

## Wind power – case study

### Introduction

This case study provides the Dutch National Council of R&Dialogue evidence based input on the role of dialogue in energy implementation projects. Not only the offshore wind power park near the coast of Noordwijk and Zandvoort is investigated; five other case studies are developed, namely: 1) carbon capture and storage in Barendrecht, 2) shale gas in Boxtel, 3) gas storage in Bergermeer, 4) gas production in Groningen and 5) local energy cooperatives and their developments.

This case study presents the process and dialogue in the implementation of offshore wind power near the coast of Noordwijk and Zandvoort. The project Luchterduinen of *Eneco* and *Mitsubishi* is investigated based on current policy and dialogue process. The objective of this case study is to research the impact of dialogue on the implementation process of a low-carbon energy technology project– wind power - and on public support. By means of stakeholder interviews and analysis of company and policy documentation, laws and procedures this case study is carried out.

First a short overview of wind power in the Netherlands is shown, together with offshore wind power projects. Then, the focus moves to the Luchterduinen project and the dialogue concerning the implementation process. Based on interviews with direct involved parties like *Eneco*, the Municipalities Zandvoort en Noordwijk, action group *Bewoners Leefbare Kust*, the Ministry of Economic Affairs, NWEA (Nederlandse Windenergie Associatie) and NLVOW (Nederlandse Vereniging Omwonenden Windturbines) this case study wants to provide an insight in the dialogue and implementation process and give recommendations.

### Wind power

The Netherlands is always associated with wind power, from the middle ages up till now. In the past 20 years wind power has taken a loop in the energy mix profile due to the available subsidies and technological innovation.

In the past few years, renewable energy production increased and wind power contributed to this. Currently, wind power is the second largest renewable electricity producer in with a share of 4.9% in the total electricity production in the Netherlands. Renewable electricity production has a share of 12.2% in 2012 where fossil electricity production has a share of 80.5%. Imported renewable electricity production is not included.<sup>1</sup>

<sup>1</sup> CBS 2014



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## The position of wind power in the Netherlands:

Period	Information	Total	Onshore	Offshore
<b>2005</b>				
	Installations	1710	1710	-
	Power capacity MW	1224	1224	-
	Energy Production in MWh	2067	2067	-
	% of total electricity usage	1.81	1.81	-
<b>2010</b>				
	Installations	1973	1877	96
	Power capacity MW	2237	2009	228
	Energy Production in MWh	3993	3315	679
	% of total electricity usage	3.42	2.83	0.58
<b>2011</b>				
	Installations	1978	1882	96
	Power capacity MW	2316	2088	228
	Energy Production in MWh	5100	4298	802
	% of total electricity usage	4.33	3.65	0.68
<b>2012</b>				
	Installations	1978	1882	96
	Power capacity MW	2433	2205	228
	Energy Production in MWh	4982	4193	789
	% of total electricity usage	4.31	3.62	0.68

Source: CBS 2014

There is no information available on the contribution of wind power to Dutch trade. Import and export of electricity is not rated by means of energy source. There are estimations of the contribution of wind power on employment and market stimulation – in 2010 it was estimated that 2000 people were employed in the wind power sector.<sup>2 3</sup>

## Offshore wind power in the Netherlands

In 2006, two offshore wind parks were realised. One offshore wind park is OWEZ at Egmond aan Zee - owned by NUON and Shell. Dutch government tendered offshore wind in 2001 and the Shell – NUON consortium was awarded with the contract in 2002. The construction started in 2006 and is operational since 2007. The park has a power production capacity of 108 MW – 36 windmills of 3MW and a maximum tipheight of 115 meter. The park lies within the 12 miles zone (located between 10 and 18 km from the shores). Because the park is located in near shore waters, the consortium developed a nature compensation plan. This was the first constructed offshore park in Dutch waters.<sup>4</sup>

The other park is called Prinses Amalia - Q7 park near IJmuiden. The park is located outside the 12 miles zone (23 km offshore) and has a power production capacity of 120 MW - 60 windmills of 2 MW and a maximum tipheight of 98 meter. The first steps towards the development of the Prinses Amalia park started in 1998 on behalf of a broad consortium. The consortium received the licences to construct the park in 2002, the construction started in 2006 and the park is operational since 2008. After bankruptcy of Econcern (the consortium partner) Eneco and investor Mitsubishi became the owner in 2011.<sup>5 6</sup>

