Deliverable Proof – Reports resulting from the finalisation of a project task, work package, project stage, project as a whole - EIT-BP2020

Name of KIC project the report results from that contributed to/ resulted in the deliverable	**Transformation of Regional Energy Agencies for Climate (T4C) Project**
Name of report	**Deliverable 1: Analysis of the current ecosystem and future trends in which Energy agencies are operating on EU level**
Summary/brief description of report	The aim of this Deliverable is to provide an in-depth analysis of the current ecosystem and future trends in which Energy agencies are operating on EU level. The analysis of the current ecosystem and future trends in which Energy Agencies are operating at an EU level is a crucial part of the project, as it will serve as the foundation on which the scope of the adjustment and transformation will be built.
Date of report	December 2020

Supporting Documents: attach in pdf format

Climate-KIC is supported by the EIT, a body of the European Union

Climate-KIC is supported by the EIT, a body of the European Union

REGIONALNA ENERGETSKA AGENCIJA NORTH-WEST CROATIA
SJEVEROZAPADNE HRVATSKE REGIONAL ENERGY AGENCY

D1 Analysis of the current ecosystem and future trends in which Energy agencies are operating on EU level

Table of Contents

1. Introduction

With releasing the European Green Deal in September 2020 the EU proposed highly ambitions actions across all sectors that will enable the EU to move towards a climate-neutral economy. First climate action initiatives under the Green Deal were European Climate Law, European Climate Pack and 2030 Climate Target Plan. Moreover, the Commission wants to adopt a new, more ambitious EU strategy on adaptation to climate change to strengthen efforts on climate-proofing, resilience building, prevention ad preparedness. This will be a challenging time for cities as they will have to adapt to new strategies and implement new, more ambitious measures. Thus, the aim of Transform4Climate is to develop a capacity-building program to empower cities trough the work of their Energy Agencies, to achieve the necessary steps in their path towards decarbonisation.

The analysis of the current ecosystem and future trends in which Energy Agencies are operating at an EU level is a crucial part of the project, as it will serve as the foundation on which the scope of the adjustment and transformation will be built. The first step of the analysis included a review of the EU legislative framework for energy and climate to indicate in which conditions the Energy Agencies are operating. Following that positioning of Energy agencies within Europe has been identified, as agencies can operate as project developers, aggregators, and facilitators for public authorities, but they can also have a crucial role in raising awareness within the general public on related issues as well as helping the private sector to enter the energy market. Furthermore, an analysis of key stakeholders related to Energy Agencies course of operation is presented in chapter 5. Chapter 6 gives an assessment of future trends followed by the conclusion and final remarks.

2. EU legislative framework for energy and climate

The EU has adopted integrated rules to ensure planning, monitoring and reporting of progress towards 2030 climate and energy targets. Such rules are set under the Governance Regulation which demands that the EU Member States develop integrated national energy and climate plans, based on the five dimensions of the Energy Union. To understand it better, this chapter will focus on the EU energy and climate legal framework and targets.

2.1. Energy Strategies

To guide the EU towards a climate-neutral future, the European Commission has developed the Energy strategy, with the purpose to build an energy union in the EU and help to provide secure, affordable and clean energy for EU citizens and business, to decarbonise the EU's energy system in line with the European Green Deal objectives and to set a long-term vision for a prosperous, modern, competitive and climate neutral economy by 2050.

2.1.1. Energy Union

The Energy Union Strategy, published on 25th February 2015, aims to build an energy union which would give EU consumers, households and businesses, secure, sustainable, competitive and affordable energy. The Energy Union builds up on close relation of security, solidarity and trust, fully integrated internal energy market, energy efficiency, climate action and decarbonising the economy, as well as research, innovation and competitiveness.

The goals of the regulation are:

- to implement strategies and measures which ensure that the objectives of the energy union are consistent with the Paris agreement;
- to stimulate cooperation between the Member States to achieve the objectives and targets of the energy union;
- to promote long-term certainty and predictability for investors across the EU and foster jobs, growth and social cohesion;
- to reduce administrative burdens, in line with the principle of better regulation;
- to ensure consistent reporting by the EU and its Member States under the UN Framework Convention on Climate Change and the Paris agreement, replacing the existing monitoring and reporting system from 2021 onwards.

2.1.2. Clean Energy for all Europeans package

The Clean Energy for all Europeans package is an energy rulebook published in 2015. It consists of eight legislative acts:

- **Energy performance in buildings** - outlines specific measures for the building sector to tackle challenges.
- **Renewable energy** - sets an ambitious, binding target of 32% for renewable energy sources in the EU's energy mix by 2030.
- **Energy efficiency** - sets binding targets of at least 32.5% energy efficiency by 2030, relative to a 'business as usual' scenario.

- **Governance regulation** – a robust governance system for the energy union, under which each Member State is required to establish integrated 10-year national energy and climate plans (NECPs) for 2021 to 2030.
- **Electricity market design** - seeks to establish a modern design for the EU electricity market, that will be able to adapt to new market demands and be more flexible, market-oriented and better in integrating a greater share of RES
- **Electricity Directive** – replaced by the Directive on common rules for the internal electricity market, sets the limit for powerplants eligible to receive subsidies as capacity mechanisms. It also sets new rules to enable the active participation of consumers.
- **Risk Preparedness** – wants to ensure that appropriate tools are put in place to prevent, prepare for and manage electricity crises.
- **ACER** - Agency for the Cooperation of Energy Regulators helps ensure that the single European market in gas and electricity functions properly. It assists national regulatory authorities in performing their regulatory function at the European level and, if needed, coordinates their work.

