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Are wind farms a problematic project?

1. Introduction

Two years ago the magazine Urbani Izziv featured an article, in which the authors presented a methodology for evaluating space for development of wind farms (WF) (Golobič in Marušič, 2001). The presented methodology was part of a study, which the project's investor commissioned as an expert guideline for placing WF, but it didn't have any visible effect on decision-making procedure about the site or following results. Four years later opponents and advocates of the WF project haven't budged an inch closer to a compromise, quite the opposite, they are ever more determined in defending their bastions. Wind generators have already gained a notoriety of more »problematic« projects; apparently and whatever the outcome, they will leave a legacy of unsolved conflicts and offences. During this time the professional and general public had ample opportunities of getting acquainted with the arguments for and against and probably had its fill. In this article we will deal with assessment of the project and search for new arguments. Its purpose is to warn that problematic projects are not necessarily a consequence of design or technology, nor the choice of site. As the experience with WF shows, any project can be coined problematic, if the planning procedure and decision making process disable legitimisation.

To clarify the issue a short review of the project's history can be beneficial. The idea about building WF was initiated by Elektro Primorska in 1989 when co-financed by EU they began to measure wind potential on 13 sites throughout the country. The results in Primorska above all, showed that there is enough wind potential for use in energy production. Several sites were checked: Banjščice, Sinji vrh, Golič, Nanos, Volovja reber, Kokoška etc. For detailed checking of various aspects of building WF and for comprehensive assessment of potential sites, the initiator commissioned various studies. On Nanos and Golič, which he saw as the most interesting sites, they actually mustered support by local groups and inhabitants, but didn't pursue the issue because of objections stated by representatives of environmentalist nature protection groups. After suggestions by the Ministry of environment and physical planning they reoriented to Volovja Reber in the municipality Ilirska Bistrica. The project gained massive support in three local communities (Ilirska Bistrica, Knežak, Šembije). In early 2003 they began to change the so-called spatial components of the municipal mid-term physical plan of Ilirska Bistrica and produce the Location plan for the Wind farm on Volovja Reber.[1] The preparation procedure for such documents entails that spatial management subjects prepare guidelines and opinions, which were the basis for adoption of both documents in the municipal Council that happened April 2004 by majority vote.

Support from the local population and municipality and adopted Location plan encouraged the initiator to begin preparation of documents needed for the building permit. A report on environmental impacts was also prepared, which proscribed diminishment measures, amongst other the purchase of additional 147 hectares of land, where, according to instructions and recommendations by environmentalists, adequate plant and animal habitats would be maintained. Despite the generally positive recommendation in the Report on environmental impact, the Environmental agency of the Republic of Slovenia (ARSO), the responsible institution, refrained from issuing the environmental concordance. The Ministry for environment and physical planning accepted the investor's appeal and returned the initiative to ARSO for repeated decision-making. An amended Report on environmental impacts was produced.

2. Approaches to finding solutions and decision-making

Contemporary society recognises two main forms of argumentation and solution funding: democratic debate and science. Both originate from ancient Greece and share a history of more or less tense relations. Physical planning operates in an area shared by both, whereby the influence of one or the other form changed according to social circumstances. Thus, in modern times, science effectively enforced itself with the concept of comprehensive and rational planning (Lyle, 1985), while plural, post-modern society doubts the legitimacy of all traditional institutions and again questions the role of science. In the concept of social risks (Beck, 1992) scientific findings are becoming increasingly necessary, but then again they are also increasingly becoming an inadequate condition for decision-making. As an alternative or augmentation of professional decision-making, consultative [2] or participatory procedures are gaining in recognition. In their optimal form, both are desired and effective, complement each other well and contribute to good decisions. Unfortunately in practise they often change into their perverted variations: either to mutually excluding technocratic or corporativistic decision-making, which also disable democratic decision-making and diminish the legitimacy of adopted decisions.

