Gas storage – 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 gas storage project in Bergermeer is investigated; five other case studies are developed, namely: 1) carbon capture and storage in Barendrecht, 2) shale gas in Boxtel, 3) wind offshore near Noordwijk/Zandvoort, 4) gas production in Groningen and 5) local energy cooperation's and their developments.

This case study presents the process and dialogue in the implementation of gas storage in a depleted gas reservoir in Bergermeer. The project is led by TAQA Energy B.V. and EBN (Energie Beheer Nederland; Dutch gas and oil exploration, production, storage and trading company - owned by Ministry of Economic Affairs and has a 40% to 50% equity stake in every exploration and production project in the Netherlands).

The project of gas storage near Bergermeer is investigated based on the public dialogue and implementation process. The objective of this case study research is to research the impact of dialogue on the implementation process of a gas storage project and on public support. By means of stakeholder interviews and analysis of company and policy documentation, laws and procedures this case study is assessed.

First, a short overview of gas and gas storage in the Netherlands is shown. Then, the focus moves to the gas storage project in Bergermeer and the dialogue concerning the implementation process. Based on interviews and contact with direct involved parties like TAQA Energy B.V., EBN, municipality Alkmaar and Bergen, Milieudefensie, Natuurmonumenten and Rijksdienst voor Ondernemend Nederland (RVO), this case study wants to provide an insight in the dialogue and implementation process and give recommendations.

Gas and gas storage

Gas storage is the storage of natural gas in (moreover) depleted gas, oil or salt wells underground, or above-ground storage in silos. Gas storage is an energy storage technology to balance the gas supply and demand, and to operate commercially on volatile gas prices. Gas usage – to a large extent used for heat in buildings – increases in winter and decreases in summer. In order to fulfil the demand for gas and to anticipate to higher gas prices in (a very cold) winter and low gas prices in summer, gas storage is a cost-effective, attractive technology. Furthermore, the amount of gas reserves in the Netherlands decline, gas imports and storage can retain the gas supply for usage in the Netherlands and abroad. As a part of the gas roundabout strategy, the trading of gas becomes more important for state income (via EBN). Moreover, gas trading on spot contracts is drastically increasing at the expense of long term contracts.

In Grijpskerk and Langelo (Norg) two depleted gas wells are used to store gas since 1997. In that same year in Alkmaar, a peak gas installation facility in a depleted gas well was stored with gas and serves as a supply in winter. Other gas storage facilities are in Zuidwending operating since 2011, and above-ground liquefied natural gas (LNG) terminals at the Maasvlakte. Infrastructure for gas imports from Norway and Russia is build, terminals for liquefied natural gas (LNG) are constructed in the ports of Rotterdam and Eemshaven, and the national gas infrastructure is equipped to export, import and store gas. Gazprom is one of the partners and has long term business relation with the Netherlands. [1] [2] [3] [4] [5]

[1] TNO Gas studies
[2] ECN gas storage studies

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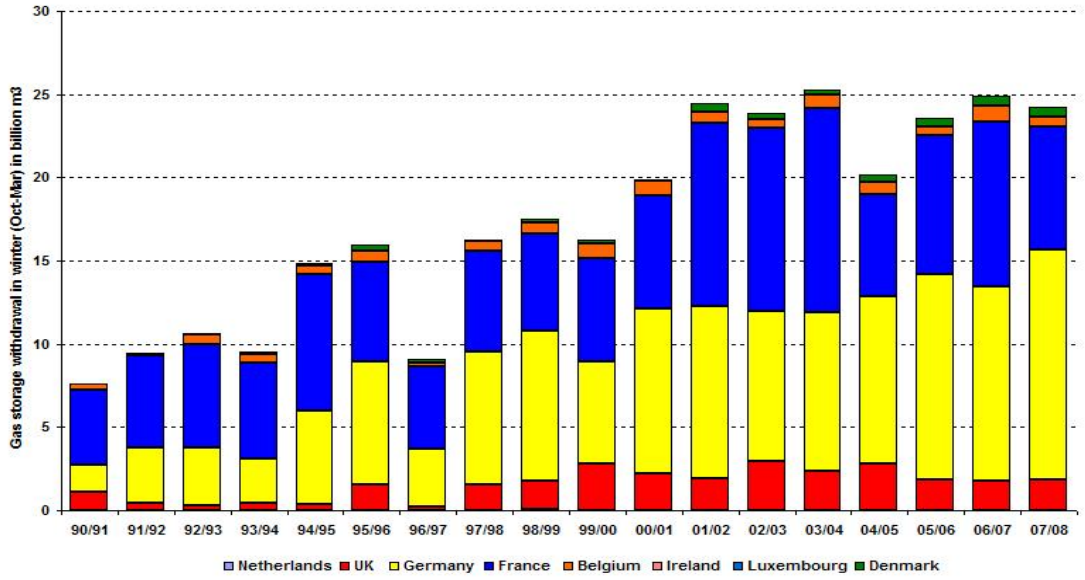
Gas storage is a technology used all over Europe. The most storage facilities can be found in Germany, France and the United Kingdom, where they experience an increasing demand for withdrawal of gas from the storage facilities in winter time. All three countries experience increasing protests and more need for public engagement concerning gas storage projects than before. [6] The difference in gas usage, and gas prices over the seasons cause an increasing need for available energy supply for a cheap(er) price in nation states. According to GIE, the European association representing gas infrastructure operators, public perception and public engagement are becoming more important topics because society wants to be more involved in the (decision-making) process and operators want to avoid raising opposition during their operation lifetime. In order to be able to deal with topics as public perception and public engagement, the GIE had advocated for a simplification of the permitting process for new infrastructure under the TEN-E regulation published in 2013. [7]

