

Market Consultation Report

Main report

Brouwersdam tidal power plant

2. Management summary of the market consultation for Brouwersdam tidal power plant

2.1 Introduction

In November 2013, the Brouwersdam tidal power plant project agency consulted market parties about the commercial interest in being involved in the realisation and operation of a tidal power plant on the Brouwersdam. In response, a wide range of construction companies, energy companies, turbine developers, engineering firms, cooperative ventures and firms of architects agreed to provide constructive input.

This type of market consultation, in which the market's opinion is sought at a very early stage of the project, is a unique process. It soon reveals any dilemmas regarding the approach and it means that maximum use can be made of the insights of the market when looking for possible solutions.

A tidal power plant in the Brouwersdam would be the first power plant of its kind in the Netherlands. It therefore goes without saying that there are as yet no reference projects for such an innovative project. This is another reason why it is so important to consult the market at such an early stage.

The market consultation has provided the initiators with a wealth of useful information about the possible design and working method for the Brouwersdam tidal power plant project. This is helping the project organisation to make the right choices with regard to the scope, the process design, the contract structure and the division of roles between government organisations and the market.

This report includes a detailed account of the market consultation. It also describes the working method used and the contributions of the parties concerned and presents an initial assessment of the results.

2.2 Background

On 5 June 2013 the Minister of Infrastructure and Environment decided to commission a survey into the feasibility of realising a spillway in the dam in combination with a tidal power plant in the Brouwersdam. Shortly afterwards, the Brouwersdam Project Agency was set up on behalf of the five government organisations involved. The project agency mainly consists of a project team of employees from the cooperating government organisations but it will also hire external expertise where necessary.

The market consultation for the Brouwersdam tidal power plant is one of the first activities of the Brouwersdam Project Agency. The aim of the market consultation is to arrive at an effective definition and structure of the project and the project assignment from a market perspective. Preparations for the market consultation began immediately after the project agency was set up. The actual market consultation took place in November and December 2013. The cooperating government organisations will take the results into account when contributing to the State Development Strategy for Grevelingen and Volkerak-Zoommeer in the second quarter of 2014.

2.3 Questions in the market consultation

The project team formulated dilemmas on the basis of six categories that are important for the design and progress of the project. The most relevant dilemmas were selected from a large number of reports and studies. These dilemmas were then articulated in specific research questions, which functioned as the guiding principle for the market consultation process.

The categorisation, the research questions and the procedure for the market consultation were recorded in a consultation document, which also included rules of play on matters such as confidentiality and transparency. The consultation document was published through the appropriate channels, enabling market parties to express their interest in the market consultation. There was no promise that the participants in the market consultation would receive any payment. However, an effort was made to structure the consultation in a way that kept the necessary work to a minimum.

2.4 Structure of the market consultation process

The market consultation is made up of three phases:

1. *Registration and written round*

The market consultation was announced on TenderNed and in a mailing to sector organisations. In addition, existing contacts were notified about the announcement on TenderNed. In response to these announcements, eight parties submitted a written reaction. On this basis, the questions for the contact days were refined and the theme Energy was added to the categories. Several additional market parties were also approached because their specific contribution (in the areas of energy and funding, amongst others) was deemed to be important.

2. *Contact days: visit to the project and dialogue round*

The contact days on 18 and 19 November 2013 included a bus tour through the area (day 1) and a day of dialogue in Rotterdam (day 2).

Day 1: The bus tour visited a number of relevant locations around Grevelingen, such as the Brouwersdam, Port Zeelande and Flakkeese Spuisluis. In addition, a number of stakeholders from the Brouwersdam surroundings were visited and introductions were made with local administrators in Bestuurderscentrum Het Rondeel in Middelharnis. The day had an informative character and it gave people the opportunity to network.

Day 2: The day of dialogue was divided into a plenary opening ceremony, theme talks at seven tables and a plenary closing ceremony.

For the plenary opening ceremony, the programme included a number of presentations about the project and the rules of play for the day.

After a welcoming speech in the form of a video message from the administrators concerned, the dialogue round was launched at seven thematic discussion tables. In three rounds of 75 minutes each, the participants exchanged their opinions in varying compositions. A (usually external) chairperson supervised the dialogue, assisted by a deputy from the project team that had prepared the discussion topic. Students taking the Construction Management and Engineering study programme at the Delft University of Technology were responsible for recording the minutes of the talks. Observers from the sector organisations were also present.

