

REGIONS AND CITIES COOPERATING FOR SUSTAINABLE ENERGY IN EUROPE:
MODELS OF MULTI-LEVEL GOVERNANCE

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SOMMARIO

In Europa, il sistema di governance multi-livello per i cambiamenti climatici e l'energia sostenibile è particolarmente complesso. Soggetti pubblici di diversi livelli amministrativi e soggetti privati cooperano sul tema, sia nell'ambito della pianificazione che dell'attuazione. Nell'ambito del progetto europeo Coopenergy sono stati identificati sette modelli di cooperazione relativi alla pianificazione regionale e locale per la sostenibilità energetica. Questi modelli si differenziano per l'ambito di applicazione, la tipologia e il ruolo degli attori coinvolti ed il contesto regolatorio e amministrativo nel quale sono stati applicati. La presenza di contesti strutturati entro cui i diversi stakeholder pubblici e privati hanno potuto definire politiche, strategie e azioni in materia energetica si è dimostrata un fattore particolarmente rilevante per una pianificazione integrata multi-livello. Sono state identificate inoltre alcune barriere rilevanti nel processo di pianificazione: l'assenza di volontà politica a livello locale, la mancanza di fondi e di competenze tecniche in particolare nei piccoli comuni, la mancanza di supporto da parte del governo nazionale. Questi aspetti sono evidenziati anche nell'indagine condotta nell'ambito del progetto, che ha analizzato 109 casi di esperienze collaborative sul tema dell'energia sostenibile in 20 Stati Membri e in Norvegia. La scelta dei modelli di governance nella pianificazione energetica deve quindi tener conto di una serie di elementi che caratterizzano il contesto di riferimento e costituisce un elemento determinante per l'efficacia dei relativi processi amministrativi e per l'integrazione di diversi livelli di governo del territorio e di politiche settoriali.

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1. Introduction

Climate change is one of the most complex and urgent issues of our time, which threatens the stability and prosperity of the world's socio-ecological systems. The global response to climate change has foreseen the adoption of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 and its Kyoto Protocol in 1997, setting mandatory GHG emission reduction targets for a set of industrialized countries. With the deadline of the Kyoto Protocol's commitment period approaching, UNFCCC's Parties started to negotiate possible follow-up options of the protocol, in order to define a new instrument that could effectively reach the convention's objective to stabilize GHG concentrations at a "level that would prevent dangerous anthropogenic interference with the climate system" (UN, 1992). After the failure to reach an agreement at the Conference of the Parties in Copenhagen (COP15, 2009) and several years of subsequent negotiations, COP21 held in Paris in December 2015 managed to adopt a new binding global climate deal ("Paris Agreement"), which sets a long-term target for all countries of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees (UN, 2015).

Sub-national authorities follow the UNFCCC process as observers, through a constituency gathering networks of local and subnational governments (Local Governments and Municipal Authorities Constituency – LGMA)³. The role of sub-national authorities in addressing climate change has been recalled several times along the negotiation process. The Cancun Agreements of COP16 in 2010 include the first references to local governments as governmental stakeholders of the climate regime (ICLEI, 2011). The Paris Agreement and the decision adopting it explicitly recognize the role of non-Party stakeholders in addressing climate change, including cities, other subnational authorities, civil society, the private sector and others. They are invited to "scale up their efforts and support actions to reduce emissions and/or to build resilience and decrease vulnerability to the adverse effects of climate change" and "demonstrate these efforts via the Non-State Actor Zone for Climate Action platform" (UNFCCC, 2016). Since several years, in fact, sub-national governments worldwide are engaged on climate change mitigation and adaptation, by developing sub-national energy and GHG emissions inventories, vulnerability and risk assessment analyses and climate change action plans. Several national and transnational networks have launched initiatives to support climate protection planning and implementation at sub-national level. The NAZCA Platform mentioned in the Paris Agreement was launched in 2014 at COP20 by the Peruvian presidency to showcase actions to address climate change implemented individually or within cooperative initiatives by non-party actors (cities, companies, regions, investors)⁴.

For the variety of public and private actors and decision-making levels involved in climate policies, as well as ongoing actions and initiatives in the field, climate change governance has been increasingly defined as "polycentric" and "multi-level" (Hickmann, 2016, quoting Ostrom, 2010, and Bulkeley and Newell, 2010). Ostrom (2012) highlights the importance to implement policies to reduce emissions at multiple scales, since "global policies are indeed necessary but they are not sufficient" and would not work effectively without support from efforts at the national, regional and local level. A key issue is the coordination and integration of policies promoted and implemented at multiple levels, because "mismatches between high level policy-making processes and coordination of local actions for climate change mitigation and adaptation are still common" (Daniell et al., 2010).

