

LOCAL AUTHORITIES AND THE PROMOTION OF RENEWABLE ENERGY

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Local authorities vary greatly in the degree to which they promote renewable energy. This is inevitable because for the most part, this is a discretionary function. They vary then from those that promote 100% renewable energy in their community to those that think that it is not their responsibility. However the action taken by the most committed is exemplary, and can be classified generally according to the roles local authorities can play in the energy market, as client, as producer/distributor, as planner and regulator and as an awareness raiser.

Local authority action as a client

All local authorities are clients. They purchase energy for their own use and where they have the choice, they can choose renewable energy. In those countries where the market is open, local authorities will usually have to go out to tender to prove good management, and then they can choose green electricity. A number of local authorities in Britain actively do this, for instance Leicester supplies all its main offices, plus its energy and environment centres, with green electricity supplied mainly from a wind turbine and small hydro scheme. The law of public markets is a key factor here – the local authority will usually pay a premium (though not always, the green electricity initially offered to Stroud in Gloucestershire was also the cheapest). So the local authority must be able to choose on factors of quality as well as price.

Local authorities can also use renewable energy directly in their own stock of buildings or vehicles. A few municipalities even run their vehicles (especially buses)

on biogas (e.g. Linköping in Sweden and Banstra Bystrica in Slovakia). Others use biomass for heating buildings – in particular by using wood pellets. For instance the county of Durham (UK) substituted wood for coal in several school heating systems (and planted willow coppice on reclaimed derelict land to supply these). The municipality of Besançon provided a wood chip heating system for their environmental school in the Forest of Chailluz.

Other potential options include the use of passive heating and cooling by careful design. Such care in the design can be supplemented by the installation of solar thermal panels in new buildings to supply domestic water. In fact the key is to integrate renewable thinking in the designer's *modus operandi*. Each new building can be appraised to see how renewable energy can be integrated into the project. Local authorities have a large stock of buildings. The potential can be very significant – for instance where the local authority owns local schools or social housing.

Local authority action in production.

Local authorities in many countries own utilities which both produce and distribute electricity, gas and heat, all three of which can use renewable sources. The more integrated the energy service provided, the greater the opportunity for using renewables. Thus many Scandinavian countries generate electricity and heat from biomass – wood or straw, in municipal chp plant feeding the district heating system and the majority of these plants are run by municipally owned utilities. It is even possible to inject biogas into the gas grid, although this is very rare (Dunedin in New Zealand has a small network fed by landfill gas and the municipal company in Vantaa in Finland pipes the biogas from the local waste tip to a small chp gas engine, so providing heat and electricity to a local hospital).

However a large plant is necessary to make cogeneration with biomass economic and so it is usually simpler just to produce heat from biomass. Lubań in Poland has installed several straw burning units for its district heating scheme, and these also provide additional income to local farmers. With the introduction of restrictions on straw burning following entry into the EU, this will also solve a real management problem for farmers. Many Austrian villages in Styria, Burgenland and Carinthia, have installed small biomass fuelled heating networks with government subsidies

and these can use local biomass resources and provide additional income to local farmers. Elsewhere less conventional biomass resources can be used – like the hospital in Portugal which is heated from waste almond shells from local farmers. Other local authorities have used local geothermal resources in heating plant as for instance have many authorities in the Ile de France or the Podhale area of Poland. Here it is usual to bring in an outside organisation with the specialist expertise (and access to the large capital required), as did Southampton with its small DH system for its town centre.

Local authorities can generate their own electricity. This can be of various sources other than biomass, e.g. wind (Neumunster (D), Pori and Kotka (FIN), Durham(UK), Dunkerque (F)), hydro power (Umea (S), Heidelberg (D) and many small utilities in France. Umea uses their current directly and avoids paying VAT.), landfill gas (Christchurch, NZ) and photovoltaics (Heidelberg and many other German municipalities). Electricity generated and used on the spot has certain financial advantages. Apart from tax benefits, it can also avoid transmission charges which are often as large as the generation costs themselves.

Local authorities also have a role in planning and regulation. This takes various forms.

Firstly there is their role in spatial planning. Renewable generation is not without its own impacts, and many new sources need permission within the framework of the local plan. Potential renewable energy sites are rarely predictable, and so plans are rarely designed with them in mind. Municipalities in some countries, e.g., Germany and Denmark, have detailed plans indicating the precise locations where wind turbine development will be allowed, but the corollary of this is that outside these areas, there is a veritable obstacle race. Preparing plans to identify the renewable energy resource and sites where development is acceptable, is a major challenge to local authorities, and one that few have taken up unless forced. Planning obstacles are perhaps the biggest constraint on wind turbines, and municipalities can help with this by having clear policies and programmes, flexible enough to take account of the uncertainty that is inevitable when dealing with a natural resource. Of course this does not only apply to wind energy. Other sources, (small hydro, biomass, waste incineration) also have their own planning problems and are helped by clear planning

regulations. Energie-Cites is currently participating as a subcontractor in an ALTENER project which was successful in the current round. This will look precisely at the problems with small hydro and how local authorities avoid delays by preparing spatial plans defining acceptable locations and conditions for small hydro – something that would be of great interest for Slovakia which has a significant resource.

