



## Climate Alliance

### **“Competitive Europe” – the local authority vision for 2030 climate and energy policy** **How the local level secures energy supply, creates jobs and ensures social cohesion**

Local action on energy saving, energy efficiency and renewable energy contributes to the achievement of the EU’s 20-20-20 targets. The Covenant of Mayors initiative launched in 2008 has become the major European movement of local authorities. The initiative counts today more than 5.000 signatories. More than 3.000 Sustainable Energy Action Plans are currently under implementation in average aiming to reduce CO<sub>2</sub> emissions by almost 30%<sup>1</sup>. A growing number of committed cities and municipalities will continue to contribute to achieving the climate goals – also beyond 2020 – not only because these actions mitigate climate change, but also due to their positive economic and social impacts.

#### **Why do we need ambitious and binding targets for 2030?**

Binding targets provide a clear policy framework and provide security of policy continuity. The only 2020 target that is not binding today – the 20 % energy efficiency target – is also the only lagging behind. A binding target for **energy efficiency** is therefore needed in the 2030 framework. One important effect of the energy efficiency target would be to boost energy service markets in Europe, creating business opportunities beyond the mere selling of energy.

**Renewable energy** sources will play a major part in Europe's long-term decarbonisation efforts. Local energy companies are becoming more and more important source of the future energy supply. United by a target for using 100% renewable energy or becoming energy autonomous, local governments and citizens are forming new initiatives to provide locally produced green energy for their community. In order to respond to this new decentralised energy landscape, Europe needs a framework with adequate financial mechanisms that will help to establish functioning markets for a 100% renewable energy supply.

Only an ambitious **CO<sub>2</sub> reduction target** for 2030 at EU level will pave the way for achieving the target of 85-95 % less CO<sub>2</sub> emissions by 2050. The Energy and Low Carbon Roadmaps 2050 provide the overall policy framework with the long term perspective. In order to answer to these long term objectives, considerable action is needed now. Ambitious targets in Europe will also send an important signal to the world and support an international climate agreement by 2015.

As raised by the European Commission in one of the recent 2030 events, if further policy actions are not taken in light of the 2030 framework, Europe will only reach 21% of energy efficiency and 24% market share of renewable energy by 2030.

Ambitious European targets also ensure better framework conditions and therefore better support for local authorities. The same applies locally. For Climate Alliance members, the challenging Climate Alliance objective (reducing CO<sub>2</sub> emissions by 10 % every five years and halving per capita emissions by 2030) is a motivating and driving force – encouraging the municipality to go beyond what is easy

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<sup>1</sup> Further information on Covenant indicators: [http://www.covenantofmayors.eu/IMG/pdf/covenant\\_indicators.pdf](http://www.covenantofmayors.eu/IMG/pdf/covenant_indicators.pdf)

and conventional and setting ambitious policies and practices. This has also motivated local authorities to take a long term view and develop and implement ambitious and coherent local climate and energy policies.

To set the right priorities and identify climate measures in **The Hague (NL)**, the city has issued a so-called back casting study with the research company CE Delft on how the city's climate target of CO<sub>2</sub> neutrality in 2040 can be achieved. This study calculates that more than 50% of the city's CO<sub>2</sub> emissions are dependent on 'tailwind'; the positive effect of the EU keeping up its stringent climate policy. This tailwind includes amongst others a further lowering of emission standards for vehicles after 2020 and the up keeping of the ambitious and binding climate neutral target for electricity production in 2050, as stated in the European Climate Roadmap 2050.

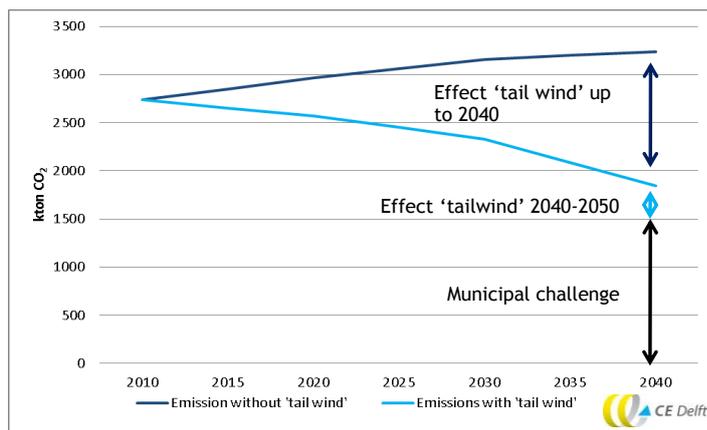


Fig. 1. Effect of tailwind on the CO<sub>2</sub> emissions of the city of The Hague. The black arrow concerns CO<sub>2</sub> emissions that the municipality itself can tackle directly (source: CE Delft, 2013. *Back(casting) to the future*).

