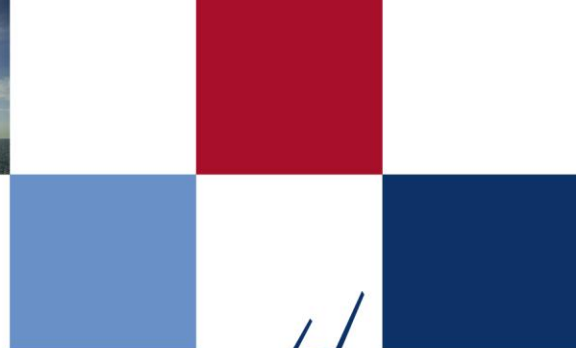




POWER cluster



SOCIAL ACCEPTANCE - OFFSHORE WIND POWER

Interreg IV B project **POWER CLUSTER** www.power-cluster.net

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1 BACKGROUND

The long-term goal of Sweden's energy policy

Climate change is one of the most complex environmental issues facing the human race. If we do not reduce greenhouse gas emissions significantly then the world's climate risks becoming warmer and warmer. We do not yet know whether we can fulfil the Swedish parliament's goal of halving emissions by 2050, but we do know that today's emissions must be reduced and that everybody's help is required. Household heating and transport stands for nearly half of the total emissions. Travel patterns, indoor temperatures, power consumption, the things we shop all have an impact, as does, of course, how our energy is produced.



ÖCKERÖ KOMMUN



European Union  The European Regional Development Fund

The Interreg IVB
North Sea Region
Programme



*Investing in the future by working together
for a sustainable and competitive region*

Renewable energy sources

Renewable energy sources renew the whole time through the sun's impact on the earth and nature. This is why they are called renewable. Water, wind and wave energy are renewable energy sources, as is tidal energy. Biomass is a solar energy source and is therewith also a renewable energy source, just like solar energy. As well as these energy sources there are also geothermal energy sources that originate from the earth's core.

Future vision

- All electricity produced in the Swedish energy system will come from long-term sustainable energy sources.
- The power system will be built and run at the lowest possible life cycle cost, fulfil the capacity and quality demands of society and industry and be well-adapted for the integration of new power production technology.
- Strong R&D forms the basis for the Swedish power production and distribution industry to develop new products for selling on global markets.



Large-scale technology is prioritised within the area of wind power. Research and development (R&D) is conducted to reduce the cost of power production and to facilitate the establishing of new wind farms. The overall aim is to increase the number of wind turbines in the power system.

Targets, expansion and operation

The Swedish parliament has set a wind power production target of 10 TWh a year by 2015. The Swedish Energy Agency has suggested a possible production target of 30 TWh by 2020.

Rapid development

Wind power has undergone rapid technological advances in recent years. Turbines manufactured ten years ago had an output of just a couple of hundred kilowatts. The turbines of today produce five megawatts (MW). Up until now wind farms have been built inland or near the coast, but now sea and mountain wind farms are being planned.

THE ENERGY SUPPLY GOALS OF ÖCKERÖ MUNICIPALITY

In its vision, political goals and structure plan for 2005-2007, Öckerö municipality strives for sustainable development. This demands changes within all sectors, the energy supply system in particular.

A long-term sustainable society with quality of life will be created in which energy consumption is rationalised and based on renewable energy sources. There will be a shift towards an ecologically sustainable energy system. This will take place through a safe, economically and environmentally adapted energy supply and local responsibility within the areas of energy and environment.

As the municipality is favourably located with regard to wind, planning for wind power comes top of the agenda. Therefore, the political goal for the 2011-14 mandate period is to become self-sufficient in renewable electrical power.

COMPARABLES IN THE REPORT

The purpose of this report is to determine the standpoint and actions of the various actors such as general stakeholders, decision-makers, municipalities and entrepreneurs with regard to the three established wind farm projects Lillgrund in Öresund, Utgrunden in Kalmarsund, Scroby Sands on the English east coast and a planned project, Stora Pölsan in Öckerö municipality. The report is intended to provide an insight into the sentiments, and understanding of the risks and opportunities, of the local actors involved in the various projects.



The comparison with Lillgrund, Utgrunden and Scroby Sands has been made because their coastal location is similar to the planned area in the sea near Öckerö. As the aim of the report is to inform of the problems posed and to give local residents the opportunity to influence the outcome, statistical material has not been used. Parts of the report have been taken from other investigations, chiefly the reports by Michael Klintberg and Åsa Waldo (Lund University) in their Vindval studies.