The following tables shows the increasing demand for gas from storage facilities in Europe. [8] [9]



Gas policy

Dutch government considers gas a transition fuel towards reaching the climate and energy goals for 2020 (20% CO_2-reduction, 20% energy savings, 14% renewables in the mix) and 2050 (80-95% CO_2-reduction). [10] With the Groningen gas field, gas serves as an important source for energy supply (mainly heat and feedstock for the industry), and with the available gas infrastructure and expertise, gas storage can be a part of the energy transition policy. Gas storage is not (directly) related to climate goals, but considered a business strategy based on future earnings for Dutch state. The Netherlands has no specific gas storage strategy directed to climate goals. Dutch gas policy focusses on small field policy.

[3] http://www.eemshaven.nl/ - LNG terminals
[4] Port of Rotterdam – LNG terminals
[5] http://www.gasopslagbergermeer.nl/nieuws/PGI_draait_op_volle_toeren
[6] Consortium partners R&Dialogue
[7] Gas Infrastructure Europe
[8] http://www.gie.eu.com/
[9] ECN gas storage studies
[10] http://www.energieakkoordser.nl/energieakkoord.aspx

The large Groningen gas field is used as swing producer and small fields operate at maximum production, this towards the development of a gas roundabout, a strategy focussing on the Netherlands as gas hub (in import, export and production) for Northwest Europe. [11] [12] [13]

It is expected that the gas production from the Groningen gas field declines within the next 10 to 25 years. In order to have an alternative and fulfil the demand for gas, gas storage facilities can provide a solution as back-up during a short period of low supply or supply interruption. As a part of the gas roundabout strategy, gas storage can increase gas transport and trading. EBN has the ambition to produce 30 billion m^3 gas on a yearly basis till 2030 to fulfil the gas demand for 2030 and beyond. The possibility of gas storage can fulfil gas demand during periods of high demand and low supply or supply interruptions, benefit from own resources, and create trading opportunities with gas import and export. Furthermore, the Dutch home market, with its knowledge, expertise and experience in the field of gas of Dutch professionals can expand and grow further. [14] [15]

Gas in the Netherlands

Gas in million m^3	2000	2005	2010	2011	2012
Supply# in the Netherlands	46,346	46,770	52,024	45,426	43,626
Production# in the Netherlands	69,180	74,460	83,944	76,429	76,020
Import of gas	16,500	21,747	24,408	21,812	23,769
Import of LNG	-	-	-	-	961
Export of gas	39,329	49,445	56,433	52,945	57,263
Stock*	-5	8	-19	-2	-115
Total usage in the Netherlands	46,346	46,770	52,024	45,426	43,626

Source: CBS 2013

supply is the primary gas available for usage in the Netherlands and production is the gas that comes from Dutch reservoirs - both onshore as offshore reservoirs.

