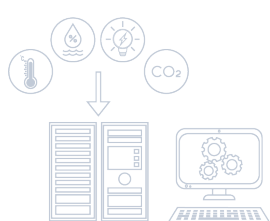




ENERGee Watch

Curriculum and learning material for Course:
Indicators and strategies
on adaptation to Climate Change



The ENERGee Watch project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement no. 892089.



Indicators and strategies on adaptation to Climate Change



Introduction

The ENERGee Watch project stems from the existing informal European network of regional greenhouse gas emission observatories managed by FEDARENE whose mission is to collect, monitor, and report Greenhouse gas (GHG) Emissions and implement energy saving strategies and policies.

Many of the structures are governed by a local consortium gathering at least several public authorities and energy data suppliers. They are very often supported by public authorities and integrated within existing regional organisations such as energy agencies or public departments. The value that this type of structure can provide stems from their expertise in data gathering, data analysis, and energy planning.

These observatories contribute strongly towards building a representation of the territorial impact on climate change and a framework for identifying areas of responsibility and priority areas for action. To best serve society, the observation of GHG emissions is a prerequisite before taking any appropriate action. The tasks of an observatory are very diverse. An observation system primary task is to provide data – most often free of charge – and improve knowledge about the territory's current and future situation with regards to impacts caused by climate change (energy and information related to GHG emissions). In some cases, air quality, social, economic or environmental effects on climate change are included. As a result, an observatory will characterise the current situation and the challenges on climate change, identify trends and influencing factors, and define various scenarios to meet any long-term energy and climate targets.

Another role is to analyse and monitor the development of the territory's situation on climate change, by identifying the challenges and by keeping an account of GHG emissions and energy consumption in order to measure the progress. To this end, an observatory will determine both quantitative and qualitative objectives, identify resources and opportunities to take action. Moreover, an observatory provides expertise and advice in policy development and in the decision-making process. Indeed, it tracks progress against fixed objectives, adjusts efforts and focuses on climate action. Lastly, it evaluates the impact of climate action in terms of energy saved and GHG emissions avoided, then providing local stakeholders with a forum for sharing knowledge and experience gained.

The overall aim of ENERGee WATCH is to launch a peer-to-peer learning program to enable regional and local authorities to timely and accurately define, monitor and verify their sustainable actions. The learning process targets regional and/or provincial authorities and their agencies and observatories that are responsible for collecting and overseeing the monitoring of mitigation and adaptation indicators in order to empower them to make use of the best practices learnt.

Regional observatories are powerful tools to implement efficient strategies at local and regional levels. Through ENERGee Watch, the objective is to increase the capacity of data observation across Europe to best support local and regional decisions makers in their fight against climate change.

Indicators and strategies on adaptation to Climate Change

Overall description of the course

Introduction

The course dedicated to adaptation aims to clarify the concept, provide keys to understanding this discipline and shed light on the methodologies, systems and tools to support public actors. The aim of the exercise is to guide participants in building their own roadmap to ensure that adaptation to climate change is fully integrated into energy-climate action plans. To this end, the adaptation course will be organised in three sessions:

- Session 1: Setting the basics: climate change adaptation and assessment
- Session 2: Establishing the diagnosis: methods and data
- Session 3: Drawing up a strategy and action plan: methods and roles of indicators

Each of the 3-hour sessions will, in turn, be divided into two highlights to optimise the pace of the training.

In addition to the contribution of knowledge, particular attention will be paid to interacting with the participants, taking advantage of feedback from actors involved in this field and ensuring a group dynamic.

The territorial examples and tools mentioned in this document are illustrative and do not reflect the completeness of the initiatives.