<sup>2</sup> <http://www.nwea.nl/Werkgelegenheid>

<sup>3</sup> <http://www.rvo.nl/onderwerpen/duurzaam-ondernehmen/duurzame-energie-opwekken/windenergie-op-land/financien/werkgelegenheid>

<sup>4</sup> <http://www.noordzeewind.nl/project/offshore-windpark-egmond-aan-zee/>

<sup>5</sup> <http://www.redwave.nl/Doelpagina-windparken/2748510/2744322/Het-offshore-Prinses-Amaliawindpark.html>

<sup>6</sup> <http://projecten.eneco.nl/prinses-amaliawindpark>

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## Developments

The Dutch government aims at 4450 MW offshore in 2023 as agreed upon in the Energy Agreement.<sup>7</sup> For offshore wind power the Energy Agreements aims at the following public tendering and time table. The current parks together with the parks under construction – Luchterduinen and Gemini are accountable for 1000 MW.<sup>8</sup>

### Developments tendering wind power

Public tender in	Power capacity in MW	Operational in
2015	450	2019
2016	600	2020
2017	700	2021
2018	800	2022
2019	900	2023

Source: SER Energieakkoord voor duurzame groei

The ministry of Economic Affairs is authorised to issue subsidies for wind parks offshore in the SDE (*Stimulering Duurzame Energieproductie*) and, its successor, the SDE+ agreement. The subsidy is provided when the park is operational and depends on the kWh price of electricity produced (SDE+ 2014 maximum tariff for wind offshore is €/kWh €0.1875 for a 15 year subsidy and an implementation within 5 years<sup>9</sup>).

*Rijkswaterstaat* as a part of the Ministry of Infrastructure and Environment has an executive role in the authorisation of permits concerning the planning, location and supervision of the process. Offshore wind is a part of the *Rijkscoördinatieregeling*. National government coordinates decision making processes of spatial planning and infrastructural projects when national interests are involved.<sup>10</sup>

Project developers wanting to apply for offshore wind park projects have to hand in a *Waterwet* permit which can be obtained after an Environment Impact Assessment (Milieu Effect Rapportage) - research on environmental conditions as fishery, sea life, maritime aspects, effects on other stakeholders at sea as the oil and gas sector. This includes research on season committed drilling, feared effect on bird life and committing to the Natura-2000<sup>11</sup> policy, these are vital necessities when applying to tenders. The winning consortium is responsible for the inland cable to the grid. The project developers carry much responsibility in term of procedure and communication to the public. From 2015 onwards, a new application system is developed with more management from Dutch state.<sup>12</sup>

Dutch government had ambitious offshore wind plans so a second round of permitting started in 2005. Parties interested in constructing an offshore wind park could hand in memorandum (startnotitie) for an Environmental Impacts Assessment. Government let the market set the preconditions – the market was free to appoint wind park areas. Approximately 80 start notices were handed in by consortia of which 12 resulted in permits. In a later stage, Eneco was granted SDE subsidy for the development of the Luchterduinen wind park.

Permits for offshore wind power projects are strict and inflexible when it comes to the implementation of the latest techniques and innovation. Banks usually only provide loans for wind parks if a proven

<sup>7</sup> <http://www.energieakkoordser.nl/energieakkoord.aspx>

<sup>8</sup> <http://www.typhoonoffshore.eu/projects/gemini/>

<sup>9</sup> <http://www.rvo.nl/sites/default/files/2014/02/Tabel%20Wind%20SDE%2B%202014.pdf>

<sup>10</sup> <http://www.rvo.nl/subsidies-regelingen/de-rijksco%C3%B6rdinatieregeling>

<sup>11</sup> <http://www.natura2000.nl/>

<sup>12</sup> For example structuurvisie wind op zee [http://www.noordzeeloket.nl/images/ontwerp-rijksstructuurvisie-windenergie-op-zee\\_3068.pdf](http://www.noordzeeloket.nl/images/ontwerp-rijksstructuurvisie-windenergie-op-zee_3068.pdf)

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technology is applied.<sup>13</sup> Latest innovations are often not proven technologies yet and therefore hardly ever a part of a permit. Contrary, onshore wind power permits can be adjusted to latest market developments. The project developer either can decide to hand in a new permit based on newer technologies and innovation or construct the original permit.