* positive means decrease in stocks, negative means increase in stocks

Gas and the economy

The impact of gas for the Dutch economy is significant since gas revenues and gas trade are an important source of income for Dutch state. Gas trade, with Gazprom as important trading partner, is an important instrument of the gas roundabout strategy. Gas is an important energy source for the Dutch economy. Within a larger context, developments concerning gas have influence on the competitiveness and economy of the Netherlands. The relatively large energy-intensive industry benefit from the gas production and supply. International developments like the discovery of shale gas in the United States and the changes in their internal market caused price differences for coal, exported for a lower prices to the European market. The situation in Crimea and Ukraine cause unrest and trigger the political and societal will to become independent from Russian gas. Before this unrest occurred, the Netherlands signed contracts with e.g. Gazprom on the supply of the gas (kussengas / cushion gas) for the Bergermeer storage facility, prolonging their over 40 years old business relation. [16] [17] [18] Furthermore,

[11] http://www.nlog.nl/resources/Publicaties/Energierapport2005.pdf
[12] http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2008/06/18/energierapport-2008.html
[13] http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2011/06/10/energierapport-2011.html
[14] TNO
[15] http://www.ebn.nl/OverEBN/Paginas/Rol-in-de-olie--en-gassector.aspx
[16] http://www.gasopslagbergermeer.nl/nieuws/Gazpromtekentovereenkomst
[17] http://www.energeia.nl/preview.php?Preview=665
[18] Ministry of Economic Affairs – letter dated 18 April 2011 Antwoorden op openstaande vragen uit AO 30 maart jl.

what influences the gas market is the low price for CO_2 in the EU-ETS and that the European gas contracts are linked to oil prices. [19]

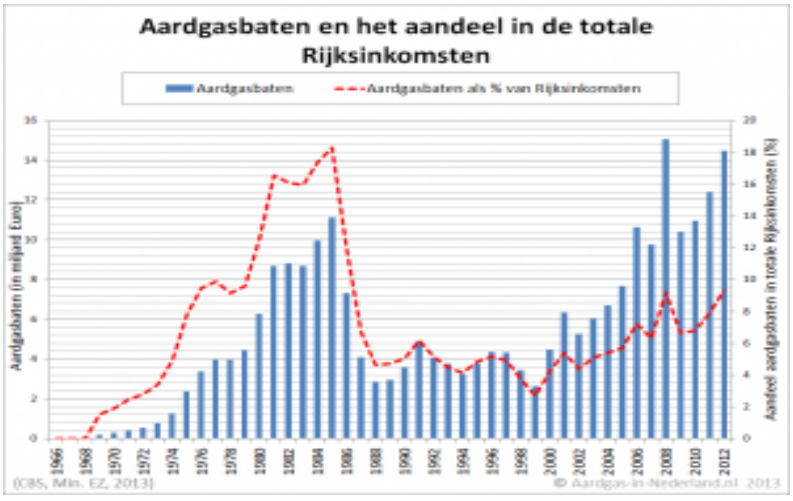
These developments stimulate the dialogue on the use of gas and the role of gas storage facilities can have. Gas is important for the Dutch economy, gas revenues contribute to Dutch economy with approximately €12 billion on yearly basis and a significant share in GDP, as shown in the chart below and figure below.

Gas revenues and its percentage of GDP

Billion €	2000	2005	2010	*2011
Gas revenues	4,490	7,579	10,670	12,391
GDP	480,825	513,407	549,265	554,543
% of GDP	1.07 %	1.47 %	1.81 %	2.05 %

Source CBS 2014
* provisional data

SER National Energy Agreement
The SER National Energy Agreement mentions the role of storage of gas for and in e.g. industrial heat management, tailoring the supply and demand of gas (for heat), developments for power to gas and research on infrastructure and storage combined with a working business model. Furthermore, the Agreement stresses the role of gas for the Netherlands. In the field of gas the Netherlands is at the top of the world league in term of knowledge, expertise and experience and gas can play a role in the transition towards a sustainable energy supply. Gas is considered a transition fuel as its emissions are lower than coal, and gas can be developed as biogas or 'green' gas. Furthermore, the changes in the rules and regulations concerning gas promote sustainable development. [20]



Source: Initiatief Aardgas in Nederland

[19] Emissions Trading System – system for trading greenhouse gas emission allowances with a 'cap and trade' principle for more than 11,000 power stations, industrial plants and airlines (only European flights) in 31 countries (EU28 and Iceland, Liechtenstein, Norway).
[20] http://www.energieakkoordser.nl/energieakkoord.aspx

The project – gas storage Bergermeer

At Bergermeer, TAQA Energy and EBN realise a gas storage facility that can store 4.1 billion m^3 gas. Gas is stored at a depleted gas field, located 2500 meter underground. This depleted gas field was used for gas production since the 1970s by the predecessors of TAQA Energy. TAQA Energy wanted to use the gas field again to operate as a buffer for customers who can inject or produce this gas to make a margin on the price differential. New wells to store the gas are constructed, together with a gas treatment installation – to purify the gas before it is transported in the grid. From 2007 onwards, TAQA Energy developed their plans and writes a memorandum (startnotitie) starting the Environmental Impact Assessment (EIA – in Dutch MER) from November 2008 onwards. The memorandum is public for six weeks [21] and is discussed with direct involved parties like Province of Noord-Holland, TAQA Energy, Municipalities Schermer, Heiloo, Bergen and Alkmaar, Ministries of Economic Affairs and Environment and Infrastructure.