Another aspect of the local planning framework are the building construction regulations. Barcelona for instance has required all new development to incorporate solar thermal water heating. It is much easier to impose this at the construction stage, when the additional cost is slight, than to try to retrofit later. The development of regulations promoting energy performance will put extra emphasis on the need to obtain „free „ heat by incorporating passive gain or cooling at the design stage.

Secondly municipalities can prepare plans or programmes at local or regional level which promote renewable energy, setting targets and acting as the framework within which a programme of support can be undertaken. This is almost always needed within a wider context, be it an Environment Charter (F), Local Agenda 21 programme (UK, IRL, DK, etc), an energy plan (D, PL, DK) or a Climate Protection Programme (D). There are always other policies which impinge on the need or potential to develop renewable sources, e.g regional development policy, agricultural policy, etc. etc. and the incorporation of policies on renewable energy and a strategy for their development in other larger scale plans is one vital element in integrating all these together. Local authority utilities often have an important coordinating role for energy via energy plans, in particular where there is a significant district heating load. Such a plan can also deal with the potential for renewable energy and the opportunities to reduce CO2 emissions. In addition other planning tools can be used, for instance the concession contract. Again Heidelberg (D) is exemplary in this regard, using both its concession contract and environmental plans to promote efficiency and renewables.

A comprehensive plan can put all this together and try and develop a community which is up to 100% powered by renewables. Good examples are the town of Malmo,

which is developing a new neighbourhood by the harbour and the town of Vaxjo which is adapting its existing energy supply system to be 100% carbon neutral.

Finally, **local authorities have a role in awareness raising.**

Many local authorities have promoted renewable energy to their citizens. This can be done via different avenues, including the corporate plans described above. Energy advice centres and support programmes have been run by many municipal utilities or municipally supported associations. For instance many German cities like Saarbrücken and Freiburg have run programmes to subsidise the installation of solar thermal collectors and photovoltaic roofs, managed by the municipal utility. In Denmark subsidies have been passed to local Energy Counters to promote renewables at local level. Advice can be given on the installation of other renewable equipment, such as efficient domestic wood burning stoves (modern smokeless stoves return 75% of the heat compared to 30-50% for a traditional „smokey” one).

At a wider level the European Union has promoted the development of energy agencies at local level in over 200 local authorities across Europe. These are „independent” structures sponsored by local authorities which promote energy efficiency and renewable energy at local level. The best ones have been a great success and have promoted different renewable energy sources (wind, Brest, biomass, Newark and Sherwood, Solar, Freiburg, Swansea and Barcelona, etc.). Where there is consumer choice they can promote the choice of green energy as Leicester has been active in doing.

In general, despite all this fine work, municipalities usually have very limited funds to subsidise the very capital intensive work associated with renewable energy,. Thus they have generally only able to nibble at the surface of the problem for want of resources, a situation that is even more critical in Eastern Europe where capital is even harder to come by and interest rates higher. Generally one is playing with the big boys in matters concerned with energy, and resources to match are needed to have an impact! The municipality’s greatest role is in leading the way, showing that it is possible. Local authorities were key partners in some pathfinder projects for wind energy in France (e.g. Dunkerque) and Germany, but have now dropped by the wayside and let the vibrant private sector take the lead. Local authority utilities took

the lead in setting up biomass fuelled plant for district heating in Denmark, but now it is the private manufacturing sector that tries to sell equipment and convince municipalities in Eastern Europe to install biomass fuelled district heating plant. Liberalisation is distancing local authorities from the provision of energy and energy advice, which used to be subsidised by the profits from energy. Now they will act more and more in a role of facilitator rather than a developer, in the East like in the West. Local authorities can provide the framework to guide the private sector and minimise their problems, they can advise and direct, and above all they can take the lead where they themselves are a client in promoting the benefits of renewable energy.

References

Energie-Cités produces a number of booklets, mainly in French, dealing with case studies of municipal best practice which are available from head office. These include booklets on wind energy, the use of biogas in transport, the use of wood biomass and solar thermal energy. In addition 200 case studies on the use of renewable energy in towns have been prepared as part of the CITY-RES project and are available on CD, and many of these are also available in English and German. All the case studies, including CITY RES are available to download from the Energie-Cités website: www.energie-cites.org .