The Council and the European Parliament set a political agreement that EU countries have 1-2 years to transpose the new directives into national law.

2.1.3. 2050 Long-term strategy

To achieve the needed economic transformation and broader goals of sustainable development which will move the EU towards the long-term goal set by the Paris Agreement, stable long-term strategies are crucial. Both, the national (Member States) long-term strategies and the EU long-term strategy have to cover following, with a perspective of at least 30 years:

- total greenhouse gas emission reductions and enhancements of removals by sinks;
- emission reductions and enhancements of removals in individual sectors, including electricity, industry, transport, the heating and cooling and buildings sector, agriculture, waste and land use, land-use change and forestry;
- expected progress on the transition to a low greenhouse gas emission economy, including greenhouse gas intensity, CO_2 intensity of gross domestic product, related estimates of long-term investment, and strategies for related research, development and innovation;
- to the extent feasible, expected socio-economic effect of the decarbonisation measures, including aspects related to macro-economic and social development, health risks and benefits and environmental protection;
- links to other national long-term objectives, planning and other policies and measures, and investment.

Member States had to submit their first national long-term strategies to the Commission by 1st of January 2020. The next strategies are due by 1 January 2029 and every 10 years thereafter while the strategies should be updated every five years where necessary. Also, the Commission put forward its long-term vision for a climate-neutral EU by 2050 in November 2018 and presented it to the United Nations Framework Convention on Climate Change (UNFCCC) in March 2020.

2.2. Energy Directives

The two energy Directives, The Energy Efficiency Directive and Renewable Energy Directive were established to guide the EU towards a carbon-neutral future by reducing the energy demand and producing energy by using renewable energy sources.

2.2.1. Energy Efficiency Directive

The Energy Efficiency Directive originally established a set of binding measures to help the EU reach its 20% energy efficiency target by 2020. Under the directive, all EU countries were required to use energy more efficiently at all stages of the energy chain, including energy generation, transmission, distribution and end-use consumption.

In 2018, as part of the 'Clean Energy for all Europeans package', the new amending Directive on Energy Efficiency was agreed upon to update the policy framework to 2030 and beyond. With the amended directive, the energy efficiency target for 2030 was put at, at least 32.5%. EU countries will have to achieve 0.8% energy savings of final energy consumption each year until 2030, except Cyprus and Malta which will have to achieve 0.24% each year. Other elements in the amended directive include:

- stronger rules on metering and billing of thermal energy by giving consumers rights to receive more frequent and more useful information on their energy consumption, also enabling them to better understand and control their heating bills;
- requiring the Member States to have in place transparent, publicly available national rules on the allocation of the cost of heating, cooling and hot water consumption in multi-apartment and multi-purpose buildings with collective systems for such services;
- monitoring efficiency levels in new energy generation capacities;
- updated primary energy factor (PEF) for electricity generation of 2.1 (down from the current 2.5);
- a general review of the Energy Efficiency Directive.

2.2.2. Renewable Energy Directive

As Europe needed to increase the use of energy from renewable sources, the original Renewable Energy Directive establishes an overall policy for the production and promotion of energy from renewable sources in the EU and it set goals until 2020.

The Clean Energy for all Europeans package did not only bring the recast of the Energy Efficiency Directive but also of the Renewable Energy Directive, which aimed to help the EU meet its emissions reduction commitments under the Paris Agreement.

The recast directive moves the legal framework to 2030 and sets a new binding renewable energy target for the EU for 2030 of at least 32%, with a clause for a possible upwards revision by 2023, and incorporates measures for the different sectors to make it happen. This includes new provisions for enabling self-consumption of renewable energy, an increased 14 % target for the share of renewable fuels in transport and stricter criteria for ensuring bioenergy sustainability. Most of the elements in the new directive need to be transposed into national law by the Member States by 30 June 2021, when the original renewables directive will be repealed.

2.3. Energy Targets

Energy targets are set by the two aforementioned directives. At a meeting on 23-24 October 2014, the European Council agreed on the 2030 climate and energy framework for the EU. It also adopted conclusions, and in particular endorsed four important targets:

- a binding EU target of at least 40% less greenhouse gas emissions by 2030, compared to 1990;
- a target, binding at EU level, of at least 27% renewable energy consumption in 2030, ;
- an indicative target at EU level of at least 27% improvement in energy efficiency in 2030;
- support the completion of the internal energy market by achieving the existing electricity interconnection target of 10% as a matter of urgency no later than 2020, in particular for the Baltic states and the Iberian Peninsula, and the objective of arriving at a 15% target by 2030.

With the 2030 climate and energy framework, the Commission proposed new targets and measures:

- At least 40% cuts in greenhouse gas emissions (from 1990 levels)
- At least 32% share for renewable energy
- At least 32.5% improvement in energy efficiency

With the establishment of the European Green Deal, the Commission proposed to raise the 2030 greenhouse gas emission reduction target to at least 55%. It plans to come forward with the proposals by June 2021.

