

Policy Recommendations Paper on Resource Efficiency

RE-SEETies

Creating more resource efficient urban communities

**Policy guidance for local, national and
European decision-makers**

Project partners involved: BP18, Potenza, Egaleo/CRES, Harghita / HEMPS, Nitra, Ptuj/Bistra,
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PURPOSE OF THIS PAPER

This document provides a **summarised overview of policy recommendations on resource efficiency relevant to political and technical decision-makers of all governmental levels – local, regional, national and European.** The recommendations are based on a very **intense stakeholder engagement process** that has taken place in the eight participating target countries of the **RE-SEETies** project namely: Croatia, Greece, Hungary, Italy, Macedonia, Romania, Slovakia and Slovenia, in order to **evaluate and compare enabling policy conditions with local practice of resource efficiency in urban communities.**

The local stakeholder process with more than 40 meetings and 700 participating governmental representatives as well as actors of the business sector, academia and civil society, was complemented by exchanges with European expert perspectives. The result is a **comprehensive package of policy recommendations** that addresses the inter-linkage of the economic, social and environmental dimensions of resource efficiency towards three themes: **Urban energy efficiency, renewable energy and sustainable waste management.**

The present paper **highlights the most effective and important policy instruments** identified in RE-SEETies' stakeholder meetings and complemented by good practice found throughout the EU. The findings shall provide guidance for the establishment and enhancement of sustainable urban communities and seek to target in particular groups like:

- **Signatories of the [Covenant of Mayors](#) and its Supporting Structures** (Supporters / Coordinators / Associates)
- **Signatories to the [Aalborg Commitments / Charta](#) on Sustainable Cities**
- **Followers of the SMART City and / or PRODUCTIVE City approach**

Moreover the extensive networking project, **RE-SEETies** explores how local and regional initiatives could contribute to the achievement of the **EU's 20-20-20 targets and beyond including:**

- **Practical implementation of EU flagship initiatives** on resource efficiency, against poverty and for territorial cohesion
- **Strengthened complementation through local action of relevant EU Directives** like the Directive on Renewable Energy and Energy Efficiency or the Energy Performance of Buildings and Waste Framework Directive
- **Guidance for vertical integration of resource efficiency efforts in order to achieve an improved ability to strive for an ambitious energy and climate framework 2030**
- **Substantial support of long-term visions of the European Union on sustainable development, circular economy and a low-carbon economy roadmap by 2050**

Ultimately, **RE-SEETies** aims to **enhance the strategic planning and decision-making process as well as meliorate the capacity** for the development, implementation and monitoring of resource efficiency measures on all governmental levels.

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EXECUTIVE SUMMARY – Overarching recommendations

Enabling resource efficiency

Enabling framework conditions in particular from the European and national level is of crucial importance to translate policy into local practice. A support package including adequate funding programmes should promote and stimulate the transition towards resource efficiency on a regional and local level. A binding energy efficiency and renewable energy target of 40% in the European energy and climate framework 2030 is an essential and needed cornerstone. Readjusting the distortion of the energy market by a swift phase-out of direct and indirect subsidies for fossil fuel and nuclear energy, while simultaneously introducing a carbon tax and improving the integrity and functioning of the European Union Emission Trading Scheme, are necessary steps to achieve resource efficiency and meet the EU 2° C climate target.

Scaling impact by vertical integration

The harmonisation and vertical integration of policies across all governmental levels is a key component in utilising the maximum potential of synergies for resource efficiency. In this respect regular local-national dialogues should take place to exchange on the development and implementation of e.g. local and regional Sustainable Energy Action Plans in correspondence with National Energy Efficiency Action Plans and National Renewable Energy Action Plans. Therefore an adequate engagement and empowerment of all levels of government in the development, implementation and monitoring of effective and target-oriented resource efficiency action will also enable the establishment and acceleration of significant bottom-up commitments like the Covenant of Mayors initiative.

From linear to circular

Decision-makers of all levels should steer the linear development path focused on short-term profit and economic growth towards a sustainable and integrated societal progress. Thus the full set of policy measures, from financial incentives to regulatory interventions, should be applied to not only utilise resource flows more efficiently, but also organise them increasingly from linear to circular economies.

Going beyond natural resources

Resource efficiency demands a reorganisation of urban functions in terms of infrastructure and the utilization of resources. Hence resource efficiency actions require the promotion of technological, social, and cultural shifts. In addition, the improved management of resources must firmly adhere to the principles of sustainability to ensure future longevity.

Taking stock

Data collection and analysis is the important initial step for any governmental level to understand the specific assets of a certain territory and make best use of the available infrastructure and resources. Thus local and regional governments should be given the means to have frequent, free and full access to energy data and data of other relevant resources to be able to achieve efficiency. Furthermore the European and national level should provide regular reports on resource flows, and especially transparent information of direct and indirect subsidies of all energy carriers.

Creating alliances

Resource use is too complex an issue to be handled by public administration alone. A successful strategy has to take into account the needs and capabilities of all stakeholders involved. It is

important that this is done in both the implementation and development of Sustainable Resource Action Plans. This will ensure not only a solid knowledge basis but also a co-ownership of the developed strategy, making it less vulnerable to short-term political changes.

Enabling knowledge transfer

Resource efficiency dialogues, networking and alliances should not stop at any governmental level. Instead of reinventing the wheel, it is important to reach out to other political and technical decision-makers, dealing with similar problems, in order to exchange experience and learn from each other.

Customizing solutions

Learning from others is not the same as copy-pasting solutions from one country or city to the other. To ensure best results, the measures chosen should reflect the local situation. This knowledge can be gathered in the previous steps of taking stock and creating alliances.

Reflecting the complexity

Resource efficiency is not merely a technical challenge. Instead it is a complex transition process, involving our institutions and most of all the values and practices of people. This complexity needs to be recognized and accounted for in any strategy.

Community power

All governmental levels should take responsibility in ensuring regulatory certainty for small- to large-scale investments and to efficiently unlock the full potential of all stakeholders to contribute in the implementation of resource efficiency including an energy system based on renewable energy sources. Effective instruments and appropriate legal and financial frameworks are required for scaling-up the establishment of intelligent and decentralised (energy) resource infrastructure instead of focusing on conventional, large-scale and centralised models.

Socially just transition

Social justice is one of the key challenges to maintain and further advance resource efficiency. While related efforts conflict with existing economic patterns and revenue flows it presents also an immense chance to democratise centralized resource management and offers the possibility of community participation and local added value. Therefore a fair distribution of the associated financial and social costs, as well as the emerging benefits associated with Europe's sustainable resource transition between all levels of governments, market actors and citizens, is essential to attain success.

Striving for excellence

Choosing an ambitious goal or vision that is easy to communicate and with which stakeholders can identify with and thus support, has the power to put the entire city or region on a completely new path, setting off a transformative dynamic and inspiring new, even more ambitious goals and creating regional added value that is able to successfully work against structural changes of economies, brain-drain or demographic challenges.

Monitoring and evaluation

Setting and adopting adequate indicators for resource efficient cities that are able to account for the spatial and temporal dimension of resource flows, going beyond simple resource use indicators, is a common need that has to be addressed more substantially in the coming years to improve the 2nd generation of Sustainable Resource Action Plans and accelerate its impact. Further it is important to regularly report against established standards to communicate and relate success and inspire others.

What is resource efficiency?

„Resource efficiency means using the Earth's limited resources in a sustainable manner while minimising impacts on the environment. It allows us to create more with less and to deliver greater value with less input“, according to the [European Commission](#).

1. CONTEXT OF RESOURCE EFFICIENCY

Resource efficiency is one important part of the overarching concept of **sustainable development**. Respective measures support the establishment of sustainable communities and regions by contributing in the reduction of their per capita use of natural resources to a level that endangers neither local nor global ecosystems, and at the same time, ensure that political, economic and social systems guarantee a high **quality of life** for present and future generations in Europe.

Short to long term visions, strategies as well as measurable targets are necessary to translate resource efficiency into practical European, national and local policy frameworks that integrate the various economic, social and environmental strands. The European Commission has started to follow this pathway by calling for a [resource-efficient Europe](#) and let it become one of the seven **flagship initiatives of the Europe 2020 Strategy**.

The objective of this strategy - to become a **smart, sustainable and inclusive economy by 2020** - can be seen as a paradigm shift, moving from a linear development path focused on economic growth towards a more integrated, even circular approach to societal progress. By now the resource efficiency flagship initiative developed a [Roadmap to a resource efficient Europe](#) which manifests a vision, sets out a frame for the design and implementation of future actions and outlines the structural and technological changes needed by 2050, including milestones to be reached by 2020.

Vision of the Roadmap to a Resource Efficient Europe

By 2050 the EU's economy has grown in a way that respects resource constraints and planetary boundaries, thus contributing to global economic transformation. Our economy is competitive, inclusive and provides a high standard of living with much lower environmental impacts. All resources are sustainably managed, from raw materials to energy, water, air, land and soil. Climate change milestones have been reached, while biodiversity and the ecosystem services it underpins have been protected, valued and substantially restored. ([EC, 2011](#))

The recent communication of the Commission: [Towards a Circular Economy](#), further contextualizes resource efficiency by highlighting that such a fundamental transition in the EU, away from a linear economy where resources are not simply extracted, used and thrown away, but are put back in the loop of economies, is driven by measures that promote a more **efficient use of resources and waste minimization**.

The present paper understands resources as **natural material** like water, air, energy (carriers), land and soil, but also as **ecosystems** such as biodiversity and climate. Both types of resources provide the people of cities and regions with **functions and services** related to health, food, recreation and income, etc.. The availability of resources determines the **human build infrastructure** in different sectors like:

Energy	Water	Buildings	Transport	ICT	...
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Resource efficiency demands a **reorganisation of urban functions**. This reorganisation need to be twofold addressing:

- the build **infrastructure**, e.g. working towards a smart grid or low-carbon economy, and
- the **use of resources** e.g. promoting a shared economy or opportunities of urban mining, reuse and upcycling.

