

## **ALLEGATO F – Joint strategy of Cities on Power project (3.3.5)**

### **Executive summary**

In the project “cities on Power” the Renewable Energy Joint Strategy is the baseline for the elaboration and implementation of the Local Action Plans for Renewable Energy. The Joint Strategy points out the strategic axes of activities with respect to the promotion of the Renewable Energy in the urban context. As such it reflects the approach of the Partners to the development of the Local Action Plans for the Renewable Energy and constitutes a general guideline for public authorities on how to act to fulfil the provisions of the Europe 2020 Growth Strategy and how to promote and make the best use of Renewable Energy.

The main purpose of the Renewable Energy Joint Strategy is to examine the conditions that are necessary for a further development of renewable energy. This covers the three fundamentals of energy policy (sustainability, security of supply and competitiveness) and is consistent with the long-term EU decarbonisation scenarios which all point to a substantially increased share of RESs. Also the need to ensure a cost-effective development of renewable energy potential, as well as to ensure that their further expansion happens in line with the requirements for system stability and is consistent with other EU policies, notably climate mitigation, internal market, international cooperation and technology development and protection of the environment, including biodiversity is implemented.

The Renewable Energy Joint Strategy is preceded by this Preliminary Renewable Energy Joint Strategy meant to help Partners in starting their works on Local action plans. This intermediate step is thought to allow the activities for the development of the Local action plans even if part of the results of the pilot demonstration projects are not available (at the moment there are available results from Warsaw and Torino).

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## **Introduction**

The Renewable Energy Joint Strategy constitutes the baseline for the elaboration and implementation of the Local Action Plans for Renewable Energy. This Joint Strategy points out the strategic axes of activities with respect to the promotion of the Renewable Energy in the urban context. As such it reflects the approach of the Partners to the development of the Local Action Plans for the Renewable Energy and constitutes a general guideline for public authorities on how to act to fulfil the provisions of the Europe 2020 Growth Strategy and how to promote and make the best use of Renewable Energy. The target groups of the Renewable Energy Joint Strategy are thence local politicians, decision makers and high-rank officials that take part in any process of creating energy policies in administrations involved in these activities. Therefore in addition to the Partners also others public authorities can use it and receive a benefit.

The Renewable Energy Joint Strategy comes from the information obtained from the different steps of the Project “Cities on Power”. In the preliminary activities it was possible to define a clear vision for strategy on Renewable Energy Sources (also called RESs), an outline of the options on Renewable Energy Sources having regard to infrastructural, environmental and technological constraints and an assessment of the Renewable Energy Sources potential in the local area. These results are now the ground of the Joint Strategy, allowing the definition of targets and corresponding regulatory measures of urban planning and building codes incorporating Renewable Energy Sources.

To this aim it is useful to summarize the steps of the CoP Project:

- 1) Individuation of the Policy Context: this was obtained through a SWOT analysis (Action 3.2.1 Comparative S.W.O.T. Analysis of regulatory framework at EU, national, regional and local levels) and guarantees to the Renewable Energy Joint Strategy that the local assumptions will be in line with the higher level strategies and ensures the validity of the strategy in the context of regional, national and European obligations. It is evident that regional, national and European policies are the context where the RESs strategy needs to be developed.
- 2) Individuation of the RESs support schemes: this was obtained through a SWOT analysis (Action 4.3.1/2 Comparative S.W.O.T. Analysis of financial incentives) and guarantees to the Renewable Energy Joint Strategy a clear identification of the different instruments able to promote a deep rooting of the RESs in the social and economical structures, in a context

where the financial schemes designed to support the development of RESs are many and differentiated.

3) Identification and assessment of the renewable energy resources and potential in the local context: this was obtained through a comparative analysis (Action 5.2); beside a review of the available information on resource in the area, in this step the production of maps of the available RESs potential was the main objective. This is now also helpful in individuating the infrastructural and environmental barriers to overlaid.

4) Information and promotion activities for a rising awareness and participation in investments of RESs: this was obtained through a number of local activities of information and promotion; being aware of the role of energy allows the stakeholders to take actions to make informed energy choices.

The Project Cities on Power involves four public authorities (City of Warsaw, City of Klagenfurt, Province of Ravenna and Province of Torino) having the capacity to implement the results of the project in the political context. This group of public authorities shows also the will to develop and adopt a local action plan for renewable energy. This makes the activities very significant because the experience acquired by the Partner in the implementation of the Renewable Energy Joint Strategy could become relevant for the cross-fertilization of the results.

