ENERGY DELTA INSTITUTE
ENERGY BUSINESS SCHOOL

Public Acceptance

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Public acceptance: why does it frequently become a 'show stopper'?

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Introduction

One may call it 'people power', or 'people against power,' but in essence, the context stays the same - ordinary Europeans are on the verge of becoming experts in delaying or even stopping the introduction of new energy technologies and installations. In recent years, there have been numerous protests all over Europe against the construction of new underground gas storage facilities, power transmission lines, developments with regard to shale gas, but also regarding sustainable energy technologies such as wind turbines and carbon capture and storage (CCS). On a large scale people are forming activist groups, striking and even attempting to elect politicians who promise not to build anything. If that does not work, often with the help of local municipalities or environmental groups, citizens are using the courts to hinder planners and developers of new energy projects from their activities - doing everything possible to prevent intrusion into their living environment and comfort.

Yet, modern society has become dependent on technology and therefore the use of energy. Everybody wants to have light and a warm house, fresh food and access to social media and very few could now imagine their lives without computers or mobile phones. However, it is essential to realize that energy, which is produced to power our lives, still mainly comes from fossil fuels (coal, oil and gas) and according to the International Energy Agency this dependence will remain in the coming decades, implying the continuing use of massive energy installations. Considering the impact of greenhouse gases produced from combustion of fossil fuels (for energy generation) on the climate, the EU has set various targets* for their reduction, implying (among other impacts) introduction and use of new energy technologies. Altogether this indicates that major investments in the energy sector need to be made in the coming years to satisfy demand for energy, while simultaneously reducing impacts on the environment and climate. Strangely enough, the innovations and potential solutions for reaching the abovementioned targets are frequently faced with serious barriers to adoption, mainly public opposition. The question arises "why is this the case?"

This article represents an attempt to find an answer to this question, while analysing such issues as the general knowledge of people with regard to current energy and climate issues and the general attitude of people towards change.

Inconvenient reality

When searching for the reasons why new energy projects are frequently opposed by the public, the first and probably the most fundamental one is the overall negative attitude of people towards building any type of installation in their living environment and general change in their lifestyle. Several terms have been introduced to describe this phenomenon: NIMBY (Not In My Backyard), BANANA (Build Absolutely Nothing Anywhere Near Anyone) and CAVE-man (Citizens Against Virtually Everything). While NIMBYs oppose a development as being inappropriate for resident's local area, the latter two terms, particularly CAVE-man, oppose nearly everything, in other words any change (e.g. changes in public policy questions, public transportation routes, parking regulations, etc). Therefore, when people discover plans for installation of a new wind turbine in their neighbourhood (even though people may generally have a positive attitude towards renewable energy), there will certainly be someone demanding that this installation is moved somewhere else, far away from his territory. The problem is there is no such place far away from everyone, especially in densely populated Europe. 'Somewhere else' will inevitably be near 'someone else' who will demand that the project go 'somewhere else'.

This overall negative attitude towards change and particularly construction of new energy installations can partly be explained by the fact that currently there is (on average) little understanding among the lay public of where energy used in households come from, together with a low awareness of climate change and environmental issues in general. In 2011, the European Commission performed a

* 20-20-20 target (20% reduction of the EU's greenhouse gas emissions by 2020, compared with 1990 levels; 20% increase in the share of renewable in the energy mix, and 20% improvement in energy efficiency) and even more ambitious goals stated in the EU Roadmap to reach the emission reduction of 80-95% by 2050.

survey to understand the attitudes and behaviour of the EU citizens towards climate change and their expectations for the future.[1] 26,840 people were interviewed in 27 European countries, and the results of this survey showed that just over half (51%) of all respondents consider climate change a serious problem facing the world. What is even more interesting is that from these 51%, most respondents (about 80%) answered that tackling climate change is the responsibility of national governments, the EU and businesses, indicating a low level of public awareness of the link between energy consumption and climate change.[1] Besides this, another interesting survey was conducted by the European Commission earlier in March 2011 on public awareness and acceptance of CO2 capture and storage.[2] One of the questions in this survey was on public awareness of climate change and CO2, showing that half of the respondents (in total, around 13,000 individuals participated in this survey) were not aware what CO_2 is. 50% of respondents were able to indicate correctly that it is carbon dioxide, however 11% indicated that it is a highly toxic gas and 7% stated that it is 'explosive'.[3]

With regard to people's understanding of the types and quantities of energy sources used for a country-specific power generation, the research of McGowan in 2005 suggested that even though people might be aware of different kinds of energy sources (i.e. renewable energy, coal, gas, etc.), the in-depth understanding of them varies markedly among individuals.[3] The results of the aforementioned EC survey on public acceptance showed that in terms of electricity production, respondents in general had difficulty in assessing how much energy produced in their country was from coal and how much came from renewable energy sources,[3] and this is without going in-depth on European energy import dependency. Even though there is a generally positive attitude and growing support for renewable energy in Europe due to lack of awareness, understanding and perhaps interest, the majority of the lay public does not see the need for new energy technologies and projects, particularly in their neighbourhood. Bearing this in mind, how can the EU governments communicate to the local people the actual need for new energy technologies, such as wind turbines and CCS?