Course objectives

In this course, mentees can achieve the following learning objectives:

- Objective 1: to appropriate the concepts and notions associated with adaptation to climate change.
- Objective 2: to understand the challenges in one's territory, to understand the climate impacts and associated effects
- Objective 3: to be able to prefigure an adaptation to climate change policy on its territory
- Objective 4: to draw on the associated methods and tools, in particular to assess the adaptation policies

Topics

Content development will be organised as follows:

Setting the basics: climate change adaptation and assessment

- The fundamentals of adaptation to climate change
- The fundamentals of assessment for adaptation

Diagnosis: methods and data

- Drawing up the diagnosis
- Tools associated with the diagnosis (representation, deliverable, sharing)

Designing a strategy and an action plan: methods and roles of indicators

- Strategy development
- Your roadmap

Target

The course is particularly aimed at territorial public actors responsible for energy-climate policies and the structures (e.g. local energy agency) supporting them in the deployment of these policies. The objective is to facilitate inclusion of adaptation to climate change and the transition to action in order to face the current and future challenges for the territories.

Mentors

Sandra Garrigou has been assisting local authorities in drawing up their climate plans since 2008, primarily as a consultant (mission to support climate plans elaboration, at local scale, in the Haut-de-France Region, assistance to Rennes metropolitan area in its project "Covenant of Mayors"...) and then at the Institut Paris Region (organisation of technical workshops cycles on the integration of air quality in the climate plans, on monitoring and assessment in the climate plans...). Some teaching aids were produced for each workshops cycles. Sandra has developed an expertise in the field of adaptation to climate change, particularly in the framework of a partnership agreement with ADEME (e.g. projects: organisation of territorial workshops to raise awareness among local authorities, analysis of actions related to adaptation in climate plans, organisation of visits...) . Sandra is also a doctoral student on this subject at the "Territories, cities, environment & society" research unit at the University of Lille.

Erwan Cordeau, senior expert in the field of adaptation to climate change, supports the design of the course. His work has focused on urban heat and on the development of territorial diagnosis in the field of adaptation.

Agnès Parnaix, senior expert in the field of public policy assessment, will contribute to the session dealing with evaluation, data processing and the choice of indicators. Agnès has participated in the work on the assessment of regional planning.



Sandra Garrigou

Chargée de projets Plans climat et adaptation



Topic 1

The fundamentals of adaptation to climate change

Description of the topic (what)

This first part of the training aims to set out the elements and main messages that structure the other topics. Indeed, several concepts are associated with adaptation to climate change, including transformation and resilience. If the aim is to go back over its definition, the objective is also to understand to which notions and contextual elements the commitment to a strategy of adaptation to climate change refers in particular:

- The necessary complementarity between adaptation and mitigation strategies
- A dynamic and adaptive approach to project management
- Integration of the systemic effects of climate impacts (environmental, economic and societal)
- Taking into account the characteristics of the territory. Adaptation to climate change is a local matter, and the solutions deployed are at this scale
- The management of uncertainty and the articulation of different temporalities

Sharing these elements is an opportunity to provide the participants with keys to understanding in order to facilitate the emergence of operational responses that are consistent with their territories.

Relevant methods / tools (how to)

The IPCC reports set out the definitions and conceptual approaches associated with adaptation to climate change, which are shared internationally. They will be an essential reference for this sequence: <https://www.ipcc.ch/>

In addition, the documents associated with the standardisation of adaptation to climate change (ISO 14090:2019: Adaptation to climate change - Principles, requirements and guidelines, ISO 14091:2021 Adaptation to climate change — Guidelines on vulnerability, impacts and risk assessment and ISO 14092:2020 Adaptation to climate change — Requirements and guidance on adaptation planning for local governments and communities), Sendai Framework for Disaster Risk Reduction 2015-2030 will consolidate the contents of this sequence, respecting the use of those documents.

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The various territorial awareness-raising workshops on climate change carried out in Île-de-France have made it possible to capitalise on these concepts.

In addition, guidelines on adaptation: <https://www.arec-idf.fr/nos-travaux/publications/adaptation-au-changement-climatique-et-plan-climat-1.html> provide a first accessible introduction to these subjects.

Through these practices, we wish to demonstrate to the participants the importance of creating a common “culture” on adaptation to climate change via different tools. The step of knowledge sharing is the moment when we understand how the participants have made those concepts their own.