Hence resource efficiency requires a **technological as well as social and cultural shift**.

Moreover it helpful for decision-makers to follow and apply a **cascading approach**, when developing policies that shall guide and lead to the establishment of a sustainable city and region.

Cascading approach for a sustainable city / region in Europe

Resource sufficiency / saving

Substitution of non renewables

Resource regeneration

Resource efficiency

Circular Economy

Source: ICLEI

Building upon the idea of resource efficiency, new concepts are currently emerging that propose further development of our production and re-production techniques towards a circular use of natural resources. Strategic concepts supported by the European Commission like **SMART Cities** can guide the reorganization of resource use and functions with an emphasis on technological improvements which for instance include information and communication technologies. The concept of **Productive Cities** currently developed at ICLEI combines the ideas of resource sufficiency, circular use and decentralised management of resources on an urban-rural interface.

2. MULTI-LEVEL POLICY RECOMMENDATIONS ON RESOURCE EFFICIENCY

The present policy paper seeks to provide guidance for local / regional, national and European decision-makers. Since the addressed theme of resource efficiency is complex and the recommendations for the different governmental levels need to be **diverse, but specific** to be useful, the RE-SEETies' **policy guidance** focuses primarily on sustainable energy and waste management.

Matrix of RE-SEETies policy recommendations for **reorganisation of urban functions towards resource efficiency**:

	Energy		Waste
	Energy Efficiency	Renewable Energy	
Reorganising the urban infrastructure and use of resources towards resource efficiency by	Suitable framework conditions	Suitable framework conditions	Suitable framework conditions
	Improve process / management	Improve process / management	Improve process / management
	Enhance knowledge / skills	Enhance knowledge / skills	Enhance knowledge / skills
	Support technology	Support technology	Support technology
	Provide finance	Provide finance	Provide finance
	Enable stakeholder involvement	Enable stakeholder involvement	Enable stakeholder involvement

2.1. EU level recommendations on reorganising the urban infrastructure and the use of resources towards resource efficiency

2.1.1. Suitable framework conditions

Aim and opportunity of resource efficiency

Natural resources, including raw materials such as fuels, minerals and metals but also food, soil, water, air, biomass and ecosystems, support the functioning of the European economy and directly impact **citizens' quality of life**. The pressure being put globally on resources threatens not only the environment, but also the **security and affordability of supply**. Resource efficiency is therefore a necessary pathway to future development, and an **opportunity for an inclusive and sustainable economy** in Europe.

The different EU Directives (e.g. on Renewable Energy, Energy Efficiency or Waste Framework) adopted in the past years aim at ensuring the implementation of a **Roadmap to a Resource Efficient Europe**, bringing **economic opportunities, improving productivity, driving down costs and boosting competitiveness**.

Implementing path constraints

The enforcement of these Directives is dealt with a national level, where sometimes **economical and societal challenges** can create unfavorable conditions for such policies. The practical implementation of policies often needs to be done at the local level. According to the [Council of European Municipalities and Regions](#), today almost 60% of the decisions taken at the municipal council level and 50% at the regional council level are directly or

indirectly influenced by the European Union. However, frequently local and regional governments do not have a **sufficient mandate, staff capacity and relevant training as well as financial means** to implement actions effectively.

Enabling conditions for ambitious targets

EU policies are a main driver in the development of sustainability and resource efficiency, but by themselves do not provide a solution. The EU level should provide, from one side, for more **capacity development opportunities for national governments**, and from the other for a clear **recognition of the importance and empowerment of the local and regional level** of governments in implementing respective policies.

EU policies should also ensure that actors strive for ambitious national and subnational targets. These targets should be set clearly and transparently and should be **realistic in correspondence with available capacity and resources, but closely linked to the planetary boundaries**.

As of today local and regional governments have proven to be able to successfully commit and implement targets often much higher than the similar foreseen for Member States (i.e. through initiatives such as the [Covenant of Mayors](#) and the [Mexico City Pact](#)). The EU level should recognize these efforts and **support legislative and financial frameworks to scale-up such actions**.

The support needed is not only financial. Local governments need clear and empowered **mandates**, free access to local and regional **energy data**, and appropriate **capacity development** for technical staff, to fully benefit from bottom-up contributions, both on climate change mitigation and resource efficiency.

Strengthen the 2030 climate and energy framework

Ambitious commitments at the EU level are crucial to the establishment of a sustainable, cohesive and ecologically sound 2030 climate and energy strategy for Europe. Subnational governments are instrumental to this goal and engaged in a [pledge for binding targets](#): **a reduction of at least 50% in greenhouse gas emissions, 40% of Europe's energy generated from renewable sources, and a 40% increase in energy efficiency by 2030**.

The EU level should encourage, through **supporting decentralized approaches and infrastructures, a fair distribution of the financial and social costs, as well as the emerging benefits**, associated with Europe's sustainable energy transition between all governmental levels and market actors including citizens.

EU policy should also readjust the distortion of the current energy market **phasing-out of subsidies for fossil fuel and nuclear energy**, and encouraging the development of renewable energy sources in accordance to the principles of resource efficiency and sustainability.

A more sustainable regional and local approach to the provision of resources, and especially of energy, will reduce reliance on increasingly scarce fuels and materials, boosting resource efficiency while **improving the security of Europe's supply of raw materials** and making the EU's economy more resilient to future increases in global energy and commodity prices.

Energy Efficiency – Ensure multi-level dialogue

The Energy Efficiency Directive (EED - [Directive 2012/27/EU](#)) established a common framework of measures for the promotion of energy efficiency within the EU in order to ensure the achievement of the **20 -20-20 targets on energy efficiency** and to pave the way for further energy efficiency improvements beyond that date. Among the measures foreseen:

- As of 2014 the **public sector is required to renovate 3% of its "owned and occupied" buildings** that have a useful area larger than 500 m² (requirement is lowered to 250 m² as of July 2015).
- EU countries are requested to draw up a **roadmap to make the entire buildings sector more energy efficient by 2050** (commercial, public and private households included).

These measures will have a direct impact on local and regional authorities as the closest level to the implementation. It is therefore important that EU policy makers **ensure the presence (and intervene in case of a lack of) a multi-level dialogue** within countries. The results of such exchanges are indicators for a successful implementation of efficiency measures and thus should be **monitored, reported in the National Energy Efficiency Action Plans** and assessed by a third party. Moreover such dialogues should be included as a standard requirement in future revisions of the Directive.

Further the EED should highlight the interlinkage between energy efficiency resource efficiency, so to **create a clear reference to it at national level**.

Renewable Energy – NREAPs as driver

A more **decentralised and inclusive sustainable energy production system** is crucial to tap the full potential of low carbon development at the local, national and EU level. Through a swift phase-out of fossil fuel and nuclear energy subsidies and a strengthened Emission Trading Scheme, **EU targets enable cities in driving the transition** towards a renewable and secure energy system more effectively.

The Renewable Energy Directive ([Directive 2009/28/EC](#)) establishes a **common framework for the production and promotion of energy from renewable sources** in accordance to the 20-20-20 targets. The Member States are required to develop **National Renewable Energy Action Plans (NREAPs)** which set the share of energy from renewable sources used in transport as well as in the production of electricity and heating for 2020.

These NREAPs correspond to the efficiency efforts on final energy consumption (the higher the reduction in energy consumption, the less energy from renewable sources will be required to meet the target). These plans also establish **procedures for the reform of planning and pricing schemes and access to electricity networks, promoting energy from renewable sources**.

Renewable Energy – demands towards NREAPs

EU decision-makers should closely **monitor and evaluate as well as enforce and adjust**, if necessary the NREAPs:

- ensure that operators guarantee the **small- to large-scale transmission and distribution of electricity and heat from renewable sources**;
- ensure a priority **access** for this type of energy;
- foster respective **storage capacities**.

Renewable Energy – Let consumers become prosumers

Local and regional governments can substantially contribute to the ambition and successful implementation of NREAPs, if a vertical coordination is established and effectively used and the subnational level is adequately resourced. Thus the EU institutions and its Directives should:

- Recognise the potential and **foster the value of small-scale and community-lead initiatives through supportive legislations**;

- Facilitate the shift of perceptions of cities and its citizens from pure consuming entities to “prosumers” by allowing full **access of small-scale renewables to the distributing energy system and reduce any relevant regulatory barriers.**

*Renewable Energy
– Foster
community power*

Where feed-in-tariff are not favoured by national policies, the EU should promote the exchange of good practices and innovative types of legislations that are able to boost community projects (including cooperatives and crowdfunding) as a **suitable instrument to leverage private investment.** This could include examples of tax rules (e.g. exemptions or reductions) and tax incentives for the installation/construction of installations (e.g. solar). From a financial point of view, European assistance is valuable on how to establish **grant-to-loan schemes** to support community power projects in preliminary investigations and works (e.g. feasibility studies, planning permission). In particular, **national rules and procedures should be adjusted to allow access to structural or other funds.**

*Waste –
Impact and needs
of the subnational
level*

The current Waste Directive ([2008/98/EC](#)) establishes a legal framework for the treatment of waste within Member States or rather regions and communities. It aims at protecting the environment and human health as well as **reducing the use of resources** and favours policies that **enhances the practical application of the waste hierarchy.** European decision-makers should:

- Consider the **disparity of income** per household between Northern/Western and South-Eastern regions of Europe in the translation of respective EU Directives that aim to improve the waste management. While the framework conditions might be similar in its ambition, the lack of local financial resources should be balanced by an **effective and adequate support** of other financial instruments like the Structural and Cohesion Funds.
- Note that since the new cohesion policy 2014-2020 no longer includes the support for establishing landfills, the focus as well as pressure on local waste management has shifted towards other areas within the waste hierarchy namely: prevention, reuse, recycle and (energy) recovery. This will stimulate the approach to local **“waste” rather as resource than waste and should be supported through capacity building.**

2.1.2. Improve process / management

*Country sensitive
management and
support*

The EU level should take stock of the difficulties encountered at national and local level, paying specific attention to the challenges related to a particular country or context. This step is important to **understand assets of a certain territory** and make best use of them. Thus the EU should promote regular **multi-level consultation and dialogues** in Member States.