Local authorities involved

Besides the involvement in the memorandum and EIA, municipalities were informed via the *Staatscourant* and local newspapers. They respond rather hesitant to the developments and municipality Bergen is against the project from the beginning. The municipalities cooperate and share their concerns about the effects and risks of the gas storage in terms of earthquakes, safety measures and reasoning behind the location, which was a Provincial natural sanctuary. The municipalities Alkmaar and Bergen are directly affected and involved in the project. During an interview, it was said that parties (government, province, project developer, municipalities) had orally agreed, when the project by the predecessor of TAQA Energy started in the 70s, to give the area back to nature when the gas production project would end . The difference of insight on this agreement triggered most of the resistance, as it was unclear why parties not kept their promise. During the process (approximately end 2008 / beginning 2009), the municipalities obtained information on the *Rijkscoördinatieregeling* for the CCS project in Barendrecht to be better aware of their rights. During this period, TAQA Energy was the main communicator of the project. [22] [23] [24]

Larger group of stakeholders

Beginning 2009, the municipalities and the Province responded to the EIA with views of judgement (zienswijze) on e.g. the legal process, noise pollution, alternative locations and pipe routes. [25] Subsequently, the direct involved parties: Ministry of Economic Affairs, TAQA Energy, Province Noord-Holland and the municipalities formed a workgroup to discuss themes as: security issues, local and national costs and benefits arrangements. Security issues as the risks for earthquakes (the area was confronted with earthquakes in 1994 and 2001 due to gas production) [26] and the effects of gas storage on the nature. The issue of costs and benefits focussed on the local costs and national benefits of gas storage and ways for compensating the local environment. The dialogue in the workgroups led to the development of permits at the municipalities involving planning and environmental permits. During this period, the stakeholders are aware of the initial energy policy (creating a gas roundabout and making the Netherlands a gas distribution country) and this is clearly communicated. During this period, the project became a part of the *Rijkscoördinatieregeling,* This means that national government coordinates decision-making processes of spatial planning and infrastructural projects when national interests are

[21] From 22 November 2007 till 3 January 2008
[22] http://www.heiloo.nl/plannen-en-projecten/gasopslag-taqa_42097/
[23] http://www.gasopslagbergermeer.nl/cusimages/pdf/mer/MER%20Hoofdrapport%202-265%20TAQA%20BGS%2015-12-2008%20web.pdf
[24] Based on interviews with Taqa Energy, Municipality Alkmaar, Municipality Bergen, Natuurmonumenten, Milieudefensie, Bedrijvenvereniging Boekelermeer, RVO.
[25] http://www.alkmaar.nl/gemeente/webcms/site/gemeente/actueel/persber/2009/files/p_33675.pdf
[26] http://www.knmi.nl/cms/content/15539/aardbevingen_bij_alkmaar_en_bergen_aan_zee

involved.[27] The municipalities, were welcomed with a visit of the responsible minister several times to explain the policy and listen to the local opinions and concerns. [28] [29] [30] From that moment , business association Boekelermeer and environmental organisations are involved in the project. The business association is directly involved in the project; TAQA Energy planned to settle at their area. They are not against the project, but argue that the consequences of the project are not well communicated and investigated. They argue that the economic interests prevail, which is not necessarily a bad thing, and that all interests should have had an equal assessment. They, amongst others, question the location and policy implementation process. Some involved stakeholders are aware of the reasoning behind and necessity of gas storage and the location in Alkmaar. Furthermore, to investigate the possible effects of gas storage the KNMI, TNO and MIT conducted research between 2008 and 2011. [31] All results were received with doubts and distrust. In interviews, it was argued that the reports were incomplete and research institutes not independent enough. Following the procedure of the *Rijkscoördinatieregeling,* the draft integration plan and necessary permits are published in September 2010. This received 2767 views of judgement of which 242 unique ones. [32] [33] With adjustments the official permit is published in May 2011. [34]