In Europe, multi-level governance for climate change and the related field of sustainable energy is particularly complex, also because of the peculiar organization of the European Union and the variety of administrative contexts of its 28 Member States. Furthermore, initiatives like the Covenant of Mayors, promoted by the European Commission soon after the adoption of its energy and climate package, have stimulated engagement on sustainable energy and climate change from a multitude of actors. The Covenant was launched to support the implementation of the 20-20-20 energy and climate EU targets by local authorities. The initiative evolved in 2015 into the new "Covenant of Mayors for Climate and Energy", with

³ <http://www.iclei.org/climate-roadmap/advocacy/unfccc/lgma-at-unfccc.html>

⁴ <http://climateaction.unfccc.int/>

signatories committing to reduce CO₂ emissions by at least 40% by 2030 and to adopt an integrated approach to tackle mitigation and adaptation to climate change. Beyond local authorities signing the Covenant, decentralised authorities such as regions, provinces or grouping of local authorities, as well as national and regional energy agencies, are involved as “Covenant Coordinators” with several tasks, including technical assistance to municipalities in the development and monitoring of local CO₂ emissions inventories (“Baseline Emissions Inventories”, BEIs) and of action plans for CO₂ reduction (“Sustainable Energy Action Plans”, SEAPs)⁵, provision of financial support for the development of SEAPs or specific actions implementation, promotion of networking, information and communication activities⁶. Furthermore, beyond public authorities at the various levels and their technical agencies, there is a multitude of actors which can play a role in SEAPs, including: citizens; financial institutions (banks, private funds, ESCOs); institutional stakeholders, like chambers of commerce, chambers of architects and engineers; energy suppliers, utilities; transport/mobility players (private/public transport companies, etc.); the building sector (building companies, developers); NGOs and other civil society representatives; universities and the education sector (EC, 2010). They participate in setting the vision for the plan, defining its measures and projects and are concretely engaged in the implementation phase (ibid.).

A key issue in European multi-level governance for climate and sustainable energy is the consistence among planning activities carried out by local public authorities. Climate and energy plans are in fact developed by several administrative levels, from the national, regional, provincial, municipal governments, as well as by aggregation of local governments. More coherent and coordinated plans – in terms of objectives, priorities, measures, allocation of resources and responsibilities, monitoring and reporting mechanisms, stakeholders involvement approach – can increase the effectiveness of regional and local policies in this area. The evaluation of relations between different administrative levels and the identification of challenges and opportunities of cooperation – also in relation to planning activities – are therefore a relevant study field to move forward climate policies in a more effective way.

The paper aims to analyse the processes behind the collaboration between regional, local authorities and local stakeholders on sustainable energy, based on the experiences of 7 regions partners of the European project Coopenergy. The paper is structured as follows: Chapter 2 provides an overview of the Multi-Level Governance (MLG) concept in European policies and in particular in energy/climate policies. Chapter 3 analyses the MLG processes behind cooperation among sub-national governments on sustainable energy in Europe by relying on Coopenergy project’s data and results. Chapter 4 draws conclusions on the models of cooperation emerging from the project and identifies some research perspectives for the future.

2. Multi-Level Governance in European policies

2.1. MLG in EU regional policy

Multi-Level Governance (MLG) is a widely debated concept, which usually refers to the participation of different actors in policy-making and decision-making, sharing a certain degree of responsibility and authority. The MLG concept includes two dimensions, the “multi-level” one which refers to the different territorial levels involved and the “governance” one which refers to the involvement of governments and non-governmental actors (Bache and Flinders, 2004). The MLG concept was initially developed by Marks (1992) in the context of European Union studies, while analysing the developments in Cohesion Policy and in particular the 1988 structural policy reform which introduced the use of partnerships within Member States for the administration of structural funds (Bache and Flinders, 2004). Partnerships are set in each Member State and involve representatives of several levels, from the national, regional and local to the supra-national (European Commission). According to Van den Brande (2014), “Structural Fund Regulations

⁵ The new Covenant of Mayors for Climate and Energy foresees the development of SECAPs - Sustainable Energy and Climate Action Plans.

⁶ According to data from the Covenant of Mayors website, as of 5 July 2016, 186 entities are involved in the initiative as “Covenant Coordinators” supporting municipalities in their participation in the initiative.

have led Member States to ensure that strategies and programmes are designed and implemented in close cooperation with RLAs (regional and local authorities), socio-economic partners and [...] with civil society partners such as NGO's and relevant interest groups", stimulating a "more participatory governance culture across Europe". Furthermore, through this greater involvement of regional authorities in policy design and management, Cohesion Policy shifted the focus of regional development policy from individual economic sectors to the needs of individual regions, adopting the "territory" as main perspective (Leonardi, 2005).

