

30 Energy Cities' proposals for **the energy transition** of cities and towns

Updated in January 2014



Proposals

European mayors "demonstrate" for greater recognition of local authorities' role.
Energy Cities' Annual Rendezvous 2013 in Växjö (Sweden).



Practical proposals to accelerate the energy transition

Energy Cities is proud to present its Proposals for the Energy Transition of Cities and Towns. They constitute a source of inspiration to think and act differently and to finally turn our backs on non-sustainable practices that can only lead us to energy, climatic and possibly economic and social dead-ends.

A transition is a shift from an initial to a future state. For Energy Cities, the energy transition is a shift from a system dominated by finite (fossil and fissile) energy towards a (renewable) flow energy-based system. Such a shift will require simultaneously taking ambitious actions to reduce our energy use. It is our century's challenge.

Political decisions made at European and national levels are indispensable to show us the way forward. Several countries have already decided to take decisive action along this path. It is, however, at the local level that the new energy paradigm is being invented, through a multitude of initiatives implemented by a wealth of private, public and associative partners. All have a common goal -the low energy city with a high quality of life for all- and most are from cities engaged in the Covenant of Mayors.

What visible changes have these initiatives already brought?

We used to think in terms of MegaWatts and we are now starting to think in terms of NegaWatts. We used to consider energy as a supply of gas, electricity and oil; we now rather think in terms of demand based on final needs (heating, cooling, lighting, mobility and leisure). Vertical, centralised energy systems are starting to make room for more flexible and resilient horizontal, decentralised multi-energy systems based on the Internet concept. Energy distribution networks will become smart networks capable also of handling the collection of dispersed energy production. Energy production used to take place here and consumption elsewhere; we are starting to consider both simultaneously in an integrated way at the scale of a building, a neighbourhood, a village or a city. Energy technologies used to involve large, monolithic systems; a large variety of scaled-down products, making use of ICT and addressing both decentralised supply and the demand-side is now emerging. Consumers will become active, energy-aware citizens. The divorce between energy and territorial economics will give way to a fruitful reconciliation conducive to innovations. Whereas central governments used to play a predominant part, the role of local authorities will become decisive.

The world that is taking shape before us is being built at the local level. The transition will take time. All the more reason for wasting no time in getting started! Such a shift involves a massive cultural change, that is, a change in our ways of thinking energy, its uses, production, systemic organisation and players.

To accelerate the energy transition and based on its members' practices, Energy Cities has organised its Proposals into five strategic areas:

- Empowering local players,
- Knowing our territories' resources and flows,
- Rethink financing solutions,
- Inventing new local governance,
- Urban planning as a way of reducing energy use.

Local energy transition will take place through alliances involving a multitude of players at all levels and in all fields. Energy Cities intends to contribute to it. This is why, in addition to local authorities which are their primary readership, these Proposals are also intended for businesses, community organisations and public institutions ready to take up the challenge of the century.

I now invite you to discover them!

Eckart Würzner,
Mayor of Heidelberg and President of Energy Cities

Proposals

In 2012, Energy Cities initiated a collective process aimed at making proposals to accelerate the energy transition of European territories. The 30 Proposals in your hands are the result of part of this collective work. Other proposals are available on the Internet*, where you will find many other examples that it would be impossible to print here.

What makes these Proposals new?

These Proposals are based on the observation and analysis of hundreds of practical examples, all stemming from existing practices. Our intention is to make these practices “talk”, to convey their meaning and to show the path they are pointing at, sometimes without us being aware of it. The criterion for selecting these Proposals is straightforward and concerns their transforming capacity, that is, their ability to change the way we think and act. Specific attention has therefore been given to all aspects of innovation, including territorial governance.

These Proposals aim to “recreate society” through a subject which concerns us all, energy, and beyond this, to open avenues to the transition towards a more humane economy, more attuned to the challenges of the century. A message of hope for Europe!

*See the Energy Cities' website
www.energy-cities.eu/30proposals
 and Wiki
www.energy-cities.eu/wiki



www.energy-cities.eu

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Empowering local players

EMPOWERING LOCAL PLAYERS

Take local control of energy supply

Proposal 1.1

What is the role of local authorities in the energy transition?

What new responsibilities do they have to take on?

What new local governance rules should they adopt to guarantee sustainable decisions?

Proposals for developing territorial energy policies:

- 1.1 Take local control of energy supply
- 1.2 Unite all stakeholders in a local energy alliance
- 1.3 Ensure public budgets integrate positive and negative energy externalities
- 1.4 Co-create a long-term vision to shape all policies
- 1.5 Eradicate local fuel poverty
- 1.6 Lead by example by transforming municipal energy management
- 1.7 Prepare an Energy Transition Action Plan
- 1.8 Be part of regional, national and European networks to gain exposure to others' experience



THE PROBLEM AT HAND

European countries are of various types. In Scandinavian and federal countries, municipalities are responsible for their territories' energy supply and set up local energy utilities to carry out this mission. This contributes to developing a sense of responsibility amongst local authorities, whilst providing them with a source of income.

In other Western, Eastern and Southern European countries, local authorities do not have such power and responsibility. It is a State monopoly, which has sometimes evolved into a private monopoly. Some cities own their energy grids and are allowed

to build heating networks, even with using combined heat and power - CHP. However, large energy companies always have the upper hand and get all the added value. These companies are usually not favourable to heating networks, which are local networks by nature.

Innovation, local resource mobilisation and CHP development are clearly ahead in countries where cities have more power in this area.



PROPOSAL

Take responsibility for the territory's energy supply.

This is a decision which comes under national laws. Experience shows that entrusting a local administration with power and responsibility always leads to better service. In the field of energy, it is a strong leverage for transition as it increases population acceptance of the infrastructures. It fosters creativity and innovation and stimulates local activities, thus creating economic added value that remains in the territory.



CONDITIONS FOR SUCCESS

In countries where municipalities have this power and responsibility:

- > Making full use of the potential offered in connection with energy efficiency and renewable energy objectives.

In countries where this is not the case:

- > Claiming such power and responsibility by referring to the experience of other countries as an example.
- > Making good use of responsibility "niches" in existing legislation.



EMPOWERING LOCAL PLAYERS

1.2 Proposal

Unite all stakeholders in a local energy alliance



THE PROBLEM AT HAND

The need for a transition towards a new energy paradigm is establishing in the minds. However the decision-making process is mainly in the hand of national administrations and large energy companies, who have vested interests in maintaining a status quo, that is, in privileging a centralised-supply approach.

Other society stakeholders would benefit from a more decentralised-supply and demand-oriented paradigm: consumers to pay less; independent producers to increase their return on investment; craftsmen and SME to develop refurbishment activities; energy service companies to enlarge their markets;

foresters and farmers to provide biomass; housing and transport managers to control costs; citizens to express their choices and local authorities to boost the local economy and collect income.

These dispersed players, however, do not weigh much in the balance of power.



PROPOSAL

Unite interested private, public and associative players in local energy or energy transition alliances.

Establishing such alliances is relevant at all levels: local, regional, national and European. They provide stakeholders with the opportunity to express their expectations, to enlarge their visions and to influence energy policies. It is a forum where to exchange points of view and make proposals. Experience shows that common interests immediately emerge, regardless of the stakeholders' status.



CONDITIONS FOR SUCCESS

- > Organising the process around the local authority (or the local authority association) which will serve as a catalyst.
- > Ensuring the diversity of stakeholders and the independence of information.
- > Establishing the relation between energy and local development and employment at the centre of the initiative.
- > Referring to an intermediation authority (agency, professionals, etc.) when necessary.
- > Designing the alliance as a vector for producing ideas and opinions.

EMPOWERING LOCAL PLAYERS

Proposal 1.3

Ensure public budgets integrate positive and negative energy externalities



THE PROBLEM AT HAND

All investment decisions have an impact on material and energy resources as well as on discharges, emissions and other types of waste. The impact in terms of security, health, air quality and predation of resources will differ depending on the source of energy considered. Some decisions will boost employment, whilst others will reduce manpower needs.