During this period the first protests of local communities occur. Action groups as Gasalarm2 is established, and environmental organisations as Natuurmonumenten and Milieudefensie are involved. The two latter cooperate with local authorities and TAQA Energy to negotiate and clarify information. Action group Gasalarm2 is against the gas storage project and actively express their concerns, distrust and counterarguments. The environmental organisations, especially Milieudefensie, is worried about the effects gas storage has on wildlife (birdlife) and the local flora and fauna. The Noordhollands Duin greenbelt is close by and can be affected by the activities of TAQA Energy both above and below ground level. Milieudefensie argues that the gas storage project is contrary to the SEVESO-II Directive and Natura2000 policy. Natuurmonumenten also expressed their worries about the effects on flora and fauna. Both parties argue that economic interests prevail above natural interests, and that flora and fauna is subordinate. The municipality of Bergen was, and has been, against the project till the last moment, due to safety and environmental risks, noise, visual pollution and light hindrance. They are still not in favour of it. Local media picks up the commotion and gave it local and national attention. [35]

Unrest

Due to local unrest, the involved parties as municipalities, action groups, environmental organisations as Milieudefensie and Natuurmonumenten cooperate with TAQA Energy at the level of research and communication. During this period, they have kept open communication with each other.

As a result of the *Crisis en Herstelwet*, local authorities are not allowed to hand in views of judgement against the project, individual legal entities can do this. The *Crisis en Herstelwet* and the *Rijkscoördinatieregling* are often confused or considered equal. [36] First, the views of judgement of the representatives of the business association Boekelermeer and neighbourhood association regarding seismic instability and security is discussed by the Council of State in August 2011 arguing that the actions of government and TAQA Energy are preliminary. In May 2012 the Council of State deals with all

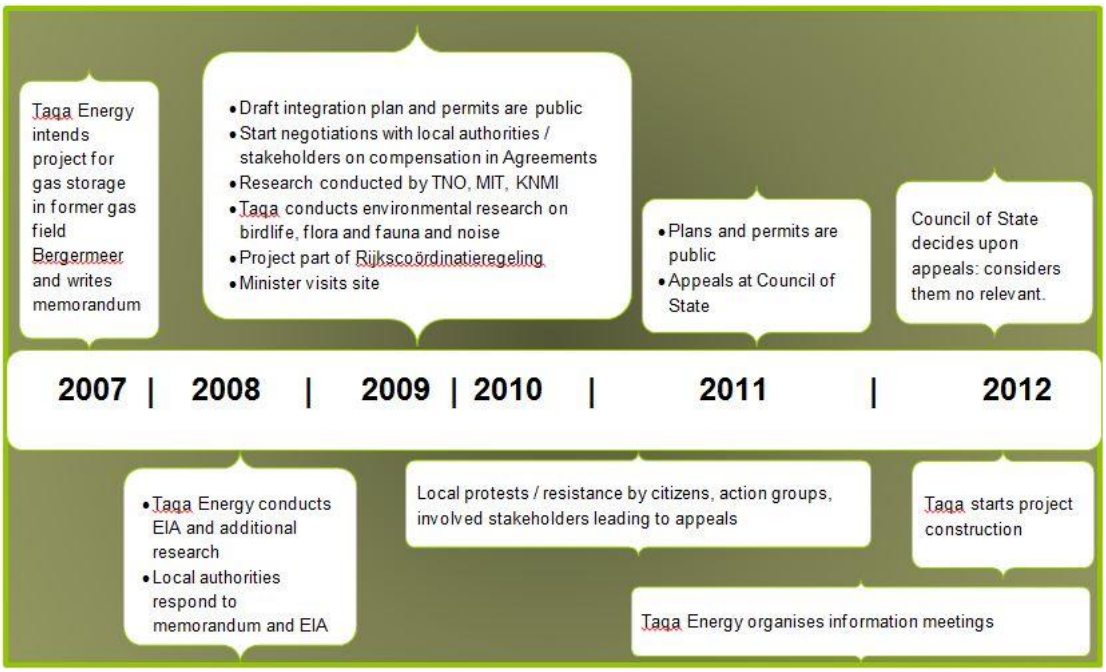
[27] http://www.rvo.nl/subsidies-regelingen/de-rijksco%C3%B6rdinatieregeling
[28] http://www.boekelermeer.biz/index.php?id=38
[29] http://www.europa-nu.nl/id/vi82ag7lkvw6/agenda/maria_van_der_hoeven_bezoekt_in
[30] http://www.gasopslagbergermeer.nl/nieuws/werkbezoekCramer
[31] http://www.gasopslagbergermeer.nl/downloads/
[32] http://www.rvo.nl/subsidies-regelingen/bergermeer-gasopslag-fase-1-deel-1
[33] http://www.rvo.nl/subsidies-regelingen/bergermeer-gasopslag-fase-1-deel-2
[34] http://www.rvo.nl/subsidies-regelingen/gasopslag-bergermeer
[35] Based on interviews with Taqa Energy, Municipality Alkmaar, Municipality Bergen, Natuurmonumenten, Milieudefensie, Bedrijvenvereniging Boekelermeer, RVO.
[36] http://www.alkmaar.nl/gemeente/webcms/site/gemeente/bestuur/bw/besluitenlijst/2010/files/p_34401.pdf

views of judgement handed in and decides that they are inadmissible and have no legal basis. This means that the project for gas storage at Bergermeer can start. [37] [38] [39] [40] [41] [42] [43]