MLG is indeed an implicit concept in EU-policy making, because of the peculiar organization of the European Union and the variety of administrative contexts of its 28 Member States. Such a context in fact requires interactions and coordination among different actors and levels (EP, 2014). This is evident also looking at the diverse territorial organization of EU Member States. Different articulations of sub-national authorities exist. Eleven countries have one level (municipalities); nine have two levels (municipalities and regions), seven have three levels (municipalities, regions and intermediary entities (i.e. departments, provinces, counties, etc.)) (Dexia, CEMR, 2012). Sub-national governments amounted to 90.380 in the EU 27 in 2011, of which 89.149 municipalities, 981 intermediary entities and 250 regions (ibid). Furthermore, in the last ten years the landscape of territorial organization has changed significantly, also because of the economic crisis that was seen as an opportunity to rationalize local public organization (ibid). Key trends are the mergers of small municipalities, greater inter-municipal cooperation, reforms of intermediary levels, strengthening/weakening of the regional level (depending on the country) and the institutionalisation/formalization of metropolitan areas (ibid).

In 1994, the EU's assembly of regional and local representatives ("Committee of the Regions", CoR) was created to "provide institutional representation for all the European Union's territorial areas, regions, cities and municipalities" and "involve regional and local authorities in the European decision-making process" (CoR, 2009). The promotion of MLG is part of the CoR's mission, based on the recognition that cooperation between all levels is necessary to face the current challenges deriving from globalization (ibid). Since several years, the CoR has been playing a relevant role in operationalizing MLG into EU policy design and implementation (Van den Brande, 2014). This took place through several steps (ibid): the adoption of the "White paper on Multi-Level Governance" in 2009 and its follow-up in 2012, which contain proposals on how to "build Europe in partnership"; the launch of "Scoreboards" to evaluate MLG in the design of policies with a territorial dimension; the adoption of a "Charter for Multi-Level Governance in Europe", which promotes the MLG principle in all stages of policy-making.

It is only more recently, with Article 5 of the Regulation 1303/2013 on Common Provisions Regulation for the European Structural and Investment Funds, that MLG has been set as a binding principle in EU policy, namely in the context of Partnership Agreements and elaboration of each programme (Van den Brande, 2014).

2.2. MLG in EU urban policy

Cities are recognized as key players to reach EU objectives, since it is at urban level that most of EU policies and legislations are applied. In particular they are considered as strategic places where the "Jobs, Growth and Investment" agenda, the "Digital Single Market" and the "Energy Union with a forward-looking Climate Change" policy can be implemented. Several initiatives promoting urban policies and action are active at EU level on a variety of topics – including the Urban Mobility Package, European Innovation Partnership for Smart Cities and Communities, EU-China Partnership on Urbanisation, Green Capital and Green Leaf awards, Covenant of Mayors, as well as financial support for cities within the European Structural and Investment Funds. However the need for more coordination among these initiatives has been highlighted⁷.

In this context, a process for the elaboration of a new European Urban Agenda is currently ongoing, and recently moved forward through the adoption of the "Pact of Amsterdam" at the Informal Meeting of EU

⁷ http://ec.europa.eu/regional_policy/en/policy/themes/urban-development/agenda/

Ministers Responsible for Urban Matters on 30 May 2016. The new EU Urban Agenda aims “to realise the full potential and contribution of Urban Areas towards achieving the objectives of the Union and related national priorities in full respect of subsidiarity and proportionality principles and competences”; “to establish a more effective integrated and coordinated approach to EU policies and legislation [...]”; “to involve Urban Authorities in the design of policies, to mobilise Urban Authorities for the implementation of EU policies, and to strengthen the urban dimension in these policies” (Dutch Presidency of the Council of the European Union, 2016). To these purposes, the agenda focuses on 3 policy pillars – better regulation, better funding, better knowledge – and relies on the principle of an integrated approach to sustainable urban development, targeting 12 priority themes⁸. Multi-Level Governance is a transversal key guiding principle for the implementation of the overall agenda, since the Urban Agenda aims to be in itself a “new form of multilevel cooperation” among all key stakeholders (“Member States, Regions, representatives of Urban Authorities, the European Commission, the European Parliament, the Union’s Advisory Bodies (CoR, EESC), the EIB and other relevant actors”)(ibid). The agenda foresees the establishment of “Thematic Partnerships” among these actors, as instruments for multi-level and cross-sectoral cooperation. Up to now, four pilot partnerships have been activated⁹.

The need for a multi-level approach to urban policies was already present in previous agenda documents on which the Urban Agenda builds upon, among others the 2007 Leipzig Charter on Sustainable European Cities and the 2010 Toledo Declaration from the Informal Ministerial Meeting on Urban Development. The Leipzig Charter in particular referred to the inclusion in urban policies of every level of government that can give a contribution to urban development and the need to pursue holistic and coordinated strategies among sectors in the perspective of an integrated urban approach (German Presidency, 2007). The Toledo Declaration reaffirmed the importance of the multi-level policy of the Leipzig Charter as “a prerequisite for the implementation of an integrated urban development policy”, and recognized the importance of Multi-Level Governance mechanisms and tools to improve coordination among sectors and among tiers of government, calling for greater coherence between territorial and urban issues (Spanish Presidency, 2010).