The Renewable Energy Joint Strategy is preceded by this Preliminary Renewable Energy Joint Strategy meant to help Partners in starting their works on Local action plans. This intermediate step is thought to allow the activities for the development of the Local action plans even if part of the results of the pilot demonstration projects are not available (at the moment there are available results from Warsaw and Torino).

### ***1.1 EU renewable energy policy***

The promotion of Renewable Energy is a cornerstone in the EU's climate and energy strategy until 2020 as illustrated by the 20/20/20 targets for greenhouse gas reductions, energy efficiency and Renewable Energy Sources contained in the Europe 2020 Strategy for growth and jobs. This is because Renewable Energy Sources are considered to provide various benefits: they not only contribute to the environment and climate policy objectives but also help to diversify the energy supply and lower the dependence on foreign suppliers, reduce exposure to the volatility of energy prices and contribute to technology development, regional development and employment.

The EU’s legislative framework as regards Renewable Energy Sources is laid down in the Renewable Energy Directive<sup>1</sup> including specific measures and objectives for the three following sectors: electricity, biofuels and heating and cooling. In particular Renewable Energy Directive sets an obligatory target of 20% renewable energy in gross final energy consumption as well as a 10% target for the share of renewable energy in transport for 2020.

Figure 1 shows the trend of the share of energy from renewable sources in gross final consumption of energy in EU-28 during the period 2004-2011 and the final target at 2020.

The Partners of the Project “Cities on Power” agree that the comprehensive and binding regulatory framework provided by the Renewable Energy Directive is effective in driving forward renewable energy development to achieve the ambitious targets that the EU has set itself.

The achievement of the EU overall energy and climate policy targets requires necessarily also stronger efforts towards energy saving. Strong policies on efficiency and renewable energy are mutually reinforcing as lower overall consumption allows reaching the renewable

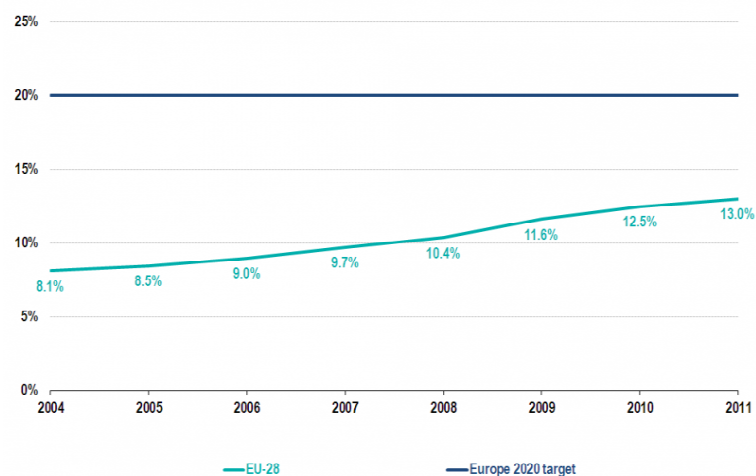


Figure 1 - Share of energy from renewable sources in gross final consumption of energy, EU-28, 2004-2011 (Source Eurostat - Energy from renewable sources 2013).

targets at lower costs and a rapid adoption of the energy saving proposal would help achieve

<sup>1</sup> DIRECTIVE 2009/28/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC

the aims of renewable energy policy.

Also the current targets for energy and climate embodied in the Europe 2020 Strategy should be seen as interlinked and mutually reinforcing.

It is therefore only appropriate to consider establishing standalone targets for renewable energy sources in the context of possible targets for energy efficiency and climate mitigation.

It is also opportune to underline that the stimulation of the Renewable Energy Sources energy market through specific policy involves new specific challenges, some associated with the character of the energy sector, some specific to the introduction of Renewable Energy Sources. The policy-makers and the other involved stakeholders, in particular at the local level, need to be ready to drive the process, being able to move the activities towards an increase of the Renewable Energy Sources share and to control the development.

## ***1.2 Cities on Power project and REJS***

Even if in the recent past significant programs placing energy savings and energy efficiency as their main priorities are available both at national and local level<sup>2</sup>, there are still relatively few explicit local renewable energy policies.

It is important to point out explicitly the Renewable Energy Sources in urban planning instead of placing them within other themes such as sustainability, climate change, clean transportation, and “green” or “eco” programs. It is evident, for instance, that a reduced final energy demand is useful and also enables the Renewable Energy Sources to meet a larger share of the remaining demand. However, it is important to avoid to overlook or to limit the potential of the Renewable Energy Sources.