2.3.1. Energy efficiency

The efficiency target for 2030 of at least 32.5%. The target, to be achieved collectively across the EU, is set relative to the 2007 modelling projections for 2030. This means that EU energy consumption should be no more than 1273 Mtoe (million tonnes of equivalent) of primary energy and/or no more than 956 Mtoe of final energy.

2.3.2. Renewable Energy

The EU's target is to reach 20% of its energy from renewable sources by 2020 and at least 32% by 2030 with possible upwards revision by 2023. Moreover, the target set at least a 14% share of renewable fuels in transport and stricter criteria for ensuring bioenergy sustainability.

According to data from Eurostat, for the renewable energy in the EU in 2018, among the 28 EU Member States, 12 Member States have reached a share equal to or above their national 2020 binding targets: Bulgaria, Czechia, Denmark, Estonia, Greece, Croatia, Italy, Latvia, Lithuania, Cyprus, Finland and Sweden. Four Member States are close to meet their targets (i.e. less than 1 percentage point (pp) away), nine are between 1 and 4 pp away, while three are 4 or more pp away from their targets.

2.4. Climate Strategy

The EU is fighting climate change through ambitious policies. Achieving the GHG emission reduction target for 2020 is on track, whilst new plans have been designed which will cut emissions progressively up to 2050. Moreover, with these new policies increasing importance is given not only to climate change mitigation but also adaptation.

2.4.1. EU Strategy on adaptation to climate change

The EU Strategy on Adaptation to Climate Change was adopted by the European Commission in 2013 to make the EU more climate resilient. It aims to enhance the preparedness and capacity of all governance levels to respond to the impacts of climate change. It focuses on three key objectives:

- **Promoting action by Member States:** The Commission encourages all Member States to adopt comprehensive adaptation strategies and provides funding to help them build up their adaptation capacities and take action. It also supports adaptation in cities through the Covenant of Mayors for Climate and Energy initiative.
- **'Climate-proofing' action at EU level** by further promoting adaptation in key vulnerable sectors such as agriculture, fisheries and cohesion policy, ensuring that Europe's infrastructure is made more resilient, and promoting the use of insurance against natural and man-made disasters.
- **Better informed decision-making** by addressing gaps in knowledge about adaptation and further developing the European climate adaptation platform (Climate-ADAPT).

2.4.2. EU Strategy on Green Infrastructure

On 6 May 2013, the Commission adopted an EU-wide strategy promoting investments in green infrastructure, to restore the health of ecosystems, ensure that natural areas remain connected together, and allow species to thrive across their entire natural habitat so that nature keeps on delivering its many benefits . The strategy promotes the deployment of green infrastructure across Europe as well as the development of a Trans-European Network for Green Infrastructure in Europe, a so-called TEN-G, equivalent to the existing networks for transport, energy and ICT. This can also help enhance the health and wellbeing of EU citizens, provide jobs, and boost the EU economy.

2.4.3. EU Biodiversity Strategy

The European Commission has adopted the new EU Biodiversity Strategy for 2030 and an associated Action Plan - a comprehensive, ambitious, long-term plan for protecting nature and reversing the degradation of ecosystems. It aims to put Europe's biodiversity on a path to recovery by 2030 with benefits for people, the climate, and the planet.

The Strategy contains specific commitments and actions to be delivered by 2030, including:

- Establishing a larger EU-wide network of protected areas on land and at sea, building upon existing Natura 2000 areas, with strict protection for areas of very high biodiversity and climate value.

- An EU Nature Restoration Plan - a series of concrete commitments and actions to restore degraded ecosystems across the EU by 2030, and manage them sustainably, addressing the key drivers of biodiversity loss.
- A set of measures to enable the necessary transformative change: setting in motion a new, strengthened governance framework to ensure better implementation and tracking of progress, improving knowledge, financing and investments and better-respecting nature in public and business decision-making.
- Measures to tackle the global biodiversity challenge, demonstrating that the EU is ready to lead by example towards the successful adoption of an ambitious global biodiversity framework under the Convention on Biological Diversity.

2.5. Climate Directives

The EU is aware that fighting climate change and achieving the transition to a climate-neutral society will require significant investments, research and innovation, new ways of producing and consuming, and changes in the way that people work, use transport and live together. Thus, it is addressing this in several directives. In the following section the most relevant directives by sectors are summarised.

2.5.1. Energy

Energy is covered within the aforementioned Energy Efficiency and Renewable Energy directives discussed in more detail under headings 2.2.1. and 2.2.2.

2.5.2. Biodiversity and Ecosystem

The legal basis for the EU nature protection network is comprised of EU nature legislation, most notably the Birds Directive and the Habitats Directive which represent the backbone of biodiversity policy. The Habitats Directive, adopted in 1992, protects over 1000 animals and plant species and over 200 types of habitat, with which it also covers the ecosystem. It established the EU-wide Natura 2000 network of protected areas.

2.5.3. Buildings

To boost the energy performance of buildings, the EU has established a legislative framework that includes the Energy Performance of Buildings Directive and the Energy Efficiency Directive. Together, the directives promote policies that will help achieve a highly energy-efficient and decarbonised building stock by 2050, create a stable environment for investment decisions and enable consumers and businesses to make more informed choices to save energy and money.