We call “externalities” the cost of the consequences of these micro-economic decisions paid for by society. The externality is said to be positive when the decision avoids societal costs on the natural, social

and economic environment. It is negative when it involves additional societal costs for repairing damage to the ecosystem or in terms of lost jobs.

The “polluter-payer” principle means “internalising externalities”, that is, making the person responsible for the damage pay for it, via an energy tax or through a waste management or water treatment system. But many areas remain unaccounted for. We therefore do not hold all the cards for making the right decisions.



PROPOSAL

Present public budgets that integrate positive and negative externalities.

Ideally, this calculation should apply to all budget items. But calculation bases accepted by all stakeholders in a given country are rare. Lighter systems could be used in a more realistic way, on a one-project basis, by applying an externality cost to the energy prices or to CO₂ emissions.



CONDITIONS FOR SUCCESS

- > Starting with a few symbolic projects to make decision-makers familiar with the impact of their decisions.
- > Trying to calculate costs based on carbon tons avoided or generated, as data is available and price scenarios can be simulated.
- > Associating financial officers so that they become familiar with these issues.
- > Gathering information about existing experiences in countries that have adopted relevant schemes.

EMPOWERING LOCAL PLAYERS

Co-create a long-term vision to shape all policies

1.4 Proposal



THE PROBLEM AT HAND

The energy and climate challenges force us to think about our society in the long term. The European Commission's Energy Roadmap 2050 provides scenarios that encourage us to carry out similar exercises at the local level and to engage in the energy transition. In an unpredictable world, cities and towns need more than ever to develop a shared vision of their future, a sustainable and desirable future that makes sense and brings hope.

Our world, however, is dominated by the short term. How can we consider long-term issues when the media has a timeframe of one day and the markets

of just one hour? What would be the use of public policies if they had to adopt such time constraints?

We must turn our back on predictions that are just a continuation of the past and on marginal improvements with no effect on our trajectory. Linking the short, medium and long terms is a necessity.



PROPOSAL

Co-build a long-term vision of the low energy city with a high quality of life for all. Gear local authority sectoral policies towards this objective.

A vision expresses aspirations and hopes. An energy transition-oriented vision includes energy use and emission reduction objectives. Carrying out this territorial energy foresight exercise will help local players overcome their ideological antagonisms and diverging interests.



CONDITIONS FOR SUCCESS

- > Taking all the time it needs (at least one year) to get local players and municipal departments really working together.
- > Finding the necessary human resources and skills to carry out this unusual exercise.
- > Using facilitation methods that encourage free expression and creativity, comparing points of view, fears and interests and making stakeholders work towards common objectives.
- > Translating the vision into objectives, "factor 4" scenarios and then action plans, and defining milestones from the present.



EMPOWERING LOCAL PLAYERS

Eradicate local fuel poverty

Proposal 1.5



THE PROBLEM AT HAND

The era of cheap energy is over. The costs for accessing the energy sources, as well as production and transport costs, are making further increases in energy prices inevitable. The introduction of energy and carbon taxes instead of labour taxes that penalise the economy also has a role to play in this. Taxing a rare product leads to a reduction in its consumption, one of the major components of the energy transition.

Therefore we are going to use less of a more expensive energy. The thermal quality of our dwellings and the performance of our equipment will improve. A more virtuous approach to urban planning will

make us adopt new modes of transport, leading to behavioural changes.

During this transition phase, an increasing proportion of the population will not be able to pay for heating and transport, two essential functions of everyday life. Several countries have adopted a plan to fight fuel poverty, with varying results. Action must be taken at the local level, where social situations are better known.



PROPOSAL

A local fuel poverty eradication plan is an accurate and geo-localised diagnosis of both collective and individual situations.

A strategy is also needed to provide sustainable solutions. Emergency situations are a matter for conventional social welfare services. But the overall aim is to eradicate the cause: the lack of insulation in dwellings, poorly efficient heating systems and peri-urban sprawl. An energy transition that does not consider social issues will not work.



CONDITIONS FOR SUCCESS

- > Drawing up a set of indicators to monitor the progress of fuel poverty eradication.
- > Making the results visible.
- > Establishing a solid relationship between social, energy and housing departments, energy suppliers and all potentially interested partners.
- > Linking local actions with national schemes.
- > Networking with other cities engaged in similar approaches.



EMPOWERING LOCAL PLAYERS

1.6 Proposal

Lead by example by transforming municipal energy management



THE PROBLEM AT HAND

Municipalities need energy for their buildings and various facilities, like street lighting, computers, water pumping and treatment as well as waste management systems. This represents 3-5% of their territories' total energy requirements. It might be inferred from the above that this is negligible. On the contrary! It is possible to have a direct effect on energy and budgetary expenditure, with quick results. The required investments can often be financed from the savings made, a totally different situation when compared to other types of public investment which only generate additional operating expenses, year after year.

Committed, exemplary municipalities showing results are more credible when it comes to encouraging their populations to use less energy, more efficiently.



PROPOSAL

Introduce -or reinforce- a voluntary energy consumption reduction policy in municipal buildings and other facilities.

Continuous implementation can result in up to 50% savings when no action has previously been taken. Some savings require no investment. A long-term plan aimed at retrofitting all properties by 2050, which means a yearly rate of 3%, is reasonable.



CONDITIONS FOR SUCCESS

- > Appointing an elected representative in charge of the project and hiring an energy manager with a small team, to be paid for out of the savings made.
- > Building an in-house information system with key indicators of the energy use, and of the savings made and re-allocated.
- > Drawing up a multi-annual action plan so as to schedule investments and integrating an "energy savings" and "renewable energy" section in all future work planning.
- > Communicating the results internally and to the population with the Display® poster (www.display-campaign.org).



EMPOWERING LOCAL PLAYERS

Proposal 1.7

Prepare an Energy Transition Action Plan



THE PROBLEM AT HAND

One of the main difficulties of the energy transition is to align short, medium and long-term objectives. Sharing visions of a low energy city with a high quality of life for all by 2050 is easy, as the time horizon is still a long way off and everyone understands that the current situation is no longer sustainable.

However, it is more difficult to agree on the strategies that need to be implemented to get there as they involve changing trajectories and, therefore, habits. This disturbs the relations between players and leads to inertia.

Things become even more complicated when it comes to voting next year's budget. All the obstacles inherited from our mindsets and practices, which have more to do with past inertia than future dynamics, come to the fore.

This is why an Energy Transition Action Plan is needed.



PROPOSAL

The Energy Transition Action Plan serves as a link between the long-term vision and annual budgets.

This 5 to 10 year action plan goes much further than just integrating quantitative energy data that will be used to monitor energy and CO₂ emission indicators. It also ensures that the desired trajectory is integrated into sectoral policies whilst being translated into policies and actions as well as human and financial resources. In short, it gives the trajectory consistency.



CONDITIONS FOR SUCCESS

- > Having a clear, shared and documented vision of the course to be taken.
- > Running the process under the authority of the Mayor who has the legitimacy and authority to enforce this course.
- > Preparing the action plan as a tool for co-ordinating and implementing a maximum of the Proposals from this booklet.
- > Making the plan an annual and multi-annual budgeting tool.





EMPOWERING LOCAL PLAYERS

Be part of regional, national and European networks to gain exposure to others' experience

Proposal **1.8**



THE PROBLEM AT HAND

Societal changes are increasingly taking place in cities and the responsibility for energy transition largely rests on local elected representatives and officers. Many towns and cities have already taken action and learned a lot in this field, whereas others have just started. Some have experience in town planning or in CHP and heat and/or cooling networks. Others are renowned for their transport systems, energy-efficient building retrofitting programmes or urban farming. This richness has not yet been fully tapped although these experiences are an unlimited source of wealth, and one that is free when shared between colleagues.

We sometimes hear: “travelling is expensive” but what is the cost of not benefiting from existing or emerging know-how? In the context of a severe economic crisis, everyone has to make do with limited resources. We cannot afford to repeat past mistakes. If many towns and cities are members of networks such as Energy Cities, the majority are still facing the upcoming challenges on their own.