On the other hand it is important to point out that Renewable Energy Sources should be promoted only if they are environmental friendly. This means to consider best available technologies, landscape attention, low emissions systems, low environmental impact on the natural resources, limited utilization of free soils.

The Cities on Power Project Partners agree in the central role of cities and local authorities in the massive introduction of Renewable Energy Sources in cities. It is well known that Renewable Energy Sources coverage targets can be established only at national level. However, the capability to govern and guide the communities, to provide services and manage municipal resources, make the political mandate of the local governments the right instrument to stimulate and drive the implementation of Renewable Energy Sources in the

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<sup>2</sup> 30 Energy Cities' proposals for the energy transition of cities and towns

cities.

The development of the regional, national and European policies, very often updated in these last times, needs to be followed by Local plans. For this reason the Local plans have to be structured so to be easily modified and updated in coordination with the higher level policies. It may also be useful to examine the local plans developed in the immediate vicinity; in this way it will be possible to avoid not understandable differences and to individuate possible trans-boundary issues.

As such, the main purpose of the Renewable Energy Joint Strategy, and of this Preliminary Renewable Energy Joint Strategy, is to examine the conditions that might be necessary for a further development of renewable energy at the local level. This covers the three fundamentals of energy policy (sustainability, security of supply and competitiveness) and is consistent with the European scenario presented in the Renewable Energy Directive which points to a substantially increased share of Renewable Energy Sources .

The Renewable Energy Directive points also to the need to ensure a cost-effective development of the renewable energies potential, as well as to ensure that their further expansion happens in line with the requirements for system stability and is consistent with other EU policies, notably climate mitigation, internal market, international cooperation and technology development and protection of the environment, including biodiversity.

The Renewable Energy Joint Strategy is based on the rationale that a positive framework for the development of Renewable Energy is necessary due to a number of market failures or imperfections. These include elements like the non-internalisation of negative externalities of conventional energy forms, the presence of subsidies for other energy forms (f.i. cogeneration), imperfect market structures, regulatory barriers, the status of many renewable technologies as "infant industries" together with a significant inertia of the system, and barriers related to information and public perception.

It is particularly appropriate to assess the validity of the current EU approach for a period where the Renewable Energy Sources will move from margin to centre stage and where, at least the more mature technologies, will be applied on a large scale. The Renewable Energy Joint Strategy therefore suggests a locally specified approach to the choice of forms and extent of policy interventions on Renewable Energy Sources.

In Table 1 is shown, for EU28 during the period 2004-2011, the share of energy from renewable sources in gross final consumption of energy. Even if one Partner (Austria) can be recognized as a Pioneer in utilization of RESs for energy production, a general trend of

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growth is clearly visible. In this context this Renewable Energy Joint Strategy is proposed as the right instrument for a deeper local implementation of the general targets introduced by the EU directives.

*Table 1 –Share of energy (in percentage) from renewable sources in gross final consumption of energy, heating and cooling and in gross electricity consumption of energy, EU-28, 2004-2011 (Source Eurostat - Energy from renewable sources 2013).*

	2004	2005	2006	2007	2008	2009	2010	2011
<b>Share of renewable energy sources in gross final consumption of energy</b>								
Austria	22.8	23.8	25.3	27.2	28.3	30.2	30.6	30.9
Germany	5.2	6.0	7.0	8.3	8.4	9.2	10.7	12.3
Italy	5.1	5.1	5.5	5.5	6.9	8.6	9.8	11.5
Poland	7.0	7.0	7.0	7.0	7.9	8.8	9.3	10.4
EU-28	8.1	8.5	9.0	9.7	10.4	11.6	12.5	13.0
<b>Share of renewable energy sources in heating and cooling</b>								
Austria	20.5	22.5	23.2	25.9	26.5	28.7	30.4	31.1
Germany	5.3	5.6	5.7	8.2	8.1	8.3	10.3	12.0
Italy	3.1	3.1	4.0	3.9	5.7	7.7	9.0	11.0
Poland	10.4	10.4	10.4	10.6	11.1	11.9	11.9	13.3
EU-28	9.6	9.9	10.4	11.6	12.0	13.3	14.2	15.1
<b>Share of electricity from renewable sources in gross electricity consumption</b>								
Austria	62.2	62.3	62.3	64.5	65.2	67.8	65.7	66.1
Germany	8.9	10.1	11.4	12.7	13.6	16.8	18.1	21.3
Italy	16.1	16.3	15.9	16.0	16.6	18.4	20.1	23.5
Poland	2.3	2.8	3.1	3.5	4.4	5.9	6.7	8.2
EU-28	14.3	14.8	15.3	15.9	16.7	18.8	19.7	21.8