## The project – Luchterduinen and its process

In 2009, *Eneco* received concession of the Ministry of Transport and Water Management for the construction of four offshore wind parks:

- Luchterduinen / Q10
- Bergen aan Zee / Q4
- Scheveningen Buiten – site was cancelled due to rerouting shipping lines, *Eneco* received in exchange a permit for Q4 West in 2013<sup>14 15 16 17</sup>
- Brown Ridge Oost<sup>14 15 16 17</sup>

This case study focusses on the dialogue process concerning the construction of Luchterduinen. Luchterduinen is 23 km from Noordwijk coast. The park has a production capacity of 129 MW and plans to be in production in 2015.

*Project information Q10 / Luchterduinen:*<sup>18</sup>

- Model: Vestas V112 – 43 turbines, 3MW, total height 136 meter, blades 56 meter, turbine height 80 meters, foundation apps 50 meters.
- Project investment: € 450 million by *Eneco* and investment partner Mitsubishi Corporation (50/50 share).
- SDE subsidy: maximum of € 989 million between 2015 and 2030.
- Operational in 2015 and until 2030 subsidised.
- Operational for maximum of 20 years (need a new permit after 20 years).
- 5 years payment at kWh price (see above: regular price).

The publication of the offshore permit was published in the *Staatscourant* in December 2009.<sup>19 20</sup> Since offshore wind parks are a part of the *Rijkscoördinatiereling* lower authorities are not directly involved. The local authorities of Noordwijk, Zandvoort, Katwijk and Bloemendaal did not notice the publications in the *Staatscourant*. Once the city council and local communities (boulevard residents and beach tenants), industries and organisation got a hold of the plans they started protesting, using the possibilities in the *Rijkscoördinatiereling* to gain influence and make appeals at the Council of State.<sup>21</sup> Information meetings held by the Ministry of Economic Affairs and *Eneco* served to inform the community of the process and project.

<sup>13</sup> Conversations with ING Bank and Rabobank Nederland

<sup>14</sup> <http://www.rvo.nl/subsidies-regelingen/windpark-q10-luchterduinen>

<sup>15</sup> <http://www.rvo.nl/subsidies-regelingen/procesverloop-windpark-q10-luchterduinen>

<sup>16</sup> <http://www.rvo.nl/subsidies-regelingen/windpark-q10-luchterduinen-aanvragen-en-besluiten>

<sup>17</sup> <http://www.rvo.nl/subsidies-regelingen/windparken>

<sup>18</sup> <http://projecten.eneco.nl/eneco-luchterduinen>

<sup>19</sup> [https://zoek.officielebekendmakingen.nl/stcrt-2009-18585.html?zoekcriteria=%3fzkt%3dUitgebreid%26pst%3dStaatscourant%26vrt%3dwind%26zkd%3dInDeGeheleText%26dpr%3dAnderePeriode%26spd%3d20091116%26epd%3d20140516%26sdt%3dDatumPublicatie%26pn%3d2%26pp%3d10%26\\_page%3d1%26sorttype%3d1%26sortorder%3d8&resultIndex=8&sorttype=1&sortorder=8](https://zoek.officielebekendmakingen.nl/stcrt-2009-18585.html?zoekcriteria=%3fzkt%3dUitgebreid%26pst%3dStaatscourant%26vrt%3dwind%26zkd%3dInDeGeheleText%26dpr%3dAnderePeriode%26spd%3d20091116%26epd%3d20140516%26sdt%3dDatumPublicatie%26pn%3d2%26pp%3d10%26_page%3d1%26sorttype%3d1%26sortorder%3d8&resultIndex=8&sorttype=1&sortorder=8)

<sup>20</sup> <https://zoek.officielebekendmakingen.nl/stcrt-2010-21073.html?zoekcriteria=%3fzkt%3dUitgebreid%26pst%3dStaatscourant%26vrt%3dwind%26zkd%3dInDeGeheleText%26dpr%3dAnderePeriode%26spd%3d20091116%26epd%3d20140516%26sdt%3dDatumPublicatie%26pn%3d2%26pp%3d10&resultIndex=0&sorttype=1&sortorder=8>

<sup>21</sup> [http://www.raadvanstate.nl/uitspraken/zoeken-in-uitspraken/tekstuitspraak.html?id=67766&summary\\_only=&q=eneco](http://www.raadvanstate.nl/uitspraken/zoeken-in-uitspraken/tekstuitspraak.html?id=67766&summary_only=&q=eneco)