## Towards a competitive and prosperous Europe

When the term “competitiveness” is mentioned, it is sometimes used to argue for low energy prices, conventional energy (no change needed!), and lower environmental standards. This is definitively wrong! Europe must stand for smart, fair, innovative and collaborative development. The local level, local authorities together with their citizens and stakeholders, will play a crucial role in achieving a **competitive and prosperous Europe**.

In 2012 Europe used €545 billion for importing fossil fuels. Europe's import dependency has increased in the last two decades and is set to grow to more than 80% in the case of oil and gas by 2035. Some Member States rely on one single Russian supplier and often on one single supply route for 80%-100% of their gas consumption. This situation is enforced by a global rise in energy demand of one third by 2035<sup>2</sup>. The import dependency profoundly affects the competitiveness of Europe's economy and shows how far Europe is from its policy objective of security of supply.

Local authorities are rapidly increasing their efforts for climate action and the transition towards green growth. In a UNDP report of 2009<sup>3</sup> it is estimated that more than 70% of climate mitigation measures (energy efficiency with building codes, LED's, waste to energy, decentralisation of energy production with renewables) and up to 90% of the adaptation measures are being undertaken by local authorities.

We argue that competitiveness and security of supply are best met via increased energy efficiency and with more decentralised energy production with renewable sources. Continuous support for

2 European Commission, 2013. 'Energy Challenges and Policies, Contribution to the European Council 22<sup>nd</sup> of May': [http://ec.europa.eu/europe2020/pdf/energy2\\_en.pdf](http://ec.europa.eu/europe2020/pdf/energy2_en.pdf).

3 United Nations Development Programme (UNDP), 2009. Charting A New Low-Carbon Route To Development: A Primer on Integrated Climate Change Planning for Regional Governments.

energy efficiency and renewable energy production will reduce the dependency on energy imports, reduce energy prices, and boost local economies creating more value as well as new local jobs.

More emphasis needs to be placed on the “non-ETS sectors”: buildings and transport. The Covenant of Mayors indicators show that the residential sector accounts for one third of the overall CO<sub>2</sub> emissions by the Covenant signatories, and the residential and service sector buildings together more than a half on the CO<sub>2</sub> emissions. The percentage for transport is 27%. Action in these sectors is essential to reduce CO<sub>2</sub> emissions significantly.

## Decentralized energy supply: kick-start for investments and innovation

“100% RES Communities” are no longer isolated examples but there are more and more municipalities striving for this objective. The growing movement shows that making the transition towards 100% RE is a political – not a technical – decision<sup>4</sup>. Striving for this objective delivers economic prospects to transform the energy sector, creating new innovative branches of RES industry. These new branches of industry can also stabilise the European export and provide opportunities in emerging markets.

Several case studies from around the world showcase solutions and best practices that are waiting to be copied. For example in Germany over 50% of new renewable capacity is decentralised and owned by private people, farmers and cooperatives<sup>5</sup>. Local authorities have an important role in facilitating citizen involvement and the creation of energy cooperatives.

Microgeneration is also increasing. Everyone can have a role in the new energy system. Energy consumers can become ‘prosumers’. If such development becomes mainstream the need for large (cross border) infrastructure for electricity transfer becomes much less significant.

### **Saerbeck (DE) Insights – the whole community together for the climate**

A small rural municipality in the North-West of Germany, Saerbeck (7,055 inhabitants), decided to meet the challenges of climate protection, climate adaptation and demographic change by becoming self-sufficient in renewable energies and reaching a positive energy balance by 2030. A former arms depot is converted into a bio-energy park with 24.000 solar collectors on bunkers, seven wind plants, a biogas- and a composting plant. Saerbeck is testing the storage of renewable energy and promotes the location of likeminded companies.