*Make process
more participatory*

Although the EU level needs to cater to regulations able to be implemented in all Member States, the provision of **special support for specific challenges** i.e. in South-Eastern European (SEE) countries **should continue.**

As stated earlier, resource-efficiency is not merely a technical challenge. Instead it is a complex transition process, involving national institutions, values and practices. This complexity needs to be recognized and accounted for in EU strategies, its long-term vision, policy-relevant research and concrete actions. The EU level can **foster a social and cultural shift through a stronger involvement of stakeholders** in relevant decision-making processes.

Monitor resource flows and support local indicators

Monitoring and evaluation is an especially pressing issue for achieving resource efficiency. The EU should **support the development of adequate indicators for resource-efficient cities** that would be able to account for the spatial and temporal dimension of resource flows, going beyond simple resource use indicators.

2.1.3. Enhance knowledge / skills

Base resource efficiency on knowledge and long-term planning

A more resource efficient Europe paves the way to achieving economic, social and environmental policy goals more easily, more securely, and at lower costs. [Resource efficiency is a key component of the Europe 2020 strategy](#), and it aims at stimulating **smart, sustainable and inclusive economic growth based on knowledge and innovation**.

Many strategies have been adopted in the past years in this regards, among those:

- A **Roadmap to a Low-carbon Economy by 2050**, which analyses opportunities for leading the EU on the path towards the establishment of a low-carbon economy. This includes increasing energy security and promoting sustainable growth and jobs, and ensuring that the proposed actions are most cost-efficient and do not bring negative distribution consequences.
- A **Roadmap to a Resource Efficient Europe**, which strives for the establishment of a coherent framework of policies and measures for a shift towards a resource-efficient economy. Resource productivity, decoupling economic growth from resource use, improve competitiveness and security of supply are the main aims.

Promote diversified approach

European decision-makers should be aware that the implementation of these policies at the national level is often taking different forms and, **when it comes to resource efficiency, a common definition seems to be missing**.

Many of the member states have included resource efficiency into their existing policies and planning, but only very few of them have adopted an ad hoc strategy. Furthermore, resource efficiency is still **widely perceived as a central government issue** without reflecting subnational levels.

Intensify use of Horizon 2020

European efforts should build capacity at the (sub)national level on how to include and implement policies on resource efficiency. The research programme [Horizon 2020](#) **should be used more intensively** to facilitate an exchange on good practices of implementation in different Member States.

Capacity building for resource efficiency

The EU level should encourage the understanding that resource efficiency affects the production and (final) use as well as the disposal. **As all levels of governance are affected, all should be included in capacity building processes** from planning to implementation to monitoring.

Smart urban design, logistics and spatial planning (compact and multi-use urban development) are particularly important to the set up of resource efficiency at national, regional and local levels. Therefore an increased exchange should be conducted on **integrating holistic planning instruments like [HEAT+](#) for policy purposes**.

EU instruments also need to foster the development of **capacity on accessing relevant funding streams, being able to make local resource efficiency projects bankable and using financial incentives** such as tariffs, subsidies and taxes more effectively.

The EU level should **facilitate technology and skills transfer and development** - particularly relevant for SEE cities - as well as foster **innovation that focuses on social and economic diversity**.

2.1.4. Support technology

Innovation through life-cycle-assessment and remanufacturing

The EU level needs to support the development of new, eco-designed products and services and enforce existing and new ways to reduce resource inputs and negative impacts through **life-cycle-(cost-)assessments, minimise waste by supporting remanufacturing, improve management of resource stocks through controlling** and change consumption patterns and business modules through awareness raising and regulatory incentives.

This requires and helps to stimulate technological innovation, **extend employment in the fast developing 'green technology' sector**, sustain EU trade opportunities (including new export markets), and benefit end users through more sustainable products.

Technology improvements need behavioral changes

While many resource efficiency initiatives relate to production, questions regarding the use cannot be neglected. Specifically focusing on the debate on the **'rebound effect'** – the idea that the introduction of technology and policy instruments developed to improve environmental efficiency might have the unintended side effect of increasing consumption.

The EU level should thus **ensure that improvements of resource efficiency are not compromised by the continuance of a resource intensive behavior**.

Enhance applied science in cities and SMEs

The environmental protection market is a worldwide opportunity for European firms: with eco-industries worth around € 1.000 billion per annum, and expected to triple by 2030 ([DG Environment, 2011](#)). Since the sector is mostly made up of small- and medium-size enterprises (SMEs), it is a vast field of fast moving innovation which impacts the development of technologies. Thus the EU should **support research and applied science in cities in particular and SMEs to tap the full potential of innovation** to turn around the current resource intensive market.

2.1.5. Provide finance

Lesson learnt from energy efficiency target

The (failure of achieving the) energy efficiency target of the current [2020 EU climate and energy framework](#) has clearly shown that the implementation of targets suffer if they have a non-binding status and lack a lasting **long-term perspective**. In comparison, **legally binding** targets for resource efficiency (and climate and energy) can provide this perspective and support the creation of a reliable corridor, and a roadmap, to provide a stable framework to ensure that national governments and relevant market actors can effectively **plan and invest**. This specifically includes facilitating the necessary **small- to large-scale energy investments**, through which Europe will be able to fully benefit from the potential for action lying in all stakeholders included in its renewable energy system.

Stable investment corridor and harmonized reporting

Coherent policies should be supported by **stable frameworks for investment** based on ambitious targets, as well as through the monitoring and evaluation of related data that has been transparently collected. The focus on **measurable, reportable and verifiable reporting on resources** - and in particular energy - should therefore be increased and harmonized. This will instill confidence in the policy process and have a positive impact on **financial flows towards sustainable investments**.

Simple and guided application process for funding

Access to EU funds is commonly assessed by subnational levels as difficult and time consuming. Therefore the **application process should be as simple as possible, less resource intensive** (through e.g. two-stage-bidding procedures) and accompanied by additional support and guidance. Further, the development of sound business plans should increasingly be fostered through facilities such as the [European Local Energy Assistance \(ELENA\)](#).

Local governments, especially in SEE countries, **lack start-up funds and are concerned about acquiring debt**. This is also one of the reasons why some of the developed Sustainable Energy Action Plans are not being implemented. Therefore the connection with national contact points of the European Investment Bank (EIB) and **dialogues with interested and applying local governments should instill confidence** throughout the submission process.

Ensure participation and certainty for local investment

The EU policy makers should ensure that national governments involve their respective local and regional governments in the discussion on the allocation of geographically specific funds (for SEE countries) as well as Structural and Cohesion Funds for the programming period 2014-2020, by fostering the **awareness of available financial mechanisms, exchange of information and participatory engagement**.

Furthermore the EU level should guide and support national governments to **enhance certainty for local investment** and innovation, while also creating opportunities for sustainable economic growth by ensuring that all relevant **policy areas consistently include resource efficiency**.

Enable bottom-up finance

In addition, bottom-up financial models should be monitored, enabled and promoted by the EU level. Initiatives such as **crowdfunding and community energy are able to mobilize substantial sums** that normally would not be invested, despite the fact that they have significant positive impacts e.g. increasing social acceptance of the energy transition and distributing the economic benefits of the added value created.

2.1.6. Enable stakeholder involvement

Intensifying engagement

The EU should continue to encourage and stimulate the set up of multi-level governance discussions and stakeholder consultations, when determining, assessing and improving its policies' papers, targets and framework as well as funding instruments on resource efficiency. Moreover the Commission is highly recommended to carry on its **support of bottom-up initiatives** such as the [Covenant of Mayors](#) and [Mexico City Pact](#), refer to it and **let the European framework continue to build on local achievements**.

Steering the private sector

The steering of and discussion with the private sector is equally important for the development of a resource efficient Europe. A **wide array of Directives and industry sector programmes can identify and remove harmful practices, stimulate innovation** to address environmental and social issues, and improve resource efficiency in individual firms and along the supply chain.

2.2. National level recommendations on reorganising the urban infrastructure and the use of resources towards resource efficiency

2.2.1. Suitable framework conditions

Define resource efficiency

“Resource efficiency’, ‘sustainable use of resources’ and ‘minimising use of natural resources’ are often used synonymously in the different countries. Only five countries **formally defined the term ‘resources’** in their policies. The general understanding of ‘resources’ in most of the countries, often includes raw materials, such mineral and biomass, and energy sources, but also soil and water, in line with the flagship initiative for a resource efficient Europe.

Energy carriers, including fossil fuels, are often dealt with separately under energy policies. The majority of countries include waste as a resource, and so view e.g. recycling as a route to greater resource efficiency ([EEA, 2011](#)).

Take stock and explore practice

Throughout Europe, the EU represents one of the main drivers for the development and implementation of national resources efficiency strategies. Without a formal definition of “resource efficiency”, national policy makers should **take stock** of the European and other member states’ experiences, and strive for the institutionalization of resource efficiency policies according to the needs and specificity of their own **national context**.