Agreements

After a period of negotiations, TAQA Energy and the four municipalities create agreements (convenanten), to fulfil the needs and answers to the different concerns. The agreements discusses the issues on how to proceed when damages and repercussions occur on the direct environment due to gas storage activities. It concerns financial support and monitoring of the environment like noise and nature. Business association Boekelermeer came to an agreement with TAQA Energy on the location of the site and the location of other companies (one company had to move to situate TAQA Energy). [44] [45] [46] [47] [48]
The operations started in 2013 and depending on national and international circumstances the discussion on the reasoning behind the gas storage project and its consequences is still a topic of discussion. For example, the corporation between Gazprom Export and TAQA Energy, the dependence on Russia and Russian companies plays a role in the discussion. [49] [50] [51]

[37] http://www.rvo.nl/subsidies-regelingen/procesverloop-gasopslag-bergermeer
[38] http://www.raadvanstate.nl/uitspraken/zoeken-in-uitspraken/tekst-uitspraak.html?id=58253&summary_only=&q=gasopslag+bergermeer
[39] http://www.raadvanstate.nl/uitspraken/zoeken-in-uitspraken/tekst-uitspraak.html?id=66989
[40] http://www.rtvnh.nl/nieuws/79235/Gasopslag+toegestaan+in+gebied+bij+Alkmaar
[41] http://www.volkskrant.nl/vk/nl/2686/Binnenland/article/detail/3377481/2013/01/15/TAQA-start-boringen-gasopslag-Bergermeer.dhtml
[42] https://www.ecn.nl/newsletter/dutch/2012/juni/taqa-start-aanleg-gasopslag-bij-bergen/
[43] Based on interviews with Taqa Energy, Municipality Alkmaar, Municipality Bergen, Natuurmonumenten, Milieudefensie, Bedrijvenvereniging Boekelermeer, RVO.
[44] http://www.gasopslagbergermeer.nl/cusimages/convenanten/Convenant_Regeling_Overlast_en_Bouwschade_Omwonenden_Gasopslag_Bergermeer.pdf
[45] http://www.gasopslagbergermeer.nl/cusimages/convenanten/Convenant%20regeling%20schade%20door%20bodembeweging%20Bergen.pdf
[46] http://www.gasopslagbergermeer.nl/cusimages/convenanten/Convenant_Regeling_Schade_door_Bodembeweging_Gasopslag_Bergermeer.pdf
[47] http://www.gasopslagbergermeer.nl/cusimages/convenanten/Bijlage%201%20Annex%20A%20en%20B%20convenant%20Bodembeweging%20-%20getekend%20%20Alkmaar.pdf
[48] http://www.gasopslagbergermeer.nl/cusimages/convenanten/Hanselman%20Monitoringsplan%20TAQA.pdf
[49] http://www.heiloo.nl/plannen-en-projecten/gasopslag-taqa_42097/
[50] http://www.dichtbij.nl/groot-alkmaar/regionaal-nieuws/artikel/3226911/kamerleden-ondervragen-minister-kamp-over-gasopslag-bergermeer.aspx
[51] http://www.volkskrant.nl/vk/nl/2686/Binnenland/article/detail/3416323/2013/03/27/Helft-gasopslag-Alkmaar-komt-in-handen-van-Russen.dhtml



The dialogue

When looking at the gas storage project at Bergermeer we can identify topics that are important for the position and role of dialogue. We identified a dialogue of macro versus micro level, and on the role of responsibility, trust and communication.

Macro versus micro dialogue

Due to the nature of this project, some stakeholders are not directly involved in the project. The first dialogue was between TAQA Energy and the ministry of Economic Affairs, developing the outline of the project and providing the first licence. From that moment onwards, all local stakeholders were involved like Province Noord-Holland, Water Control Hollands Noorderkwartier and the municipalities Alkmaar, Bergen, Schermer and Heiloo. They were involved in the memorandum and the EIA. When it became clear that the project was of national interest and it became a *Rijkscoördinatieregeling*, more parties were involved, like environmental organisations, business association Boekelermeer and local action groups.