PROPOSAL

Taking an active part in regional, national and European exchange networks is the time investment with the highest pay back.

The exchange of experience and ideas between colleagues is fruitful as it is informal and based on trust and mutual aid. People are better prepared and able to discuss matters with consultants and contractors, when implementing new solutions and when taking part in collective campaigns with hundreds or thousands of other towns and cities. And they are together stronger in influencing regional, national and European policies.

CONDITIONS FOR SUCCESS

Members must accept to give and take and be clear about their expectations:

- > A European network is conducive to innovation and open-mindedness by comparing practices in different situations; it helps influence European decisions.
- > A national network deals with the practical implementation, in one's own country and language, with colleagues that share the same legal/regulatory/fiscal framework that their proposals will improve.
- > A regional network is closer at hand and leads to reinforced co-operation between neighbours.

Knowing our territories' resources and flows



KNOWING OUR TERRITORIES' RESOURCES AND FLOWS

Know the territory's metabolism so as to optimise local potential and reduce the impact of human activities on the ecosystem

Proposal **2.1**

What strategy should we adopt for improving the management of incoming and outgoing resource flows generated by human activities in territories: energy, water, waste, greenhouse gases?

Why should, and how can, we improve our knowledge of them?

How can we optimise them and what should our priorities be?

Where and with whom should we take action in order to be the most efficient?

Proposals for a global optimisation of territorial resources:

- 2.1 Know the territory's metabolism so as to optimise local potential and reduce the impact of human activities on the ecosystem
- 2.2 Identify local energy potential in order to live within our means
- 2.3 Prepare a local heat plan to match need and available resource
- 2.4 Create and implement a territorial bio-waste action plan
- 2.5 Make the best use of energy and material flows by encouraging synergies between players
- 2.6 Make better use and share what already exists instead of always buying more
- 2.7 Encourage the development of a more endogenous economy to increase territories' resilience



THE PROBLEM AT HAND

The ecological footprint indicates that we would need three planets to satisfy our resource needs. The biosphere cannot absorb our emissions. It is impossible! International conferences regularly come to this conclusion, leading (or not) to the development of policies.

This situation will not improve as long as we keep considering a macroeconomic "financial accounting" system. A "cost accounting system" is needed at the territorial level to understand how territories mobilise and transform the biosphere's resources and how they use and transform energy, water and materials. It is also necessary to know what flows are crossing the territories and what is recycled.

We have started counting water and waste, followed by energy, emissions and discharges at territorial level. But we are still too often unaware of the local or imported resources we use. We do not know what is circulated, lost, exchanged or transformed in our territories.

That is what is called the "metabolism" of territories.



PROPOSAL

Know the territory's metabolism so as to optimise local potential and reduce the impact of human activities on the ecosystem.

The objective is to implement adequate information and communication systems for locating and quantifying flows crossing the territory. This will help reveal systemic optimisation potentials between water, energy and material flows. Synergies between them will enrich the territory and will reduce resource predation as well as the impact on the biosphere.



CONDITIONS FOR SUCCESS

- > Giving more importance to the impact of territorial activities on the ecosystem, not only in terms of resources, but also of discharges and emissions.
- > Being willing to make the most of water, energy and material flows crossing the territory in order to boost the local economy.
- > Allocating adequate human, financial and technical means so as to make the most of territorial metabolism which should be viewed as a resource.



KNOWING OUR TERRITORIES' RESOURCES AND FLOWS

2.2 Proposal

Identify local energy potential in order to live within our means



THE PROBLEM AT HAND

We have become used to just plugging our equipment in without considering where the energy comes from or who the decision-makers are. This is really convenient. However, this "Plug and Play" attitude has a cost. At the global level, it comes up against fossil resource limitations and climate constraints and is a source of geopolitical tensions. At the local level, this attitude tends to make consumers, citizens and local and regional authorities feel less responsible by breaking the link between energy and territory.

This has not always been the case. In the past, territories and their inhabitants were extremely cautious

in the way they managed their few scarcely available resources, i.e. local energy sources. Priding ourselves on modernity, we gradually abandoned the knowledge of our territories' energy potential from the sun, the wind, water, ground and underground heat, free heat, wastewater, waste and biomass.

Territories must rediscover their hidden treasures in order to secure their energy transition.



PROPOSAL

Prepare a spatial inventory of local energy potential to support urban planning, building and retrofitting decision-making.

Integrating this data into mapping tools (GIS) will help planners, developers and town planners systematically take local potential into account, thus ensuring a balance between available resources in the territory and existing and future needs, as well as facilitating the implementation of local energy solutions.



CONDITIONS FOR SUCCESS

- > Having the many stakeholders, including citizens, take part in investigating the data, defining priorities and the way these resources are to be used.
- > Integrating the constraints linking the ecosystem and biodiversity so as to make cautious use of local renewable resources.
- > Finding the right balance between the use of local resources (to satisfy needs) and energy efficiency (to control needs).

KNOWING OUR TERRITORIES' RESOURCES AND FLOWS

Proposal 2.3

Prepare a local heat plan to match need and available resource



THE PROBLEM AT HAND

We need more heat and cooling than electricity although we paradoxically attach more importance to the latter. All buildings have heating and/or cooling requirements and heat sources are often available nearby. These can take many forms: power plant, combined heat and power unit, waste incineration plant, free industrial heat, wastewater, refrigerating units, data centres, surplus capacities from biomass boilers, etc. There are also low temperature heat sources that can be used for cooling, like rivers, lakes and seas.

There is often no relation between supply and demand. Why is that so? Is it due to a lack of information, to differing legal entities or are solutions considered as too complex? We use energy to produce heat whereas heat sources are wasted nearby.

Such a situation is no longer acceptable in a world that is putting energy abundance behind it.



PROPOSAL

Prepare a local heat plan, listing and locating all heating and cooling requirements and surplus resource potential in the territory.

This spatial inventory will be part of the sustainable energy action plan (SEAP) and aims to eliminate heat wastage by making use of currently unused heat sources. The plan may introduce an obligation to inform municipal services when applying for planning permission.



CONDITIONS FOR SUCCESS

- > Considering the exploitation of unused heat sources as an opportunity rather than a constraint.
- > Communicating on available heat sources, both in terms of quantities and quality.
- > Influencing, through urban-planning documents, the location of any new installation generating excess heat so that it is as close as possible to demand areas. And vice-versa.
- > Facilitating the relation between heat suppliers and users.

KNOWING OUR TERRITORIES' RESOURCES AND FLOWS

2.4 Proposal

Create and implement a territorial biowaste action plan



THE PROBLEM AT HAND

Household, retail and small business waste management is organised on a territorial basis. Waste is increasingly regarded as a resource: as raw materials for recyclable or compostable waste and as energy sources for combustible and, less frequently, methanable waste.

However we still produce a lot of organic waste in many sectors: agri-food business, unsold food products, leftovers from restaurants and canteens, animal faeces, etc. Waste producers are legally responsible for treating their waste. However, it is often impossible to come up with individual, or even

sectoral, solutions that are satisfactory from both an economic and a technical point of view. Collective and efficient solutions from an ecological and economic stand should be found on a territorial, multisectoral basis. Waste to energy schemes based on waste methanisation and involving CHP or biogas grid-injections is one solution.



PROPOSAL

Prepare a territorial plan at regional level for the methanisation of organic waste from the agricultural, agri-food and industrial sectors.

This plan is to list all sources of organic waste and suggest optimal locations for methanisation units. Private companies will be encouraged to build and operate these units. Combined with a land spreading plan, this will prove an efficient solution, avoiding chemical fertilisers and long-distance road haulage.



CONDITIONS FOR SUCCESS

- > Adopting a territorial approach that goes beyond sector-based logics.
- > Involving waste-generating businesses and their professional organisations.
- > Taking into account the existence of significant local heat needs and/or of a natural gas network capable of absorbing massive biogas injections.
- > Privileging the installation of methanisation units on the property of major organic waste producers ready to accept organic waste from smaller producers.
- > Getting farmers' associations on board in order to optimise land spreading.