Institutionalising resource efficiency

Institutional and organisational arrangements to support resource efficiency policies, both within the national level and across the regional and local level, need to address the cross-cutting nature of the issue, as well as the trade-offs and the challenges in sharing competencies and knowledge. National policy-makers can strengthen policy development and implementation, through:

- the improved **integration** of resource efficiency **within existing institutions** and within their areas of responsibility;
- stimulating closer **inter-institutional and multi-level collaboration** to improve coherence and consistency of policies (i.e. constituting working groups);
- fostering **multi-stakeholder dialogue** and public participation to mobilise support for implementing resource efficiency initiatives, especially involving the industry sector;
- increasing the **knowledge base** of resource efficiency at the national, regional and local levels, with the aim to reach out to both the private sector and community;
- highlighting the role and the potential for **financial institutions** in implementing resource efficiency initiatives;
- supporting closer cooperation between policymakers and research institutes to **produce resource efficiency indicators**;
- **monitoring and evaluating** the impacts of the policies implemented, and fine-tuning them when necessary.

Bridge sectors and levels through cross-cutting focus

The institutionalisation of resource efficiency can potentially act as a bridge between sectors and actors through a rational **integration of overlapping competencies**. Often there is limited inter-institutional coordination and the involvement at the local and regional levels is rather limited as resource efficiency is seen as a central governmental issue. Policy makers should make sure that all levels of government are included in the discussion and facilitate their participation.

Choose model for implementation

Countries can implement their policies on resource efficiency, embedding them within a series of action plans and practices (EEA, 2011). This includes:

- **Economy-wide strategies and action plans**, related to all economic actors and encompassing all relevant themes. Examples include environmental strategies, sustainable development strategies, and Sustainable Resource Action Plans.
- **Sectoral strategies and action plans**, related only to specific target sector. Examples include waste strategies, Sustainable Energy Action Plans (SEAPs) and Sustainable Urban Mobility Plans (SUMPs).
- **Resource-specific strategies and action plans**, related to a specific resource or group of resources. Examples include biomass strategies or (waste) water policies.
- **Product-oriented strategies and action plans**, which focus on redesigning and improving products and building a market for more sustainable products. Green public procurement is the main process contributing to this aim, but other examples can include product roadmaps and information instruments such as environmental labelling.

Apply a holistic approach

Even through difference models, policies need to follow a holistic **life-cycle approach to resources**. This is crucial in order to ensure that impacts are not shifted - in accounting and accountability terms - between nations or between different categories of environmental, social, health or financial considerations. The concept of measuring the life cycle of products and services has a high potential to identify and use opportunities for resource efficiency.

Moreover national governments should take into account **resources (and harmful externalities) 'embedded' in imports and global trade**, in addition to the traditional focus on 'domestic' resource efficiency within national territory.

Specific target setting

Resource efficiency targets should address the **infrastructure and use of waste and (renewable) energy** in particular. Moreover targets are recommended to specifically focus on the energy efficiency of buildings and transport as both sectors usually possess the highest potential of savings.

Impulse for the implementation of EU Directives

The sectoral target setting is also useful to assess performance in relation to the implementation of related EU regulations such as the Directive on Renewable Energy and Energy Efficiency or the Energy Performance of Buildings and Waste Framework Directive.

At the same time these directives can be utilised as an important **driver for national policy development on resource efficiency**.

Cut costs and gain resource security

Resource efficiency remains a priority at the national level due to common **dependence on imports and the rising prices** of depleting resources, but also because of the increased international recognition of the planetary boundaries and efforts to correct unsustainable production and consumption patterns. Nationally, this can **result in shortages in supplies, market failures or fuel poverty**. Hence national governments are recommended to respond to resource inefficiency more effectively by using all available instruments that are directly and indirectly related to resource efficiency such as:

- **Economic policy and national reform programmes;**
- **National plans to ensure security in the supply of raw materials** and to foster economic competitiveness;
- **Social cohesion policies and rural development programmes.**

It is generally recognized by all EU countries that the main areas of interest for the application of resource efficiency measures are energy and waste.

*Energy Efficiency –
Use synergy
potential of
NEEAPs*

The [EU Energy Efficiency Directive \(EED\)](#) requires all EU-28 countries to use energy more efficiently at all stages of the energy chain – from the transformation of energy and its distribution to its final consumption. Each Member State is required to set an indicative national energy efficiency target and to 'translate' the target in terms of an absolute level of primary energy consumption and final energy consumption in 2020. By 30 April 2014 and **every three years thereafter Member States will have to submit their National Energy Efficiency Action Plans (NEEAPs)** to the Commission.

Policy makers should consider the **potential for synergies the in planning, implementing and monitoring of resource efficiency in general** within this framework and process. Specifically, the public sector is required to lead by example by annually **renovating 3% of its building stock** starting from 1 January 2014 and by including **energy efficiency considerations in public procurement** (e.g. cost-effectiveness, economic feasibility) – so as to purchase energy efficient buildings, products and services.

*Energy Efficiency –
Tap and foster
bottom-up
commitment*

There is great potential for the implementation of energy efficiency strategies and subsequent benefit from these measures at the local level as it is the one closest to implementation. Without this implementation, there is a lack of **harmonisation and synchronisation with local efforts**, and policies become difficult to execute and targets hard to enforce.

Long-term commitment with intermediate milestones as well as support for capacity building at the national level has proven to be important. In some of the (SEE) countries **local governments don't have a sufficient mandate on energy** and for that reason face barriers in implementing progressive actions e.g. establishing a local energy efficiency standard for buildings etc., which is commonly determined by national law. A **bipartisan understanding on the long-term vision should be gained between the governmental levels** and local short-term ambitions enabled through a respective mandate.

Moreover policy makers at the national level should nurture the dialogue with other levels of government in order to fully tap the potential of bottom-up actions, such as Sustainable Energy Action Plans, and should **offer support and capacity building opportunities** for local and regional levels.

*Renewable Energy
– Mobilise small-
to large-scale*

Renewable Energy is increasingly recognized as a crucial part of the energy mix in Europe, especially in relation to the climate target and **energy security**. As a fundamental part of the sustainable energy roll-out in Europe, countries need to support the implementation of RES (Renewable Energy Sources) on their territory, **engaging actively the local administrators and respective community of implantation**.

A more **decentralised and inclusive sustainable energy production system** is crucial to tap the full potential of low carbon development at the local, national and EU level. This is especially relevant at subnational levels where **governments can act not only as energy consumers, but as “[prosumers](#)”**.

In this context, cities' ambition to fulfill the commitment of sustainable, cohesive and environmentally sound development can support, both at European and national level, the **mobilization of [long term small- to large-scale local energy investments](#)** for realising **mitigation and adaptation measures**.

*Renewable Energy
– Distribute cost
and benefits
locally*

National governments often consider renewable energy production as a means to create jobs as well as an instrument to **reduce energy poverty**, while also increasing citizens' awareness about energy efficiency, energy sufficiency as well as the consequences of climate change.

Local renewables are particularly desirable as they support a more **efficient redistribution of both costs and benefits, while creating local value chains**.

Therefore national policies should address legal barriers related to the [ownership of the distribution grid](#), in order to fully support the development of RES. While a large developer may be able to cope with the costs, or find a suitable location in which to connect to the grid, smaller community-scale initiatives, including municipal scale, do not possess such capacities. **National policy makers should support the access of small-scale producers.**

*Renewable Energy
– Utilise RE
Directive as driver*

Member States can **utilise existing obligations under the RE Directive** as a starting point to support the use of RES. These include obligations regarding:

- The **establishment of a single administrative body** for dealing with licensing applications for RES installations and providing assistance to applicants. This body should communicate in an accessible and clear manner to facilitate investments;
- Ensuring that national rules concerning procedures to [authorise, certify and license](#) plants, associated transmission and distribution networks are proportionate and also **allow community-scale initiatives to engage**;
- Development of information, awareness-raising, guidance and national **training programmes for communities and citizens on RES**;
- On the practical side, national governments should **address costs related to grid** connection, technical adaptations to develop the grid, and transmission and distribution;

The elaboration of National Renewable Energy Action Plans should specify planned **measures that promote decentralized RES** development (including community-lead initiatives).

*Waste - Realise
secondary raw
material potential*

Waste is widely recognized as a secondary raw material and a substitute for primary natural resources. Combined with a growing emphasis on waste prevention, this shift of perception is an essential step towards developing a circular economy.

Waste prevention is an important field for policy intervention and **organic and food waste are primary streams to target** as they bound a lot of resources (e.g. water and energy). Better waste management not only reduces greenhouse gas emissions, but also allows access into the energy mix.

*Waste – Resource
local level*

National legislation regarding waste management, should be adapted to match the **higher level of responsibility and/or performance of regional and local public governments** i.e. through the reduction of the volume and/or number of landfills to increase prevention, while reusing and recycling waste.

The enforcement and practical implementation of such a European and national legislation will only be successful, if involved subnational entities are **adequately supported by resources such as staff capacity, knowledge transfer and finance**. A regular local-national dialogue on the design and implementation of the legislation of waste management can facilitate and improve the process.

Waste – Ensure repetitive resource cycles in production

Waste policies can **encourage more efficient use of materials during production** (potentially regardless of the economic sector) and energy efficiency strategies can drive increased resource efficiency in a broad range of industrial and commercial sectors. As such these are strong leverage points for increasing resource efficiency. Moreover policies need to **ensure that resources are reinserted into the production cycle after their use** through adequate “waste” collection and treatment schemes.

2.2.2. Improve process / management

Aim for integrated management

To reorganize urban and rural infrastructures, and the use of resources towards resource efficiency it is crucial to **ensure that the overall management process is soundly, transparently and cyclically integrated**. The starting point for this cycle should be the set-up of supportive **framework conditions** including inter-sectoral policies, clear mandates and regulations defined as well as multi-level working groups.

All ministries and governmental levels should be regularly involved and adequately informed about the policies. A facilitating structure to coordinate the dialogue between the private and public sector should be established.