The responsibility is shared between the municipality and its citizens, both contributing financially via the Cooperative Energy for Saerbeck, and benefiting now from energy security and stable prices. Saerbeck, taking up a pioneer-role, has also a Transparent Heating Plant and an Energy Adventure trail, in addition to an information and communication platform. These projects are at the heart of 'Saerbeck Insights', which allows citizens to observe local heating pipelines and other energy related information. The information is also shared in the schooling curriculum and in the continuing education in the region. From businessmen via churches to schoolchildren: everyone in Saerbeck shares the objectives of municipal climate protection.

### **Güssing (AT): 100+% Renewable Energy**

In the 1990's, this small town with 3,770 inhabitants decided to turn its economic hardship around using a model that included supplying 100% of its energy needs with local resources. It succeeded. Currently, the town is a net renewable energy exporter, producing about 10 times more energy than it needs and approximately 40 times more electricity than it can use. Along the way, around 1000 jobs were created, more than 100 directly in the energy sector. The town also became a tourist attraction and inspiration for the entire region - as well as countries as far away as the Cook Islands in the South Pacific - to adopt a 100% renewable energy goal.

**San Benedetto Del Tronto (IT)** (48,700 inhabitants) has activated a programme to put roofs of municipal buildings at the disposal of private citizens for installing photovoltaic panels. The project has promoted the installation of 2.150 kW of photovoltaic and generated investments of € 5.25 million.

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<sup>4</sup> Read more about the 100% RES campaign: [www.go100re.net](http://www.go100re.net)

<sup>5</sup> “Renewable Energy: Shifting Sources of Power (Cont'd), Rick Bosman, in Government Gazette, October 2013

**The city of Padua (IT)** (214,125 inhabitants) has activated through three programmes the installation of 6552 kW of photovoltaic panels and 700 m<sup>2</sup> of solar thermal with a private investment of € 5.78 million. The installation of solar thermal panels was supported with a contribution of € 1000 per installation. The city spent € 177.000 for 177 installations leveraging € 907.000 investments by private citizens.

Together with the citizens and local energy providers, the municipality of **Mureck (AT)** runs a biodiesel plant, a biomass district heating system, a biogas plant and a photovoltaic plant. Their vision is to take efficient action against climate change, while ensuring social stability and creating new jobs by renewable and decentralised energy. The biodiesel from rapeseed is produced by about 500 regional farmers, as well as from cooking oil that has been used by private households and restaurants. The citizen photovoltaic plant ensures the future electricity supply for the municipality's transport services and consists of a climate-friendly energy generating greenhouse where organic vegetables are grown. Through initiatives as these, Mureck achieves a reduction of about 60,000 tons of CO<sub>2</sub> and 20,000 tons of crude oil per year.

In the municipality of **Amstetten (AT)** (22,880 inhabitants) their energy provider STADTwerke generates heating from sewage. This unique project was rewarded with the 'European Heat Pump City of The Year Award' in 2013. More than 50 projects have been implemented in the fields of RES, sustainable construction, quality of life, education and work. "Our goal for the future is to turn Amstetten into an energy-smart town. Three years ago, in order to achieve this goal, we elaborated together with municipal representatives, enterprises and citizens a vision for 2050, as well as a roadmap for 2020", explains mayor Ursula Puchebner, demonstrating that the use of renewable sources of energy will definitely play a central role in future measures taken against climate change.

### Local climate action is a job engine

Europe is a world leader in environmental technologies and environmental protection, thus proving a great market opportunity for EU businesses. Many European producers benefit from ‘first mover advantage’ as their technologies are adopted abroad. The EU eco-industry directly employs around 3.4 million people, around 1.5% of all Europeans in employment (see Fig 2 below) – this is more than car manufacturing, chemicals or textiles.