2.3. MLG in EU climate and energy policy

Going beyond its origins in European studies, the MLG concept was later applied to the field of global environmental politics and specifically climate change, to represent the complex interactions between different state and non-state actors and levels in global climate governance (Hickmann, 2016). Over the years, in fact, also because of the slow pace of global climate negotiations, several initiatives to address climate change have been promoted by public and private actors, leading to a variety of climate governance arrangements outside of the UNFCCC. Hickmann (2016) distinguishes these arrangements between *multilateral governance arrangements* – created by nation-states and regarding a more domestic setting – and *transnational governance arrangements* – launched by a variety of sub- and non-state actors (cities, provinces, civil society groups, environmental organizations, business corporations). The use of the MLG concept in this context helps to identify the several layers involved in global climate governance (ibid). For some of these initiatives, the multi-level aspect is a key dimension, since they involve sub-national governments from various levels through specific commitments. It is the case of the “Under2MOU” (Memorandum of Understanding)¹⁰, launched by a partnership between California and Baden-Württemberg, whose endorsers agree to reduce their GHGs 80 to 95% or limit to 2 metric tons CO₂-equivalent per capita by 2050. The initiative currently involves 135 jurisdictions from 32 countries, including states, regions and cities.

⁸ Inclusion of migrants and refugees; Air quality; Urban poverty; Housing; Circular economy; Jobs and skills in the local economy; Climate adaptation (including green infrastructure solutions); Energy transition; Sustainable use of land and Nature-Based solutions; Urban mobility; Digital transition; Innovative and responsible public procurement (Dutch Presidency of the Council of the European Union, 2016).

⁹ Air Quality, Migrants & Refugees, Housing and Urban Poverty.

¹⁰ <http://under2mou.org/>

In Europe, MLG for climate and sustainable energy is particularly complex, also because of the peculiar organization of the European Union and the variety of administrative contexts of its 28 Member States. EU climate and energy policy is currently defined by the 2020 climate and energy package, the 2030 climate and energy framework and the 2050 Roadmap for moving to a competitive low-carbon economy, setting GHG emissions reduction targets for these different time-horizons as well as targets on energy efficiency, energy saving and renewable energy production¹¹. Climate change and energy sustainability targets deriving from these policy documents are also included in the Europe 2020 strategy for a “smart, sustainable and inclusive growth” and its flagship initiative for a resource-efficient Europe. In June 2016, the European Commission has presented a proposal for the European Union to ratify the Paris Agreement, after the ceremony signature held in April 2016 in New York. In the following months, specific targets for Member States will be adopted to comply with the targets of the Paris Agreement¹².

Regional and Local Authorities will play a key role in reaching the EU GHG emission reduction targets in sectors like buildings, transportation, agriculture and waste, which are not covered by the EU Emission Trading System. As described above, the sub-national organization of EU Member States is quite diversified. Member States have different territorial and administrative articulations, as well as types of powers and competences delegated to their regional and local authorities. In eight Member States, the national government has devolved some legislative powers to their regions (CoR, 2016). Local authorities usually have administrative powers and can adopt hybrid forms of legislation (e.g. ordinances) (Panara, 2015).

Though differentiated according to their country administrative and regulatory framework, Regional and Local Authorities own several competences and powers in fields that are relevant for energy use and related emissions in these sectors. They are also the closest level to citizens and communities; thus they can act on several levers to implement sustainable energy and GHG reduction policies and plans. Depending on their administrative level and specific national context, their roles can be either as energy consumers, energy producers, energy distributors, energy planners, or sustainable energy initiators and facilitators¹³.

In several Member States, these competences on energy and climate are split among different administrative levels. Energy and climate plans are developed by national, regional, provincial, municipal governments, as well as by aggregation of local governments. Plans can be either developed on a voluntary basis (such as within the Covenant of Mayors EU initiative) or following regulatory schemes, such as for instance in France where authorities representing areas with more than 50.000 inhabitants have to develop comprehensive climate protection plans. A detailed assessment on the number of climate and energy plans available in Europe at different levels is currently not available. According to Wolking et al. (2012), most of European regions have developed a climate action plan. Within the Covenant of Mayors, 5.401 Sustainable Energy Action Plans have been submitted by participating municipalities (as of 4 July 2016). Combining data from different sources, the overall number of local action plans developed so far within the 28 EU Member States amounts to more than 8.000, representing about 10% of the EU municipalities and more than 40% of the EU population (Biard et al., 2015).

¹¹ It is out of the scope of this paper to draw a comprehensive picture of EU climate and energy policies.