KNOWING OUR TERRITORIES' RESOURCES AND FLOWS

Proposal 2.5

Make the best use of energy and material flows by encouraging synergies between players



THE PROBLEM AT HAND

One company's waste can be another company's raw material, leading to financial savings, and optimised resource and waste management on both sides. This concept is called "industrial ecology" or "circular economy".

The huge material flows entering, leaving and crossing cities include building materials, raw materials, food products, manufactured goods, solid, liquid and organic waste, fuels, etc. But we have very little knowledge of these flows and many opportunities are lost. Territories do not optimise these flows of materials and waste as they should, and they

continue to squander considerable amounts of resources. Energy is produced from waste, and building materials are recycled here and there, but we are far from our potential optima!

Applied to a city, industrial ecology is called territorial ecology. It involves co-ordination and dialogue between players from the same sector or from sectors of activity likely to create synergies.



PROPOSAL

Making the best use of a territory's material and energy flows is a good management principle.

Gaining as much knowledge as possible about these flows, including waste flows of all sorts, is essential but not sufficient. The information must be made available, for example via an Internet-based exchange, which means involving the relevant players in order to optimise synergies.



CONDITIONS FOR SUCCESS

- > Applying circular economy principles to the local authority's areas of responsibility and publicising the fact.
- > Initiating the process by associating professional and consular organisations which will have to progressively take the lead.
- > Providing a place for dialogue, giving as much leeway as possible to self-organisation between the supply and demand sides that, in turn, will have to come up with practical implementation methods.
- > Assess the expected economic, social and environmental benefits generated by potential synergies.

KNOWING OUR TERRITORIES' RESOURCES AND FLOWS

2.6 Proposal

Make better use and share what already exists instead of always buying more



THE PROBLEM AT HAND

Is having a car a necessity when it is used only 2 to 5% of the time? Should we not rather rent a car when and where we need one? Is travelling alone really judicious when car-pooling is possible? Do we really have to buy a bike when bike rental services are available in our city? Is building new public buildings and facilities really necessary when existing ones are underused?

Here is the paradox. We have needs in terms of mobility and space that we satisfy by buying cars and building new public facilities. The advantages are well known: we have guaranteed availability of

the goods we own. But the drawbacks are beginning to outweigh the advantages in a number of areas, both for individuals and the community: in cities, owning a car has become a source of annoyance and involves a significant outlay both for its acquisition and maintenance, whilst the energy and raw material used are disproportionate to the services provided.



PROPOSAL

Doing more with what we already have means giving use the priority over ownership.

The so-called functional service economy consists of replacing consumption of commodities (such as energy) by their intelligent use, that is, optimising the use of the building stock rather than building new facilities, anticipating and facilitating emerging changes in citizens' lifestyles through car-pooling, car and bike-sharing and community gardens, and encouraging the pooling and exchange of goods and services between citizens.



CONDITIONS FOR SUCCESS

- > Using examples, showing that such solutions provide practical and positive answers to the problems of everyday life and helping reduce public and private spending as well as energy and raw material wastage.
- > Demonstrating the added value for society of solutions that promote post-individualistic urban lifestyles and empower citizens.
- > Developing the sharing and pooling of goods and equipment between municipal departments.

KNOWING OUR TERRITORIES' RESOURCES AND FLOWS

Proposal 2.7

Encourage the development of a more endogenous economy to increase territories' resilience



THE PROBLEM AT HAND

Globalisation has drifted production and consumption areas apart. Food often travels thousands of miles before reaching our plate, traceability is not always guaranteed and between one-third and a half of our food is wasted. Manufactured products follow the "extraction-production-disposal" cycle, a source of material, energy and transport waste. And all this to the detriment of the local economy.

We are now at a crossroads. The economic crisis and ecological concerns tend towards creating a more resilient society, better prepared to face unexpected events. An increasing number of Europeans are

learning how to use healthy, local food without wasting it. For them, giving, selling and buying second-hand products make sense and is financially interesting. But this more endogenous economy is still in its infancy.



PROPOSAL

Develop short food supply chains.

Support new consumption practices aimed at "reducing - reusing - recycling".

Local authorities have levers they can use to accelerate these budding processes by adopting urban planning and land management policies that re-establish a link between producers and consumers, by preserving water resources and soils, by using public procurement to encourage short food circuits, and by promoting second-hand markets and optimising waste management.



CONDITIONS FOR SUCCESS

- > Clearly adopting a strategy encouraging short food supply chains and the reuse of manufactured goods through awareness-raising events and campaigns.
- > Giving practical signals of the local authority's commitment to the local population by introducing local organic produce in institutional catering, by opening facilities dedicated to waste sorting and second-hand goods and by a concerted effort at creating land reserves dedicated to organic farmers.
- > Encouraging private, associative and co-operative initiatives organising these short supply chains so as to elicit new viable economic models and the social inclusion of the most vulnerable groups.

Rethink financing solutions

RETHINK FINANCING SOLUTIONS

Keep money spent on energy near to home

Proposal 3.1

What are the solutions to the public financial, debt and credit crisis?

How can we finance the energy transition?

What can we do to make it a driving force behind the local economy and job creation?

What are the new financial cash flows for this new economy?

Proposals for mobilising the financial resources, in particular of local stakeholders and citizens:

- 3.1 Keep money spent on energy near to home
- 3.2 Collect local savings and invest them in sustainable local energy projects
- 3.3 Integrate future energy prices in the economic calculations made prior to investment decisions
- 3.4 Dedicate human capacities in financial engineering
- 3.5 Set up financial structures dedicated to the energy transition



THE PROBLEM AT HAND

Where can we find the resources for financing the territories' energy transition? This issue is on all local authorities' agendas in a context of drastic cuts in public spending. Facing ever increasing social emergencies, local authorities may feel tempted to let it go and wait for better days.

This would mean misunderstanding the relationship between the energy transition and the stimulation of territorial economies. In a city with 250,000 inhabitants, the annual energy bill for supplying heating, domestic hot water and electricity to house-

holds, tertiary activities and SME amounts to roughly 250 million euros. It is a considerable, steadily increasing amount of money that generates a financial flow. Will this flow go to Qatar, Russia or major industrial groups? Or will this money stay "at home" in the territory? In what proportions? What for? And who cares about where it goes? To find a way out, local authorities must take a hard look at their territories.



PROPOSAL

The energy balance of a territory should also include a financial transcription.

This would give the amount of money that is being annually spent on energy, how much is kept in the territory, and how much goes elsewhere. Medium to long-term targets must then be set to "capture" this financial flow and use it to finance energy retrofitting works, energy networks and local renewable energy use. Local medium, small and very small-sized companies would benefit from this capture.



CONDITIONS FOR SUCCESS

- > Changing the way that money spent by households and economic activities on energy is perceived: moving from an expenditure "fatality" to a resource "opportunity".
- > Going beyond CO₂ emission and energy use-related approaches and integrating related "financial emissions".
- > Stopping considering them as additional expenses instead of investments in the economy.
- > Giving visibility to the local economic benefits of energy transition actions.



RETHINK FINANCING SOLUTIONS

3.2 Proposal

Collect local savings and invest them in sustainable local energy projects



THE PROBLEM AT HAND

Local actors' traditional financial resources for energy transition are drying up. Public funding is becoming rare and banks, who are supposed to provide alternative solutions to public financing, are short of funds. Learning that their savings have been used for feeding international speculation rather than local jobs has undermined citizens' trust in banks. The amount of savings potentially available at local level, however, still represents a significant share of wealth, but it is not sufficiently invested locally.

The term "short distribution channels" is used for both food (increasing local production) and energy (local renewable energy). We must now invent "short bank channels" that reinstate traceability between the savers and the local energy solutions their money is to finance. It is a new opportunity for financing projects and restoring confidence between lenders and borrowers, working in close co-operation.