2.5.4. Disaster Risk Reduction

Disaster Risk Management helps populations to better cope with disasters caused by climate change. Because of that disaster risks are included in key EU policy areas, including health, environment, climate change adaptation, development, cohesion, agriculture, transport, energy, research and innovation. To ensure the quality of Disaster Risk Management in the Member States, the European Commission issued Recommendations for National Risk Assessment for Disaster Risk Management in the EU.

2.5.5. Transport

European Union transport policy aims to ensure the smooth, efficient, safe, and free movement of people and goods throughout the EU utilizing integrated networks using all modes of transport (road, rail, water and air). In regard to climate change, the most relevant document is the European Strategy for low-emission mobility. It identifies three priority areas for action: increasing the efficiency of the transport system, speeding up the deployment of low-emission alternative energy for transport, and moving towards zero-emission vehicles.

2.5.6. Urban

For the urban environment, several directives could be considered from the view of climate change. Environmental Impact Assessment Directive applies to a wide range of public and private urban-development projects. Water Framework Directive - integrated river basin management for Europe Directive is a response to demands by citizens and environmental organisations for cleaner rivers and lakes, groundwater, and coastal beaches. Floods Directive obliges EU countries to assess and reduce flood risks. Finally, the Urban Waste Water Directive seeks to protect the environment from the adverse effects of urban and industrial wastewater discharge.

2.5.7. Water management

The EU Water Framework Directive, adopted in 2000, aims to protect water, based on natural geographical formations: river basins. It sets out a precise timetable, with 2015 as the deadline for getting all European waters into good condition. The Directive provides scope to adapt to climate change through the cyclical river basin planning process.

2.6. Climate targets

With the commitment made in the Communication on the European Green Deal and the 2030 Climate Target Plan, the Commission proposes to raise the EU's ambition on reducing greenhouse gas emissions to at least 55% below 1990 levels by 2030. The new goal is set to make sure that the EU’s goal to be climate-neutral by 2050 will be achieved.

3. Initiatives

To accomplish the ambitious goals and to help the Member States in their efforts, a vast number of initiatives have been established throughout the European Union. Some of the initiatives were established by the European Commission, while others are a result of the cooperation of cities or the result of the cooperation with the European Commission. Following is the summery of the most important initiatives in the aspect of climate change.

3.1. Green deal

The European Green Deal is the EU's plan to make the EU's economy sustainable. It provides an action plan to boost the efficient use of resources by moving to a clean, circular economy, restoring biodiversity and cutting pollution. The plan outlines the investments needed and financing tools available. It explains how to ensure a just and inclusive transition.

3.2. Climate-ADAPT platform

The European Climate Adaptation Platform (Climate-ADAPT) is a partnership between the European Commission and the European Environment Agency (EEA). Climate-ADAPT is maintained by the EEA with the support of the European Topic Centre on Climate Change Impacts, Vulnerability and Adaptation (ETC/CCA). Climate-ADAPT aims to support Europe in adapting to climate change helping users to access and share data and information on various climate-related topics.

3.3. Mayors Adapt

Mayors Adapt is an initiative of the European Commission's Directorate General Climate Action. It is launched in the context of the EU Adaptation Strategy and is implemented within the Covenant of Mayors, the flagship European initiative for cities to reduce their greenhouse gas emissions. Mayors Adapt is supported by the European Environment Agency (EEA). The main outputs from the project are planned to be included in the Climate-ADAPT platform. Mayors Adapt provides a framework for local authorities to act on the second of these elements.

3.4. ManageEnergy

ManagEnergy is a European Commission initiative dedicated to local and regional Energy agencies. It helps them to increase sustainable energy investments in regions and cities across Europe. It provides information, know-how, visibility, and networking opportunities to support the agencies in contributing to Europe's climate and energy goals.

3.5. European Climate Pact

The European Climate Pact aims to engage citizens and communities in action for climate and environment. It aims to inform, inspire, and foster cooperation between people and organisations ranging from national, regional and local authorities to businesses, unions, civil society organisations, educational institutions, research and innovation organisations, consumer groups and individuals. The Pact is an EU-wide initiative that invites people, communities and organisations to:

- connect and share knowledge;
- learn about climate change;
- develop, implement and scale up solutions.

Anyone can be part of the European Climate Pact. Some of the ways to take part are to:

- become a Climate Pact Ambassador;
- take climate-friendly action and make a pledge;
- register a satellite event.

3.6. European Urban Initiative-post 2020

The European Urban Initiative aims to strengthen integrated and participatory approaches to sustainable urban development and provide a stronger link to relevant EU policies, and in particular, cohesion policy investments. It will do so by facilitating and supporting cooperation and capacity building of urban actors, innovative actions, knowledge, policy development and communication in the area of sustainable urban development.

3.7. Green City Accord

The Green City Accord is a movement of European mayors committed to making cities cleaner and healthier. It aims to improve the quality of life of all Europeans and accelerate the implementation of relevant EU environmental laws. By signing the Accord, cities commit to addressing five areas of environmental management: air, water, nature and biodiversity, circular economy and waste, and noise.