¹² http://ec.europa.eu/clima/news/articles/news_2016061001_en.htm

¹³ **Energy consumer** (Regional and local public authorities manage their properties (administrative buildings and vehicle fleets) as well as other public premises such as schools, hospitals, etc. The authority is the project owner for any work conducted on any of its properties); **Energy producer** (Regional and local public authorities produce energy for their own buildings or to supply electricity, gas, or heat networks (solar water heaters for pools, wood boilers, photovoltaic panels, etc.). Some of them own or have strong links with local energy suppliers); **Energy distributor** (depending on their level of authority, they may manage distribution networks for electricity, gas, or heat. They can play a role in connecting renewable energies to the grid); **Energy planner** (Regional and Local Authorities may be responsible for transport (development of plans such as Sustainable Urban Mobility Plans, organization or management of transport or certain modes of transport (soft transport, vehicles, rail transport, etc.). They usually have competences at regional level in spatial planning. They can develop action plans to create or renovate energy-efficient social housing. **Sustainable energy initiator and facilitator** (they help to raise awareness and inform citizens of energy and climate issues. They serve as an initiator through their policies and subsidies for renewable energies or energy-efficient housing and mobility) (Coopenenergy, 2014).

A key issue in European Multi-Level Governance for sustainable energy is the consistence among planning activities carried out by local public authorities. More coherent and coordinated plans can increase the effectiveness of regional and local policies in this area. The following chapter explores some cases of MLG processes which took place within the European project Coopenergy in the field of regional and local sustainable energy planning.

3. Multi-level cooperation among sub-national governments on sustainable energy in Europe

3.1. Defining MLG models for sustainable energy

MLG models may be defined as the ways in which different public actors - from different administrative levels and sectors - and private actors interact on a specific topic or issue, in our specific case sustainable energy. They may foresee the set up of arrangements and agreements between the involved actors, specifying the objectives and modes of the interaction. MLG models may take place within *structures*, either a legal entity or a network of actors supported by the regional authority and providing services (e.g: technical support, financial support or funding) for the development of sustainable energy projects; or through *processes*, involving public organizations in the development of specific planning instruments or in the implementation of sustainable energy projects¹⁴. MLG models in sustainable energy may therefore take different forms, ranging from legally binding partnership and participatory planning activities, to the joint development of regional and local structures and tools (Biard et al., 2015). The cooperation that can take place between different government levels can provide public authorities with significant opportunities to implement integrated and concerted energy planning (e.g. combining infrastructure planning with spatial and energy planning, developing cross boundary sustainable energy supply chains, developing innovative financial mechanisms to support local actions and economies of scale) (ibid).

How to design and implement effectively such multi-level and multi-stakeholder cooperation processes still requires research (Daniell et al. 2010). Effective cooperation in fact can be hampered by several “gaps”, which can regard the quantity and quality of information held by different levels, the amount of capacity and funding, administrative competences and boundaries, and lack of inter-sectorial coordination among policies (Van den Brande, 2014, quoting OECD, 2009). Several coordination tools can be implemented to fill these gaps. Scholars have elaborated the concept of *coordination mechanisms* with reference to MLG approaches in energy efficiency. These are “formal and informal procedures allowing for effective communication and cooperation between and among the national, regional and local level” and they facilitate two types of coordination, a vertical one among the different government levels and a horizontal one between measures, schemes of programmes at the same level (Iatridis et al., 2015).

3.2. MLG models identified in the Coopenergy project

As described in Chapter 2, Regional and Local Authorities in Europe are widely working together on sustainable energy-related activities. The Covenant of Mayors in particular has stimulated such joint efforts. Also European projects have a role in promoting joint activities on sustainable energy planning and in the implementation of actions, thanks to dedicated funding programs. Coopenergy (2013-2016) was a project co-financed by the Intelligent Energy Europe programme of the European Commission, involving eleven partners from eight European countries¹⁵. It aimed to implement and promote effective cooperation models in sustainable energy planning between regional and local public authorities.

Within Coopenergy, MLG models were categorized into two main areas of collaboration, one related to *strategic energy planning* conducted jointly between regional and local authorities, and one related to *operational energy planning* referring to concrete actions conducted jointly by regional and local authorities;

¹⁴ This definition was elaborated within the Coopenergy project, presented in paragraph 3.2.

¹⁵ <http://www.coopenergy.eu/>

in particular, this second area was further articulated in three thematic “Pillars”: 1.Modelling, planning and monitoring tools for decision making; 2.Financial mechanisms; 3.Awareness raising and stakeholders involvement.

Within the project, an EU-28 survey was carried out to collect examples of MLG models on sustainable energy and identify 60 best practices across Europe¹⁶. The regional partners themselves tested out a number of different MLG processes during the project, also drawing inspirations from the selected best practices, in order to revise their regional Sustainable Energy Action Plans (SEAPs), develop local action plans and develop joint actions for sustainable energy projects in collaboration with local authorities of their territories.