This representation of concepts also applies to the representation of the vulnerabilities that each participant will have in his or her territory, a crucial point in the diagnosis phase to determine the issues at stake.

Practices in other European regions

To illustrate the proposed contents on the capacity to elaborate different operational trajectories according to different climatic scenarios, the testimony of the Environment Agency of the United Kingdom, on the construction site of the century concerning “the Thames barrier” would be interesting <https://www.gov.uk/government/publications/thames-estuary-2100-te2100>

In the same way, ADEME (French Environment and Energy Management Agency) has produced a number of technical sheets highlighting exemplary initiatives and approaches. One of them addresses a strategy for adapting the coastline at Lacanau (France).

The approach aims to study the technical, legal and operational feasibility of relocating assets and activities and to compare several adaptation strategies for the Lacanau coastline in order to inform political leaders.

https://www.ademe.fr/sites/default/files/assets/documents/ademe-fiche_lacanau-web.pdf

Link(s) with other courses

To a certain extent, links could be sought with course, “Data display, dissemination and validation by local authorities”, in particular on the representation, the uses in the field of energy and climate.



Topic 2

The fundamentals of assessment for adaptation

Description of the topic (what)

During this sequence, the aim is to put into perspective the evaluation methodology for adaptation to climate change. In the dynamics of the adaptation project, it will be necessary to understand which needs the data will meet: to draw up the diagnosis, to communicate and raise awareness, to have indicators for monitoring and assessment, etc.

As part of the evaluation process, this sequence will allow the participant to grasp different aspects and generic points of attention:

- Which evaluation questions do we want to answer?
- What demonstrations are sought?
- When should the evaluation be carried out?

These elements can be echoed in the session dedicated to the strategy development process. In addition, this sequence will also be an opportunity to understand - according to the set of skills specific to each country - who are the action's leaders. The action initiator also conditions and frames the expected evaluation requirement.

Relevant methods / tools (how to)

Several methodological references support this topic:

- UKCIP, Oxford, UK: AdaptME toolkit Adaptation monitoring & evaluation: <https://www.ukcip.org.uk/wp-content/PDFs/UKCIP-AdaptME.pdf>
- ADEME: Monitoring and evaluating climate change adaptation at local and regional levels: Learning from international experience to develop an M&E methodology: <https://climate-adapt.eea.europa.eu/metadata/guidances/monitoring-and-evaluating-climate-change-adaptation-at-local-and-regional-levels-learning-from-international-experience-to-develop-an-m-e-methodology>

ENERGee Watch Partner Expertise

Institut Paris Region contributes to various assessment exercises of regional strategic documents that can inspire the contents of this sequence, such as the assessment of the implementation of the SDRIF (regional development plan for the Ile-de-France region).

<https://www.institutparisregion.fr/nos-travaux/publications/bilan-de-la-mise-en-oeuvre-du-sdrif.html>

Link(s) with other courses

Complementary links and approaches are to be sought with the course "Data collection course" and the course « Monitoring, reporting, verification: follow up on implementation of actions ». Cross-linked lessons on how to apprehend the indicators associated with mitigation and adaptation could be useful for a global approach to the evaluation of an energy-climate plan. This is an opportunity to assess the specificities of each of its components.

Practices in other European regions

The new EU strategy on adaptation to climate change illustrates the wide range of areas affected by climate change, including at the social level so as not to generate or exacerbate inequalities. The approach is intended to be systemic and highlight the articulation of different level skills:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0082&from=EN>

In the same context, the European Environment Agency has established a report focused on monitoring and evaluation of national adaptation policies throughout the policy cycle. The report provides an overview of country developments in terms of strategies and plans for climate change adaptation (CCA) and their implementation in a context of global and European policy frameworks. The report brings together lessons learned — at the national level — on adaptation monitoring, reporting and evaluation (MRE), future directions and opportunities for mutual learning on evaluating CCA strategies and plans at national and European levels.