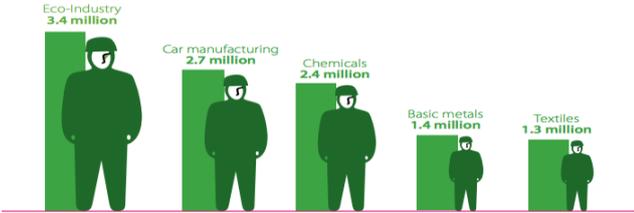


Figure 2 Ecorys (2009), “Study on the competitiveness of the EU eco-industry”

In 2011, 7.8 million Europeans were employed in the EU’s low carbon and environmental business sector. The Commission estimates that an additional 6.5 million jobs can be created or retained by 2020 in renewables, energy efficiency and ETS revenues alone (see image below). These businesses must be encouraged in order to build Europe’s comparative advantage<sup>6</sup>.

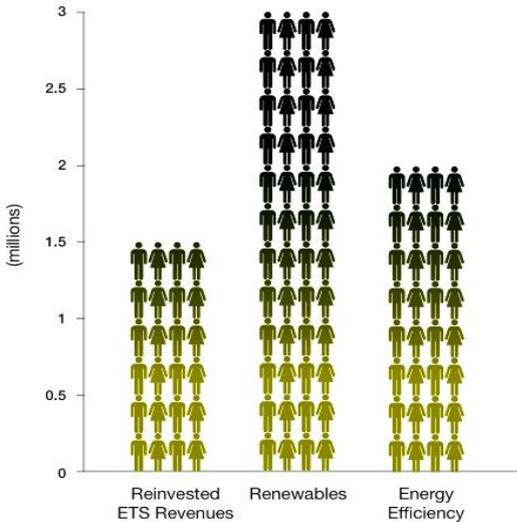


Figure 3: EU low carbon sector job creation and retention in potential in 3 low carbon sectors (EC, 2012, exploiting the employment potential of green growth)

In addition, the communication of the European Commission (2012), *Towards a job-rich recovery*, identified that job growth in the green economy has been positive throughout the recession and is forecast to remain very strong even during the economic ‘crisis’.

<sup>6</sup> "Going for Green Growth: The case for ambitious and immediate EU low carbon action" Department of Energy & Climate Change, UK (October 2013)

## **Beckerich (LU) – towards energy autonomy**

Beckerich, a town of 2,300 people in western Luxembourg is well known for its objective of becoming energy independent. The implementation of this ambitious vision, embodied by the dedicated Mayor, Camille Gira, is bearing fruit in terms of local economic development. Today Beckerich produces itself 90% of its low-tension electricity needs and 30% of its heating demand. Moreover the town tries to derive maximum benefit of the extensive wind, solar and biomass potential specific to rural areas.

In 2004, 19 farmers founded a biogas cooperative, treating manure to produce energy. The total investment amounted to € 5 million, being 50% funded by the Ministry of Agriculture and 50% financed by a loan. Each farmer also contributed with an investment of € 4,000 (i.e. € 76,000 in total). Today the cooperative produces electricity and hot water for some 700 families delivered through 14 km of district heating pipes. The municipality buys the heat produced and resells it to the citizens. In 2012, Beckerich raised € 500, 000 by selling heat. Local energy production is important also from an economic point of view: money stays in Beckerich, benefits the local economy and creates local jobs. At least 15 long term jobs have been created.

Whilst Beckerich is making the most from the wind, solar and biomass potential specific to rural areas, its SEAP (Sustainable Energy Action Plan) has shown that the future emphasis must be placed on saving energy. The municipality provides energy audits, grants, interest-free loans to low-income households and retrofits municipal buildings via contracting.

## **REDIBA / Barcelona Province (ES) – ensuring energy efficiency financing in times of low public budgets**

The REDIBA project in Barcelona Province (5.55 million inhabitants) finances preparation of bankable energy efficiency projects mainly in the field of public lighting and supports the process of ensuring financing of the investments required. It is a project financed by the ELENA (European Local ENergy Assistance) facility of the European Commission run by the European Investment Bank (EIB). For the moment € 70 million worth value has been generated including some 80 investments. In terms of EIB criteria the amount of investments awarded is € 36 million. In total the project will mobilise € 100 million of investments and will create around 20 GWh of energy savings per year.

The Province of Barcelona estimates that 1.400 jobs (employed-year) linked to energy efficiency and 200 jobs linked to biomass projects will be created/sustained as a result of the their investment programme.

According to the Province, small and mid-sized municipalities need technical support and coaching during the whole process. New models of contracting in public administration require time. However, once it “clicks” and there are reference projects, the investments start piling up.