Expert approaches should ensure expert knowledge, meaning quality solutions, but also no involvement of interests, meaning objective decisions. The interesting fact is that in Slovenia this approach is mainly supported by environmentalist groups. Environmental protection was in fact one of the first sectors worldwide that got its impetus from bottom-up and gained recognition in official policies only after substantial public support. The expert approach was at first typical for protection of agricultural land, whereby the best agricultural land was exempt from interest mediating procedures, following expert criteria for determining their quality for agricultural production. Lately calls such as »let the experts decide« and references to »expert arguments only« can be found in nature protection fields, management of natural resources and environmental protection. These attitudes are nevertheless also expressed in departmental legislature, which massively rely on mechanisms for issuing concordances, which are based on expert reports and administrative procedures (Ordinance on special protected areas – Natura 2000 areas, Official bulletin, No. 49 and 110/2004, Ordinance on comprehensive assessment of environmental impacts of executed plans (in preparation, proposal 2005)). The Natura 2000 programme when determining areas explicitly demands ob-

jective procedures and exclusively expert criteria, based on which, 36 % of Slovene territory is subject to certain regimes that grant experts special status in decision-making procedures. The latter is probably one of the key reasons that demands for expert decision-making are not well-accepted amongst planners and other experts. The wording and argumentation demanded by inclusive procedures thus place the expert in a different, less influential position, but also demand more open ways of decision-making and different communication, which most experts are not used to or don't master.

Referring to the profession and expert criteria is convincing and also effective if we believe that taking decisions about our carriage is possible on knowledge of the reality, as is enabled by science. Veneris (1993) coined this approach »cohesive« planning, whereby resolution of technical problems occurs within general social consensus about values. Many problems in space are at least apparently of such nature, meaning professionally completely solvable. In such cases decisions that are more or less based on expert knowledge prove to be completely legitimate, although they actually imply transfer of decision-making to experts. However, almost any issue concerning space can invoke different views, therefore referring to science as the only aspect of decision-making is in principle wrong. (Marušič, 2002). In practise they often prove to be unsolvable or even escalate the conflict. Since it usually manifests itself as disagreement about facts, decision-makers are lead to obtain ever more new, more *professional* and more *objective* knowledge. A quote from the national Agency for protection of nature concerning acceptability of WF is typical: »(…) *we can ascertain that the report in the chapter Extant condition of particular components of the environment, is deficient. Data on types, including qualification of types, is deficient. Reasons for such recognition probably lies in the short and limited period of report preparation* (…) *meaning that for a truly realistic assessment of the development's impact, more data has to be obtained, not only from available resources but also new data obtained from suitable filed research.«* Such demands usually delay the procedure by several months or years, ensure contracts for professional researchers, but don't bring the conflict much closer to resolution. The conflict truly isn't a consequence of disagreement about facts, but their interpretation, which are conditioned by differences of involved interests (Figure 1).

Deficiencies in expert decision-making were known since the 60s. At the time criticism of technocratic planning and individual rights, linked closely to the right for a healthy environment, brought about the idea of planning as a participative process between the public (users), profession (planners) and politicians (decision makers), as well as the introduction of various forms of participative approaches. The paradigm of participatory planning as a communication process (Habermas, 1984, 1987) contributed the strongest criticism of the ongoing technocratic planning procedures. Proof of distancing from technocratic approaches from the needs of true users of physical plans can also be found in Slovenia. A review of more than 30 years of systematic monitoring of pubic opinion about issues in physical planning showed that attitudes of the public are becoming increasingly different from attitudes of the professions. (Kos, 2002)

Various presently enforced physical planning procedures have more or less successfully solved issues of democracy, harmonisation and transparency. Veneris (1993) states that cohesiveness, which would enable the technocratic principle, is essentially possible even in a pluralistic social context, but it demands prior solution of social conflicts concerning values. Thus the procedure has to include also representatives of conflicting interests: mutual confrontation and recognition of mutual problems is in fact the precondition for differing starting positions to harmonise. Therefore, in the participative approach acceptability of the solution for involved parties is in the forefront, which should also ensure quality and above all feasibility of the adopted solution. These procedures are generally successful in issues of subjectivity, dynamics and conflicts of values, however they are subject to other risks that expert approaches avoid more easily: expert weakness of the solution, populism in argumentation and corporativism, meaning decision-making on the basis of presently prevailing societal power levers, in societies where expert arguments or public interest are not respected. Participatory procedures are subject to temptations of lobbying, political and economic pressure and the use of other semi-legitimate levers for achieving goals. If the participants in such procedure cannot (don't) ensure representation of public interests, then the risk of private groups not only pushing their solutions forward, but also legitimising their interests as public is dire. The method of organising quasi-public groups (societies, civil initiatives, non-governmental organisations, companies …) isn't specially regulated, thus it is not obvious that these groups are organised in a democratic fashion or that they represent public interest. The risk that these participative procedures will pervert into corporativistic ones is tied to their birth: various local groups gained public recognition precisely by participation in the field of nature protection initiatives. Similar occurrences are rather common even in exemplary democratic societies (e.g. The Netherlands, Voogd in Woltjer, 1999). The conclusion, that any participation or consultative procedure can also ensure decisions taken in the best public interest, is therefore not at all obvious.