Besides a lack of awareness, there is also an issue of trust. People generally don't trust energy companies, local authorities and even governments, and in most cases there are reasons for this. Concerning the issue of climate change, it seems that at some level EU governments do not truly believe in it themselves. Even though European climate targets are being raised, there still is a lack of legal and financial incentives for reaching those in a given timeframe, leading to very slow progress and results. Several technologies, such as CCS, that are essential for reaching climate goals continue under regulatory uncertainty and the European Emission Trading Scheme, the EU's key tool for reducing industrial greenhouse gas emissions cost-effectively, is widely criticized as being ineffective. The new Energy Outlook 2012 of the International Energy Agency (IEA) indicates that with the current path of development, the limitation of global warming to 2°C[†] is nearly unreachable. With all these uncertainties, what kind of impression is made on the local population with limited knowledge? Regarding energy companies that propagandize the environmental benefits of a massive new energy installation over other benefits/impacts, will the local population truly believe the motives of such companies? The research of Terwel et al. (2011)[4] indicates that the answer to this question is "no", and underlying motives of these companies will almost certainly be perceived as exclusively profit making. Terwel et al. argues that similar actions can cause suspicion of "greenwashing" in the public's eyes, leading to public distrust in the entire organization rather than creating trust and reinforcing NIMBY, CAVE-man and BANANA phenomenon among the local population. Such factors as the type of information provided to the public, the source of this information, as well as individual values and attitudes contribute to the level of public trust in a certain technology and the entire organization, or even governmental actions. The research of Brunsting et al. (2011) on trustworthy information sources showed that research institutes, NGO's, academics and family and friends were rated most trustworthy, while social network sites and industry were the least trusted information sources. Considering the fact that most information reaches the lay public by the means of social media these days,[3] the quality of already limited knowledge among the lay public on energy and climate issues can be deeply questioned.

The last, but not the least, reason that can be distinguished while searching for an answer to the question "why are new energy projects and technologies frequently faced with serious barriers to adoption?", is the issue of compensation, or a frequently asked question "what is in it for me?" among the local population. In essence, the compensation issue is strongly interconnected with NIMBY phenomenon. The overall negative attitude of people towards building any type of installation in their living environment, together with the lack of trust, awareness and understanding of the current climate/energy issues frequently leads to a situation in which a new energy project is perceived by local communities as an intrusion into their property with a profit motive. In the view of the lay public, this leaves the local population only with unwilled consequences (e.g. visual pollution) while the energy

[†] The commonly accepted goal in science and policy making to prevent catastrophic climate change.

company gets all the benefits and revenue. People might wonder 'why should I sacrifice my comfort (note: still powered by energy!) to live and see this ugly installation every day or be in fear of potential health effects and concerned about property values?' If people don't see their benefit from a new technology/installation, their already 'negative spirit' might grow into irritation and anger, binding them together and provide motivation to organize opposition. This sort of situation can lead to the formation of a strong and growing public opposition, potentially becoming a 'show stopper' of the entire project.

Discussion and conclusions

As practice shows, several energy projects, such as the Barendrecht CCS project, construction of the largest underground gas storage facility in Europe (Bergermeer), general developments in energy sector (such as shale gas production in France and Bulgaria), and even renewable energy projects have been postponed or even cancelled due to strong public opposition. As analysis presented in this article shows, there are various interconnected reasons why public opposition can become a 'show stopper' for an entire project. To address this pressing issue, EU governments should take major steps to raise the generally low knowledge of energy and climate issues among the lay public and therefore increase their understanding of the need for new energy/climate installations. Next to this, significant attention must be given to issues of trust and compensation. At the end of the day each and everyone of us wants to have a comfortable life with a warm and well-lit house in a clean environment. Therefore, mutual cooperation while reaching compromises is the key for the future success of energy and climate projects; after all, we all need energy!

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[1] EC (2011). Special Eurobarometer 372: Climate change. Available at: http://ec.europa.eu/public_opinion/archives/ebs/ebs_372_en.pdf

[2] EC (2011). Special Eurobarometer 364: Public awareness and acceptance of CO2 capture and storage. Available at http://ec.europa.eu/public_opinion/archives/ebs/ebs_364_en.pdf

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Community-based renewable energy business models

Key concepts

Local and community-based ownership are additional emerging business models of renewable energy development. Just as utilities can invest in renewable energy, so can local landowners, public groups and local governments. The key feature is that local community members have a significant, direct financial stake in a project beyond land lease payments and tax revenue. A community-based project is perhaps the best way for the broadest group of people to participate in and benefit from harvesting large-scale renewable energy.

With community-based business models there are two main categories, based on the main project owner, being a cooperative ownership and municipal ownership:

- Cooperative: A renewable energy cooperative is a jointly owned and democratically controlled enterprise that follows the cooperative model, investing in renewable energy. The cooperative model was developed in Denmark. The model has also spread to Germany, the Netherlands and Australia, with isolated examples elsewhere(1).
- Municipal: Some municipalities have enacted policies to encourage development of municipally owned and operated renewable energy production on town land. Generally, the development and operation of the RES is performed by a municipal utility.

As the local owners of the project usually don't have all the necessary technical and development knowledge, most community-based business models involve some kind of partnership with a project developer or technology provider.

A key advantage of community-based business models is local economic development. Local investors often contribute a large percentage of the equity base in the projects, or projects are structured so that ownership of the project is returned back to the local investors once corporate investors recoup their investment. This means that a large part of the profits will return to the community where the RES installations are built(2).

References

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2. http://www.greenchipstocks.com/report/community-wind-power/547

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