PROPOSAL

Make bank loans accessible to territorial investors: households, housing companies, small energy producers.

This could be done via a local savings bank, a co-operative/ethical bank or a traditional bank willing to earmark part of its savings for local projects.

Citizens are already offered the possibility of supporting local authorities by insulating their dwellings or using their bikes. Why not give them the possibility of using their savings for financing local projects? This would be good for social and territorial cohesion, wouldn't it?



CONDITIONS FOR SUCCESS

- > Demonstrating local public willingness to seek new solutions to the problems encountered.
- > Ensuring good relations between local authorities, SME representatives, bank organisations and groups of citizens.
- > Encouraging citizens' initiatives and communicating on alternative solutions.
- > Offering an attractive yield as well as acceptable borrowing conditions.
- > Improving the transparency of (and advertising) the savings-financing channel.



RETHINK FINANCING SOLUTIONS

Proposal 3.3

Integrate future energy prices in the economic calculations made prior to investment decisions



THE PROBLEM AT HAND

Local councils regularly vote investments in new infrastructures, sometimes without even evoking related operating and maintenance costs.

It is well known that investments in energy savings and renewable energy reduce operating costs. Although capital investment may be higher, the additional cost is paid for out of the savings made. However, the project manager always has to prove the cost-effectiveness of the investment by calculating its payback. It is paradoxical. A virtuous investment has to prove it is virtuous, whereas other investments do not!

And how is cost-effectiveness calculated? Potential savings are usually calculated using the energy price from the last known year. But energy prices will reach much higher levels in the 20, 30 or 50 years of the investment's existence. Decisions are therefore based on inaccurate figures and projects are placed at a disadvantage.



PROPOSAL

Integrate future energy prices in the economic calculations made prior to investment decisions.

Of course, we do not know what these prices will be, but we do know that they will be higher than last year's prices. This can only improve the return on investment. The idea is to calculate expected savings based on energy prices increased by 20, 30 or 50% depending on the lifetime of the investment. This has two main advantages: attention is drawn to the unavoidable price increase, and decisions are made on the right basis.



CONDITIONS FOR SUCCESS

- > Getting elected representatives and financial officers used to anticipating energy price increases so as to make better decisions.
- > Presenting future price scenarios, either possible or probable. They will help decision-making.
- > Getting into the habit of presenting operating costs generated by any investment, regardless of its nature, as "plus" or "minus" points.



RETHINK FINANCING SOLUTIONS

3.4 Proposal

Dedicate human capacities in financial engineering



THE PROBLEM AT HAND

Local authorities have developed administrative and technical capacities in their areas of responsibility. As regards to energy efficiency, most have hired an “energy manager” or even a specialised team. These teams usually have a technical background and have gradually integrated an economic dimension so as to be able to present their projects on a technico-economic basis. They are starting to integrate communication skills, but very few are well-versed in finance.

The local authority's financial directorate is responsible for managing the budget voted by the Council. It has the power to say “yes” or “no” to other depart-

ments' projects but is not always well informed about the solutions provided by financial mechanisms concerning energy efficiency. Many project opportunities are therefore lost.

And this lack of financial engineering competency becomes blatant when it comes to finding solutions to territorial stakeholders' financial needs, and not just the local authority's.



PROPOSAL

Have a financial engineering team so as to come up with suitable financial solutions for both the local authority and local stakeholders.

Conventional public or bank financing systems have shown their limits. It is now time to invent and implement solutions combining loans, grants, third-party financing, co-operative solutions, “revolving” funds, etc. And we need financial engineers to invent financial solutions.



CONDITIONS FOR SUCCESS

- > Being aware of the current lack of financial solutions for financing investments in building retrofitting, local energy resource harnessing, etc.
- > Calculating the cost-benefit ratio of the financial engineering team which will have to show that it is capable of coming up with new solutions.
- > Teaching technical and financial engineers how to work together as closely as possible.

RETHINK FINANCING SOLUTIONS

Proposal 3.5

Set up financial structures dedicated to the energy transition



THE PROBLEM AT HAND

Investment needs for thermal retrofitting of buildings, producing local renewable energy, and developing CHP and district heating are considerable. These investments are cost-effective but their economic impact spans over a long period of time. In financial terms, this means that their return on investment is moderate and the banking system prefers short-term, risky products with a high return. Sustainable development has not yet found its business model. Only a few public, co-operative and ethical banks are interested. Transaction costs can also be disproportionate in the case of small projects.

Some large companies offer comprehensive packages (audit, feasibility studies, installation, financing) but these are often expensive with little impact for SME and local craftsmen.

This is why local authorities are inventing new solutions, some of which are closely connected to the conventional banking system.



PROPOSAL

Set up financial structures dedicated to the energy transition.

These may take several forms: a guarantee fund using local savings for reassuring banks and supporting project managers; a local sustainable energy fund for financing widely ranging public and private projects; a specialised public or semi-public company providing both technical and financial solutions; an ESCO (Energy Service Company) for energy performance contracting.



CONDITIONS FOR SUCCESS

- > Clearly identifying local public and private financial needs as well as existing solutions, including those that are under-used.
- > Highlighting examples of necessary investments for which no satisfying solution has been found.
- > Gathering information on instruments that are -or are in the process of being-tried and tested using, notably thanks to the support of European programmes.
- > Setting up a panel of the public and private stakeholders concerned.

RETHINK FINANCING SOLUTIONS

Channel spending towards local economies by means of a local currency

Proposal 3.6



THE PROBLEM AT HAND

Globalisation has increased the distance between consumption and production areas in a drastic and sometimes caricatural way, thereby massively increasing energy costs. This not only affects manufactured goods, but also food and everyday products, such as energy and some materials, even where a competitive local source exists. Distribution is being increasingly concentrated in the hands of large retail chains offering a wide range of products. The result is that local economies are often circumvented and are being impoverished as consumers' spending is channelled to faraway places, including tax havens, at their own expense.

How can we limit or reverse this trend when our consumer goods have to be paid for with the same currency, whether or not they are produced locally? The ideal solution would be to enable what consumers spend to be kept within the local economy whenever a local supply is available. But how can this be achieved?



PROPOSAL

Create a local currency in addition to the national or European currency. This would encourage consumers to direct more of their spending towards the local economy. And local producers would receive the message that a local market based on short supply chains is again possible.

This would help reduce energy use, keep added value in the local territory, preserve food diversity and guarantee product traceability, leading the way to high-quality, sustainable and personalised trade.



CONDITIONS FOR SUCCESS

- > Bring together consumption groups and production & distribution stakeholders to create a first local community which will demonstrate the interest of creating a local currency for the territory.
- > Involve a local authority as a catalyst, promoter and seed financier to give the project credibility and reassure users.
- > Receive the backing of a local bank to build trust.
- > Set up a simple, practical system and aim at critical mass.
- > Support this change in habits through awareness campaigns.

Inventing new local governance

INVENTING NEW LOCAL GOVERNANCE

Create interface capacities between public authorities and the civil society

Proposal 4.1

How can we make stakeholders share the construction of a common vision and the desire to jointly engage in the energy transition?

How can we reinforce collective dynamics?

How can we encourage decision-makers and citizens to change their habits?

How can we invent new social practices?

Proposals to give dynamic to creativity and involve local stakeholders and citizens:

- 4.1 Create interface capacities between public authorities and the civil society
- 4.2 Establish cross departmental links to avoid silo mentality
- 4.3 Prove that it works and create a snowball effect
- 4.4 Give public visibility to motivated players and citizens
- 4.5 Raise opportunities for experimenting new practices to encourage their dissemination
- 4.6 Make arts and culture part of the energy transition process
- 4.7 Use town twinning as a springboard for energy transition



THE PROBLEM AT HAND

Public, private and associative actors and, of course, citizens, play a vital role in the energy transition of their territories. Inventing a future that does not yet exist requires some sort of support. Local authorities have to act as catalysts, or conductors, in order to accelerate the transition. All territorial musicians must gradually learn to play their collectively composed score.