The existing **financial framework** should be assessed towards the ability to implement these policies effectively and findings should be shared with other governmental levels and actors involved in the implementation. A favorable framework includes the provision of ad hoc funds and suitable **market conditions** at national level for the realisation of the adopted targets.

Verifiable process to obtain support and acceptance

A **baseline** should be established in order to inform and support realistic targets. For example, **Green Public Procurement or energy efficiency appliance** can be strong drivers of growth for the national market on sustainable and resource-efficient products and services. A pre-assessment of the regulations and current status of the economy is very useful to obtain a set of **arguments for the political support and social acceptance of resource efficiency measures**.

The **targets** should be ambitious, visionary and easy to communicate – to encourage action. They should be discussed and set in a transparent and understandable manner to ease the cooperation with relevant stakeholders.

Measure performance to accelerate success

Indicators to monitor the achievement of these targets are equally crucial, as they would not only provide for **confidence through transparency**, but also allow for an evaluation of the results and for the set up of new objectives. Establishing **response indicators and performance drivers** on resource efficiency is a necessary step to identify leverage points for policy intervention.

Several **accounting methods** (e.g. material flow accounting, National Accounting Matrix including Environmental Accounts (NAMEA) and environmentally extended input/output analysis, life cycle assessment, ecosystem capital) offer the potential to produce a coherent indicators package ([EEA, 2011](#)).

Ensure bottom-up feedback loops

Monitoring of the results during all phases (from target setting to implementation) is crucial to guarantee transparency and accountability, and it is the basis for evaluation of the process. Targets and indicators for resource

efficiency are one the priorities for **exchanging experience** and sharing good practice at country level. They also serve as feedback for re-directing policies and improve performances.

Environmental Management Systems (EMS) and environmental **auditing guidelines** such as ISO standards can support the implementation and monitoring of such processes.

Build capacity through exchange

Local energy strategies and action plans developed by cities and municipalities should feed into regional and national action plans and a **multi-level cooperation** and coordination is needed for this purpose, in order to fully benefit from the potential of implementing national policies.

The importance of **capacity development** has to be highlighted through the process:

- EU and national funds have co-financed several projects in the past years in order to **stimulate sustainable management of resources, energy use and production**. National governments are in the unique position being able to gather and use the results of these actions, combining local with national expertise for a mutual benefit.
- **Local-national dialogues** can provide the opportunity for the topical exchanges and effective finance.
- Moreover national government should also discuss with their peers and learn from other **practices through partnerships** and exchanges.

Implementing resource efficiency on household level

Citizens' involvement is an asset for the implementation of resource efficiency actions which power is often underestimated. Product-related initiatives are a potentially effective instrument to change prevailing patterns of consumption.

- Both **European and national product labeling schemes** can boost consumer awareness and increase demand for more sustainable products, and result into more sustainable consumption patterns.
- Ecolabeling can help creating more aware and responsible consumers and it can support environmental and **social criteria in the market**.
- Permitting requirements for renewable energy projects should be based on a sliding scale according to size. **Simplified requirements for smaller community power projects**, as well as minimal requirements for micro-installations should be explored and set up at national level (i.e. pre-approval of specified installations).

2.2.3. Enhance knowledge / skills

Communicating resource efficiency

Most often, resource efficiency is perceived as linked to concerns regarding environmental degradation and sustainable development. When considering economic factors, resource efficiency is normally discussed in relation to the energy crisis and rising prices, future scarcity and increased costs of resources as well as dependence on imports.

Mechanisms to **coordinate inter-institutional collaboration on resource efficiency** are important to strengthen the policy development and internal knowledge base. For this reason, resource efficiency needs to be discussed across sectors and across-level, down to the citizens. There is a need for increasing public recognition of the importance of the topic, which could be addressed by stronger communication and capacity building efforts, such as through **campaigns coordinated by the national level** in support to regional and local governments.

Learning and replicating resource efficiency

Information-based policy instruments and economic instruments are a useful tool to **communicate across levels and target groups**. The establishment of a platform for sharing good practice regarding resource efficiency policy could assist policy-making at all governmental levels.

The national level is recommended to cluster information on how best to integrate resource efficiency into other policy areas and **combine it with existing strategic objectives, targets and indicators**.

Monitoring and assessing policy effectiveness should also be part of the discussion at European, national and local level.

Among the issues to be addressed by capacity building:

- **consumption** policy and good practices;
- **economic instruments**;
- example on how to **change/influence consumption behavior**;
- **rebound effect** and ways towards enhancing low-impact products and services;
- **impacts embedded in global trade**.

2.2.4. Support technology

Investment in the future of resource efficiency

Significant investment is needed in the field of resource efficiency in order to create and apply smarter technologies that are able to require less (renewable) energy and produces less waste. The market plays a significant role both on the provision of such technologies as well as the usage of resources. The **expenses of Research and Development (R&D) should be shared** between the private sector and institutions (EU, national level, and local level where feasible) based on the political degree of ambition to achieve a resource efficient shift of the market by a certain time.

Breakthrough technologies are needed to make major changes to the production system. However, they represent not only additional costs, but also additional opportunities to make gains through exploiting **synergies with the private sector and leveraging investments** that will provide future markets and employment.

Support national eco-industry

Increased resource efficiency can offer **competitive benefits to industry**. Thus R&D should be supported at the national level as eco-innovations deliver benefits for both the environment and established businesses.

Already the European environmental industries active in the fields of pollution management and control, waste collection and treatment, renewable energy and recycling have a combined **turnover of over 300 billion EUR, provide nearly 3.5 million jobs, and have impressive global market shares of 30-40%**. This sector is growing at annual rates of more than 8%, while the global market for these industries is foreseen to reach four trillion EUR by the middle of the decade.

2.2.5. Financing

Funding resource efficiency A number of European key sectors have already embarked on a resource efficient strategy. One of the first steps for fund resource efficiency is to **decrease resource consumption**, and therefore cutting production costs.

- **Potential savings from unexploited resources** resulting into payback periods of less than one year can often increase up to four times in case of products/services with a longer payback period. Therefore it is crucial for national governments to evaluate the importance of investing in resource efficiency cutting the costs at the start.
- Among the policies to be funded, governments should promote **full use of material in production**, including energy and water, through reduction and [recovery programmes](#), recycling and reuse of material.

A **wide range of financial EU instruments are available** to national governments to increase resource efficiency in collaboration with both private and public sector.

Combine voluntary and obligatory commitments

Economic instruments, such as **voluntary commitments from industry**, environmental auditing and environmental management systems, have a role to play in resource efficiency. Within the business community, many of these come under the heading of [Corporate Social Responsibility \(CSR\)](#).

- [Industry sector programmes](#) can identify and remove harmful practices, stimulate innovation towards addressing environmental and social issues, and improve resource efficiency in individual firms and along the supply chain.
- National governments should continue to stimulate ambition in the private sector and set clear **targets that provide a reliable investment corridor**.

Use available EU funding

In the upcoming programming period **2014-2020, the European Structural and Investment Funds (ESI Funds)** includes a minimum of [23 billion EUR](#) earmarked for funding projects that are able to catalyse a “shift to a low-carbon economy”.

The investments shall promote and support **energy efficiency, renewable energy and smart energy management in public infrastructure**, the building sector (public and private) and enterprises. Smart grids and sustainable multi-modal urban mobility are also included, in particular for urban areas.

More effective investment through partnership

In accordance to the **partnership principle**, national governments should involve regional and local governments, local businesses, citizens and other stakeholders in defining investment priorities.

Though the [“Community-Led Local Development”](#) (CLLD) approach, local governments can setup their own sustainable energy development strategies together with citizens and local business, with the added value to contribute to the national targets on energy and resource efficiency.

The needs and potentials for energy efficiency measures and renewable energy production should be assessed within **National Sustainable Resource Action Plans**, together with similar plans of the local level, in order to deploy EU funds efficiently in a coordinated manner.

Encourage leverage of private capital

Furthermore, in addition to grants and direct payments to beneficiaries the European Commission encourages Member States to enhance the use of financial instruments that foster the up-take of **EU funds and leverage of private capital**.

Financial instruments include “**soft loans**” (subsidised interest rates, longer pay-back periods) and risk sharing (loan guarantees) based on revolving funds, direct equity investments (e.g. Energy Saving Companies) or new sources of funding like citizens financing (e.g. energy cooperatives).

Support combined funding

The European Commission is proposing a set of “**off-the-shelf**” **financial instruments** (i.e. “Renovation Loan”, “equity for Small and Medium-sized Enterprises” or loans for “Urban Development”) which allow the **combination of various sources of funding and financing mechanisms** (loans and grants).

These financial instruments are open to a wide range of beneficiaries. National governments should **support local and regional governments in applying and acquiring these funds**.

Set up a fair incentive system

Governments must take targeted approaches towards developing stronger models of **resource efficiency based on self-sufficiency**. Such support should at the very least include grants to decrease initial costs of installing generation installations. Support should, however, also ensure that such models do not lead to significant increases in the cost of energy for other users.

The incentive systems on e.g. renewable energy production should take into account the interest of the national economy. However, incentive systems sometimes fail to **distribute a renewable surcharge evenly between all consumers** with the often unjustified argument of losing the economic competitiveness. Thus supporting renewable energy production should target local investors first and should prevent unnecessary increases of energy prices through a balanced allocation of related costs and a conservative approach to justify exemptions.

Enhance community investment

Small and medium-size community power projects and projects with an objective to serve local public / community needs should be eligible for market-based existing support schemes. **National regulatory safeguards** should ensure that larger developers do not benefit at the expense of small and medium-size community power projects.

Socially responsible investment in community power should be supported through differentiated treatment such as preferential tax rules. For example, where limits to rates of return exist on investment in community RES (e.g., 5% annually), tax rules should provide corresponding tax relief (e.g., exemptions or reductions).