3.8. European Green Capital

The European Green Capital Award has been conceived as an initiative to promote and reward efforts to face environmental challenges. The aim is to give recognition to the important role that local authorities play in improving the environment, and their high level of commitment to genuine progress.

3.9. Strategic Energy Technology Plan

The European Strategic Energy Technology Plan (SET Plan) is a European initiative that has been launched in 2007 by the European Commission. It is a key stepping-stone to boost the transition towards a climate-neutral energy system through the development of low-carbon

technologies in a fast and cost-competitive way. The goal of the SET Plan is to help promote cooperation among EU countries, companies, and research institutions, and in so doing also deliver on the key objectives of the energy union.

3.10. EIP-SCC

The Smart Cities Marketplace is an initiative supported by the European Commission that brings together cities, industry, small business (SMEs), banks, research, and others. It aims to improve urban life through more sustainable integrated solutions and addresses city-specific challenges from different policy areas such as energy, mobility and transport, and ICT. It builds on the engagement of the public, industry, and other interested groups to develop innovative solutions and participate in city governance.

3.11. CIVITAS

CIVITAS is a network of cities for cities dedicated to cleaner, better transport in Europe and beyond. Since it was launched by the European Commission in 2002, the CIVITAS Initiative has tested and implemented over 800 measures and urban transport solutions as part of demonstration projects in more than 80 Living Lab cities Europe-wide. The knowledge garnered through these practical experiences is complemented, and supported, by a number of research and innovation projects also run under CIVITAS. These research projects look at ways of building a more resource-efficient and competitive transport system in Europe.

3.12. 100 Resilient Cities /C40 cities climate leadership group

100 Resilient Cities is dedicated to helping cities around the world become more resilient to the physical, social, and economic challenges that are a growing part of the 21st century. It supports the adoption and incorporation of a view of resilience that includes earthquakes, fires, floods, etc. and the stressors that weaken the fabric of a city on a day to day or cyclical basis.

C40 is a network of the world's megacities taking action to address climate change. C40 supports cities to collaborate effectively, share knowledge and drive meaningful, measurable, and sustainable action on climate change.

To ensure the development of robust climate change and resilience plans, the two networks announced a partnership. The collaboration will leverage resources and facilitate cooperation between the two groups, along with member cities.

3.13. EU Energy Poverty Observatory

The EU Energy Poverty Observatory (EPOV) is a relatively new initiative by the European Commission to help Member States in their efforts to combat energy poverty. It exists to improve the measuring, monitoring and sharing of knowledge and best practice on energy poverty.

3.14. Urban Agenda for the EU

The Urban Agenda for the EU is an innovative urban policy initiative, which has put multi-level governance into action. It has enabled cities, Member States, the European Commission

and other key stakeholders to come together to jointly tackle pressing urban matters and deliver concrete outputs for the benefit of EU citizens.

3.15. Hazards and risks of climate change impacts

Due to Climate Change, frequencies of extreme weather events such as floods, droughts and heat waves are expected to increase in the future. The JRC works on predicting and making impact assessments of such events.

4. The positioning of Energy agencies within Europe

Energy Agencies have multiple roles in the energy market - as project developers, aggregators, and facilitators for public authorities and therefore are in a unique position to support energy investments in their regions and cities. They also have a crucial role in raising awareness in the general public on related issues as well as helping the private sector to enter the energy market.

4.1. Role of Energy agencies within the EU framework

When the IEE released the first call for proposals for Energy Agencies it was because there was a great number of authorities in the need for services that Energy Agencies provide at the local level. The primary reason for setting up Energy Agencies relates to their local added value, that can be divided into 3 categories:

1. Provision of information/advice to energy users;
2. Assistance/policy advice to public authorities;
3. Market facilitation.

Energy Agencies established with EU support or which participate in EU projects are contractually obliged to spread information about EU energy policies to decision-makers and stakeholders at local and regional levels who are affected by European policy. This includes public authorities, businesses and households. By disseminating such information, Energy Agencies support the implementation of EU policies related to sustainable energy, help local communities to benefit from those policies, and influence both the development and implementation of related local energy policies.

Agencies pass on information from across the EU to local businesses and provide advice to both the private and public sector with the help of international experts through workshops, training courses, business trips, and study tours. Agencies also promote best practices in their regions using knowledge and case study examples which they have obtained by networking with other agencies across the EU.

EU energy policies are embodied in a combination of official communications, white and green papers, action plans and legislation, only some of which are legally binding. Energy Agencies which are regularly provided with up to date information about EU initiatives, policies and legislation can offer a local source of expertise on EU energy policies and their implementation, which they can interpret for local policy makers and other local decision-makers in their language and a local context.

From the aspect of market positioning, Energy Agencies work in three main fields:

- development of projects for cities/municipalities (financing through public budgets);
- EU collaboration and projects;
- independently performed activities on the free market- development of projects/studies for private investors.

Moreover, on 13 October 2015, a signing ceremony was organised for Energy Agencies to commit to supporting local authorities in developing and implementing Sustainable Energy

Action Plans. This was a recognition of a key role that Energy Agencies play in helping municipalities reach their Covenant of Mayors goals.