The ELENA facility is funded through the Intelligent Energy Europe (IEE) Programme. The general objective of ELENA is to assist the transition from action plans to making large scale investments, usually higher than € 50 million. The facility covers up to 90% of eligible costs required for technical support related to setting up an investment programme. All eligible projects must have a minimum leverage factor of 20, i.e. the investment to be supported must be at least 20 times the amount of the ELENA contribution. ELENA is an important funding source allowing Covenant signatories to implement their Sustainable Energy Action Plans (SEAPs). The allocated funding is expected to create some 3 billion Euro investments in energy efficiency and renewable energy.

## Investing in resilient communities

The extensive fuel imports highlighted earlier mean that Europe is not only losing money, but also supporting governments and structures which do not share European values or democracy. Being more independent from the fossil fuel imports will benefit local economies and increase resilience against crisis.

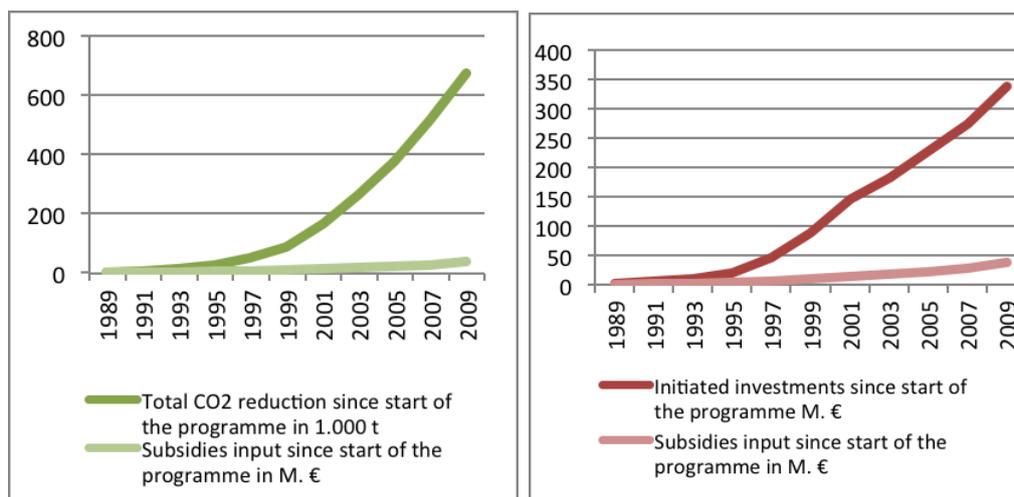
For example the cost of energy (electricity, gas and transport fuel) in the city of **The Hague (NL)** (482,510 inhabitants) equals a total of approximately € 900 million a year. Each percent of energy savings in the city of The Hague corresponds to approximately € 9 million a year in lower energy costs. This is money that can be reinvested within the local economy.

### Munich (DE) – Subsidies Programme for Energy Saving (FES)

Munich (1.378 million inhabitants) has been promoting energy efficiency in private and commercial buildings through a funding scheme targeted at house owners and the building and construction industry since 1989. Around 60 % of Munich's housing stock has a very high energy demand for heating and therefore a high potential to save CO<sub>2</sub> emissions.

The city of Munich gives € 13.8 million into the fund yearly. Subsidies out of the fund cover a wide range of measures such as building insulation, heat generation and solar thermal systems. They start from 500 Euros and reach 50.000 Euros, e.g. for passive houses, in exceptional cases even 1 million for large-scale housing developments. All measures must fulfil the "quality standards of the city of Munich".

The graphs below highlight the success story of the funding programme: mobilised investments are 10 times higher than the subsidy input. Furthermore, the job sector is boosted; in 2009 and 2010 around 200 jobs were created or saved due to activities of architects and construction engineers. Last but not least, the funded measures lead to substantial energy and CO<sub>2</sub> emission savings for the whole life span of the measures.