From this aspect the WF project becomes interesting, since it allows insight into decision-making mechanisms of both the expert and consultative approaches and at least partially also evaluation of their results. In the case of WF expert arguments and the decision-making process were used by agencies and representatives of natural protection civil groups. On the other hand the investor constantly (at least formally) supported an open integrative procedure. While preparation of expert guidelines was going on, they already started informing the public in areas of potential sites. This began on Nanos, where they mustered support from the municipality and local population, but the site proved difficult because of opposition by representatives of nature protection. Similar events followed on Golič, where the local population and municipal structures supported the development, but activities were stopped after opposition by environmentalists. The whole procedure however never carried the flag of model transparency. The un-involved, general public saw the activity as exceptionally coroporativistic, as can be discerned from numerous commentaries in daily papers and the internet forum. To illustrate the latter, here is one comment by an internet forum participant [3]:
Evil Dick: »Removal of Volovja Reber from Natura 2000 was therefore a consequence of obvious pressure by the investor and municipality of Iirska Bistrica. The local mayor and capital interests prevailed over the expert opinion and environmentalists.«

3. How to determine criteria of acceptability of the intervention?

One of the key questions that should be answered by the design procedure is the decision about physical acceptability of the proposed development. The answer is sought between the duality of arguments for and against, which is generally vast and the problem is that they are expressed in very different ways. We can therefore weigh them only in a multi-criteria decision-making procedure, which in the context of expert or consultative procedure unravels in different ways. In the case of expert approach we try to assess and possibly financially evaluate costs and benefits and decide on the basis of net social benefit. The other commonly used approach in expert decision-making is checking the development's proposal from the aspect of formal limitations (norms, standards, regimes). In the latter we accept these limitations as definite, unchangeable facts and often forget that they are a result of agreement in a specific value context determined by historical, economic, social and professional circumstances. With such consideration and in changed conditions, we can completely legitimately confront them with other starting points and check their validity. Besides those measures that are codified in formal documents, a whole army of other value categories enters the decision-making procedure, which are confirmed in expert circles or not at all (Figure 2). Most depend on whether individuals accept them as values and what their opinion is about spatial usage. These views differ between individuals or groups, but they can also significantly differ from those defined by the market or experts (Figure 3). Thus, despite use of state-of-the-art knowledge a common occurrence is that solutions, designed only on the basis of expert knowledge, are unacceptable for the public and that perfecting of information doesn't necessarily bring solutions closer.

How different can evaluations of spatial quality be and thus assessment of (potential) environmental damage caused by the development is shown by the following opinions from the forum:
Evil dick: (quotes the content of the petition, signed by civil society groups and individuals against the WF on Volovja Reber …) »The areas Volovja Reber and Vremščica form a complex of high Karst mountain ridges with exceptional nature protection significance and rare landscape beauty. These are areas of habitat types of European significance, places of endangered plant types and the living space of large predators, as well as many internationally recognised protected birds. The ridges of Volovja Reber and Vremščica lie along the migratory paths of white-headed vultures. On entry to EU they will become part of the international network of Natura 2000 areas. The preserved high biotic variety will be one of the main comparative advantages of Slovenia in the EU. Construction of wind farms on Volovja Reber and Vremščica will be a callous and eternal act, which will cause irreparable degradation and diminish their large nature protection significance.«

Anarhist: »…I have often been to this ridge of yours, as a soldier on Ilirska Bistrica. I have often been to Vremščica too; I am a local in fact. On this ridge there is nothing but old grass, a stone and bush, the same applies to Vremščica, only there you can also see some sheep. What would a windmill disturb there? The sheep will continue grazing and the birds will keep flying.«

The second reason, why assessment of acceptability by using exclusively expert criteria and procedures cannot give adequate support for decisions is lack of knowledge or insecurity: almost all hypotheses that are stated by advocates and opponents are built on shaky arguments:

- How will the wind blow: for how long annually and what will be the WF efficiency rate,
- What will the needs for energy be and the market conditions,
- How many birds will fly into the turbines and what will be the effect on their populations,
- What disturbance will these new neighbours cause wolves, bears and lynx,
- What will the image of the landscape be with WF and will we like it,
- How many tourists will visit Volovja Reber because of WF and what will its effect be on development in the municipality of Ilirska Bistrica.