Local authorities' administrations are not organised to co-ordinate territorial dynamics and local actor networks, to encourage the co-construction of visions

of the future, to support stakeholders or to provide them with advice and information. They lack expertise and practice when it comes to working with the civil society instead of just providing top-down information.



PROPOSAL

Local authorities have to develop interface capacities with the civil society.

This requires specific engineering, like technical and financial engineering. They also have to develop an interface tool with the society, for example a local energy and climate agency. Its mission will be to assist the local authority and other players in their energy transition, to help the musicians take part in composing and playing the territory's score.



CONDITIONS FOR SUCCESS

- > Being convinced of the need for new governance which makes the active participation of stakeholders essential.
- > Considering expenditure generated by the intermediation with the civil society as a capital expenditure that will benefit the success of projects, the local economy and social cohesion.
- > In the case of a local agency, making this instrument an initiative to be shared with stakeholders in order to serve the territory.
- > Getting professionals to co-ordinate meetings with the population on an ad hoc basis.



INVENTING NEW LOCAL GOVERNANCE

4.2 Proposal

Establish cross departmental links to avoid silo mentality



THE PROBLEM AT HAND

Energy and climate are considered as serious topics by local authorities who are now aware of their importance. However, sectoral policies seem to be playing different scores. They sometimes continue to obey their own goals and habits inherited from the past, which act as obstacles, preventing common objectives from being reached.

The natural trend is to seek an optimum within one's own area of expertise: urban planning, housing, economics, etc. This is perfectly normal, but we can no longer accept such behaviour as the addition of sectoral optima never produces collective harmony.

Interactions between areas and the relations between stakeholders are now what matter. We have to work with a more holistic approach and each sectoral policy has to contribute to the energy transition at its own level. This requires new know-how and practices, that is, a new culture.



PROPOSAL

Make the energy transition a cross-cutting objective applicable to all the local authority's sectoral policies.

Each department - economic, social, urban planning, transport, highways, health, housing, etc. - will have to integrate energy into their strategies. This approach may go against old habits but each sectoral policy will benefit from it in the end. And it can be considered as a success when the whole municipal budget is a transition vector, thus making specific transition budgets unnecessary.



CONDITIONS FOR SUCCESS

- > Preparing an energy transition action plan common to all sectoral policies approved by the Council and co-ordinated by the Mayor.
- > Involving the various municipal departments in the preparation of the Plan by getting them to make proposals for reaching the energy and climate objectives.
- > Applying this cross-cutting approach to elected representatives as well as technical and administrative departments with appropriate collective working methods.



INVENTING NEW LOCAL GOVERNANCE

Proposal 4.3

Prove that it works and create a snowball effect



THE PROBLEM AT HAND

MRV - Measurable, Reportable and Verifiable, is the favourite formula used by Kyoto practitioners. It is indeed necessary to count and measure CO₂ in order to give it a price and transform it into a negotiable product, that is, to measure and demonstrate the progress made. We have learned how to count the water we produce and sell in order to reduce losses, and to count waste to limit production. We do the same with the energy we use and greenhouse gas emissions. But this data should not only be used by experts.

It is often said that "little streams make big rivers", and this is true, but results can gain conviction. The impact of the efforts made to use less energy more efficiently must be measured and communicated at both territorial and individual levels: household, company, local authority, etc. It is a way of publicly recognising committed people and getting others on board, thus creating a snowball effect.



PROPOSAL

Provide territorial stakeholders (household, company, university, hospital, etc.) with an opportunity to quantify their energy use reduction on a voluntary basis and make these results public.

An aggregation of individual results can be used to show collective results. This involves dynamic field work and the availability of Web-based communication (and sometimes calculation) tools. Social media and stakeholders' mapping are additional indispensable tools.



CONDITIONS FOR SUCCESS

- > Integrating this action in the figure-based objectives linked to the 2020 and 2050 European commitments.
- > Communicating results in a friendly and enthusiastic way.
- > Communicating using examples that have strong symbolic values (a school) or that can be reproduced (building insulation).
- > Supporting committed stakeholders, getting others on board and going for massive results, not just the exception.



INVENTING NEW LOCAL GOVERNANCE

4.4 Proposal

Give public visibility to motivated players and citizens



THE PROBLEM AT HAND

Everybody has to contribute to fighting climate change and promoting energy transition in proportion to their responsibilities. "Alone, I will achieve nothing! I agree to act, but only if others are involved too" is a common, and legitimate, reaction.

Many initiatives taking place throughout the territories are often ignored. They are led by citizens, households, entrepreneurs and administrations who do not know one another and whose efforts are not recognised. These "motivated" people are, however, showing the way towards a low energy city and a high quality of life for all.

They are open and generous. They, their actions and their results need to be given more visibility. Everybody should be proud of them and be invited to join the movement.



PROPOSAL

Draw up a list, communicate on, and publicly acknowledge public, private and associative players who carry out retrofitting works in their buildings, change their mode of transport, buy local products, offer renewable energy or energy services, install solar units or invent new lifestyles.

This initiative must come from the local authority, even though its implementation can be entrusted to an energy agency or an association. It is a perfect opportunity for stimulating creativity and engaging the population in an attractive and optimistic way!



CONDITIONS FOR SUCCESS

- > Giving actions a human dimension and communicating using pictures showing people rather than objects.
- > Supporting and advising committed players and encouraging events: field visits, festivals, shows, competitions, business clubs, etc.
- > Using social networks and Internet mapping technologies to show that a mass effect is in progress and can encourage engagement.
- > Making this process a collective ambition driver.

INVENTING NEW LOCAL GOVERNANCE

Proposal 4.5

Raise opportunities for experimenting new practices to encourage their dissemination



THE PROBLEM AT HAND

A transition is a movement towards the future. Once the course has been set, the paths to reach it have to be found.

We know how to invent a technology in a laboratory and improve it with trials. It is tested again and again until the desired product is obtained and marketed. The latest fad is about urban technologies that are supposed to make cities "smart". But a city is not a collection of technologies. It is a complex interaction of interests, habits, desires, constraints and opportunities and each city is a specific case.

Here, the "laboratory" is the city itself. Its "engineers" are the local authorities, its inhabitants and socio-economic players. They are the city's intelligence. New neighbourhoods, decentralised energy systems, short food circuits, and new modes of transport: how many trials, adjustments and experiments have to be carried out before a satisfying solution can be obtained and disseminated?! So make way for initiatives!



PROPOSAL

Raise opportunities for experimenting new practices to encourage dissemination.

The target groups are: households, companies, students, grandparents, farmers, tradespeople, town planners, architects and energy experts. The idea is to mobilise all intelligence around practical initiatives aimed at preparing the city for a desirable future in which energy is used cautiously. Local authorities must also have the right to experiment, which is not the case in all countries.



CONDITIONS FOR SUCCESS

- > Publicly displaying the local authority's desire to encourage the experimentation of new individual, family, social and economic practices.
- > Advertising the findings of these new city "engineers" demonstrating, for example, that the changing of practices is possible and desirable.
- > Creating events and places encouraging people to change their habits like testing an electrical bike, buying locally, leaving their cars in the garage, producing their own energy, measuring consumptions etc.

INVENTING NEW LOCAL GOVERNANCE

4.6 Proposal

Make arts and culture part of the energy transition process



THE PROBLEM AT HAND

Energy has long been considered a technical issue, a matter for specialists! This time is over. The energy and climate issue is about the way we move around, eat, conceive the city and live. It implies a conception of the world, of the relations between countries, of justice and of the balance of the ecosystems. Energy echoes our Western development model, which reached a stalemate when the rest of the world started imitating it. It is a societal issue. From local to global, we need to imagine again and again the energy civilisation of the 21st century.

It is not therefore surprising that the world of Culture is starting, albeit timidly, to seek to get on board.

Are there any change, transgression and imagination tools better than art and culture? Culture can help us modify our representations of reality. Reality is changing and we have to accompany and anticipate this change in our representations.



PROPOSAL

Making arts and culture part of the energy transition process means letting artists, comedians, photographers and film directors have their say.