### Watt-Busters – Energy Efficiency Services in Cascais (PT)

The city of Cascais helps its residents (205,117) to improve their private energy efficiency and save costs. Technical reports help Cascais citizens identify how and where to save energy. "Caça Watts" ('Watt Hunting') is a public initiative allowing Cascais' citizens to get an energy audit worth up to 350 € for a lower price, starting from 25 €, with further discounts depending on personal income. Such an audit reveals home energy usage patterns and points of excessive energy consumption, it compares

the energy efficiency of home appliances and electrical equipment and provides recommendations on how and where to save energy. Cascais municipal technicians are equipped with high-end software permitting, together with consumers' energy bills, for an exact technical analysis as well as specific recommendations. They even run a solar panel simulation as to the effects on energy savings and financial benefits if a photovoltaic plant was installed at home. Each year, the Cascais Energy Agency carries out approximately 100 energy audits.

This project had an investment of 55,000 € and has been delivering greatest benefits in terms of climate protection and quality of life. Energy consumption has been reduced by 75 MWh/year and CO<sub>2</sub> emissions by 28 tons CO<sub>2</sub> eq./year. Households participating in this initiative have reduced their energy bills by about 100 € per year and household.

### **Ober-Grafendorf (AT) - Reducing energy related household spending**

In Ober-Grafendorf (4650 inhabitants) action has been taken on energy efficiency, renewable energy and e-mobility. In the municipality households spend € 2,5 million (in 2013) for energy, 41% of these are taxes and duties, 59% go abroad. Action to keep this money in the community is therefore needed. Two community owned buildings with over 90 apartments were renovated to reduce the owner heating costs by more than € 30.000 per year. One out of the many actions taken in the field of renewable energy is 4 private hydroelectric power stations. These 4 stations produce electricity for more than 200 households. One of these stations is a local invention, which has been patented. This shows the potential for local innovation in the field of renewable energy also within small towns.

## Warm houses, full wallets

The largest potential in energy saving relies in heating. Extra benefits can be yield when supporting refurbishment of social housing. This allows lowering the heating costs of the tenants – as well as avoid the need of the municipality to cover the costs of heating when the tenants are not able to pay these costs themselves.

### **REgent – energy efficiency advice and support in Ghent (BE)**

The city of Ghent with a population of 248,242 inhabitants assesses that a shift to sustainable housing would save 26% of the CO<sub>2</sub> emissions of the city. One step towards using this reduction potential is to supply construction advice for free. This encourages people to be informed about insulation, materials to use, energy and water supplies. The ‘environment advice shop’ hosts experts in these different fields to provide support.

To ensure this objective the REgent has been established. REgent is an office giving advice about energy efficiency for households with a focus on low income households. Its focus is threefold:

- First, it offers energy scans for free. This allows a full scan of the household to assess where energy can be saved. During four years (2009-2012), 5313 scans have been executed with an estimated energy reduction of 8-10% per energy scan. 25% of the scans were targeting rented apartments or houses and 32% social houses.
- Second, when you plan to refurbish, REgent offers the most sustainable and affordable solutions (tax information, financial advice, guidance during execution, etc.). Citizens can ask for help to find a constructor, to find and apply for subventions and to help to fill in tax papers. Group purchases for rooftop and window insulation are one example of the possibilities.
- Third, REgent offers low cost loans (2% interest rate) for investment needed to achieve the energy savings. These offers are targeted to all the inhabitants of the city, but deprived neighbourhoods have a priority. For some works households can obtain a loan (financed by FRGE) with no interest charged.

In 2012 REgent dealt with 1214 advice requests, gave guidance for 400 households and approved 423 sustainable energy loans.

### **Modena (IT) – Refurbishment of social and sport facilities**

The city of Modena (186,108 inhabitants) with the support of the Foundation of the “Cassa di Risparmio di Modena” has developed an ambitious programme of energy efficiency and energy generation in sports, social and recreational structures. From November 2010 to December 2012 some 10 sports and recreational complexes underwent an energy audit followed by installation of photovoltaic systems and retrofitting for energy efficiency. With contributions by the city of Modena and the Foundation “Cassa di Risparmio di Modena” € 2.6 million have been invested for the measures.

The project has helped to finance local welfare (with the feed-in-tariffs) and reduce the operating costs (via energy efficiency). It also promotes the visibility of renewable energy installations, helps local craftsmen to manage innovative renewable energy projects and contracts, reduce carbon emissions and create employment. Moreover the resources that are saved in energy efficiency are spent to support the access of disadvantaged groups (young immigrants) to sports facilities, courses and activities.