These dilemmas condition the commentary stated by a forum participant, who used a very grotesque approach, but essentially got the point of the issue:
Zdravko Vatovec: »Why the noise in the game?
(not the right question).
The right questions are:
What's the dough in the game?
Who's dough is in the game?
Who will pinch the dough?
How much dough will he finger?
Expert answers desired!«

4. Alternative solutions as a possibility for resolving conflicts

For a successful and legitimate expert approach therefore prior resolution of social conflicts is needed, which is always a lengthy, complicated and truly never fully successful endeavour. However conflicts are very often presented as excluding strategies, i.e. *birds or Kyoto*, which of course doesn't promise any possible solutions and is in reality wrong presentation of the problem. Alternative approaches for resolving conflicts Veneris terms »conflictive«, whereby we end up on a conflicting value system and demand that solutions are prepared accordingly. This approach proves to be easier – the possibility that there are better solutions, is probable, which are acceptable even in otherwise conflicting value systems. The latter can be checked only after solutions are created, as well as possible compensation strategies, mutually dependant criteria etc. In the case of WF, concordance on the level of conflicting interests is almost unimaginable. A more sensible starting point is *conflictive planning* and search for solutions acceptable for all involved. In truth, none of the opposing parties offered alternatives, at least not such alternatives that could be dealt with as sensible, i.e. realistic and feasible.

The forum participants clearly recognised the lack of alternatives:
Lokiamater: »Environmentalist, I support you, but give us an alternative for progress and corresponding use of electrical energy...«

The starting point for alternative solutions should be the understanding of the conflict of interests, which is different at

different levels. On the national level it's above all about alternative strategies within the energy policy: what are the alternative methods of (environmentally least conflicting) energy production – or diminishment of consumption?

Lokiamater: »The thing is maybe more complex – green energy – yes, but for this purpose we should take a step forward – close such big consumers like Talum (aluminium rolling plant) that spend – you won't believe this – as much energy as the entire Primorska in the same amount of time.«

Mikimous: »Ok, I hope I won't be understood wrong, I support clean nature, but I don't think wind farms and hydro are clean, they endanger the ecosystem … I stated my doubts about wind, water erodes riverbanks with different levels of water, fish can't spawn, artificial lakes create new living conditions, which are not kind to all animals … Turn it this way or that, nuclear energy is the most efficient … but waste is a problem, but if they are stored properly, I think they are not dangerous … Černobil was the human factor …«

On the regional level the question is, whether alternative sites exist, which are still suitable for obtaining energy from the wind but less contested by conservationists. In Slovenia, where wind conditions for profitable energy production are marginal, there is not much space for choice: only well-aerated areas can be considered. Proposals stated by opponents of the WF on Volovja Reber for WF along the highways are unrealistic. On the other hand the investor proposed several alternative sites, but even they didn't take them very seriously; themselves they excluded sites with lesser wind potentials from further debate, while the site on Kokoška, which was suggested as a compromise, didn't provoke any response. Possible other sites, as suggested in the study on potentials, they didn't even care to consider, with the argument that measurements of wind are expensive and that they will insist on sites, where lengthy measurements showed sufficient wind potential. These sites, as we know by now, are all problematic: Nanos, Golič, Volovja reber.

On the local level, meaning on the site as such in the municipality of Ilirska Bistrica, the main issue are development perspectives of the local community. In truth, amongst all the arguments, the only tangible ones are contracts for land purchase and the promised rent for usage of land. Thus the protest voiced by the local community about the possibility that the government would prevent construction of WF is not surprising. The solution to this conflict would require search for alternative development possibilities for Ilirska Bistrica. It seems that this aspect didn't find its rightful place in the official debate. The forum participants however showed much more sensitivity for recognition of this problem:
Last: »...One of the last round tables on this topic disclosed certain small background info about the whole story, but didn't offer a very good answer to the population around the problematic ridge. They have the Karst ridge and wind and want to make some money from what they have. They will intervene with nature, so what. We all do that every day. Not all equally and not all equally disturbing, so (they say) the state was invented, to order something or prohibit. In this case prohibition would dangerously force adequate compensations to citizens, whose right to exploit natural resources is infringed because of public interest …«