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In March 2012, *Eneco* handed in a revised permit request for the offshore wind park and the onshore cable permit requests.<sup>22</sup> The Municipalities of Noordwijk and Zandvoort responded in a negative way and, together with citizens – *Bewoners Leefbare Kust*, and beach tenants – *Vereniging Strandpachters Zandvoort*, tried to discuss the location of the wind park wanting it out of sight.<sup>23</sup> They were bound to legal procedures on the construction and location of the park at the Council of State. In summer 2013, the Council of State decided in favour of *Eneco* and against the protesting parties arguing that they are no stakeholder and their argumentation – visibility and horizon pollution, causing tourism to decline, and the drop in housing values, is of no relevance and declared the protests inadmissible.<sup>24</sup>

In parallel, *Eneco* wanted to develop the inland cable route. *Eneco* organised information meetings discussing the process, risks and the relevance of electromagnetic signals and consequences for traffic. The information meetings are considered very successful since it gave *Eneco* the opportunity to fulfill the wishes and needs of the local community<sup>25</sup>. Subsequently, *Eneco* did not receive any protests or positions.

Futhermore, *Eneco*, together with the municipalities of Bloemendaal, Katwijk, Noordwijk and Zandvoort decided to compensate the region and started a trust fund. This was initially badly perceived because it was considered bribery. All parties came to the agreement that a study on people's perception at the coast with a visible wind park will be conducted. The trust fund contributes to sustainable tourism and sustainable (energy) projects and provides the rescue-squad with four hybrid cars. The trust has an independent administrator to avoid conflicts of interest. Every year *Eneco* complement the trust fund with € 45.000,- and once per 2 years the best initiatives are chosen, paid and realised. The trust fund has a maturity of 20 years, has an approximate size of €1 million and begins when the offshore construction of *Eneco Luchterduinen* starts in summer 2014.

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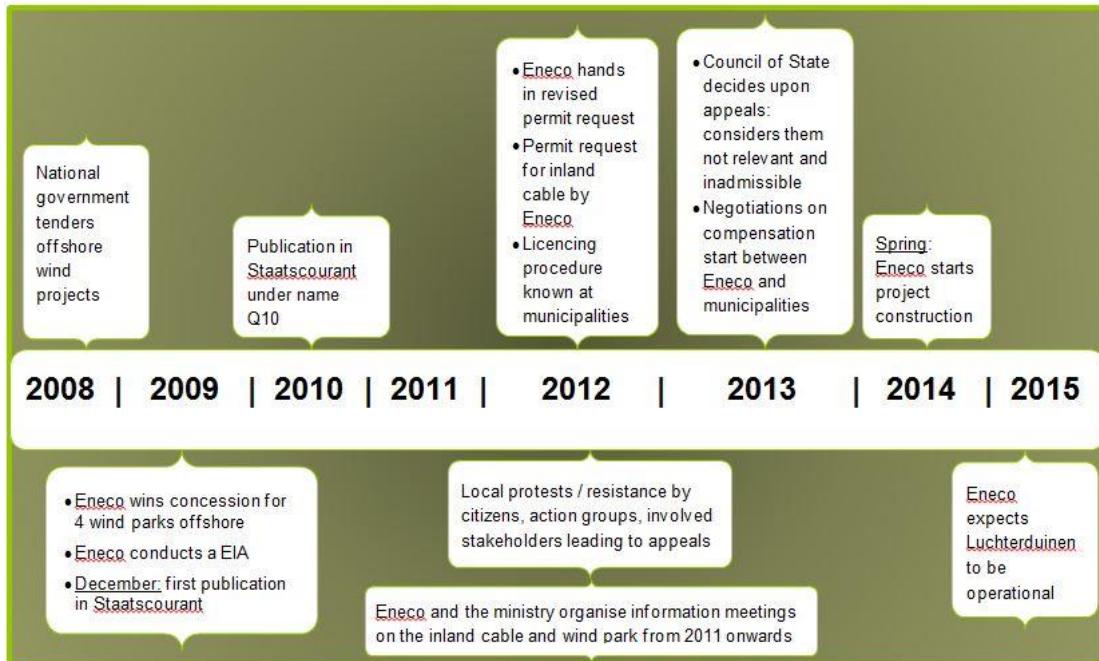
<sup>22</sup> <http://www.rvo.nl/subsidies-regelingen/windpark-q10-luchterduinen-aanvragen-en-besluiten>