<https://www.eea.europa.eu/publications/national-adaptation-policies>

The evaluation of France's first national plan on adaptation to climate change provides some initial insights into how the evaluation has been approached in this area.

https://www.ecologie.gouv.fr/sites/default/files/ONERC_Rapport_evaluation_mi-parcours_PNACC_VF.pdf

<https://www.adaptation-changement-climatique.fr/centre-ressources/adaptation-au-changement-climatique-1>

https://www.ecologie.gouv.fr/sites/default/files/ONERC_Rapport_2016_EvaluationNap_EN.pdf

Topic 3

Drawing up the diagnosis

Description of the topic (what)

The main subject of this sequence concerns the elaboration of the diagnosis. This will include understanding the method associated with vulnerability analysis, which articulates the notions of hazards, exposure/sensitivity and capacity to reduce risk.

A benchmark based on the work of the observatories at different territorial scales will shed light on the most commonly used data and those specific to the characteristics of the territories. It will also be a question of understanding the circuit of data sources and the role of the stakeholders contributing to this vulnerability analysis.

This time dedicated to the diagnosis, will be an opportunity to understand the various climate impacts at European level and to identify the resources and capitalisation elements available to European regions.

Following this sequence, the mentee will have the keys to approach the elaboration of this diagnosis and to assess the sources of information that can help him/her in this exercise.

Relevant methods / tools (how to)

The ISO-norm 14091:2021 Adaptation to climate change — Guidelines on vulnerability, impacts and risk assessment contains guidelines to conduct a diagnosis. This standardisation provides a framework for assessing the vulnerability of a territory.

Different approaches are possible, as shown by the publication of the European Environment Agency: <https://climate-adapt.eea.europa.eu/metadata/publications/adapting-to-climate-change-european-countries-assess-vulnerability-and-risks>

The TACCT methodology developed by ADEME could be reused for this sequence. This tool proposes a methodological approach to identify the consequences of climate change on a given territory and to formulate priority objectives for action. This methodology also helps in the development of a monitoring-evaluation process for climate change adaptation policies. It should enable a local authority to measure and monitor the progress of its policy as well as to evaluate its performance with a view to improvement and policy coherence.

In addition, the ADEME report "Indicators of a territory's vulnerability to climate change" - a collection of international literature - will consolidate these content elements.

ENERGee Watch Partner Expertise

-Ile-de-France region and ADEME carried out a study on vulnerabilities in the Ile-de-France region, highlighting systemic effects.
<https://www.teddif.org/sites/teddif/files/fichiers/2019/04/impacts-socio-economique-adaptation-changement-climatique-0.pdf>

Practices in other European regions

-The testimony of Climate-Adapt referent, the European resource platform on adaptation to climate change, is awaited. <https://climate-adapt.eea.europa.eu/> This would be an opportunity to apprehend the data and knowledge accessible through this one-stop shop for knowledge at European level.

-The testimony of AURA-EE would illustrate the structuring of climate database at a local scale (identify, collect and consolidate the data):

<https://www.orcau-avergne-rhone-alpes.fr/methodologie/climat/indicateurs-climat>

-Some observatories rely on the PER (Pressure-State-Response) method to characterize indicators. These elements may contribute to the contents of this sequence: <https://hal.archives-ouvertes.fr/hal-00794558>

Link(s) with other courses

A link can be made with the course "Data collection course", in particular on aspects related to access, quality and regular / periodic update of data.

Topic 4

Tools associated with the diagnosis (representation, deliverable, sharing)

Description of the topic (what)

This sequence will enable the different tools associated with the diagnosis to be assessed both in terms of content and the associated sharing. In the content elements, the cartographic representation tools to express the territories' vulnerabilities enable the effects of the climate (urban heat, floods, drought, etc.) to be materialised and contribute to raising the awareness of elected representatives. This will be the opportunity to question the associated means to deploy this cartographic work.

The scope of the diagnosis is all the more significant as it is shared by the greatest number to build this common vision of the territory's stakes and to initiate the elaboration of an associated strategy. This sequence will refer to the practices associated to collective intelligence (from the construction of the unfolding of a typical workshop to the methods of animation to reach the desired objective). At the end of this sequence, the participant will know a first panel of tools to consolidate the elements of diagnosis and to valorise it.