5. Conclusion

The often quoted debate in the forum temporarily finished in April 2005 like this:
Qassam: »Serious damage they won't do, but there won't be any economic and environmental benefits either!«
Robek: »Well finally I agree with you!!!! Br Štajerska«
Packer: »Fine, at least we all agree on one subject.«

Apparently the WF Volovja Reber isn't half as glorious a project, as presented by its advocates, nor is it a disaster, as was the image presented by its opponents. The development is nevertheless an excellent example of wrong approach in physical placement and the lack of understanding for emergent conflicts or use of (known) methods for their resolution. Part of the responsibility probably lies with physical planners, who don't know how to offer tools for non-conflicting and negotiated approval to interest groups in their quest for advancing their legitimate interests. They then reach for those tools that they know and think most efficient: in our present social-political reality they are either technocratic, referring to science and expert arguments with refrain from public debate, or various methods of political pressure and lobbying. The results serve nobody, especially not public interest.

Independent from formal actors in the procedure the case of the WF triggered a wide and active public debate, which can surely be seen as a positive phenomenon. WE our not exaggerating in our assessment that in this case the debate conducted in the most open and democratic scene, i.e. the internet forum, proved to be much more productive and sensible, but also identified all the main obstacles in the procedure: limitations of expert arguments (technocratic decision-making), issues of corporativist mechanisms of decision-making, questions about the necessity of the project and the need for alternative solutions. All contributions in such debate are not of course well-meaning and don't benefit creative efforts for problem solving; nevertheless many do, but still didn't experience response from the procedure's actors. Although a conclusion is forcing itself forward, which is that it is best to leave decisions to the people (e.g. with a referendum), it would be too quick and just as wrong as leaving conclusions and decisions to the experts. The main lesson learned from this example is that even potentially ideal forms of decision-making are booby-trapped, as well as that we still don't know how to involve the public and use its roles in achieving transparency, democracy and thus legitimacy of established formal decision-making practices.

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Notes

[1] The procedure began according to the former law, which proscribed a municipal location plan for the development. According to the Law on spatial planning (ZUreP-1, Official bulletin, 110/02) the development would demand a state location plan.

[2] In this field we are dealing with a specific terminological inadequacy, therefore at this point, a short explanatory note about terms used is necessary. The term »consultative« is used to describe the procedure, where the widest public and un-organised individuals are included in the search for solutions and decision-making, which are based on partnerships and negotiation (stake-holders and actors). (Wates, 1996). The term participatory is often used as the umbrella concept

for all types of integration of un-professional participants, proving the unclear distinction between the two approaches, which is in practise truly hard to define. At least on the theoretical level distinction is nevertheless important, since in some of the goals (democratisation, public influence on decision making, transparency) the approaches are markedly different.

[3] The quoted forum organised by TV Slovenia is just one of the many forms of spontaneous public debate that developed in all the main Slovene media (Delo, Dnevnik, Primorske novice, Mladina) and numerous internet forums. The article presents literal quotes by their participants and states their nicknames, by which they represented themselves.

***Illustrations**:*

***Figure 1**: Because of the conflict of values, which is in the background of all disagreement on facts, the level of conflict cannot be diminished simply by introducing new expert knowledge (Obermeyer, 1998)*

***Figure 2**: Acceptability of wind farms (WF) in various landscape settings is and example of criteria, where one cannot rely on standards, similarly expert assessment is not necessarily aligned to public opinion. Moreover, even opinions of different public groups can vary significantly. Results of the survey done within the framework of the study about spatial potentials for wind generators in Primorska (western region in Slovenia) by Brečevič et al, 2002, showed that consent about certain sites was very high; either whether WG were a major degradation (left), don't significantly affect the visual quality of landscape (centre). On other sites differences were very substantial (right). (Note: surveyees were assessing harmony, interest, naturalness, homeliness and beauty of a photograph, once without and then with the WF).*

***Figure 3**: Assessment of suitability of independent energy sources for Slovenia is only one of the examples of differences in attitudes between the professional and lay publics (source: Brečevič et al., 2001).*

For sources and literature turn to page 49.