It means encouraging creative and artistic activities that will free our imagination and help us invent tomorrow. It means contributing to making energy a matter for the whole society in all its aspects. This is actually a cultural issue!



CONDITIONS FOR SUCCESS

- > Adopting initiatives promoting the intrusion of the world of culture in energy transition processes: theatre-forum, competitions concerning the vision of cities, videos, etc.
- > Promoting the cultural dimension and considering it a new energy dimension, together with technology, governance and the economy.
- > Encouraging artists to venture out into the energy area and contribute to transition with their own vision!
- > Encourage youngsters' participation in cultural projects.

INVENTING NEW LOCAL GOVERNANCE

Proposal 4.7

Use town twinning as a springboard for energy transition



THE PROBLEM AT HAND

Town twinning was invented to take up the challenge of fraternisation between peoples after the Second World War and following the fall of the Berlin wall. It has led to cultural and sport exchanges, thus helping to bring peoples into a closer understanding of each other. Twinning agreements with developing countries have created another dimension, that of technical co-operation, including in the field of energy supply, whereas those with emerging countries like China often focus on urban ecology and pollution control. Alongside diplomatic relations between countries, direct relations between local authorities have become an essential feature.

The challenge of energy transition is at the same time political, economic, technical, environmental and cultural. It is therefore perfectly suited to exchanges and co-operation programmes between sister cities, which can help one another. Exchanges between twinned municipalities in the field of energy are still limited. But this is changing.



PROPOSAL

Use town twinning as a springboard for co-operation between cities in transition.

Twinned cities have a good, trust-based knowledge of each other. Twinning will become a common tool for defining climate, energy and urban planning policies, encouraging the exchange of best practice and co-operation between players (municipalities, businesses, community organisations, etc.), promoting new ideas and pooling experiences.



CONDITIONS FOR SUCCESS

- > Considering existing twinning agreements as capable of integrating energy transition co-operation objectives.
- > Inviting all local players to commit to a co-operation process with their counterparts: energy suppliers and distributors, financiers, housing associations, schools, hospitals, community organisations, citizens, etc.
- > Developing common monitoring tools and encouraging transfers between teams.

Urban planning as a way of reducing energy use

URBAN PLANNING AS A WAY OF REDUCING ENERGY USE

Make planning system drive territory's energy transition

Proposal 5.1

What type of urban planning should we develop to satisfy housing, mobility and consumption needs in an energy-efficient way?

What infrastructures can increase territories' energy sufficiency?

How should we change our modes of transport and the way we use public space in the future?

How can we encourage short supply chains?

Proposals for energy-efficient urban planning:

- 5.1 Make planning system drive territory's energy transition
- 5.2 Prepare an energy retrofitting plan for the whole building stock
- 5.3 Ensure that new neighbourhoods are "100%" renewable
- 5.4 Plan modal shift to sustainable transport
- 5.5 Transform railway stations into territorial structuring hubs
- 5.6 Design a street code to favour walking and cycling
- 5.7 Implement goods delivery schemes
- 5.8 Think commercial urban planning differently to improve quality of life



THE PROBLEM AT HAND

Sustainable energy and urban planning often ignore one another, despite being closely interrelated. Urban planning decisions over-determine energy use in the housing and, above all, the transport sectors, even though urban planners are rarely aware of it. By segregating urban functions, zoning increases travel needs for moving from one function to another. Urban sprawl increases distances and therefore fuel consumption as well as households' fuel poverty. Depending on its design, a city or a neighbourhood will encourage or discourage energy efficiency and renewable energy use. Urban planning decisions can influence how easy it is to cycle to work.

An increasing number of local authorities are committing to energy use and emission reduction objectives. But they stand no chance of reaching them if urban planning is not used constructively.



PROPOSAL

Use urban planning as a tool for controlling the territory's energy use.

This means assessing the impact of urban planning decisions on energy use, both in terms of resources and emissions, at peri-urban, urban and district levels. This involves limiting urban sprawl, densifying constructions around service and transport hubs, building heat networks, avoiding the construction of new infrastructures, building a pedestrian path network and integrating energy issues in planning permission.



CONDITIONS FOR SUCCESS

- > Setting figure-based energy use and emission reduction objectives throughout the territory.
- > Estimating the role that urban planning can and should play in reaching these objectives.
- > Getting energy specialists and urban planners used to understanding their respective reasoning.
- > Inviting them to propose subjects for practical collaborative work so as to develop constructive co-operation. More particularly, articulating the urban-planning documents and the climate and energy objectives.



URBAN PLANNING AS A WAY OF REDUCING ENERGY USE

5.2 Proposal

Prepare an energy retrofitting plan for the whole building stock



THE PROBLEM AT HAND

A city is made up of a multitude of buildings, not just those belonging to the local authority whose management has to be exemplary. Blocks of flats, detached and semi-detached houses account for around two thirds, with the last third consisting of tertiary buildings: public or private office buildings, hotels and restaurants, shops, leisure centres, hospitals and health centres, secondary schools and universities. A city's building stock accounts for around 50% of its energy use.

These buildings are extremely diverse. Some are very old, even historic, whilst others are more recent and their thermal quality may vary from 1 to 10. They may be occupied by owner-occupiers, landlords or tenants. The spectrum of possible management and decision-making systems is extremely vast and the solvency of owners is variable, as is their sensitivity to energy costs.

And using the very generic term of "buildings" just adds to the confusion.



PROPOSAL

Prepare an energy retrofitting plan for the whole building stock of a territory covering the entire "building" sector so as to have an overview of the stock's condition and the diversity of its energy features.

The plan should specify the energy, economic, social and financial challenges that have to be met in order to reach a "factor 4" trajectory by 2050. This means defining the level of stakeholders involved so as to integrate their decision-making processes and propose adequate energy retrofitting instruments.

CONDITIONS FOR SUCCESS

- > Considering including players in the preparation phase of the plan which is to be much more than just a collection of physical data.
- > Not trying to "do everything at once" but prioritizing the actions of the retrofitting plan, based on a multi-criteria approach (fuel poverty, age of the building, symbolic value, etc.).
- > Evaluating the job creation potential of the plan in terms of quantity and quality.
- > Considering that the local authority cannot do everything; it creates a favourable framework in the territory and acts as a conductor.
- > Co-ordinating actions with national schemes where they exist.

URBAN PLANNING AS A WAY OF REDUCING ENERGY USE

Proposal 5.3

Ensure that new neighbourhoods are 100% renewable



THE PROBLEM AT HAND

In Europe, new neighbourhoods are being built on former industrial, port or military wasteland close to town centres or on the outskirts of towns. These neighbourhoods will still exist in 50 or 100 years time, when everything will be "100% renewable". Building them in line with today's designs means condemning them to planned obsolescence. Too often, we stick to existing legislation without considering that by 2020, the amount of energy used for heating new constructions will have to be as close to zero as possible.

Not integrating a 100% renewable objective from the start may lead to the neighbourhood being designed according to existing standards, with renewable energy sources having to be integrated as a second step. It requires additional capital investment. The inevitable conclusion will then be "this is not economically viable". But is it always true?



PROPOSAL

By targeting a "100% renewable" objective from the start, we stand a better chance of building very low energy consuming neighbourhoods.

The higher cost of renewable energy is an incentive to reduce energy use. It makes necessary the improvement of building and equipment energy efficiency in order to achieve the objective. Project costs are better controlled, and the experience of the most advanced countries shows that a virtuous project is not necessarily more expensive. It is simply a question of integrating all these elements at a very early stage.

CONDITIONS FOR SUCCESS

- > Visiting existing "100% renewable" neighbourhoods.
- > Gathering an international, interdisciplinary team.
- > Not setting the "100% renewable" objective as an absolute target, but trying to get as close as possible.
- > Integrating mobility in the energy objectives. A neighbourhood is not just a collection of buildings. It is an interconnected place where people live, work and travel.
- > Ensuring social and functional diversity in the neighbourhoods.