Open framework

National funds should set an ambitious framework that fosters resource efficiency, but should also be designed in a way to **allow a higher and more ad hoc strategy** for e.g. solving local waste management issues through local solutions.

2.2.6. Enable stakeholder involvement

Engaging in resource efficiency

While addressing resource efficiency in the area of energy and waste it is important for **national decisions to reflect and enhance the role that communities play** in ensuring, from one side a fair and inclusive process, and from the other a successful implementation. Participation and engagement are central elements in terms of democracy and transparency of decision-making. Citizens are entitled to know how decisions are made and which reasons were argued. Particularly the participation in issues like energy and waste are important, because the developments of these policies are likely to have a **direct impact on local residents**.

Enable effective stakeholders' involvement

To effectively enable stakeholders' involvement, national policy makers should:

- **Establish administrative procedures that allow the participation** of all stakeholders, and in particular energy agencies and citizens, for the implementation of renewable energy systems into the national grid.
- **Direct governmental informational and technical support** in a way that it helps individual citizens and community groups.
- Make **community benefits as eligible as 'material consideration'** in planning decisions on renewable energy.
- **District grids should be allowed to operate under public or consumer-owned ownership** to enhance the benefits of localized RES production. Internal market principles should be adapted to favour respective local interests.
- Laws should prevent smaller RES developer entities such as cooperatives from becoming energy suppliers, and licensing requirements established under **national law should not prohibit smaller local actors to enter the energy market** (i.e. through very bureaucratic or cost-prohibitive procedure).
- Strong public participation leads to **better decisions and to higher level of social acceptance**. Local knowledge is valuable in reaching optimal solutions.
- Member States should **support energy governance frameworks** and aim at prioritising the integration of renewable.

2.3. Local and regional level recommendations on reorganising the urban infrastructure and use of resources towards resource efficiency

2.3.1. Suitable framework conditions

High commitment to resource efficiency

The **role of local and regional governments in enhancing sustainability and resource efficiency is increasingly recognized** at international, European and national level. From one side local governments (LGs) are the subject of an increasing urbanization trend that will see 75% of the world population living and consuming resources in cities by 2050, from the other LGs will also have to face the pressure of this urbanization trend and provide for services, infrastructures and therefore policies and strategies able to **guarantee quality of life for their citizens in a sustainable manner**.

A combination of developments has helped to raise interest among many LGs in contexts beyond their own local community and national borders.

- With about 80% of energy related decisions that have an [impact on the local level](#) taken at the EU level, **LGs increasingly want to engage in dialogue** to raise their concerns – also prior to decision-making. The Renewable Energy, Energy Performance on Buildings or Waste Framework Directive are examples of national interpretation of EU frameworks into the local level.
- The growing realisation that **climate change is a shared responsibility** on a local, regional, national, European and global sphere has driven **LGs to support and call for ambitious targets at the EU level** for the establishment of a sustainable, cohesive and ecologically sound Climate and Energy Strategy for Europe. Local and subnational governments are instrumental to this goal and pledge for binding targets towards 2030: a reduction of at least 50% in greenhouse gas emissions (GHG), 40% of Europe’s energy generated from renewable sources, and a 40% increase in energy efficiency by 2030.
- The [Covenant of Mayors \(CoM\)](#) initiative has highlighted the **need and the capacity for committing to climate protection at local level**, through enabling the 20-20-20 targets. Although focusing on energy and GHG emissions specifically, the **Sustainable Energy Action Plans (SEAPs)** developed in this context are a good instrument to plan ahead and include resource efficiency measures including waste management in a holistic manner.
- Processes such as the [Local Government Climate Roadmap](#) has led to visibility and recognition of the role of **LGs as “governmental stakeholders” in the international climate negotiations**, and helping to focus national governments’ attention on the potential in addressing climate change mitigation and adaptation, as well as biodiversity and sustainability (i.e. Rio+20 process) in partnership with the local level.
- **Peer to peer and coaching schemes** for LGs are blooming across Europe drawing attention to good practices, tools and support offered. LGs increasingly need to explore partnerships and closer inter-linkage to unfold full potential.

Analyse policy challenges

The framework conditions to implement coherently such commitments are often not optimal and LGs, especially in South and East of Europe flag their need for a comprehensive, well-integrated climate and sustainable energy policy. **Policy is needed to direct and drive the sustainable energy transition and resource efficiency process at community level**, with adequate financing and appropriate technologies required to implement measures. The challenges faced include:

- evaluation and selection of appropriate policies,
- finding funding options,
- choosing the optimal range of actions and technologies.

Reduce external dependence

Often LGs **lack of in-house municipal expertise**, requiring support from external consultants – helping to guide setting-up of processes, completing integration into existing systems and structures, conducting assessments, accessing financing, designing action plans, monitoring and evaluating their implementation. However, **if in-house capacity building isn't fostered, the external dependence is likely to continue.**

Enhance information flow

Limited interdepartmental collaboration it is often a challenge. Thus it is necessary to set up a net of knowledge sharing and expertise within the LGs in order to cooperate effectively in the creation of long-term holistic strategies i.e. on ecosystems management and to overcome political differences within the local government and with other levels of government on e.g. energy dependency, security and poverty.

Information flow between LGs are also important to increase knowledge and capacity development. Political and/or technical staff exchanges with other LGs (neighboring, regional, national or even at international level) facilitate the sharing of ideas and stimulate action.

Enable data access

Taking stock and the acquisition of reliable data is the first step to ensure that actions and strategies on resource efficiency are sound and effective. **Data collection is a challenge** particularly in South and East Europe. **Political leaders of LGs shouldn't leave this challenge exclusively with the technical municipal staff**, as the emphasis of the highest political level has proven to be necessary and effective to access data. Hence LGs should instruct public companies in collecting the necessary data, liaising where necessary with the private sector. As local governments need aggregated data, ideally per sector and consumer groups, to develop and monitor their performance indicators, usually **data privacy issues don't apply, although often brought forward to avoid data sharing.**

Therefore it is important to establish a **clear framework for a data exchange** that respects and balances issues like data privacy and commercial sensitivity with the need to access reliable data to monitor the effectiveness of implemented strategies and plans of municipalities.

Improve energy data exchange

As far as energy data is concerned they are usually generated by energy producers and providers (who offer the energy service to clients). Sometimes if not often **energy companies are reluctant to pass information on energy production and consumption** due to additional time and effort, consumer data protection, fear of competition, etc.. Therefore it is necessary to develop solutions and tools facilitating the sharing of energy data between energy utilities and local authorities, in a way that will create a win-win situation for both parties.

Make use of the Energy Efficiency Directive

The [Energy Efficiency Directive \(2012/27/EG\)](#) asks for:

- Member States to set up an energy efficiency obligation scheme (Article 7);
- **obligated energy distributors** and/or retail energy sales companies to **achieve energy savings of 1.5% per year on average** (Article 7, 1);
- once a year, member states shall publish the energy savings achieved by each obligated party (Article 7, 8);
- alternatives to setting up an energy efficiency obligation scheme under Article 7, 1 include “regulations or voluntary agreements that lead to the application of energy efficient technology or techniques and have the effect of reducing end-use energy consumption” (Article 7, 9(c)).

This obligatory framework presents great opportunities for:

- **voluntary agreements to share data with LGs could provide a mechanism to fulfill this requirement**
- **powerful incentives that opens up the possibility to create win-win situations between energy companies and LGs in developing and adopting integrated and sustainable energy efficiency plans by sharing energy consumption data**

Embed resource efficiency

LGs should **embed resource efficiency** in their local action plans to achieve overall good framework conditions:

- Measures can be included in [Sustainable Energy action Plans](#) (SEAPs)
- Municipalities can use also use **local planning and building codes** to promote community energy efficiency and RES development within their respective jurisdictions. For example, requiring new buildings to be able to meet minimum requirements of energy efficiency or for using renewable energy sources (RES).

Advocate for decentralised energy

A dialogue between local and national decision makers should contribute to formulate **policy recommendations towards national legislation** addressing capacity and competencies of different institution/entities involved in the investment of RES.

The increased interest in **energy self-sufficiency** of various actors starting from households to private companies to local and regional governments should be fostered by feasible legislative regulations and administrative procedures that allow and guarantee a swifter integration of **decentralised energy systems into the regional and national grid**.

Use power of public procurement

Through **public procurement**, LGs can contribute towards low carbon objectives through their choice of what electricity and heat to purchase and consume. LGs may choose on the basis of the “[most economically advantageous tender](#)” (known as MEAT), rather than simply on the basis of the lowest price. This could provide local authorities with the discretion to take broader considerations into account, perhaps such as social and environmental benefits.

Cooperate to influence the full waste cycle

Local government cannot influence the full cycle of waste management due to its limited mandate but can **cooperate with regional government** for the development and implementation of waste plans as well as (pro)actively involve local business operators to strengthen respective business activities in the region.

Local business operators should be **supported as well as pushed by local legislation** as far as possible. Governments of all levels should increase their efforts to create suitable and transparent framework conditions to stimulate local waste products and services that foster resource efficiency. In this respect legislation regarding waste management should favour actors within the procurement process that perform not only economically, but also socially and environmentally better.

Coordinate waste strategy on regional level

Local and regional authorities should **seek opportunities of cooperation and potential synergies** as both levels are responsible for different parts within the waste management cycle. The regional level should work towards the same objective jointly, lining a top-down approach with bottom-up needs and context.

2.3.2. Improve process / management

Raise resource management through consensus

On a local level, **energy management is commonly more advanced than any other resource management**. Nevertheless only a small percentage of LGs have developed a comprehensive medium-term energy action plan, e.g. up to 2020 or even beyond. The reason for this can in part be linked to the relatively short political term in office and election cycles (around 4-5 years), which tend to lead to a **short term focus of local political parties in power**.