2 INFORMATION PHASE

GENERAL

Each project has an information phase for the general public and other stakeholders such as local associations, branch organisations, etcetera. The speed in which this information is provided is crucial in how it is perceived by the recipients. The better compiled and prepared it is, the greater its significance for the project's acceptance. If it is released late it runs the risk of being perceived as just paying lip service rather than a serious approach to determining people's views. On the other hand, all too early information implies that all the issues have not yet been cleared up, which creates mistrust and concern. In addition, efforts should be made not to overlook any stakeholder groups. Starting by making certain groups feel excluded or marginalised will lead to problems further down the line.

It is important to stress the positives of the project already at the introductory stage of the information phase backed up with facts and figures. As economy and efficiency are the main factors in any potential 'blot on the landscape', this would legitimise the project economically and underline the efficiency of the planned production.

Comparisons with other energy sources will be made, chiefly nuclear power, which can produce enormous amounts of energy in a relatively small area. Wind power runs the risk of being seen as an energy source that may produce green energy but hardly enough to boost the national grid.

Up until recently, before the breakdown of the Fukushima reactors in Japan, the advantages of wind power were being undermined by positive comments about nuclear power and coal-fired power plants such as: Does nuclear power actually represent an increased risk? Should it not be built out like in other countries, or at least modernised for increased capacity? Won't engineers create a system to remove all carbon emissions from coal-fired power plants? The actions of the large energy companies did not exactly shed any light on the situation either.

Another well-worn argument that should be met at the information phase is what happens when there is no wind. The possibilities for interaction with water power are excellent in Sweden and simple to show with tangible facts and figures.

At the information or consultation meetings there should not be too many ranks up to decision-making level. It could be perceived as though the opinions being put forward will not be treated seriously and that the message could well be distorted or lost by the time it reaches decision-making level.

To summarise, the following three items must be fulfilled:

- The information shall: Have the right target group
- Be published at the right time
- Contain correct information

WIELDING AN INFLUENCE

A variety of views will emerge during the consultative meetings. One possibility of wielding an influence that exists for other types of construction is the statutory consultation with the plaintiffs. However, in the building of sea wind power there are no clear definitions of who to regard as a plaintiff. Prior to the construction of Lillgrund in Öresund, everybody thought to have an interest in the issue were informed through the local press. With land-based plants everyone affected by measurable disturbances such as noise, for example, are regarded as plaintiffs while those who are only affected visually are normally excluded.

Another aspect worth considering is: what exactly is sea wind power? One reason for placing wind farms in the sea is because the turbines can be made larger (the water has no limits in ground pressure) and because they are far enough away from settlements to eliminate noise problems and the negative impact on the landscape. The current situation at Utgrunden, as well as Lillgrund, Scroby Sands and Stora Pölsan, is that the plants are near enough to the coast to have a similar or even greater visual impact as land-based plants. A person living near Lillgrund puts it this way: "Placing wind turbines in this fashion is idiocy as far as I'm concerned. And to call it sea wind power when it's in the middle of a sound... It's not a sea. I'd prefer to call it coastal". (Klintman & Waldo 2010)



Projects that are decided at government and regional level limit public influence in shaping the prospective area and facilitating cable runs and connection points. There will be great disappointment among those who think that interaction will lead to the whole project cost being written off. This possibility (of completely writing off the costs) of public influence with the chance of appeal exists when the structure plan is being established but is very small afterwards.

If the planning stems from a local decision, as is the case with Stora Pölsan in Öckerö municipality, this naturally increases the extent to which stakeholders can wield an influence.

3 PUBLIC SENTIMENT

GENERAL

The sentiments of the general public to sea wind power could well be predetermined (they already have a positive or negative attitude) or are formed during the process. If you arrive late to the decision-making process the possibility of wielding an influence is so limited that a negative attitude is formed immediately. Defining what "late" implies is difficult as it could take several years to get from proposal to construction start.



Informing at an early stage could be perceived by authorities and politicians as creating unnecessary conflicts should planning permission be granted. The general public, individuals or groups, could interpret this procedure as meaning that their views are not welcome and that everything has already been decided.

Similar projects can be perceived as different depending on where they are constructed. Several factors have a role to play, like the local infrastructure, the size of the project in relation to local communities and their private sectors.

SIZE OF COMMUNITY

The job creation and stimulation of the local private sector as a greater effect the smaller the community is. A hundred new jobs has more significance in Torsås and Mörbylånga municipalities (Utgrunden) than the same number in the Malmö region (Lillgrund). In Bergkvara, which has become a hub for the construction of Utgrunden, a positive identity has emerged for the wind power municipality.