The timing and implementation of the *Rijkscoördinatieregeling* depended on the decision of both parliaments. This caused indistinctness. Most stakeholders in the project had the idea not to have influence or grasp the effects of the new law. It was clear from the beginning that the gas storage project was a part of national gas policy (gas roundabout policy) but some stakeholders were given the idea that there was room for negotiation. Most stakeholders argue that it would have been better if national government would have set preconditions for the project. What is negotiable and what not? Transparency and openness in the level of involvement of micro level stakeholders can be improved and should be communicated. Some interviewees mentioned that the *Rijkscoördinatieregeling* should have been implemented right away, that would have given a better signal, especially when the image is present that national government will implement the project anyway. By providing preconditions, this can

be perceived as a sign that all parties are taking seriously. The current process gives the suggestion that some stakeholders and their arguments are subordinate. [52]

Responsibility

This brings us to the following important factor of dialogue: responsibility. Who or which stakeholder is responsible for what? In the case of gas storage, this has not been as clear for all parties. First of all, the interest in the project was clear for all stakeholders – the role of gas storage facilities as a part of the gas roundabout strategy was clearly communicated according to the interviewees. Most communication lies in the hands of TAQA Energy, as project developer. The involvement of the Ministry of Economic Affairs, responsible for the execution of the project and process manager, is perceived as involved in the project from the moment most protests occurred. Before that, TAQA Energy is considered the main stakeholder and most responsible one. The role of EBN is unclear, just as their responsibility in the project. It could be argued if a project developer, who's initial task and goal is to make profit, is the right stakeholder to be the contact and advocate of a project as a part of national government policy.

It is considered unclear which responsibility the Ministry of Economic Affairs had and took. Especially when they, later in the project, took all responsibility for the implementation of the project (with the *Rijkscoördinatieregeling)* not providing room for any further form of participation. National government is responsible for the execution and enforcement of climate and energy policy, but does not always effectively take this role. Interviewees mentioned, that it would be better if national government would take position from the beginning. This creates transparency on the different roles of stakeholders, provides the stakeholders preconditions and a framework on how to proceed and work and allows for insights in policy and implementation.

Due to the unclear position of stakeholders, it is unclear who to involve and at what moment. In first instance, authorities (local, provincial, national) were involved and only later on in the process other regional stakeholders e.g. the business association Boekelermeer, local environmental organisations and citizens. The responsibility of local authorities towards local stakeholders in terms of representation is not always perceived equally and can be improved. This causes unrest, different perceived positions and interests which can lead to a lack of trust in a stakeholder that should or could represent other stakeholders.

Trust

The level of trust is very important for the implementation of a project. The interviewees revealed that almost everyone and everything was distrusted. The only clear position was taken by TAQA Energy which is seen as a foreign profit organisation, creating business to make profit, no matter with whom. The only matter most interviewees questioned was their cooperation with Gazprom. This is disputed and distrusted, but does not directly affect the trust of other stakeholders in TAQA's role in the project.

Research reports are highly distrusted. Research institutes conducting research are often accused of partiality or lack of independence from government or project developer. It is suggested by some interviewees, that it would be better if national government first conducts research on the intended project itself before starting a project and before attracting a commercial party.

Due to the unclear level of responsibility, the stakeholders involved have the tendency to distrust each other. The positions are too unclear or subject to change. It was suggested by several interviewees, that if national government would have implemented the *Rijkscoördinatieregeling* from the beginning onwards, the position of national government would have been clear and the lack of trust minimal. Time

[52] Based on interviews with Taqa Energy, Municipality Alkmaar, Municipality Bergen, Natuurmonumenten, Milieudefensie, Bedrijvenvereniging Boekelermeer, RVO.

constraints on the implementation of the *Rijkscoördinatieregeling* are not taken into account. This also could have created less distrust in the Council of State, who is perceived by some stakeholders as partiality partner of national government positioning nature and environment subordinate. On the other hand, from the perspective of the responsible Ministries the verdict of the Council of State was received with suspense.

Communication

It could be questioned whether a project developer as TAQA Energy is the responsible stakeholder for project communication, or that this lies in the hands of national government. Either way, the interviewees mentioned that the communication of TAQA Energy was accurate and open. The project communication is disabled due to the change in policy and implementation responsibility to national government.

The overall communication is not perceived negatively. It is said, that stakeholders should have been involved earlier and personally by the responsible and involved parties. The interviewees are not unhappy with the communication and argue that having an open dialogue is positive, just as long as the framework and preconditions within the topics are clear. Furthermore, it is argued that the stakeholders involved in the dialogue should be broader. This way, all stakeholders have the idea or feeling been taken seriously.