To enable long-term strategies it is necessary to **build consensus among all or most political parties** that resources such as climate and energy are priorities, ensuring continuity and thereby making planning, implementation and monitoring more effective.

Prepare administration for cross-cutting issues

The majority of European LGs represent small to medium sized communities (less than 250.000 inhabitants). Typically groups (departments, teams, sections) dealing with these issues in a municipality are quite small and often not in proportion to the importance of their mandate. For this reason, the choice would be typically to spend most of the available staff capacity on advising the Council, planning and coordinating interdepartmental involvement, and then on implementing and monitoring actions. This leaves **limited capacity to explore optimal tailor-made policy options and to select appropriate financing instruments**. Further to this, the selection of suitable measures and technologies – that could offer viable solutions over the next decade or more – is difficult, as there is no concise, centralised information to ease selection of low-carbon solutions, especially in different national languages.

Therefore two aspects are very important to prepare administration:

- LGs should **set up an internal steering body** that can help identify involvement of appropriate actors which in turn helps to promote **cross-sectoral approaches**;
- a **well-coordinated, integrated management system** also supports effectively combining efforts of different departments or teams.

Milestones of circular process

To ensure a successful integration of all municipal actions and their best possible benefit for the community, it is important to know where local resource processes stand. A defined and well established process for planning and development of **sustainable resource management should address at least the following five milestones:**

1. **Assessment** – draw your baseline!
2. **Target setting** – what do you want to reach?
3. **Planning** – how do you plan on reaching these targets?
4. **Implementation** – what steps to take?
5. **Monitoring** – evaluate, optimise and start to improve again!

While the recommended overall process is based on ICLEI's [Basic Climate Toolkit](#) which incorporates 20 years of experience of the **GreenClimateCities Program** (formerly Cities for Climate Protection Campaign), the policy process in particular is defined in the [RE-SEETies' step-by-step methodology](#) as follows:

1. **Agenda Setting**
2. **Policy Formulation**
3. **Policy Adoption**
4. **Policy Implementation**
5. **Policy Evaluation** (with a revision of step 1, 2 and 4).

Enhance investments and involvement by accountability

A circular process should be established to encourage public administrations and their stakeholders to **develop and accelerate action in a measurable, reportable and verifiable manner**. The approach aims to increase transparency and accountability as well as to increment participation of all relevant actors in the process.

It is important to consider the close link between **accountability and enhancing investments**, as well the capability to foresee future actions to be taken for improving the quality of life of the community.

Indicators to make success reliable and verifiable

Furthermore it is essential to have an understanding of the starting point, also for future comparisons, drawing and outlining a baseline. This is challenging for a number of reasons, including: the need for an appropriate **calculation tool** or **availability of reliable data** (lack of knowledge where to find data, inaccessible data, data ownership and privacy issues, inadequate quality of data, etc.).

While **setting targets**, there are some general indicators to be considered. These include some of the key issues that should be already addressed during the assessment of the baseline and they will most likely repeat thorough the process in most of the steps, as they are cross-cutting “essentials” within the whole process:

- Political commitment
- Job creation and income generation
- Environmental measurements
- Social impact
- Stakeholders' involvement.

Evaluate to become better

Monitoring and evaluation of the results is a crucial part of the technical and policy process as it allows not only to assess the effectiveness of the intervention implemented, but again gives transparency and accountability to the actions undertaken by the community.

Moreover, stakeholders such as citizenry will be able to investigate more in depth the results obtained and thus are likely to have more **confidence to contribute** to any next actions promoted by the local authority.

Monitoring also allows room for **amelioration** in the future and it is the base for setting new and more ambitious targets.

Energy efficiency – overarching recommendations

Regional and local governments are recommended to follow overarching advice which is **based on the experiences of implementing energy efficiency** locally throughout Europe:

- **Politically recognize energy efficiency** as a high priority to achieve a resource efficient and sustainable energy community.
- Make **strong short- to long-term commitments** to implement cost-effective energy efficiency measures.
- Jointly identify and broadly **communicate the benefits and opportunities** of energy efficiency.
- **Facilitate access to sufficient and stable funding** for energy efficiency to local stakeholders through liaising with the financing sector as well as higher levels of governance.
- **Modify policies to align utility incentives** with the delivery of cost-effective energy efficiency using the also the obligatory framework that the current Energy Efficiency Directive provides.
- **Acquire guidance on energy data collection** for monitoring and assessing energy efficiency improvement.
- **Establish a data management system** for SEAP reporting purposes and to support the city council to make informed decisions regarding energy issues including investments.
- **Include social indicators to measure the impact** of energy efficiency towards the quality of life.
- **Use Life-Cycle-Cost analysis** within the public procurement process to select the most energy efficient products and services.
- **Harmonise energy efficiency efforts with other sectors** by relating them closer to general improvements of urban and rural infrastructure.

Renewable energy – part of a circular economy

Analyse locally available renewable (energy) sources to optimise the utilisation of these and **establish a regional circular economy and resource flow management** that focuses on the reduction of negative externalities.

Feasibility studies on the appliance and use of local renewable energy sources help in identifying the urban areas with the highest potential. Therefore energy action can be **prioritised according to payback times of investments** and (scarce) finance is used more effectively.

Public and residential buildings, for example, represent one of the fields with the highest potentials, as the high costs for heating often guarantee a feasible return of investments. Thus conducting a RES feasibility study for buildings should be considered as a cost-efficient option.

Waste – valorize it **Waste valorization** is an important component of resource efficiency and in particular energy efficiency. For instance, the increase of use of solid recovered fuels from waste for cogeneration of heat and power would allow the realization of the following objectives:

- Reduction of waste that is disposed on a landfill,
- Solution to the problem of the final deposit of sewage sludge,
- Production of hot water for district heat supply by energy recovery,
- Reduction of burden on users by creating additional revenues in the market (sale of heat and electricity production),
- Cheaper heat for domestic heating and industry.

Waste – selected recommendations towards waste valorisation

Senior representatives of the municipality should (pro)actively support data collection by approaching relevant public and/or private companies and institutions to emphasize the importance or even negotiate the exchange of data in all relevant sectors.

Establishment and promotion of the **selective collection** of waste with higher **recycling rates** can locally support swifter improvement in waste management.

To overcome potential incompatibility of local and regional waste management strategies **regular meetings between local and regional stakeholders and decision makers** prior to and during the strategy development and implementation phases should be scheduled.

Improve the soundness of the field of waste management as a whole is important. For this purpose implementation of **re-use** in business processes which can create and maintain local jobs.

2.3.3. Enhance knowledge / skills

Information hubs to learn and replicate resource efficiency

Information and capacity is fundamental for enhancing resource efficiency. A wide series of tools on local sustainable planning and good practice is available for both local and subnational policy-makers and technical staff. Three of the most valuable and centralised information hubs are:

1. The [Covenant capaCITY](#) project assists Sustainable Energy Action Plan development and improvement in Europe - from motivation, planning, implementation, to monitoring and evaluating. A [capaCITY Online Training Platform](#) provides guidance, useful tools as well as practical hints on SEAP planning through a modular approach that includes topics such as waste, mobility, procurement, buildings and stakeholders' involvement.
2. [The Toolbox of Methodologies on Climate and Energy](#), an online collection of tools and resources in many different languages, assists local governments and their partners in planning local climate and energy action and their integration into larger sustainability policies for the local level.
3. [The Sustainable Procurement Resource Centre](#) is a one-stop access point for procurers, policy makers, researchers and other stakeholders. The Sustainable Procurement Resource Centre contains key knowledge on how to effectively undertake sustainable procurement, saving public authorities money and driving the market towards sustainable solutions.

Professionalise internal and external communication

Decision-makers of public authorities should communicate more often on sustainable energy and resource efficiency, both inside and outside the local authority. However, often internal **training and capacity building** is needed to achieve a **thematically competent and communicatively effective outreach**.

Experiences of advanced cities and towns show that resource efficiency, SEAPs and waste management programmes require strategic, target audience specific and above all a **continuous communication and information flow**. The different communication activities should build repeatedly on one another and follow the three step approach of attracting attention to providing information and build capacity to finally trigger **active engagement and behaviour change**.

Raise awareness by using existing material

Since often more than 90 percent of the emissions are community-generated, it is crucial to effectively target and involve stakeholders outside the public administration. This should be done through establishing **awareness raising campaigns** that involves the main governmental actors and is **supported by a broad, local alliance** that include the private sector, academia, NGOs and associations as well as the media.

Campaigns and initiatives, such as information centers can stimulate resource efficient behavior of **citizens**. However, some local and regional governments might lack capacity and/or resources to develop material for awareness campaigns on resource efficiency. Thus it is helpful to cooperate and **use of existing material** from other local governments (of the region/country) as well as information produced by European projects in order to save resources and optimise the efforts.

Online and social media campaigns should also be explored to communicate information through diverse channels to the citizens and press.

Facilitate capacity building in the private sector

A lack of awareness and capacity to analyse and install energy efficient technologies can be observed even in **professional sectors** (e.g. craftsmen, architects etc.) in the South-Eastern European region, but also in other parts of Europe. Therefore local governments should explicitly include measures on respective capacity building not only for its municipal technical staff, but also for other main actors that are involved in the local roll-out of resource efficiency.

Thus information campaign should **target, motivate and activate in particular builders, architects and engineers** to achieve a more resource efficient build infrastructure and influence choices of companies and house owners.

Target schools to reach households

Support environmental awareness as an integral part of the **educational programme** for schools. This should include resource efficiency and “Zero Waste” strategies. Raising the awareness of pupils and their families about the importance of waste prevention, reuse and recycling, providing them practical tips on “how to be less wasteful”, has proven to be a key success factor.