Relevant methods / tools (how to)

The methodologies dedicated to collective intelligence will be reference elements for this sequence. They allow a structured approach and make us reflect on the desired purpose of these collective times. Some organizations describe these practices as examples:

- <http://www.artofhosting.org/>

- <https://www.arec-idf.fr/nos-travaux/publications/la-concertation-energie-climat-1.html>

The SWOT analysis will also be discussed in the diagnosis sharing elements during this sequence. This classic method for representing the stakes makes it possible to associate a temporal approach between today's observations and what could happen in the future.

ENERGee Watch Partner Expertise

-The various territorial awareness-raising workshops on climate change carried out in Île-de-France have made it possible to capitalise on the way in which these collective times are conceived in order to ensure that the diagnosis is shared in the best possible way. One exercise concerns the prioritization of the main stakes linked to climate change via "game cards" called "Climate at stake": https://www.arec-idf.fr/fileadmin/DataStorageKit/AREC/Ressources/Outils/KO_plansclimat/cartes_jeux_vf.pdf

In order to do this, several groups mixing local mandate authorities and stakeholders were set to perform. They agreed on a shared vision of the issues.

-This sequence will be also an opportunity to visualise the issues in a cartographic form and to rely on examples of territorial diagnosis such as the one of the PCAEM: <https://www.metropolegrandparis.fr/fr/plan-climat-air-energie-metropolitain-76>

In particular, Institut Paris Region contributed to the diagnosis by producing cartographic representations, notably those on the effects of a heat wave.

Practices in other European regions

-CO-designing the Assessment of Climate CHange costs (COACCH), project funded by the European Union's Horizon 2020 research and innovation programme, is an interesting reference of intelligence collective tool. One of his specific goals is to develop a challenge-driven and solutions-orientated research and innovation approach involving stakeholders in the co-design, co-production and co-dissemination of policy driven research:

<https://www.coacch.eu/>

-The CERDD (environmental agency for the Hauts-de-France region) has conducted design thinking workshops with elected officials to raise their awareness of territorial issues and co-construct the most appropriate tools for their peers and facilitate the transition to action: <http://www.cerdd.org/Actualites/Changement-climatique/Adaptation-et-elu-es-un-dispositif-innovant>

Link(s) with other courses

To a certain extent, links could be sought with course, "Data display, dissemination and validation by local authorities", in particular on how to disseminate data.

Topic 5

Strategy development

Description of the topic (what)

Once the diagnostic elements and the associated challenges have been identified, the aim of this sequence is to understand the tools and methodologies associated with the development of the climate change adaptation strategy. At the end of this sequence, the participant will be able to understand the different types of actions that can be implemented and the prioritisation work to build adaptation paths. The review of the indicators and data associated with this stage will be part of the content provided during the sequence. These elements guide the resulting analysis work for those responsible for climate change adaptation policies. Even if the measure concerns the effects of the actions, it is also valuable to apprehend it with a qualitative perspective, for example on the means deployed or the governance associated with the strategy.

Relevant methods / tools (how to)

At the international level, under the Nairobi programme on impacts, vulnerability and adaptation to climate change was developed a report reviewing different assessment approaches and methodologies and shares best practices and lessons learned, which could inspire the adaptation pathways:

https://unfccc.int/resource/docs/publications/pub_nwp_costs_benefits_adaptation.pdf

The European Commission has financed the Life Sec Adapt which contains some guidelines to conduct an adaptation strategy:

http://www.lifeseadapt.eu/fileadmin/user_upload/ALLEGATI_LIFESCADAPT/EXCHANGE/C3_Adoption_of_Local_Climate_adaptation_strategy_and_plans_through_SEAP_integration/Methodology_Strategy_and_Action_Plan.pdf

In addition, the documents associated with the standardisation of adaptation to climate change (standard ISO 14090:2019: Adaptation to climate change - Principles, requirements and guidelines and ISO 14092:2020 Adaptation to climate change — Requirements and guidance on adaptation planning for local governments and communities), the TACCT methodology (ADEME) will consolidate the contents of this sequence.