<sup>23</sup> Letter offered by Municipality Zandvoort, Bewoners Leefbare Kust, Vereniging Strandpachters Zandvoort - 22 augustus 2012

<sup>24</sup> [http://www.raadvanstate.nl/uitspraken/zoeken-in-uitspraken/tekst-uitspraak.html?id=74655&summary\\_only=&q=luchterduinen](http://www.raadvanstate.nl/uitspraken/zoeken-in-uitspraken/tekst-uitspraak.html?id=74655&summary_only=&q=luchterduinen)

<sup>25</sup> Interview with Eneco

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## Dialogue

When looking at offshore wind park developments we can identify topics that are important for the position and role of dialogue. We identify two levels of dialogue that are significant and not directly related to each other, the role of responsibility and communication.<sup>26</sup>

### Macro level dialogue

In this case study a dialogue at macro or national level is identified. The dialogue at macro level concerns the communication and dialogue with parties involved in the construction of the wind park at a national level. Due to the *Rijkscoördinatieregeling* the involved parties are, amongst others, the Ministries of Economic Affairs, Infrastructure and Environment, and Defence, *Rijkswaterstaat*, project developers, fishery and environmental organisation, shipping sector, maritime and oil and gas industries. The dialogue concerns rules and regulations, policies in the area of concerning offshore projects like on fish populations, environmental impact, shipping routes, military training fields, sand territories and oil and gas areas. The dialogue is held amongst experts and between direct involved stakeholders and mostly out of media and without local communities. The macro level discussion is on technology and installation, subsidy and financing, policy and regulation. In this dialogue, project developers seek more preconditions on e.g. spatial planning and agreements with other offshore stakeholders as the maritime and oil and gas sector. Currently, the preconditions for offshore wind parks is minimal and a topic of dialogue developed in the structural concept offshore wind power.

When the drafted permits are public, everyone is allowed to stage an appeal. This is when the micro level dialogue starts.

<sup>26</sup> Interviews with Eneco, Municipality Noordwijk, Municipality Zandvoort, Bewoners Leefbare Kust, Ministry of Economic Affairs, RVO

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## ***Micro level dialogue***

The micro level dialogue is held with indirect involved stakeholders like local authorities and local communities. Due to the *Rijkscoördinatieregeling* local authorities are a part of the decision-making process by means of appeals and inspection procedures and involved in a later stadium. Their level of influence is limited. Information meetings are held for local communities to inform them on the project. Appeals and inspections have to be handed in at the Council of State, directly the highest court of appeals for citizens against executive branch decisions. In this project, local parties handed in appeals and expressed their disagreement with the construction of the park, quickly realising the effects of the appeals would be minor.

In the case of Luchterduinen, the local community was involved in information meetings explaining the plans of an offshore wind park, the inland cable and process around the inspection and appeal stage. Broad media attention was given, stimulated by local protests.

## ***Responsibility***

National energy projects have to follow procedural steps for implementation. In the case of wind power, the procedures are developed by the licencing authorities – national government and executive authorities as *Rijkswaterstaat*. Policies like the *Rijkscoördinatieregeling* created a shift in responsibility from lower authorities to national government only. The idea behind it is, that prior to *Rijkscoördinatieregeling* the process of implementation was very lengthy and now national government can overrule lower authorities when considered necessary. The *Rijkscoördinatieregeling* has to stimulate regional negotiations and a more speedy process. National government takes over responsibility in order to implement projects. The responsibility for communication and dialogue, financing and investment of the projects is in the hands of the project developers – in this case *Eneco*. The project developer is responsible for policy implementation and mechanisms, subsidies, assessment and monitoring. Whoever wins the project, is responsible for the execution: construction, operation and maintenance of the park, together with public engagement and support of the local communities, if relevant.

The difference in level of responsibility of both government and project developer creates a gap. On the one side, the policy and implementation process is drawn by government and they have the responsibility for the licencing and implementation. On the other side, the role of the project developer, in first place the executive party in the project, has to create (public) support for government policy, while this is not their core expertise nor their intended role.

## ***Communication***

At the level of communication, it is unclear who communicates which message and why. The unclear division between the level of responsibility between government and project developer and policy implementation and communication and execution of a project is reflected on further communication with other stakeholders. Therefore, communication experiences a lot of noise.

