DESIGN AND IMPLEMENTATION OF REGIONAL AND COMMUNAL ENERGY PLANS

Abstract:

Local energy planning has become a common thing, particularly after the first oil shock in the year 1973. This kind of planning claims to follow an integrated approach, i.e. to treat not only the economic problems connected with the supply of energy, but also the environmental problems concerned and the questions related to the conservation of resources. In Styria, such "integrated" plans have emerged in more than 25 municipalities, so far. Most of these concepts - harmonized with the clearly defined goals and objectives of the province's energy and environmental policy - may be termed a success insofar, as the measures considered therein are already in the process of practical implementation.

IZRADA I UVOĐENJE REGIONALNIH I OPĆINSKIH ENERGETSKIH PLANOVA

Sažetak:

Lokalno planiranje korištenja energije postalo je uobičajeno, osobito nakon prvog naftnog šoka 1973. Taj način planiranja nastoji koristiti cjeloviti pristup t.j. ne obrađuje samo ekonomske probleme opskrbe energijom već i mogući utjecaj na okoliš te pitanje očuvanja izvora energije. U Štajerskoj su se takvi "integrirani" planovi već pojavili u više od 25 općina. Većina tih pristupa – koji su usklađeni s jasno definiranim ciljevima regionalne politike korištenja energije i očuvanja okoliša – može se dosad smatrati uspješnima jer su se mjere koje ti planovi predviđaju već počele praktički primjenjivati.

Objectives

"Local energy planning" has been an object of discussion for about two decades. By now, concrete conceptions have been developed and a number of such plans are in existence. All the energy plans developed claim to be committed to a wholistic (integrated) treatment of the problems connected with energy. So, their main objectives are as follows:

* monitoring of the actual energy supply system, measures for energy saving (short-term stabilization and long-term reduction of energy consumption),
* decrease in existing dependence from imported fossil energy through increased
utilization of renewable (locally available) energy, i.e. hydro power, biomass, solar energy and energy from the environment,
* compatibility with the environment,
* compatibility with social conditions,
* consideration of impact on national economy.

In Austria, and in Styria in particular, it did not take long for a rather pragmatic approach to establish itself after the initial energy planning euphoria had cooled down a little bit. The results were few, but realization-oriented, energy plans.

**What is a local energy plan good for?**

This question may seem superfluous at first sight, as there is general consent that local energy plans are indispensable planning instruments, indeed. However, it has to be kept in mind that the expectations of the various parties involved do differ widely.

For the planning body, e.g. for the provincial government as the superordinate authority, or for the municipal authority, local energy plans mean in the first place systematic planning to guarantee long term energy supply for a municipality. The provincial government of Styria is always involved when these concepts or plans are worked out and offers subsidies together with the Provincial Energy Agency of Styria and the Federal Ministry for Economic Affairs: the community itself has to cover only one third of these costs. The plan has to take into account the local situation and the goals and objectives of local and regional development planning within the framework of the overall economic, energy, and environmental policy of the country and the province both. And it must generally bear in mind the requirements of industrial economics. Accordingly, from this point of view, the energy plans and their realization should first of all bring about a reduction in energy consumption, more efficient use of energy, reduction of environmental burdens, and certain improvements with respect to regional economics.

The private energy consuming sector, on the other hand, expects a kind of energy supply which is inexpensive and which, in addition induces environmental relief. As regards the importance of these two objectives, the question of energy cost is more and more overruled by environmental concerns, as opposed to purely economical considerations. When it comes to energy costs, plants and other major users, such as hospitals, and the energy supplying companies themselves would, of course, like to stick to cost-benefit accounting in the most narrow sense. However, more and more pressure is being put on the suppliers by the public to internalize external costs such as environmental ones, at least to a certain degree.

Local politicians are, of course, aware of the advantages offered by a planning procedure carried out objectively and in Styria, accordingly, local energy plans are normally made up by an independent planning firm after the usual tendering procedure. Notwithstanding, such politicians generally try to satisfy all interest groups in the municipality and, therefore, existing structures are rarely touched in any really significant way. Only few personalities have the amount of charism required to present convincingly enough to the public the necessary measures that have to be taken in connection with urgent
energy and environmental problems to have the public put aside business or other partic-

ular interests.

On the other hand, some politicians at province level have gone quite far in the imple-
mentation of certain principles of energy and (above all) environmental policy introdu-
cing them into the province’s legislation, thereby clearly defining the background for
energy supply in the future. The first initiative of this kind was realized in Styria in 1984, in
the form of a “Provincial Energy Plan” (Landesenergieplan), where absolute priority for
district heating and for the use of renewable energy - especially for fuel wood - was fixed.