The revision of the regional SEAP took place through the set-up of regional Steering Committees in the partner regions, involving the representatives of several regional and local stakeholders through “Multi-level stakeholder forums”. The joint actions, which regarded the three thematic pillars of operational energy planning identified above, took place through the establishment of specific Working Groups, involving representatives of regional and local stakeholders. The joint actions saw a collaboration between regional, local authorities and other socio-economic stakeholders on a variety of topics, including the increase of energy utilisation of communal waste from landfills (Zlin Region, Czech Republic), joint procurement for bulk energy (Zlin Region, Czech Republic), housing retrofit programmes (Kent, United Kingdom), community-led renewable energy projects (Kent, United Kingdom), financial instruments for renovation projects on private buildings (Rhône-Alpes, France), adaptation of spatial planning procedures (Rhône-Alpes, France), strengthening of the wood fuel supply chain (Rhône-Alpes, France), stakeholders meeting to explore the bioenergy potential (Rhine-Neckar, Germany), local workshops with citizens associations willing to invest in renewable energy (Rhine-Neckar, Germany), implementation of Municipal Building Codes (Liguria, Italy), joint procurement process and collaboration in Public Lighting (Liguria, Italy), joint plan for public lighting renovation in Municipalities (Basque Country, Spain), joint action on biomass (Basque Country, Spain), sustainable energy and transport infrastructure/land use planning (Norrbotten Region, Sweden)¹⁷.

Based on partners’ experiences within the project, the following collaboration models for the development/update of the regional SEAP and for the promotion/development of local SEAPs were identified by the partner EVE – Basque Energy Agency (Table 1):

Table 1: MLG models used by Coopenergy partners during the project

<i>Model name</i>	<i>Scope</i>	<i>Model description</i>	<i>Used by</i>
Regional burden sharing	Regional SEAP	The national government determines the contribution of each region to national objectives on sustainable energy and climate change, and this framework is used as a planning tool for regional authorities.	This model was used in the Rhône-Alpes region under the Schéma Régional Climat Air Energie (SRCAE), in France. http://srcae.rhonealpes.fr/
Regional integrated multi-sectoral approach	Regional SEAP	The regional energy strategy is part of the environment strategy, with different stakeholders delivering different parts of the strategy, from district representatives to health and environment organisations.	This model was used in the county of Kent, UK, for the Kent Environment Strategy (KES). http://www.kent.gov.uk/about-the-policies/environmental-policies/kent-environment-strategy

¹⁶ A presentation and analysis of the survey results is available in IEFE Bocconi (2014) and Biard et al. (2015). The 60 best practices have been documented and are accessible at the following link: <http://www.coopenergy.eu/good-practice-resources>

¹⁷ A detailed description of each Joint Action, its process and results is included in Coopenergy deliverables at the following link: <http://www.coopenergy.eu/content/reports-and-guidelines>

Region-centred model	Regional SEAP	The regional SEAP is prepared under the responsibility of the regional administration, who consults the local administrative levels through workshops and web-based public consultation processes to define priorities and potential collaboration areas.	This model was used for the Basque Country's Estrategia Energética de Euskadi 2025 and for the Liguria region's Piano Energetico Ambientale Regionale (PEAR) 2014-2020, in Italy.
Voluntary supporting schemes for LAs	Local SEAPs	The regional authority launches a voluntary scheme to provide support to local authorities or territories willing to engage in sustainable energy action within their territories.	This model was used for the Energy Positive Territories (TEPOS) in the Rhône-Alpes region, where the regional authorities act as energy planning facilitator, working with several local authorities within each TEPOS. http://www.rhonealpes.fr/TPL_CODE/TPL_AIDE/PAR_TPL_IDENTIFIANT/416/18-les-aides-de-la-region-rhone-alpes.htm
Municipality-centred model	Local SEAPs	The local authority voluntarily decides to engage in the Covenant of Mayors (CoM) initiative. The regional authority, or a regional energy agency, then supports the local authority to create an energy plan as a CoM Coordinator.	This model was used across several of the Coopenergy partner regions including the Basque Country, the Norrbotten county of Sweden, the Rhône-Alpes region of France and in the Liguria region of Italy. http://www.eumayors.eu/participation/as-a-province-or-region_en.html
Delegation to the regional energy agency	Local SEAPs	The regional energy agency, belonging 100% to the regional government, has the mandate to provide know-how, experience and advice as a part of the regional governance. The regional energy agency provides this advice service to both the regional government and its municipalities, in order to support the region to develop local SEAPs and projects focused on renewable energy and energy efficiency.	This model is used by the Energy Agency of the Zlin Region (EAZK), in the Czech Republic. http://www.eazk.cz/en/importa
Obligation to develop a local SEAP	Local SEAPs	The local authorities are obliged by the national law to develop a local SEAP. This is the case of cities above 50,000 inhabitants in France, whose SEAP need to comply with the regional plan covering their geographical area. The region may collaborate providing technical support for the preparation of the SEAP in this framework.	

Source: based on Coopenergy (2014), Coopenergy (2015)

LAs: Local Authorities

These models are not mutually exclusive and have been applied in combination. The choice of the model was based on several factors depending on the specific administrative and regulatory context, such as the

administrative organization of the region and the municipalities, the level of autonomy of the regions and the regulatory framework (Coopenergy, 2015).