URBAN PLANNING AS A WAY OF REDUCING ENERGY USE

5.4 Proposal

Plan modal shift to sustainable transport



THE PROBLEM AT HAND

The transition towards a more energy-efficient world is also, and above all, a matter for the transport sector. Reducing energy use in this sector is much more complicated than in buildings. Changing the way we travel means changing our habits and involves more than just having one's flat insulated.

Reducing energy use in the transport sector also involves reorganising city space so as to give public space back to the inhabitants.

The local authority has, therefore, an indispensable role to play in changing the current situation. The car culture has reached its climax. The most attractive cities are those who privilege walking, cycling and public transport. Achieving 50% of journeys by bikes or public transport takes time. It also requires some planning as well as a long-term, strictly applied strategy.



PROPOSAL

An urban and peri-urban mobility plan is a diagnosis of the current situation: origins, destinations and journey purpose; modes of transport used; energy used for transportation.

More importantly, this is about the objectives we want to reach (quieter city, public space given back to the inhabitants, cycling and pedestrian path networks, improved or transformed public transport) and the time allowed for reaching them. Figure-based targets in terms of modal distribution and energy use have to be defined.



CONDITIONS FOR SUCCESS

- > Creating cohesion between decision-makers and urban planners, public and private transport operators and user (cyclists, pedestrians, etc.) associations.
- > Having a trained and motivated technical team.
- > Working as a team from the beginning of the process and throughout all its phases.
- > Keeping the population informed of the objectives, seeking its consent and, if possible, its desire.
- > Keeping steadfast despite the obstacles to change.

URBAN PLANNING AS A WAY OF REDUCING ENERGY USE

Proposal 5.5

Transform railway stations into territorial structuring hubs



THE PROBLEM AT HAND

European cities historically developed around their market places which is what makes many town centres so attractive. In the last fifty years, the car culture has transformed motorway junctions on the outskirts of cities into temples of consumerism with hypermarkets as their focal points. Highways have structured urban and peri-urban space based on the conviction that private cars would be eternal. Energy use increased drastically, and so did local pollutant and greenhouse gas emissions. Many cities are still struggling to find the places on which to base urban life in the future.

What about railway stations?

A railway station is not just a place where trains pull in and out. It is an interface between the city and the outside world, that is, other cities, the suburbs and the surrounding villages. It is a crucial exchange point for pedestrians, cyclists, car drivers as well as bus, tram and train passengers.



PROPOSAL

The urban and peri-urban travel flows, regardless of the means of transport used, should be organised so as to be connected to railway stations.

These will be attractive places offering all sorts of activities: shops, leisure and tertiary services, as well as cultural and life activities. The combination of both dimensions will make railway stations major structuring hubs in cities and decisive instruments for reducing energy use.



CONDITIONS FOR SUCCESS

- > Thinking about the railway station as a critical urban planning and intermodality component, and not just as a transportation place.
- > Not letting railway companies alone decide on station design and connection to the urban fabric.
- > Considering that train traffic is going to develop, generating important flows around stations.
- > Thinking from a peri-urban point of view to facilitate access to railway stations for people from the surrounding towns and villages.

URBAN PLANNING AS A WAY OF REDUCING ENERGY USE

5.6 Proposal

Design a street code to favour walking and cycling



THE PROBLEM AT HAND

Private cars have long been a symbol of urban dynamism and freedom for citizens, but their proliferation is now a problem. Cities have been organised around the car with fast, easy access to all areas, segregated urban functions and public space occupancy, thus leading to rocketing energy use.

This happened to the detriment of cyclists and pedestrians, conviviality and peaceful use of public space by children and the elderly. Once used as meeting points, streets have become almost insuperable walls separating the inhabitants.

Private cars are using a disproportionate amount of space in view of the service provided and the nuisances generated. Streets and parking areas, as well as many places and interstices, are not permanently occupied by cars but cannot be used for other purposes. We need multi-functional, balanced, intense and safe public spaces to reduce our energy use and improve quality of life.



PROPOSAL

The establishment of a Highway Code made it possible for cars to move around without causing too much damage.

A Street Code is a set of rules regulating public space sharing between users. It puts the most exposed people and the modes of transport presenting the highest risk factor first. This gives the following order of priority: playing in the street, going to the shops on foot, cycling to work, taking public transport, delivery fleets and private car traffic.



CONDITIONS FOR SUCCESS

- > Designing public spaces as convivial meeting places.
- > Designing the street code as a component of an urban planning policy focused on people rather than on objects.
- > Applying the street code in city neighbourhoods so as to facilitate access to local public and private services.
- > Making the street code an intergenerational (children, parents, old people) and multi-player (schools, shops) dialogue tool at the district level.
- > Explaining with pedagogy the changes made possible by the street code.

URBAN PLANNING AS A WAY OF REDUCING ENERGY USE

Proposal 5.7

Implement goods delivery schemes



THE PROBLEM AT HAND

Delivering goods to the city centre is a significant part of urban traffic. It concerns goods delivered to all sorts and types of shops and increasingly to households, a trend that is on the rise.

The US-inspired model of hypermarkets located at motorway junctions or near peri-urban ring roads has prevailed in many countries for two main reasons: it reduces delivery constraints and most households have a car. This has led to millions of private car journeys and has sterilised a considerable amount of building areas. But this energy-intensive system is coming to an end.

We are witnessing a movement towards the relocation of shops in neighbourhoods. At the same time, e-commerce is developing, leading to an increase in energy-saving home deliveries. Shopping areas are getting closer to dwelling areas, thus compelling local authorities and their partners to manage delivery traffic differently by coming up with efficient and often innovative solutions!



PROPOSAL

Integrating goods delivery into the city's organisation requires imagination.

Conventional approaches based on defining shop delivery times only partially answer the problem, we must go even further. Group delivery platforms using electric vehicles, local depots for bulky e-commerce products, parking spaces reserved for home deliveries, delivering by bike or scooter and waterways are just a few examples of innovative solutions.



CONDITIONS FOR SUCCESS

- > Aiming at a service level that is much higher than that sought by individual solutions.
- > Working in collaboration with traffic generators, in particular retailers and chambers of commerce.
- > Anticipating the increase in e-commerce demand and the related changes in goods flows.
- > Ensuring that the solutions selected are user-friendly and contribute to a dynamic city life.

URBAN PLANNING AS A WAY OF REDUCING ENERGY USE

Think commercial urban planning differently to improve quality of life

Proposal **5.8**



THE PROBLEM AT HAND

Following the US model, European commercial urban planning has often favoured vast shopping areas at the outskirts of cities, close to road and motorway interchanges. Based on a zoning logic and the maximisation of car parking spaces, this model encourages land-hungry and energy-intensive developments and reinforces our dependence on private cars. It also affects the urban function mix, the vitality of town centres and neighbourhoods as well as the city's visual identity.

Supported by large retailers and made possible by cheap oil and an appetite for consumption, this model has now reached its limits. It is no longer

appropriate to the future energy and socioeconomic challenges. The large retailers are returning to local neighbourhoods and shopping-centre wastelands have started to appear in the US.

Now is the time for more diversified retail areas, closer to where people live and accessible on foot or by bike, and for Internet sales and home delivery services which are less energy-intensive options.



PROPOSAL

Think commercial urban planning differently at the scale of the urban area and each of its peripheral towns or neighbourhoods.

Encourage a mixing of living, working, private and public service areas, including shops. Adapt the supply chain logistics so that consumer goods can be brought closer to consumers. Encourage small retailers and convenience shops based on an optimised and less polluting goods delivery and integrate Internet into the supply chain. Give shops their social role back.



CONDITIONS FOR SUCCESS

- > Defining a local commercial urban planning strategy with shopkeepers, large-scale distribution companies, chambers of commerce as well as with local community and consumers' associations.
- > Systematically integrating the issue into town planning and urban mobility policies and facilitate access by soft modes of transport.
- > Using urban planning rules to regulate the development of large stores and, wherever possible, reserve the sale of staple goods to local convenience shops.

Proposals

for the energy transition
of cities and towns



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