Naturally, all the above mentioned groups will strive to uphold and further their own parti-
cular interests, and thus, the implementation of “objective” energy plans will continue to
be a rather difficult and problematic matter.

**Starting situations - basic conditions**

There is one circumstance which distinguishes the Province of Styria from the other Au-

"Provincial Energy Plan" a clear-cut legislation exists, which provides a general setting
for its energy policy.

In addition, their “Manual of Local and Regional Energy Planning” (Handbuch für kom-
munale und regionale Energieplanung) provides a code of practice for energy planning,
implementing a uniform methodology for such planning work and guaranteeing a certain
comparability of the energy concepts developed. Up to now, more than 25 local energy
plans have been set up in Styria according to this code of practice. Some of them also
include suggestions for improvements and amendments with respect to methodology,
which will certainly bear fruit in future energy plans.

Though subjected to common terms of reference by the province’s energy and environ-
mental policy, the various local energy plans are nevertheless confronted with differing,
specific starting situations, the most common being:

* district heating with biomass,
* use of waste heat,
* exploitation of the local geothermic potential,
* area-wide supply of natural gas.

As the energy supply system of a community is always subjected to manifold different in-
fluences, “orderly” growth is an exception. Normally, several energy supplying compa-
nies coexist offering different energy sources (electricity, gas, oil, etc.) and marketing
them according to their corporate policies. Not surprisingly, without the planning instru-
ment of a local energy plan, the communities have proved to be quite unable to take a
decision, with all its long-term effects, in cases when a conflict - like “district heating or
gas” - arose.
Emergence of local energy plans

The 25 energy plans developed in Styria since 1985 - together with numerous other in different western countries - have demonstrated clearly enough that not only the economic and environmental aspects of such instruments are of importance but that the (sociological) issue of acceptance plays a special role.

With this in mind, the initiation of such planning is certainly easier in cases when the community itself voices a plea for a local energy plan as an objective planning basis acceptable for all parties concerned. On the other hand, it must be said that it would be more desirable, indeed, if long-term planning such as the concepts considered here would be initiated long before a situation of conflict or urgency becomes manifest.

As a rule, the planning procedure will go through the following steps:
* Determination of the status quo,
* Amelioration of the status quo,
** Presentation to the public,
* Conception,
** Presentation to the public,
* Decision finding process,
** Presentation to the public,
* Realization (time schedule and measures required for financing).

There are two steps in this sequence which are of particular importance, though they are not included in quite a number of the energy plans which have come up so far. Firstly, amelioration of the status quo must be considered, already in initial stage. When working out a general concept measures should be taken which will have desirable effects in any case (e.g., energy savings, more efficient use of energy), provided they do not involve decisions requiring the completed plan as a basis. Secondly, special emphasis should be given to the presentation to the public of the planning in its different stages, and to the involvement of the citizens, who must have a feeling of participation in the decision finding process. On the other hand, taking into account the urgent solution energy and environmental problems usually call for, it may seem detrimental for the timely establishment of a decisive package of measures to allow for such rather complex set of influences to act upon the decision finding process.

Realization of the measures proposed

With some few exceptions, Styria's communal energy plans have been drawn up as outlined above and are now in the stage of realization. In the first instance and in its main part, such realization means the introduction of district heating with its concomitant changes energy source and measures for improving the housing stock.

To encourage the realization of the desirable measures propagated in the various concepts, a system of selective subsidization has been established for example for connection to district heating systems, for the erection of biomass-based district heating sy...
stems, for comprehensive energy counselling (free of charge for the customer) and for thermal improvement of the existing building stock. Luckily, the Styrian provincial government is in a position to carry out this kind of funding very efficiently in a coordinated manner.

The different expectations placed on a local energy plan, a point shortly mentioned at the beginning, are paralleled by the different subjective opinions on the measures proposed by any (independent) planning body or firm. Each of the interest groups affected will evaluate the plan on the basis of different priorities. This will inevitably lead to a compromise or - if a compromise cannot be achieved - a "political" decision will be made, which will depend on the pressure exercised by different sectors such as business economics, environment, resources (replacement of imported fossil fuels by domestic and renewable ones), regional economics or national economics, to mention only the principal ones.

One is pleased to note that, in Styria, development in the past few years does indeed reveal a distinct, though slow, change in thinking, insofar as environmental considerations tend to overrule purely economic ones. Consequently the measures promoted by increasingly local energy planning can be realized to an increasing extent, although, in the narrow sense of economy of operation, these measures can be expected to pay off only in the far future or maybe never. Therefore, there is a good chance that the priorities of the different interest groups will become less divergent in the future. Anyway, an adequate final decision can always be advanced by a politician who has enough charism and integrative force to channel the different interests into decision-finding processes for the sake of implementing long-term solutions to the problem of energy supply and for the sake of an overall improvement in the environmental situation.