5. Key stakeholders

This chapter provides an analysis of key stakeholders that may influence the Energy Agencies according to their levels of participation in the project, interest, and influence as well as how they will be involved and how it will be communicated with them. They will also be identified through a form of connection with Energy Agencies - partners, clients, competition, or a combination of the categories. A detailed list of stakeholders can be seen in Annex 1: List of stakeholders.

5.1. Energy and Environment ministries (and other related ministries)

Energy agencies work with Energy and Environment ministries in the means of collaboration or consulting. As the ministries have the highest impact and are the most relevant in the means of decision making, there is a high need for successful collaboration. Ministries could be the key stakeholders to help the development of Climate Energy agencies (CEA) that will implement EU Climate Directives. Barriers in the collaboration could be lack of interest, not seeing the potential and the need for Climate Energy agencies, differing priorities, low level of ambition and resistance to change and bureaucratic.

5.2. Regulators/ utilities

Energy agencies would collaborate with regulators/utilities in the development of Climate Energy agencies and setting regulatory basis. Furthermore, currently Energy agencies, and in future Climate Energy agencies would consult regulators/utilities do develop the market and promote RES. As the regulators/utilities have medium to high impact on the work of Climate Energy agencies, their collaboration is needed. Barriers in the collaboration would be lack of interest from the regulators/utilities and their lack of understanding why Climate Energy agencies are needed. Some more specific barriers would also be that the regulators are working with large scale national programs and are not too interested in the smaller projects of Climate Energy agencies, they possess the monopoly for selling the electricity and would not want to help the creation of new companies that would endanger them and are not willing to change, etc.

5.3. Public authorities (regional and local level)

Public authorities are one of the most relevant stakeholders for the establishment of Climate Energy agencies. In the same way, as the Public authorities were the ones who needed to express their need for Energy Agencies, now they need to be informed why there is a strong need to upgrade Energy Agencies to Climate Energy Agencies, thus they have medium to high impact on the project. In the means of work, Public Authorities would have to support the creation of such Agencies, and at the same time continue sharing their needs with the Agencies, just this time from a wider perspective, working with CEA to promote RES and regulate tariffs to ensure that RES installation is rewarded, to promote energy transition and climate change adaptation of local communities at policy and regulatory level. Barriers in engaging public authorities are

lack of interest/knowledge and capacity for cooperation, differing priorities, low level of ambition and resistance to change and bureaucratic.

5.4. Energy agencies (competition/partners)

Energy agencies are the ones who need to be empowered and collaborated with. Although their impact on the upgrade to CEA is medium since they will have to adjust to the climate needs, it is extremely important to be a support to them in the journey to evolve to Climate Agencies. Barriers to their cooperation would be lack of interest, not seeing the reason to evolve into a Climate Agency and lack of resources to evolve into CA.

5.5. Private companies (competition/clients/partners)

Some private companies are important for the implementation of climate adaptation measures and for climate change projects to be successful. As it is important to establish good cooperation with them, their impact on the upgrade to CEA is medium. The barriers for the cooperation are lack of interest of the private companies, their unwillingness to start a partnership and to share their needs and possibilities for cooperation, lack of knowledge and capacity for cooperation.

5.6. Associations (partners)

Similar as private companies, Associations are also important for the implementation of the climate adaptation measures and for climate change projects to be successful, ensuring a good cooperation with them is also important, although their impact varies with their market power and can go from low to high. The barriers to cooperation are lack of knowledge and capacity for cooperation.

5.7. Academia (partners/competition)

Academia is striving to be the first to bring change. As such, Academia can be a partner on certain projects, but also a competition. Depending on their influence on the market, Academia could have little to high influence on the establishment of CEA. The barriers to engaging them are lack of interest/knowledge and capacity for cooperation.

5.8. Other (partners)

Other stakeholders that will be engaged are media, commercial institutions, general public and NGOs. Their key interests would be sharing the news about the newly established CEA and their work, but also developing projects and funding mechanisms for certain projects.

6. Assessment of future trends

The global climate is changing, and this change is apparent across a wide range of observations and is related to many different sectors (with a focus on energy, transport, buildings, and infrastructure). When looking at all the directives and action plans issued by the European Commission, it is clear that the path of the EU policies is increasingly focusing on not only climate change mitigation but also adaptation. Evidence for that is the plan for Governance regulation and establishment of NECPs, and the Risk Preparedness plan, the initiative that aims to put in place appropriate tools to prevent, prepare and manage electricity crises.

An even stronger indicator that only actions on renewable energy implementation and energy savings will not be enough in the future is the 2050 Long-term strategy. The first point covered by the Strategy is the total greenhouse gas emission reduction and enhancements of removal by sinks, followed by emission reductions and enhancements of removals in individual sectors. While studying the Directives, it can be seen that measures for climate change mitigation and adaption are recently found in all the directives focusing on human impact on the earth in all possible ways, starting from biodiversity, buildings, ecosystem, transport, water management etc. Finally, the most important initiative, the European Green Deal, which all the Energy agencies will surely follow, provides an action plan to boost the efficient use of resources by moving to a clean, circular economy, restore biodiversity and cut pollution.