## 2 Renewable Energy in the urban context

This *Renewable Energy Joint Strategy* sets out the Partner's common strategy for renewable energy in the urban context. The aim of this Renewable Energy Joint Strategy is to enable the Partners to meet the twin objectives of reducing consumptions of fossil energy and reducing greenhouse gas emissions. In this Renewable Energy Joint Strategy, the Partners propose to create a new local context to enhance the promotion and use of renewable energy.

As the results of the analysis of regulatory framework at EU, national, regional and local levels held in the Project<sup>3</sup> the difficulties encountered in the past in meeting this target can partly be explained by:

- the high cost of renewable energy owing to the investment required;
- administrative problems resulting from installation procedures and the decentralised nature of most renewable energy applications;
- the opaque and/or discriminatory rules governing grid access;
- inadequate information for suppliers, customers and installers.

Furthermore in the countries participating to the Cities on Power project the externalities<sup>4</sup> have not been taken into account and this gives to fossil fuels an artificial advantage;

Figure 2 shows that biomass is the principal RES used for energy production. The extent to which other energy sources have been developed varies considerably depending on the type of source and the country in question. As shown in Table 1, an assessment of the share of RESs in the energy mix and the progress made in the last years shows that more and better use could be made of RESs. Furthermore, the progress made by the Countries of the Partners has been patchy and highly uneven.

The delay in setting binding target and the gaps in the legal framework for RESs have meant that a real progress has only been possible for the few Countries whose determination has outweighed their changing political priorities. Additional efforts are therefore required. This Renewable Energy Joint Strategy is an opportunity to fill the gap and to drive the introduction of RESs in the urban context.

The EU has adopted a legislation (Renewable Energy Directive) including specific measures and objectives for the three following sectors: electricity, biofuels and heating and cooling. It is evident that the production of biofuels is hardly compatible with the urban

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<sup>3</sup> Report on Comparative S.W.O.T. Analysis of regulatory framework at EU, national, regional and local levels

<sup>4</sup> Externalities are the "external" cost of the different energy sources, particularly their long-term impact on health or environment.

context. Also the large power production from RESs is of difficult placement in the urban context. However, the distributed production of electric energy from RESs (photovoltaics, micro-wind) is fully compatible with the urban context and can give a real contribution to the increase of the share of energy from RESs. This contribution can increase if this distributed electricity production is coupled to intelligent energy distribution systems (smart grids).

The EU Commission<sup>5</sup> is of the opinion that the Heating and cooling sector, which accounts for approximately 50% of final energy consumption, is not doing enough to exploit the potential of RESs. As shown in Table 1, the share RESs used in this sector is rising only slowly.

The main barriers against a stronger uptake of renewable energies in the Heating and Cooling sector are individuated in: costs or lack of financial support, lack of awareness or unfavourable building regulations, a decentralised nature of the sector, split incentives of market actors, as in the case of landlords and tenants, a lack of a supportive tax policy, which would address the issue of cost competitiveness, a lack of education and training for installers to ensure a sufficient number of qualified staff, a political attention too much focused on the electricity, not focused on the size and potential of the Heating and Cooling sector.

The Renewable Energy Directive sets an overall mandatory target for the proportion of RE figuring in gross domestic consumption by 2020. The Renewable Energy Directive provides also for each Member State to adopt mandatory targets and action plans in line with its potential. Setting targets at European level makes it possible to ensure that national and local policies on this issue remain relatively stable.

The measures proposed in this Renewable Energy Joint Strategy try to improve the Internal Market and remove the barriers to developing renewable energy in the Heating and cooling and in the Electricity production sectors by, for example, reducing the administrative burden, improving transparency and provision of information, and adjusting and increasing the number of installations.