3.3. Analysis of MLG models applied in the project

As shown by their description, MLG models applied within the project differ according to several elements, which are hereby analysed. Firstly they differ in their *scope*, since half of them are applied in the regional SEAP process and half within the local SEAPs processes. For the regional SEAP, these approaches may apply to the elaboration/revision of the plan in a collaborative way with local authorities and stakeholders of the territory. For the local SEAPs, these may apply to the elaboration of new local plans, the promotion of planning activities among local authorities or the provision of technical support to local authorities within the planning activities.

Secondly, these models differ according to the *roles and types of actors* involved in the collaboration. In some cases the role of the local authorities in the consultation process and provision of inputs is highlighted, in others the focus is on the role of regional energy agencies as technical and supporting partner in the development of regional and local SEAPs. Regional energy agencies emerged as a relevant partner of multi-level collaborations also in the MLG cases mapped by the EU-28 survey, since these organizations provide a wide range of services to regional and local authorities on energy and environmental issues. These include the promotion of low carbon technologies to local authorities, technical support for development of SEAPs and other plans, along with monitoring initiatives, management of help desks and financing energy efficiency or GHG reduction (Biard et al., 2015; IEFE Bocconi 2014).

Also the *regulatory and planning context* in which the collaboration takes place may differ. In specific cases, there is a binding commitment by law to develop the plan, such as for the Regional Scheme for Climate Air and Energy (Schéma Régional Climat Air Energie - SRCAE) in France or the Regional Environmental Energy Plan (Piano Energetico Ambientale Regionale - PEAR) in Italy. In the case of Italy, also the consultation-based process involving stakeholders is foreseen as mandatory by law, within the Strategic Environmental Assessment (SEA) of the plan. For the local governments in France specifically, authorities representing areas with more than 50.000 inhabitants have to develop comprehensive climate protection plans (Plan Climat Energie Territorial – “PCET obligatoires”) which need to comply by law with the SRCAE covering their geographical territory. In the other models, the plan is elaborated voluntarily by the local authority, for example within its adhesion to the CoM.

3.4. Lessons learnt and key barriers

Each regional partner conducted an analysis of its MLG collaboration, identifying the main lessons learnt from these experiences and key faced barriers. The results of this analysis are useful to understand the kind of benefits that MLG approaches may bring to sustainable energy planning, in the view to promote their wider diffusion and replication among regional and local authorities.

The main success factor identified by partners throughout these experiences has been the set-up of structures, such as the Steering Committee for the revision of the regional SEAP and the local Working Groups for the joint actions. These provided an opportunity for different multi-level and multi-area stakeholders to meet and share their views, expectations and proposals on the sustainable energy strategies and projects concerning their territory. Some regions have decided to establish the Steering Committee as a permanent structure also after the end of the project, in order to carry forward the sharing process with stakeholders. For the joint actions, the creation of specific working groups tailored on the typology of action and its objectives has been evaluated as more effective than a unique structure to be maintained over time.

These aspects were highlighted also by the EU-survey conducted within the project, which analysed data from 109 collaborative experiences on sustainable energy carried out in 20 Member States and in Norway. From the EU-survey, the most relevant success factors of collaborative experiences stood out to be political

commitment and the involvement of the political level, partnership working and good working relations between participants, as well as governance and process management, which included the set-up of dedicated governance structures, agencies, meeting places as well as management/monitoring approaches to follow the process (Coopenergy, 2014). These results are consistent with lesson learnt from partners within their regional SEAP and joint actions activities.

Several barriers to an effective multi-level planning process emerged during these experiences. A first key barrier is the lack of commitment at local level, which is also exacerbated by the short elections periods compared to the long SEAP planning procedures. This was highlighted also by the EU-survey, where the political commitment stood out as one of the most relevant success factors and enabling condition of analysed collaboration initiatives.

Secondly, there are relevant financial constraints for the development of sustainable energy projects at local level, which impact on the availability of resources for the implementation of projects and for hiring specific human resources. This is related also to a further barrier emerged from these experiences, which is the lack of competences on these topics inside public authorities, in particular in small municipalities. Also this result is consistent with the survey outcomes, where lack of funding emerged as the most important weakness factor of collaboration initiatives and the availability of technical expertise (technical, financial, legal) was frequently mentioned as a relevant success factor.

Furthermore, the lack of support from the national government to these initiatives has been highlighted. Also within the EU-survey the national level was seldom present in collaboration initiatives, which represent a weakness in terms of multi-level consistence of sustainable energy initiatives.

Looking at joint actions, the following key dimensions emerged for the experiences regarding *Modelling, Planning and Monitoring*. Firstly, *participative processes*, involving both representatives of local authorities, socio-economic stakeholders and experts, stood out as key approach throughout the experiences. Participation improves the outcomes of the planning itself and enables a shared and more comprehensive vision, which is very important to implement what has been decided. A participative process is also important to share objectives, barriers and to solve knowledge gaps between the regional and local level, setting the basis to generate a long-term collaboration between sub-national authorities. Secondly, it is important to conduct *integrated processes*, that is linking energy planning with other sectoral planning which can have an impact on energy production and consumption, such as in the spatial, environmental, mobility, social sphere. This ensures a better coherence between regional and local SEAPs. Also, both political and bureaucratic (administrative and technical) levels must be involved for success. Thirdly, *evidence-based planning* is needed. Indicators and solid data enable to monitor an action plan's progress and revise it when needed. Either an internal or external body can perform the monitoring, but in either case it must be transparent.

