actions)	✓
ADAPTATION	Adaptation Scoreboard <i>Provide an indication of the status of adaptation and the level of completeness of actions within the adaptation cycle.</i>	✓	✓	✓
	Risks & Vulnerabilities <i>Report on climate hazards, vulnerabilities, and impacts faced by your city.</i>	✓	✓	✓
	Adaptation Actions <i>Provide information on the adaptation-related Action Plans and individual adaptation actions.</i>	✗	✓ (min. 3 Key Actions)	✓

Note (mitigation part): If you find that developing and reporting the results of a Monitoring Emission Inventory (MEI) every two years puts too much pressure on human or financial resources, you may decide to carry out an emission inventory every four years instead of two.

For instance, in the case of a signatory who has submitted its SECAP in 2016; they must carry out an 'Action reporting' (without a MEI) in 2018 and a 'Full reporting' (with a MEI) in 2020.



How are signatories monitoring the implementation of their action plan?



Vila Nova de Gaia, Portugal

The city of Vila Nova de Gaia was the first to submit its monitoring results to the Covenant of Mayors in end-July 2014. Vila Nova de Gaia's report concludes that CO₂ emissions in the city have been reduced by 16% compared to 2005 according to the compiled Monitoring Emission Inventory for 2011. The greatest reductions were observed in the transport sector, while the buildings sector's emissions have slightly increased (5%). Despite the fact that the economic crisis also gave its contribution to the drop in CO₂ emissions, significant reductions were also achieved through the implementation of measures such as landfill biogas recovery for electricity production and subway line expansion. Other measures showing the exemplary role of the local authority were the refurbishment of social housing and municipal fleet renovation. The first set of actions being implemented were financed from local stakeholders, such as the City Council, energy agency, companies in transport and water, wastewater and waste sectors. The local authority itself has invested €12.8 million euros between 2010 and 2013, while the investment from other actors was around €35.7 million for the same period. One quarter of the budget foreseen for implementing the measures outlined in Vila Nova de Gaia's SEAP has already been spent. One of the main challenges pointed out by the energy agency in charge of monitoring the results relates to the fact that the data is too disperse and needs to be gathered from different bodies. To face this situation, the agency has developed an Excel tool for data collection and analysis as well as a web-based tool specific to collect energy consumption data from all municipal buildings and facilities. The lack of National and European funding as well as the lack of interest of Energy Service Companies (ESCOs) on the public sector have been the main barriers to achieving the expected implementation of the measures set out in the SEAP.

Key Facts

Inhabitants: 303,000

CO₂ Target: 25% from 2005 to 2020

Reduction achieved: 16% in 2011



Växjö, Sweden

Key Facts

Inhabitants: 87,000

CO₂ Target: 65% per capita from 1993 to 2020 and 100% by 2030

Reduction achieved: 47% in 2013

Växjö owns a long history of climate action initiated back in the 80s. Since 1993 that the city has been carrying out annual energy and CO₂ emissions monitoring reports. The city has been among the first signatories handling the Monitoring template. By 2013 – the year of the latest Monitoring Emission Inventory – the city has reduced its CO₂ emissions per capita by 47% in relation to 1993, reaching 2.4 tonnes CO₂ per capita. The population in Växjö has increased by 20% in the same period, thus the reason for setting the target to be emissions per capita. Fuel shift measures in the buildings and industry sector have

greatly contributed to reduce greenhouse gas emissions in the city. District heating plants running on fossil oil have shifted to bio-oil which resulted in reducing annual emissions by 500 tonnes. The Lantmännen Reppe Industry which used to use oil to produce steam for its industrial processes has shifted to biomass. With an investment cost of €0.5 million, this has contributed to reduce Växjö's overall CO₂ emissions by 3% and fossil oil consumption by 33%. The monitoring report has also concluded that the transport sector remains Växjö's biggest challenge in reducing emissions due to the high consumption of fossil fuels. Nevertheless, some measures have taken place, such as the production of biogas to be used in public transport and cars in the newly constructed biogas plant with an investment of close to €9 million made by the local authority or the optimisation of freight transport in the city concerning municipal purchases. In terms of adaptation, Växjö developed a plan in 2013 that targets technical infrastructure (e.g. water, sewage, energy), buildings, natural spaces and activities (e.g. agriculture, forestry, tourism) and public health. In the plan numerous actions are outlined and prioritised, including an investment plan for stormwater management measures, the development of an integrated climate adaptation and spatial planning approach, and public

awareness raising campaigns about the heat effects of heat waves to name a few. The goal of Växjö's adaptation efforts is to identify sectors that require adaptive action and integrate adaptation into the daily processes and planning of all affected parts of the city's administration.



Watch the [webinar recording](#) where Vila Nova de Gaia and Växjö explain their monitoring experience!