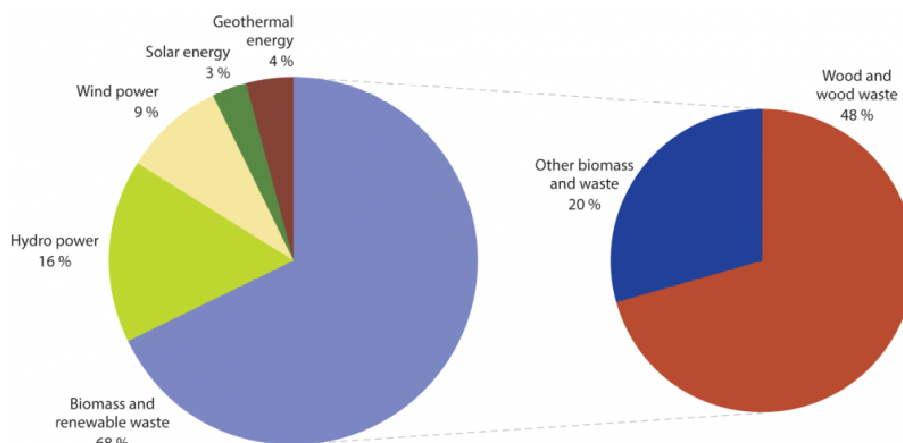
The Renewable Energy Joint Strategy translated into Local Action Plans will encourage an optimal use of the existing financial instruments, as well as instruments that focus on supporting research and disseminating technology. Local and regional authorities are at the right level to encourage the maximum use of the instruments available and to promote the development of RESs, e.g. through administrative simplification and improved planning.

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<sup>5</sup> Communication from the Commission to the European Parliament and the Council - Renewable Energy: Progressing towards the 2020 target, Brussels, 31.1.2011.

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Moreover, developing alternative energy sources to fossil fuels will help guarantee security of energy supply in the EU and on local level and reduce the energy bill resulting from



*Figure 2 - Gross inland consumption of renewable energy by source, Eu-27, 2011 (Source Eurostat - Europe 2020 indicators - climate change and energy 2013)*

increases in the price of fossil fuels. Furthermore, developing the technologies used in the renewable energy sector will create new business opportunities, particularly for exporting these technologies. It is also expected to have a positive impact on employment and gross domestic product growth.

After analyzing the above mentioned facts the Cities on Power project Partners agreeded that the relevant elements to be endorsed in a Local Action Plan should be summarized as the following points:

- 1) clear targets and appropriate legislation,
- 2) availability of mature technologies appropriate in the local context,
- 3) opening and support to the innovation,
- 4) R&D program to enhance capacity and competitiveness of industry and to assure the feasibility of the targets,
- 5) competitive markets to control the price trends and active presence of the local administration on the market to prevent economic distortions and inefficient energy consumption,
- 6) market enhancement and infrastructure development,
- 7) appropriate financial instruments to support the RES utilization and production,
- 8) subsidy programs, because both the technologies and the markets are not mature and

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competitive, respectively,

- 9) removal of the non-technical institutional barriers to the wide spread utilization of RE,
- 10) information and dissemination for a higher level of awareness,
- 11) possibilities for the population to participate in erection of RE plants.

## 12) Renewable Energy Joint Strategy

The main purpose of the Renewable Energy Joint Strategy is to examine the conditions that are necessary for a further development of renewable energy. This covers the three fundamentals of energy policy (sustainability, security of supply and competitiveness) and is consistent with the long-term EU decarbonisation scenarios which all point to a substantially increased share of RESs. There is also the need to ensure a cost-effective development of renewable energy potential, as well as to ensure that their further expansion happens in line with the requirements for system stability and is consistent with other EU policies, notably climate mitigation, internal market, international cooperation and technology development and protection of the environment, including biodiversity.

The Renewable Energy Joint Strategy is subdivided under the following chapters:

1. General policy approach
2. Financial support
3. Administrative procedures
4. RESs in distributed power production and Smart Grids
5. RESs in Heating and Cooling and electricity
6. Sustainability
7. Regional and international dimensions
8. Technology development
9. Participation

### **2.1 General policy approach**

As the general policy approach to be adopted, the Cities on Power Project Partners individuate the following points necessary to promote RESs:

- locally dedicated targets for RESs, mandatory if possible in the national regulatory framework;
- enhanced focus on R&D;
- enhanced facilitation policies, such as faster and easier permitting;
- public procurement obligations.

### **2.2 Financial Support**

For the “Cities on Power Project” Partners a financial support to the utilisation of RESs in Heating and cooling and Electricity production is justified for different reasons. The cost of RESs has been falling steadily for the last years, but remains higher than that of conventional energy sources. This is above all because the external costs of fossil fuels have not been

internalised. This makes the RESs less competitive against the conventional ones. Some of the RESs technologies are relatively close to the market, even if for higher costs due to the still small scale productions while other RESs are at the stage of development.