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The energy poverty is differently addressed in Europe due to the diversified national contexts. For example in Romania, during the previous communist regime a great part of the housing shortage has been solved after the 2<sup>nd</sup> World War by a massive social programme of building up mainly cheap dwellings but at a low quality. This makes today the Romanian housing sector mainly dominated by old residential buildings facing poor thermal performance. Studies have shown that it is possible to reduce cost-effectively heating needs by at least 40-50%, but the rehabilitation is taking place slowly. Meanwhile large amounts of energy are consumed and wasted with a constant dependency on imported fossil fuels. Moreover, the efficiency of district heating networks in Romania is very low (ca. 43%), while covering over 1.6 million dwellings, mostly blocks of flats where customers often cannot adjust the heating level<sup>7</sup>. Despite the difficult context when it comes to energy poverty, high ambition in developing local strategies is emerging.

### **Tg Mures (RO) – Casa Verde Project**

In Tg Mures, a city of 143,939 inhabitants, the Casa Verde project (Green House project) is financed under the national programme “Replacement or complement to traditional heating systems with systems using solar, geothermal and wind energy or other systems that lead to improved air quality, water and soil.” Under the Green House project, with one year investment period, solar panels were installed in fourteen high schools, social centres and kindergartens. The solar systems have been connected to the hot water distribution and the investment was performed under several conditions: improved quality of air, water and soil, reduction of CO<sub>2</sub> emissions, reduced operating costs, and subsequent rehabilitation of the buildings.

### **Vienna (AT) – Green Social Housing for All**

“One of the biggest challenges for our city planners and architects lies in the combination of high quality living space and high quality outdoor space with a high level of density” according to Michael Häupl, Mayor of Vienna<sup>8</sup>. In the city with 1.757 million inhabitants, around 85% of the volume of the new homes constructed are social housing projects, which are subjected to a competition to receive subsidies in order to encourage innovative architectural techniques and the preservation of the environment. In 2010, 20% to 30% of the new homes were built to passive house standards.

Furthermore, Vienna has introduced the **SMART-Flats** initiative which follows the strategy of providing compact flats with low rents and offering attractive community spaces to compensate. For example by 2011, 900 flats were built in the area of former railway stations. Because the living space reduces, the energy consumption decreases as well. At the same time, Vienna is cooperating with private companies in order to reduce its car parking space with 50% to make room for bike facilities.

Finally, the city focuses on **wood** as a construction resource for housing complexes and meets in this way high environmental standards. The material brings warmth, comfort and sustainability to the residents. An example is the seven storey building located in Vienna, the largest wooden housing complex of Austria.

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<sup>7</sup> United Nations Development Programme Romania: [http://www.undp.ro/projects.php?project\\_id=63](http://www.undp.ro/projects.php?project_id=63)

<sup>8</sup> Covenant of Mayors 2013. Case Study Vienna, 'Green Social Housing for All': [http://www.eumayors.eu/IMG/pdf/Vienna\\_Case\\_Study\\_Covenant\\_Mayors.pdf](http://www.eumayors.eu/IMG/pdf/Vienna_Case_Study_Covenant_Mayors.pdf).

## **Conclusions: Plenty of business opportunities through sustainable and decentralized energy policies**

When looking for reasons for a decreasing competitiveness of Europe, then these are definitively not found from renewable energy and energy efficiency. All headlines blaming renewable energy as the driver for high energy prices or a 'job killer' could be refuted easily. And (honest) figures reveal that fossil fuels and nuclear electricity subsidies are much higher than those granted for renewable energy.

Of course, the energy transition will change a lot: Less big coal and nuclear plants, but numerous small green energy plants; less shareholders, but many cooperatives; reliable energy supply instead dependency from a limited number of energy deliverers; less big employers, but many SMEs; innovative products; engaged and responsible citizens becoming 'prosumers'; less energy poverty, but cheap and warm houses... But does that sound so bad?

The local examples presented above demonstrate the high potential of local action in light of local green economy and job creation. The current negotiations on the 2030 energy and climate framework are a real opportunity to set the course for a Europe to stand at the forefront of secure and clean energy supply, decentralised, but stable energy infrastructure, smart cities and municipalities, innovative industry and social cohesion. So, let's go for it!