ENERGee Watch Partner Expertise

The testimony of the City of Paris will illustrate the contents of this sequence. The City of Paris has been committed to a climate plan since 2007 and has been implementing a resilience strategy since 2018. One of the emblematic actions of the Paris strategy is the transformation of schoolyards into oases. The aim is to contribute to the refreshment of the city by making schoolyards watertight. Beyond the technical considerations, this action opens the reflection on multi-functional spaces and on the awareness-raising accompanying the project with teachers, parents and students.

Practices in other European regions

Approaches and strategies for adapting to climate change are emerging at European level, through sectoral or territorial entries (some elements available on <https://climate-adapt.eea.europa.eu/>). We can refer to the following feedback as illustrations:

-Adaptation in winter tourism in Spessart (Germany): the objective of the region of Spessart is to develop touristic offers towards all-year activities, compensating the winter losses in the "skiing" sector that occurred due to reduced snow and snowfall security resulting from changes in climatic conditions.

-Climate-adapted management of the Körös-Maros National Park (Hungary): a park was created for the protection of birds. The impacts of climate change on this environment can be significant and varied. They also exacerbate other forms of pressure. In order to deal with these impacts, a specific climate change adaptation management plan (which includes management strategies and measures, restrictions, barriers, indicators and stakeholder engagement methods) has been created.

Link(s) with other courses

To some extent, links could be sought with course "Monitoring, reporting, verification: follow up on implementation of actions", in particular, on the monitoring of the implementation of actions.



Topic 6

Your roadmap

Description of the topic (what)

The objective is to be able to draw up a first version of the roadmap. Each participant will be able to draw on the lessons learnt during this cycle and lay the foundations for the first elements of the framework:

- What actions would you like to implement following this training?
- To meet what objectives?
- What would be the steps to achieve them?

To facilitate this exercise, a framework document will be available at the first topic of the learning course. This document integrates some structural questions in links with the main contents of each topic. The mentee will have the possibility to answer during the session or between the sessions.

This sequence will be split in 3 steps:

- Finalize the framework document and fill 2 actions sheets. The latters will formalize the first intentions of the mentee to prefigure an adaptation strategy depending his position in the territory
- Sharing inside the group
- Collective feedback to complete each mentee's roadmap

Relevant methods / tools (how to)

Several tools could be articulated: framing note, specification sheet, model of an action sheet in order to facilitate and structure the guidance for the sequence. We will pay a particular attention to the methods of collective intelligence to share and advance everyone's thinking in a limited amount of time.

ENERGee Watch Partner Expertise

The various territorial workshops to raise awareness on climate change carried out in Île-de-France have made it possible to capitalise on the way in which these collective times are conceived, and in particular how they help structure the local authority roadmap.

The specific tool for framing PCAET approaches could be adapted to a reflection on adaptation to climate change processes.

https://www.arec-idf.fr/fileadmin/DataStorageKit/AREC/Ressources/Outils/KO_plansclimat/Outil_de_cadrage_du_PCAET.xlsx

Practices in other European regions

-Interreg Alpine Space: The Alpine Space programme is a European transnational cooperation programme for the Alpine region. It provides a framework to facilitate the cooperation between economic, social and environmental key players in seven Alpine countries, as well as between various institutional levels such as: academia, administration, business and innovation sector, and policy making.

Within this framework, a governance mapping has been developed to visualise the interactions between actors, planning documents and actions. It sheds light on the strengths and weaknesses of the approach and on the adjustments to be made in the roadmap for each of the stakeholders.

<https://www.wsl.ch/gov-vis-cca/>

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The logo for ENERGee Watch features four overlapping circles. The first circle on the left is a light blue ring. The second circle is a solid teal color. The third circle is a light green color. The fourth circle on the right is teal with white wavy lines. Below the logo, the text "ENERGee Watch" is written in a bold, teal, sans-serif font.

ENERGee Watch



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