POPULATION COMPOSITION

Differences also arise from the population composition of the area. Generally speaking, all-year-round dwellers are more positive to local wind power than summer dwellers. The explanation is found in the fact that the all-year-round population benefit more from local economic growth than summer retreat owners. The effect is further strengthened by the natural values that played a role when buying a summer residence.

EXISTING INFRASTRUCTURE

The negative attitudes are less prominent if the area has an industrial background rather than a place of natural beauty. There have been fewer

objections in Degerhamn (Utgrunden) but greater resistance in Öckerö (Stora Pölsan), Vellinge, Klagshamn and other communities affected by Lillgrund's wind farms.

NEGATIVE ENVIRONMENTAL IMPACT

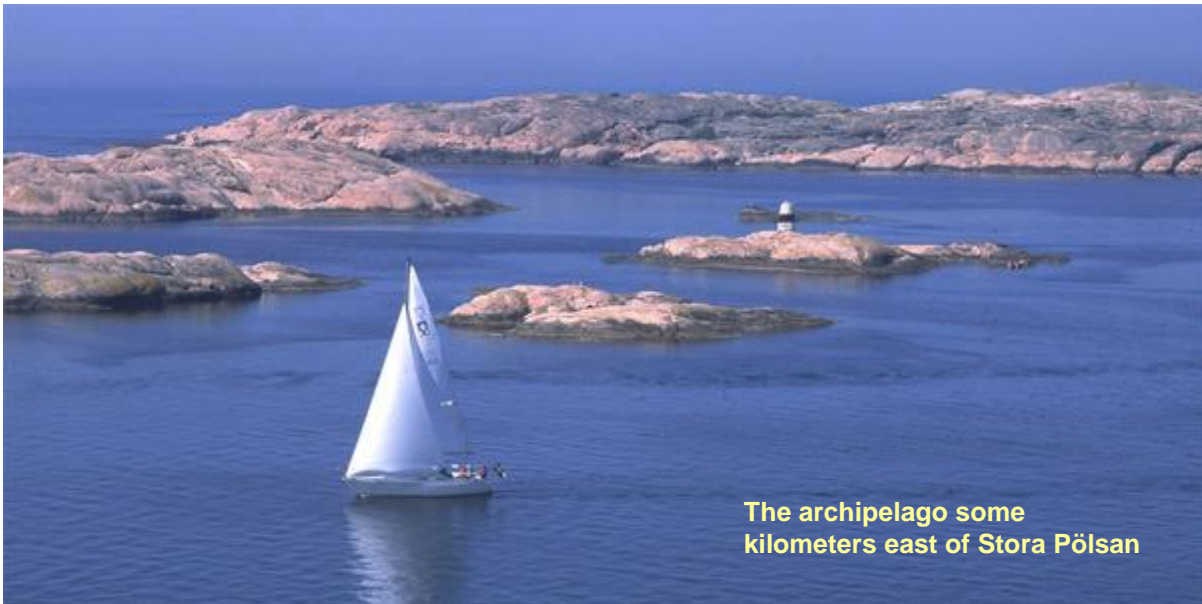
A negative attitude is usually due to the negative impact on the landscape being greater than the benefit of the project. Other reasons could be financial or relate to technical problems, real or feared.

The broken horizon caused by a wind turbine is considered by some as being an unacceptable blot on the landscape while others see a few wind turbines as a symbol of a sound and green power production. The resistance is particularly manifest if the area is seen as being of such natural beauty that the high natural values make up the area's chief competitive factor.

Another important factor is the proximity to the wind farm. The drop in resistance is directly proportional to the distance from the exploited area. This was particularly clear during the planned construction of Stora Pölsan in Öckerö municipality. The original proposal had three plants placed on Björkö which aroused great protests. When they were deleted during a review of the plans the protests ended.

In this context there are seldom any arguments against wind power as such. No, it is a green energy source that must be invested in, but preferably not built in my back yard. This argumentation is not unique for wind power and is usually abbreviated as NIMBY (Not In My Back Yard).

One problem that arises when discussing visual values is that they are not possible to measure objectively and put into figures. The size of the problem is determined by the individual's feeling for the area and therewith varies from person to person.



ECONOMIC FACTORS

Resistance based on economic factors could relate to the private economy of the residents as well that of the local community. One example of personal loss is a fall in property prices due to the impact of wind turbines on the attractiveness of the area.

Objections are made on the basis that sea wind power is not a cost-efficient way of producing power and is therefore not motivated.

As both wind power and the fishing industry are dependent on the shallow areas, a competitive situation arises. Each turbine that is built takes away a good fishing site. Financial compensation was paid to the fishing industry in Lillgrund, but many considered it to be insufficient.

Tourism is another sector that could suffer a negative impact. It could be completely dependent on the natural beauty of the area and therefore fear falling revenues should the natural benefits become fewer.