Conclusions

Based on the conducted interviews and information available on this topic, certain issues could and should be dealt differently in order to be more successful in the future. Especially, the political process, responsibility and lack of trust in this project is under discussion and leaves room for improvement. When focussing on dialogue, this case study can conclude the following:

- The decision-making process (e.g. energy policy, gas roundabout) lies in the hands of national government;
- The implementation of gas storage follows rules and regulations applied to the gas and mining business;
- Gas storage as a part of the national gas roundabout policy is a known and well communicated message;
- Parties responsible for the implementation of the project have to follow the rules and regulations with the involved stakeholders, and therefore do not focus on communication with local communities and lower authorities directly;
- Public and local communities are informed when the party appointed for the implementation submits the application licence – causing questions and protests by local communities;
- The party applying responsible for the implementation the appointed party to create support;
- This requires good communication and negotiations, and trust in the sending party;
- It also requires an open and active attitude towards conducted research, being willing and open to learn lessons from it;
- Responsible parties intending to implement a certain policy experience protests (from local communities and lower authorities) and lack of trust in their work or organisation;
- Often research and investigation reports are considered a proof of good practise and project implementation by responsible parties of the project, but do not minimise the concerns of other stakeholders per se;
- The late implementation of the *Rijkscoördinatieregeling* and *Crisis en Herstelwet* causes further distrust in national government taking halfway all responsibility for the project, leaving no room for dialogue or discussion with other stakeholders;
- The points above create a lack of trust in government, communication tools / messages, and research reports;
- The involved stakeholders have the option to negotiate forms of compensation in order to have some influence and trade off local costs and benefits;

- Due to the *Rijkscoördinatieregeling* and *Crisis en Herstelwet* local communities can only take legal steps at the Council of State. This creates the image for some stakeholders that the Council of State is biased and considers some interests more important than others (e.g. economic interests prevail above environmental). Other stakeholders consider the legal position of the Council of State as the independent body to judge over administrative jurisdiction and competence.

Recommendations

- Government should communicate national policies, interests and business approaches more often and early in the project stage with local authorities, preferably face-to-face;
- Government and project developers should communicate the reasoning behind the implementation – express a clear vision on energy policy and the specific embodiment, leaving no or minor room for fictive information;
- Government and executive parties should involve local communities and involved parties (e.g. local authorities, local communities) in plans beforehand and explain the vision and reasoning behind the plans (moreover the responsibility of government), technical details as appointed location, safety regulations (moreover the responsibility of executive parties), together create a co-decision procedure: informing and listening to each other;
- When involving local stakeholders make sure that enough time is taken to get to know each other and investigate each other's interests in the project and local environment. It was suggested that this project was bound to time constraints. An inventory on everyone's interests and needs creates trust, openness and transparency which leads to a level playing field for all involved parties;
- When government decides to take responsibility e.g. with the *Rijkscoördinatieregeling* and *Crisis en Herstelwet* instead of a co-decision procedure, this should be done early in the process and with clear, proper and transparent preconditions and frameworks – also for setting compensation etc.;
- It should be made possible to organise counterforce (tegenmacht) by citizens – there should be a point where citizens, organisations and institute can express their opinion and together will look for solutions for the gap between the project as it is supposed to be implemented and the opinion and wishes of the local environment. An example would be a mediator or Ombudsman or a similar position;
- Government and executive parties should improve communications on the process itself (vision and goals, implementation process, participation, co-decision procedure), from the beginning of the process – depending on the level of responsibility at macro or micro level - towards the involved parties. The improvement of communications involves the choice of the communicator, timing of communication, medium used and targeting. Communication should be tuned to the message and goals;
- National government should give choices / scenarios on where to implement gas storage facilities – both underground as above ground; giving local stakeholders (authorities, companies, communities) options where to implement a project thereby creating local engagement and provide situations whereby local benefits are given priority;
- There has to be a possibility to organise counterforce / nuisance power for stakeholders to manifest and combine different viewpoint that is led by an independent process monitor. An organisation or person who guides the dialogue process towards co-decision and successful implementation of a project supported by majority or a by majority shared discontinuation of the process;
- The decision-making process should be improved by including stakeholders (direct involved parties) in the policy creation process, as early as possible, being able to draft together a successful implementation process;

R&Dialogue

- The implementation process should be open and flexible for feedback from a broad range of stakeholders (including citizens), creating the option for involvement and a co-decision procedure wherein policy-makers and involved stakeholders, from every level, can be involved and co-decide 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.