Two different kind of activities can support the implementation at schools:

1. **Zero Waste campaigns** based on the realization of specific educational activities: lectures and laboratory works with waste specialists, delivery of informative materials, site visits to reuse centres or waste treatment facilities etc.;
2. **Zero Waste actions** for preventing, reusing or recycling waste at school: minimizing paper use, reducing food waste in canteens, promoting the use of tap water, composting food waste, doing separate collection of waste in classrooms etc..

Explore good practice together

More aware users also mean larger impact on waste management strategies. **Involve business and citizens to explore their interest** to improve and extend the collection scheme towards e.g. cooking oil and electronic equipment.

Moreover the **staff of the public or private waste company should regularly participate in capacity building activities** to be able to melorate the waste management system and thus its impact on resource efficiency.

Investigate and engage in EU projects

Regular exchanges of information and good practice that involve political and technical staff of local and regional governments as well as other relevant civil and private stakeholders are useful for the (re)organisation of the waste management towards resource efficiency.

EU and/or national projects might present a good **opportunity to start a structured process of collaboration** between public authorities and e.g. research centres. LGs should investigate available possibilities.

2.3.4. Support technology

Investment in the future of resource efficiency

Procure and thus help to mainstream green innovative technologies is an efficient way to enhance resource efficiency, while indirectly creating new research and development (R&D) to support the local economy.

Investments in more energy efficient technologies in the RES sector can significantly increase the share of renewables in the energy mix, while adding no further pressure on local resources (e.g. biomass, land-use etc.).

Existing technologies that enhance an efficient use of resources, for instance, Combined-Heat-and-Power plants should be supported by policies as well as financial incentives. New technologies that are not yet broadly taken up by the market like e.g. e-mobility can be **stimulated by kick-starting their use in the public administration**. It is the role of the public sector to **lead by example** and to excite developments for a larger up-take of solutions by the community.

- Through utilising and promoting resource-efficient technologies, the public sector can **instill confidence** both on the final user (the citizens) and on the investors, who see these technologies as been endorsed by the LGs.
- LGs can **mobilize funds** by creating a pilot reference projects to support the purchase of the best available technologies.

Dialogue on technologies

Waste is a(n unused) source for raw materials which can be utilised by available technologies to firstly, **reintroduce resources into the economic cycle** and secondly, **recover some of its intrinsic energy**. The actual application of these technologies is determined to a large extent by local decision-making processes and the capacity of the local society.

A dialogue on technologies between public authorities and the business sector can **stimulate the regional market for better and even new waste management products and services** for a region.

2.3.5. Provide finance

Funding framework for resource efficiency

Financing continues to be highlighted by local governments across Europe as a major challenge. The **financial and economic crisis** has had a huge impact on many LGs, but especially in SEE and Iberian countries. In general there is a call for improved information on financing options and for an easier **access to funds by short-track applications and administration processes**.

National contexts provide an essential framework for LGs to fund resource efficiency, but are diverse in nature. They range from **centralized financial support systems for local action to more decentralized approaches of responsibility sharing**. However, open dialogues and joint budget negotiation between local and national governments are rarely applied.

Thus LGs seek financial and technical support from any available options (funds, programmes, voluntary support) to bridge a possible lack of supportive condition. EU funding like the [Horizon 2020 Programme](#) plays an increasing role for LGs to finance their planning and implementation of resource efficiency.

Use EU funding opportunities

For small-scale energy efficiency and renewable energy projects which involve local governments as well as citizens and businesses, a **[tailor-made financing mix should include three elements](#)**:

1. A **grant** should facilitate the **integration of all stakeholders involved** in local energy projects. A Community Development Fund could finance the mobilisation and capacity development of stakeholders. Such a fund should be included into operational programmes.
2. **Technical and Project Development Assistance (PDA)** should be **granted to the project developers** to set up projects, finance feasibility studies or prepare the technical documentation. This technical assistance could come directly from the European Regional Development Fund (ERDF) or other PDA mechanisms (i.e. public development banks or facilities like the European Investment Bank's [ELENA – European Local Energy Assistance](#)).
3. **Soft loans, guarantees or direct financing** of energy efficiency measure and renewable energy installations can be provided by an **Urban Development Fund** which consists of contributions from the EU, national funds and private capital. The European Investments Bank's [JESSICA - Joint European Support for Sustainable Investments in City Areas](#), is an example for such a revolving fund.

Local and regional governments should actively search for opportunities to get involved in national and European projects to receive technical and financial support and to examine good practice of others, especially on how to **acquire suitable funding and leverage investments**.

Profit from private partnership

Additionally, there is a growing interest in exploring options regarding particularly energy services that establish partnerships or some form of cooperation to finance projects. These for example include **Public-Private Partnerships (PPPs)** and the establishment of **Energy Service Companies (ESCOs)** – with many constellations possible for co-ownership and win-win situations for investments, improvements in efficiency and the use of renewables in the provision of electricity or heating, but also sewage, waste and maintenance services.

Apply power of public procurement

Pre-tendering dialogues with the private sector (for procurement) have shown that there is a market interest in cooperation to reduce the carbon footprint and optimize efficiency in developing products and offering services. The budgets available to LGs for procurement can effectively be used to **create and shape demand for “green” services and products**. Money savings potential through joint procurement (bulk buying and obtaining price concessions) is one area starting to draw attention, although tender specifications should be tailor made and usually require training procedures.

Calculate holistically to achieve cost-efficiency

Feasibility studies should serve as basis for application towards private, national and/or EU funding. When analyzing the **economic feasibility** of energy or other resource efficiency options it is recommended to **include environmental, resilience and health aspects** into the assessment, since some efficiency measures have a direct or indirect impact on them. If these costs are considered, some measures become feasible or even more obvious in its financial and energy cost savings.

Adequate funding schemes should be established on regional and local level to support the introduction of resource efficiency measures in several sectors.

2.3.6. Enable stakeholder involvement

Plan stakeholder involvement in detail

As local governments have direct influence over a relatively small percentage of the overall resource consumption in a community as well as the negative externalities such as greenhouse gas emissions generated from the local production and use of fossil energy, the need for **informing and actively involving all local actors is essential**. However, this undertaking is also challenging as LGs have to address many different target groups in appropriate ways and **respond to their specific needs by sending specific messages**. It is especially important to engage multiple sectors and target groups, when discussing resource efficiency in order to succeed in changing behaviour.

For the complexity of the topic it is advisable to **develop a stakeholders’ engagement plan** which takes amongst other issues the following into account:

- All relevant target groups,
- Define jointly an overall vision as well as ad-hoc messages,
- Allocate a budget to timed tasks,
- Identify the most effective and also creative instruments,
- Assess staff capacity necessary for the actions.

Stakeholders’ involvement can support the entire project cycle from planning to implementation to evaluation. In fact, ad-hoc problems faced during the project are most **effectively solved in cooperation and by involving the affected / benefited stakeholders**.

Gain social acceptance and direct investment

Feasibility studies for using local renewable energy sources should reflect real needs and thus should be developed together with involved or affected groups. Thus stakeholders’ engagement can also support solving the **NIMBY syndrome** (Not In My Back Yard), providing for acceptance of renewable energy projects on the territory and even triggering interest in developing **community-led initiatives** on energy efficiency and renewable to benefit from the local creation of added value.

Hence, engaging and informing the community can also result into **leveraging private direct investments** in energy projects, for instance, via crowdfunding or cooperatives.

Benefit from ripple effect

Involving citizens in energy activities has a **direct influence and ripple effect** for the implementation of other policies on the local territory. It also allows **better defining, communicating or justifying regulations and policies** like e.g. the adjustments of payment schemes, establishment of a wind park or number and volume of waste bins newly introduced in residential blocks.

Learn and be inspired

Cooperation with other local governments to share information, network, advocate jointly, exchange ideas, motivate one another or collaborate on actions is without any doubt beneficial for all participating parties.

Peer-to-peer schemes and twinning activities as well as study tours are the most effective ways in exchanging perspectives, learn from others and obtain tailor-made advice.

Beyond that **collaboration with the private sector** is also increasingly important, especially when considering the development of PPP for financing local action.

3. CONCLUSIONS

Governing resource efficiency on various governmental levels demands the close involvement and cooperation with public, private, scientific and civil actors. **Enabling framework conditions** need to be provided in particular from the European and national level to translate policy into practice. They have to respect sustainability, meaning resource constraints and planetary boundaries, and thus mostly need to be **ambitious and binding in the short and long term**. Furthermore a comprehensive package of **European and national support including adequate funding programmes** should promote and stimulate the transition towards resource efficiency on a regional and local level.

Practically, the governance on resource efficiency is determined in four spheres: Local and regional governments, businesses of all sizes, knowledge institutions such as universities or private consultancies, and civil society, including both local organizations and individual citizens. A joint effort and intense interaction is needed to accelerate the reorganization of the current resource infrastructure and use of resources. A **participatory development and implementation of local and regional Sustainable Resource Action Plans** which consist of topical focuses through e.g. Sustainable Energy Action Plans, are important for the success of actions and especially its social acceptance.

Moreover regions, cities and towns are drivers of ambitious movements such as the [Local Government Climate Roadmap](#), [Covenant of Mayors](#) or [carbonn City Climate Registry](#). They are also incubators of innovation, since European and national policies are not only implemented, but adapted towards the local context. Thus it is important for decision makers of the EU and its Member States to observe what **local and regional governments as enabler, supporter, utiliser, developer and promoter of resource efficiency** plan and are able to accomplish, if given suitable conditions and support. Local success stories can be replicated by other cities and towns, but also should be given the opportunity to shape the national and European policy frameworks to enhance the overall ambition on resource efficiency and impact on a **sustainable and inclusive economy**.



Source: ICLEI