Colmar, France

Colmar carries out an evaluation every six months in order to measure the progress in their SEAP implementation, using both qualitative and quantitative indicators. Based on this, the project team and steering committee analyse the results and decide on potential changes to the plan. For each SEAP action, there is an action fiche where the action is described in detail, including means of implementation, human resources, partners, timeframe, expected results and monitoring indicators. Colmar's monitoring report shows that the city is half way to achieve the target. It has reduced its greenhouse gas emissions per capita by 10% in the period 2007-2013. As part of the local authority's strategy, a number of grants and subsidies have been provided to improve the energy performance of residential buildings and promote sustainable urban transport. An amount of €0.5 million has been granted to improve the thermal performance of 780 dwellings, leading to a reduction of 3.1 ktonnes CO₂ eq. Colmar has also implemented a [grant scheme to promote the use of bicycles](#). Citizens can benefit from a €120 grant when purchasing a new bicycle and €200 when purchasing an electrical bicycle. By 2014, 16,523 persons have benefited from this measure which involved a city budget of close to €1.7 million. This measure has also been accompanied by investments in cycle paths. Colmar has set an objective of 100 km cycle paths by 2014, which has been achieved. The results show an increase in the use of bicycles, which now represents 11% in total urban transport, and a reduction in greenhouse gas emissions of 8.7 ktonnes.

Key Facts

Inhabitants: 68,000

CO₂ Target: 20% per capita from 2007 to 2020

Reduction achieved: 10% in 2013



Tallinn, Estonia

Key Facts

Inhabitants: 411,980

CO₂ Target: 20% from 2007 to 2020 and 40% by 2030

Reduction achieved: 10% in 2011

The City of Tallinn has committed to reduce its CO₂ emissions by 20% by 2020 and by 40% by 2030 from 2007 levels. According to the Monitoring Emission Inventory carried out for 2011, the city has already reduced its CO₂ emissions by 10%. The construction of a Combined Heat and Power Plant (Tallinna EJ) using wood chips, which accounted for an investment of €85 million, has contributed to reduce CO₂ emissions associated to end-users heat consumption by 150 ktonnes. In addition, renovation measures currently ongoing in residential and commercial buildings are expected to reduce CO₂ emissions by some

100 ktonnes and result in approximately 400 GWh energy savings. The lion's share of the first set of implemented actions took place in the municipal sector. Some examples are the renovation of [school buildings](#) and [kindergartens](#) using Public Private Partnerships. This accounted to close to €12 million invested (without accounting for investments already made during 2009-2010) leading to more than 500 MWh annual energy savings. Actions at the level of improving the building envelope of social houses and the sport hall have also been carried out by the local authority. The full implementation of Tallinn's SEAP will require an investment of more than €1.4 billion, of which 45% is foreseen to come from other actors than the local authority. In the period 2011-2013, 24% of this budget has been spent in the implementation of SEAP actions. Nevertheless, limited financial resources are pointed out by the city as a strong barrier to SEAP implementation that needs to be overcome in order for the city to succeed in achieving its targets.



Bologna, Italy

In regards to adaptation, Bologna has an Adaptation Plan that covers the period from 2012 to 2025 and aims to address the key climate impacts the city faces including water scarcity and droughts, heat waves, and extreme rainfall and hydrogeological risk. The administrative structure established for the development and implementation of the Plan was the Sustainability Office of the city's Environmental Department. This office is responsible for monitoring implementation against the indicators outlined in the monitoring framework, which include, for example, ensuring a minimum flow of Reno river of greater than 1,87m³/second, decreasing leakages from the water supply network by 18%, reducing domestic water consumption to less than 130 L/inh/day, and implementing 10 greening measures on public buildings and 4 on public spaces in the historical city centre to name a few. Of the 50+ actions outlined in Bologna's monitoring template, 19% have been completed and 57% are in the implementation phase. The completed actions, for example, have already achieved savings of 44,000 m³/year of potable water, collected 9,000–12,000 m³ of water per year through a rainwater collection system, and planted 1,486 trees (by 2015). The costs of the projects ranges from approximately €25,000 for an awareness raising website regarding health, heat waves, and air quality to €15 million for the creation of a new lamination pond located in front of the water treatment plant. Limited financial resources, however, are one of the key factors identified by the city as creating a barrier to taking adaptation action.

Key Facts

Inhabitants: 386,663

Climate impacts: water scarcity & droughts, heat waves, extreme rainfall & hydrogeological risk.

Adaptation Goals: 1) ensure min. Reno river flow of 1,87m³/second, 2) decrease leakages from water supply network by 18%



Aachen, Germany

Key Facts

Inhabitants: 253,945

Climate Impacts: extreme heat & precipitation, flooding, storms

Adaptation Goals: 1) transforming wooded areas to resilient hardwood forests, 2) increasing green areas in the city, 3) mitigating damages from heavy rainfall

To prepare and improve its resilience to the impacts of climate change, Aachen has conducted a vulnerability assessment and drafted an Adaptation Action Plan. A team of nine administrative departments are involved in implementing the city's adaptation actions and exchanges regularly on their experiences, strategy, and ideas. A coordinating office is responsible for summarising measures and planned activities, monitoring progress, and communicating results. To achieve Aachen's adaptation goals of transforming wooded areas to more resilient hardwood forests, optimising and increasing the green areas in the city centre, and mitigating damages from heavy rainfall on buildings and infrastructure, the city has identified a number of actions. 27% of its identified adaptation actions are planned and 47% are in the

implementation phase. The timeframe of the adaptation action varies but the first actions recorded in the monitoring and reporting template are to be completed in 2017, after which time the outcomes will be assessed. Aachen's planned adaptation actions range from short term projects like passing municipal laws for green areas and green roofs and awareness raising campaigns about invasive species, to longer term projects like the renaturation of streams and continuation of sustainable forestry practices.