The EU has already begun the inclusive fight against the climate change which can, among others, be seen in the switch in the names and rules of writing plans, such as switching the Sustainable Energy Action Plans (SEAPs) into Sustainable Energy and Climate Action Plan (SECAP) and introducing the National energy and climate plans (NECPs), etc. To support the fight financially, in September 2020 EU opened a Horizon 2020 European Green Deal Call, that will give out 1 Billion EUR for research and innovation to boost the EU's green recovery, i.e. respond to the climate crisis, provide more protection to Europe's biodiversity and habitats under threat, and accelerate a sustainable recovery.

7. Conclusion and final remarks

With releasing the European Green Deal in September 2020 the EU proposed highly ambitions actions across all sectors that will enable the EU to move towards a climate-neutral economy. This will be a challenging time for cities as they will have to adapt to new strategies and implement new, more ambitious measures. The Transform4Climate wants to develop a capacity-building program to empower cities through the work of their Energy Agencies, to achieve the necessary steps in their path towards decarbonisation.

The purpose of this document was to review and analyse the EU legislative framework for energy and climate to highlight the conditions that the Energy Agencies are operating within. Thus, the document gives a broad overview of the energy and climate directives, strategies, targets, and initiatives. The overview made it clear that the path of the EU policies is increasingly focusing on not only climate change mitigation but also adaptation.

Furthermore, the role of the Energy Agencies within the EU framework was analysed. Energy Agencies established with EU support or which participate in EU projects are contractually obliged to spread information about EU energy policies to decision-makers and stakeholders at local and regional levels who are affected by European policy. This includes public authorities, businesses and households.

Finally, to finish the analysis, a list of stakeholders that will have an impact on the establishment of the Climate Energy Agencies was presented with a short overview of each group of stakeholders. Stakeholders were divided into national authorities, regulators/utilities, local authorities, Energy Agencies, Academia, Companies, etc. After reviewing each of the stakeholders, it is clear that all of the stakeholders have a degree of influence, some to greater and other to a lesser extent, on the operation of Energy Agencies and on the creation of Climate Energy Agencies, thus ensuring a good cooperation with all of them is important.

It can be concluded that the EU has already begun the inclusive fight against climate change. To follow the lead of the European Commission and support local authorities, Energy Agencies will have to evolve and incorporate a broader understanding of climate change mitigation and adaptation measures. This will require a capacity building programme for Energy Agencies which is the goal of this project.

8. Annex 1: List of stakeholders

Table 1Energy and Environment ministries

Croatia	Ministry of Economy and Sustainable Development
	Ministry of Physical Planning, Construction and State Assets
	Ministry of Regional Development and the EU funds
	Ministry of Tourism
Cyprus	Energy Service, Ministry of Energy, Commerce and Industry
	Department of Environment
	Town Planning and Housing Department
	Water Development Department
	Civil Defence
	Ministry of Education....
	Department of antiquities
	Public Works Department
Italy	Italian Ministry of Economical Development (MISE)
	Italian Ministry of the Environment and Sea and Territory Protection (MATTM)

Table 2Regulators/utilities

Croatia	HERA - Croatian Energy Regulatory Agency
Cyprus	Cyprus Energy Regulatory Authority
	Electricity Authority of Cyprus
	Distribution System Operator
	Transmission System Operator
Italy	Energy services management Society (GSE)
	Research on the Energy System Society (RSE)

Table 3 Public authorities

Croatia	Zagreb County
	Karlovac County
	Krapina - Zagorje County
	Dubrovnik - Neretva County
	Varaždin County
	Međimurje County
	Primorsko - Goranska County
	City of Zagreb
	City of Karlovac
	Karlovac City
	City of Zabok
	Sveta Nedelja City
	Pregrada City
	Brdovec City
	City of Varaždin
	City of Čakovec

	City of Rijeka
	Dubrovnik City
	City of Poreč
Cyprus	Union of Cyprus Municipalities
	Union of Cyprus Communities
	All municipalities
	All communities
Italy	Liguria Region- Environmental Department
	Liguria Region- Economical Development Department - Energy service
	Metropolitan City of Genoa
	Province of Savona
	Province of La Spezia
	Province of Imperia
	West Liguria Port Authority
	Est Liguria Port Authority
	Public Social Housing Operator for the Province of Genoa (ARTE GENOVA)
	Public Social Housing Operator for the Province of Savona (ARTE SAVONA)
	Public Social Housing Operator for the Province of La Spezia (ARTE SPEZIA)
	Public Social Housing Operator for the Province of Imperia (ARTE IMPERIA)
	Municipality of Genoa
	Municipality of Savona
	Municipality of La Spezia
	Municipality of Sanremo
	Municipality of Badalucco
	Municipality of Finale Ligure
	Municipality of Ospedaletti
	Municipality of Alassio
	Municipality of Porto Venere
	Municipality of Montalto Carpasio
	Municipality of Riva Ligure
	Municipality of Quiliano
	Municipality of San Lorenzo al Mare
	Municipality of Balestrino
	Municipality of Bergeggi
	Municipality of Mezzanego
	Municipality of Bolano
	Municipality of Sarzana
	Municipality of Mendatica
	Municipality of Dolceacqua
	Municipality of Apricale
	Municipality of Bajardo
	Municipality of Diano Arentino
	Municipality of Taggia
	Municipality of Vallebona
	Municipality of Plodio