The positive effect for the public economy is usually seen in the construction jobs created by the large investment and the maintenance and service jobs that follow. The project will employ a large number of contractors. Those directly concerned are power companies, manufacturers with their subcontractors, and service and transport/security companies. One problem with creating jobs is that it is not possible to tell in advance exactly where these new jobs will come from.



TECHNOLOGICAL OBJECTIONS

Other objections and doubts could be connected with the possible infrasound that many claim arises. In that case is it harmful? The regulations for noise disturbance only cover noise that is heard, not infrasound. Misgivings about the effect of electromagnetic fields around high voltage cables have also been heard. These problems lack substance and some form of knowledge transfer is required.

NEGATIVE ATTITUDE - RESISTANCE

Passive resistance

The fact that active resistance is not widespread does not necessarily mean that the general public supports the project. A negative attitude without any form of active resistance is quite common for a variety of reasons. The reason could be that they do not consider it worth the trouble or politically correct to protest. If they see no chance of having a say in the matter then they will take an aloof and passive stance.

Active resistance

The active resistance that arises creates activity on all fronts; the opposition, authorities, contractors, etcetera. Resistance arises spontaneously among concerned residents or through organised groups. Normally the aesthetic impact is the reason behind the resistance. The unbroken horizon is destroyed, the peace and tranquillity disappears, shadows cast by the wings are troublesome, etc. Societies like Svenskt Landskapskydd (society for the protection of rural Sweden) pursue the issue, organise campaigns against wind power and gladly enter the debate. Sometimes, with ready-made manuals on how best to organise the resistance, regardless of where the turbine is planned.

POSITIVE ATTITUDE

Various factors form the basis of a positive attitude. Among them: the benefits the project brings with it to the local area and/or its residents. Job creation and an upswing for the community generate a predominantly positive attitude. This effect is naturally stronger among all-year-round residents than summer residents. Summer residents put more emphasis on the aesthetic effect than all-year-round residents. In addition, there are various types of financial compensation where the immediate area is fed some of the production value or residents are offered shares in the wind farm. Generally speaking, the positive attitudes wear thinner the larger the wind farm. This has occurred at, for example, Utgrunden where stage 2 has not been received with the same goodwill as stage 1.

CONTRACTORS' OPINIONS

Contractors are also affected by local opinion. Just how much they are affected varies depending on how strong the various actors appear to be. A government decision and planning permission gives the contractor some ground to stand on. Public funding is also of great significance for contractors as it facilitates the project financing and borrowing.

CHANGING ATTITUDES OVER TIME

Attitudes always change once the wind turbines are up and running. It is normal for a negative attitude to change as in Cornwall, UK in 1993, but even more complicated changes can occur. In the Netherlands acceptance swung backwards and forwards several times during an eight-year period.

But less criticism does not necessarily mean increased acceptance. Declining criticism could just as well be due to resistance being considered as meaningless.



Utgrunden in winter

4 FINANCIAL INVOLVEMENT

There are two types of financial involvement in the building of larger wind farms. In Denmark and Germany, for example, financial involvement is statutory but does not exist in Sweden despite having been debated for some time. Financial involvement can also be a strategic tool in encouraging participation. Tore Wizelius book *Lokalt ägd vindkraft* (Locally Owned Wind Power) has a few examples of this.

PART-OWNERSHIP

Discussions have taken place regarding part-ownership at both Utgrunden II and Lillgrund but with no definite outcome. Difficulty organising the part-ownership of large-scale projects (which sea wind power is) has been put forward as the main obstacle. As there does not appear to be any great interest among the general public to become part-owners, no great effort has been put into finding a solution.

Smaller land-based plants comprising of one or a few turbines have generated much more interest in part-ownership. Several smaller projects are therefore financed through part-ownership.

FINANCIAL COMPENSATION

One alternative to part-ownership is for the communities in question, or the industries like, for example, the fishing industry, to be given some form of financial compensation for the disadvantages incurred. This form of compensation is usually called "bygdepeng" (community funding). How this compensation is determined varies according to each individual case. In some cases compensation should be seen as a purely goodwill measure from the power producer, while in other cases formal agreements are reached between the producer and other actors. Those regarded as "other actors" also differ from place to place or who is responsible for allocating the compensation.



Financial compensation must not be offered during the information process. It could well be seen as a bribe, which could result in the offer having the exact opposite effect.

The Swedish Village Action Movement is involved in the issue of financial



compensation. The movement organises courses and provides information to interested parties, and has over the years compiled a great deal of knowledge on the subject.

Öckerö May 23, 2011

Lars Iggström