Looking at joint actions related to *Financial Instruments*, a first recommendation emerged from the project experiences is to create *financial synergies*, linking new projects with funding sources already planned and available. Secondly, it is important to use a *variety of financing sources* including also private actors, since in time of restricted public budgets it is not possible anymore to rely only on public funding. Thirdly, attention should be paid to design *bankable projects*. Public authorities at the regional and local levels can intervene designing incentive schemes and contributing to reduce the risks related to investments in these projects.

Finally for the *Awareness-raising and stakeholder involvement* joint actions, the involvement of citizens and stakeholders since the beginning, also with a *co-design role*, stimulating creativity and ideas can motivate them to take part in the implementation phase. Secondly, it is important to *structure the participatory process* from the beginning, also with the assistance of experts. Thirdly, *showing the tangible results* emerging during the implementation of the process or initiative motivates stakeholders in a continuous way throughout the action.

4. Conclusions

MLG for sustainable energy in Europe is taking place through several forms of cooperation between public authorities at different levels (national, regional, provincial, local) and private stakeholders (companies, professional associations, financial institutions, citizens, NGOs). Within the EU-funded project Coopenergy, seven models of cooperation regarding the regional SEAP development/revision and the local SEAPs development have been identified, which help us to identify the processes that public authorities are implementing to coordinate their efforts in sustainable energy planning and increase plans' consistence. These models differ according to their scope, roles and types of actors involved, regulatory and planning context where the models are being applied. Furthermore, the joint actions carried out within the project through a collaboration between regional and local public authorities and socio-economic stakeholders show the variety of processes and topics that can be tackled in the field of sustainable energy.

A key success factor of these initiatives was the set-up of structures, such as the Steering Committee for the revision of the regional SEAP and the local Working Groups for the joint actions. These provided an opportunity for different multi-level and multi-area stakeholders to meet and share their views, expectations and proposals on the sustainable energy strategies and projects concerning their territory. Furthermore some key barriers have been identified regarding the planning process: the lack of commitment at local level, the lack of funding and capacities, in particular in small municipalities, the lack of support from the national government. These aspects were highlighted also by the EU-28 survey conducted in the first phase of the project, which analysed 109 cases of collaborative experiences on sustainable energy in 20 Member States and in Norway. The survey identified as key success factors the political commitment, partnership working and governance/process management. The lack of funding was reported as a critical weakness of such initiatives by many respondents.

Furthermore, for each of the thematic pillars of the project key dimensions can be drawn from the joint actions: for the modelling, planning and monitoring pillar, the role of participative, integrated and structured processes as well as evidence-based planning; for the financial mechanisms pillars, the creation of financial synergies, the use of a variety of funding sources, the bankability of projects; for the awareness raising and stakeholders involvement pillar, a stimulating and co-designing process with stakeholders, a structured participatory process and showing the tangible results of the collaboration.

The choice of governance models in sustainable energy planning therefore must take into account a series of elements that characterize the reference context and is a relevant element for the effectiveness of the related administrative processes and for the integration of different government levels and sectorial policies. Climate planning at regional and local level is now entering a new phase, where more integration between mitigation and adaptation will be needed to increase the effectiveness of policies. This is also shown by the recent development of the Covenant of Mayors, which sets new and more challenging targets for 2030. Furthermore, more integration and coordination will be needed also with other sectoral planning activities, in order to identify synergies and optimize the use of resources. Future research lines may consider the models of cooperation in these new planning approaches, in order to evaluate which are the most suitable for these planning needs. Also the monitoring and evaluation of the plans' implementation will continue to be a key research area, in order to evaluate the effectiveness of efforts at the regional and local levels.

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ABSTRACT

In Europe, the multi-level governance system for climate change and sustainable energy is very complex. Public actors from different levels and private actors cooperate on this topic, both in planning as well as in the implementation activities. Within the EU-funded project Coopenergy, seven models of cooperation regarding regional and local sustainable energy planning have been identified. These models differ according to their scope, roles and types of actors involved and regulatory and planning context. The presence of structured contexts where public and private stakeholders could define policies, strategies and actions for sustainable energy was a key relevant factor for an integrated multi-level planning. Furthermore some key barriers have been identified in the planning process: the lack of political commitment at local level, the lack of funding and capacities, in particular in small municipalities, the lack of support from the national government. These aspects were highlighted also by the survey conducted within the project, which analysed 109 cases of collaborative experiences on sustainable energy in 20 Member States and in Norway. The choice of governance models in sustainable energy planning therefore must take into account a series of elements that characterize the reference context and is a relevant element for the effectiveness of the related administrative processes and for the integration of different government levels and sectorial policies.