It is evident that the financial support is possible at the national level; however, the local level it should play an important role. The "Cities on Power Project" Partners will guarantee as an essential point of the Renewable Energy Joint Strategy and Local Action Plans the widespread diffusion of the information about the available financial support schemes, the search for local resources useful to the start-up of the RESs programs, the collection and coordination of the stakeholder interested but unable, for economical reasons or for lack of structure, to participate.

### ***2.3 Administrative procedures***

The non-cost obstacles related to a deep RESs penetration are identified in the length and complexity of administrative procedures relating to authorization, certification and licensing. Lack of commonly agreed technical specifications and lack of credible and certified training and qualification are the other biggest obstacles seen in this category. From the side of the Renewable Energy sector the absence of clear deadlines for authorization procedures leading to excessive lead times is stressed as a key problem.

The "Cities on Power Project" Partners are called for more direct intervention into these procedures, even for harmonisation or mutual recognition in this field.

### ***2.4 RESs in Distributed power production and Smart Grids***

In the distributed power generation, electricity is generated close to the point of consumption. This decreases the need for large electricity systems and opens opportunities for improvements in energy efficiency, energy usage and increased use of renewable energy sources. The "Cities on Power Project" Partners find necessary to promote these solutions, because they are fully compatible with the urban context. Furthermore, the power production from RESs will be encouraged in the areas where intelligent energy distribution systems (smart grids) will be installed.

### ***2.5 RESs in Heating and cooling***

On the most promising pathways for Heating and cooling RESs, the "Cities on Power Project" Partners find necessary to concentrate the activities on those technologies close to the market, like solar thermal, biomass and heat pumps. Ground source heat pumps, heating and cooling storage will be taken into account even if they need further R&D.

### ***2.6 Sustainability***

The "Cities on Power Project" Partners find necessary to apply sustainability criteria to the development of the Local Action Plans. In particular new criteria will be applied to biomass to ensure that only the best performing biomass will be promoted. This to consider that in the sustainability criteria an increased competition for the limited resource biomass and aspects of land-use change will be reflected.

### ***2.7 Regional and international dimensions***

RESs are characterized by a strong local nature (sun, biomass, wind availability etc.). A strong effort to move to a more local planning is thence important in order to favour the penetration of the RESs utilization.

Next to this, an enhanced visibility for the different experiences grown in other countries can be useful to a faster development and promotion of RES.

The "Cities on Power Project" Partners find necessary to ground their strategy by planning with a strict attention to the local aspects at the same time opening their activity to the national and international cooperation.

### ***2.8 Technology development***

The key challenges for the technologies in the area of the RESs are identified in: performance, cost-competitiveness, issues linked to system integration of new technologies and industrial manufacturing, supply chain issues. The existing industrial initiatives need to move toward small-scale and local applications. Most of these topics can be managed easily at the national level. However, at the local level it could be easier to facilitate the step from the basic research to deployment and commercialization. At the local level it will be easier to satisfy the need for more training and education programs linked to Renewable Energy technologies and an improvement in communication efforts to disseminate the results.

### ***2.9 Participation***

The participation of all stakeholders in the energy turnaround is very important for a successful implementation and also a common principle of the European Union<sup>6</sup>. On the one hand the public wants to play a role in decision-making and wants to be a part of the development. On the other hand the public administration is not able to overcome the major problems alone. They need the resources and the commitment of local stakeholders to achieve their self appointed objectives. Therefore it is important to involve local stakeholders also in the development of climate and energy issues. It leads to more awareness and acceptance and

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<sup>6</sup> European Parliament Council Commission (2006/C 46/01): The European Consensus on development, 4. Common principles, 4.3 Participation of civil society.

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support the decision making of investments in renewable energies. And people get the chance to invest in renewable energy plants or infrastructure together. Cities should implement and support participation instruments in local concepts.

The project "Cities on Power" has developed a transnational participatory concept which describes in which manner stakeholders can be involved in renewable energy development in urban development, under the consideration of different instruments. This concept is an offer to all European municipalities and shows, how a participatory concept could be set up and elaborated in their cities.

Furthermore it is necessary to develop finance instruments which people can trust in: The crisis from 2008 showed the limit of unregulated markets and awoke a desire of the population of EU-Member states to invest into clear and useful investments like investments in regional RE power plants.