	Municipality of Altare
	Municipality of Cosseria
	Municipality of Albisola Superiore
	Municipality of Borghetto Santo Spirito
	Municipality of Borgio Verezzi
	Municipality of Cairo Montenotte
	Municipality of Carcare
	Municipality of Celle Ligure
	Municipality of Loano
	Municipality of Millesimo
	Municipality of Cengio
	Municipality of Roccavignale
	Municipality of Noli
	Municipality of Rialto
	Municipality of Stella
	Municipality of Tovo San Giacomo
	Municipality of Vado Ligure
	Municipality of Calizzano
	Municipality of Murialdo
	Municipality of Bardineto
	Municipality of Dego
	Municipality of Giusvalla
	Municipality of Piana Crixia
	Municipality of Bormida
	Municipality of Osiglia
	Municipality of Pallare
	Municipality of Sassello
	Municipality of Mioglia
	Municipality of Urbe

Table 4 Private companies

Croatia	Croatian chamber of Economy
	PARENTIUM d.o.o.
	EKONERG d.o.o.
	Vodoopskrba i odvodnja, d.o.o.
	Gradska plinara Zagreb, d.o.o.
	HEP d.d.
	HEP Toplinarstvo, d.o.o.
	HEP Elektra, d.o.o.
	HEP ESCO d.o.o.
	City Housing and Municipal Services Company (GSKG)
	BMD
	Stambeni ZG
	Zagreb zgrade
	Monel
	Rumat

	APN
	ZET, d.o.o.
	HŽ Infrastruktura, d.o.o.
	HŽ Putnički prijevoz, d.o.o.
	Integrirani promet zagrebačkog područja, d.o.o.
	Zagrebački holding d.o.o.
	Gradsko stambeno komunalno gospodarstvo, d.o.o.
	Zagrebačke ceste, d.o.o.
	Hrvatske vode
	Zrinjevac, d.o.o.
	Čistoća, d.o.o.
	Zagrebačke otpadne vode, d.o.o.
	Rudan d.o.o.
	Cras d.o.o.
	DUBOŠ GRADNJA d.o.o.
	Sense ESCO
	WORK-ING d.o.o Varaždin
	Tvrtka SPACE
	RITEH d.o.o.
	ENERKON d.o.o.
	Veritas ESCO d.o.o.
	Mreža Znanja d.o.o.
	Zagrebački inovacijski centar d.o.o.
Cyprus	Elliniki Trapeza
	Ethniki Trapeza
	ERGO Energy Cyprus
	T.Timotheou Architects & Associates
	Solek Group
Italy	Genoa's Chamber of Commerce
	General Confederation of Italian Industry (Confindustria)

Table 5 Energy agencies

Croatia	MENEA - Međimurje Energy Agency
	REA Kvarner - Regional Energy Agency Kvarner
	REA Sjever - Regional Energy Agency North
	IRENA - Istrian Regional Energy Agency
Cyprus	N/A
Italy	Italian network of Energy agencies (RENAEL)

Table 6 Associations

Croatia	Association Lijepa Naša
	ARGONAUTA Association
	Association Sunce
	Croatian Association of Nature and Environmental Experts (HUSZPO)
	Eco Pan association

	Green Istria
	Eko - Zadar
	Green Osijek
	The Environmental Organization «Krka» Knin
	Association Žmergo
	ZEO Nobilis
	DOOR - Society for Sustainable Development Design
	CGBC - Croatia Green Building Council
	ZEZ - The Green Energy Cooperative
	EIT Innoenergy
	EIT Health
	EIT Food
	EIT Raw materials
	EIT Manufacturing
Cyprus	Cyprus Association of Renewable Energy Enterprises
	Cyprus Association of Energy Saving Companies (PASEEXE)
	Cyprus Association of Large Electricity Consumers
	Cyprus Association of Biogas Producers
	Cyprus Wind Energy Association
	Cyprus Association of Liquid Biofuels
	Cyprus Union of Solar Thermal Industrialists
	Association of Electricity Market Participants
	Cyprus Consumers Association
	Cyprus Sustainable Tourism Initiative
	Nicosia Development Agency
	Cyprus Employers and Industrialists Federation
	Cyprus Chamber Of Commerce and Industry
	Cyprus Scientific and Technical Chamber (ETEK)
Italy	National Association of Italian Municipalities (ANCI)

Table 7 Academia

Croatia	University of Zagreb, Faculty of mechanical engineering and naval architecture
	University of Zagreb, Faculty of Civil Engineering
	University of Zagreb, Faculty of Electrical Engineering and Computing
	Univesity of Zagreb, Faculty of Agriculture
	Univesity of Zagreb, Faculty of Foresty
	Univesity of Zagreb, Faculty of Transport and Traffic Sciences
	Univesity of Zagreb, Faculty of Science
	Univesity of Zagreb, Faculty of Mining, Geology and Petroleum Engineering
Cyprus	Cyprus Institute
	University of Cyprus
	Cyprus University of Technology
	Frederick University
	University of Nicosia
	KIOS Research and Innovation Centre of Excellence

	CMMI-Cyprus Marine and Maritime Insitute
	FOSS Research Centre for Sustainable Energy
Italy	University of Genoa