The communication at macro level is perceived as direct and clear. Government and project developers regularly communicate and rules and regulations are followed. The project developer has to deliver the necessary documentations and reports on which the tendering authorities base the grants. Public engagement or support is not a required aspect in this stage. The local community is involved in the inspection and appeal stage of the *Rijkscoördinatieregeling*, and in a later stage in the process via information gatherings organised by the project developer and the ministry.

In the case of the Luchterduinen project, local communities prefer to understand and know the reasoning behind the changes in their direct environment, want to be provided with information and prefer to know the technical details. Often local protests are explained as NIMBY effects (Not In My BackYard) meaning that local communities are not necessarily against technical innovation and change as long as it is not implemented in their backyard. The implementation of, in this case windmills, can have direct and

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indirect effects on the situation of local communities. In the example of project Luchterduinen, local communities argue that the windmills cause visibility and horizon pollution affecting employment, tourism and housing prices. Research on the effects of offshore wind parks on the employment rate, tourism and housing prices has only just started.

The current legal process channels communication in terms of responsibility, level of decision-making and involvement. The unclear level of responsibility and way of communication cause noise in communication and lack of trust. According to the interviewees, the current process causes a lack of trust in both local and national government and project developers. As a result of the legal process and communication, local communities express their dissatisfaction and protest. Some interviewees expressed that the less they feel heard, the more militant they want or decide to become.

The communication concerning energy policies is questioned by some interviewees. It is questioned whether offshore wind power is the best solution to meet the European and Dutch sustainability energy goals. Topics as cost-effectiveness, the contribution to the sustainable targets, and the integration in the grid of offshore wind parks was questioned by the interviewees. This shows the necessity for a clear policy outline, policy communication, explanation and person(s) willing to take leadership and spread this message. When asked, it was mentioned that purpose, reasons and arguments for this policy initiative are not well understood and communicated.

## Conclusion

During this case study research it became clear that there is a discrepancy between policy, responsibility for the policy and implementation and the way both policy and projects are communicated. This causes lack of trust in government and project developer and a lack of support behind the policy in general and the project. It can be summarised that in the case of the construction of an offshore wind park near Noordwijk the following has an effect on the process and dialogue:

- The decision-making process and the *Rijkscoördinatiereregeling* (e.g. energy policy and the role for wind power) lies in the hands of governments;
- Rules and regulations regarding offshore wind power lack preconditions like appointed construction areas;
- Project developers applying for tenders have to draft their proposal together with all involved stakeholders offshore;
- (Local) public and local communities are informed when the party applying for tender submits the application licence – causing questions and sometimes protests of local communities;
- Local communities argue they do not understand the vision / reason behind the policy implementation – making it difficult to give support;
- The project developer applying for tender is the appointed party to create support in order to receive the licences;
- The points above create a lack of trust in government and project developers;
- Finally resulting in delays and possibly extra costs during the implementation of the project.

## Recommendations:

- Government and project developers should involve local communities and involved parties (e.g. maritime sector, beach tenants, local authorities) in plans beforehand and explain the vision and reasoning behind the plans, technical details as appointed construction area, type of turbine, make participation possible, create a codecision procedure;
- Government and project developers should improve communications on the process itself (vision and goals, implementation process, participation, codecision procedure), from the beginning of the process – depending on the level of responsibility at macro and micro level - towards the involved parties. The improvement of communication involves the choice of the

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communicator, timing of communication, medium used and targeting. Communication should be tuned to the message, goals and (local) community;

- Government in the first place and subsequently project developers should communicate the reasoning behind the implementation – express a clear vision on energy policy and the specific embodiment;
- National government should give choices on where to implement wind power projects; giving local authorities and companies options where to implement a project thereby creating the best local engagement. Connect these choices with local benefits and negotiate this with local communities and authorities.
- The decision-making process should be improved by including stakeholders (direct involved parties) in the policy creation process being able to draft together a successful implementation process;
- The implementation process should be open and flexible for feedback from a broad range of stakeholders (including citizens), creating the option for a codecision procedure wherein policy-makers and involved stakeholders, from every level, can codecide on aspects of the implementation process (e.g. location, forms of compensation etc.). During this process, the vision and goals behind the actual implementation should be communicated early in the process, transparently, and clearly.