The day of dialogue concluded with a short plenary feedback session about the discussions.

3. *Bilateral talks.*

Two weeks after the day of dialogue, market parties were given the opportunity to exchange their views confidentially with members of the project team. The precondition for these meetings was that the discussion topics were indicated in advance. This meant that the appropriate discussion partners from the project team could be selected for each meeting. The Project Director and the initiator of the market consultation were in any case present at all the meetings. In this way, a total of seven bilateral meetings took place.

A report of all the market consultation components was compiled, except for the bilateral talks, for which a summary of the resulting insights was drawn up on a high level of aggregation.

2.5 Findings of the market consultation

In the opinion of the project team, the market consultation reaped a rich harvest of insights. The project team does note, however, that the findings of the market consultation are partly explicit and partly diverse. The main findings are:

Budgets and investment costs

- There are good opportunities for lowering the investment costs for the Brouwersdam and reducing the budget uncertainty. That can be done by:
 - introducing design improvements;
 - using different, optimised turbines; the use of siphons.
- The Brouwersdam tidal power plant cannot be funded just on the basis of the energy yield; a contribution from the government remains necessary. This can take the shape of a contribution for the spillway, the allocation of energy subsidies or deployment from other budgets.
- There are possibilities for generating extra income from regional developments if the dynamic created in the surroundings by the development of the tidal power plant is used as a catalyst.
- Optimisation is also possible by broadening the scope to include:
 - (in addition to the north side) the south side of the Brouwersdam and the openings to the Volkerak-Zoommeer and the Oosterschelde;
 - land reclamation;
 - expansion and optimisation of the tidal range..

2 Definition of the project:

- The project scope, objectives and requirements should be formulated more clearly;
- There is a need for a functional programme of requirements;
- Every objective should have a public owner;
- It is important to have one properly mandated client.

3 Funding and the energy market:

- There is still little enthusiasm in the market to take on the risk of participating in the tidal power plant. Uncertainties on the energy market, risks related to market and the weak position of energy providers are contributing factors here;
- The scale of the risk related to energy production is different to the scale of the risk related to design, construction and/or regional development.

4 Project/Process

- The parties appreciate the openness of the initiators and the opportunity to become involved in the process at such an early stage;
- The market welcomes a joint follow-up, for example by means of a Joint Fact Finding mission;
- In this context, however, the tendering costs should be limited. One way of doing this is to narrow down the project quickly to a single party with whom the project can then be further developed;
- To make this possible, a number of contract types have been specified, such as Early Contractor Involvement and contracts from the process industry;
- The process of co-creation will be supported. One possible format might involve a contribution through cooperatives.

5 Role Market-Government

- The government has a number of roles to play in this project and can contribute to the project in various ways;
- In addition there are also a number of major roles in the market for the Brouwersdam tidal power plant;
- There are a number of risks that the market regards as serious obstacles. These include the sale of energy, price developments in relation to electricity, and the subsidisation of 'green electricity'. As far as the latter is concerned, it would be more advantageous for this project if the government could ensure that the subsidy also applies to energy generated by water and that the scheme could be implemented more consistently over a number of years. In addition, the government could act as a launching customer for the purchase of the energy.

2.6 Conclusion

Based on the insights gained from the market consultation, the project team has drawn the following conclusions, which are relevant for the structure of the follow-up procedure.

1. Conclusions with respect to the business case:
 - a. Limit the investment costs by focusing on:
 - possible innovative solutions
 - reducing the uncertainty margin of the estimates
 - a higher energy yield
 - a (different) scope expansion.
 - b. To do this, further technical exploration and other research are necessary.
 - c. It will not be possible, however, to fund the entire conversion of the Brouwersdam from this revenue. There will always be an unprofitable financial gap.
2. Conclusions with respect to the contribution of financiers and the energy market:
 - a. It is still too early to involve the financial sector:
 - the project may well be attractive for financiers with a social objective
 - it may be possible to work with an (energy) cooperative.
 - b. The energy market is displaying very little enthusiasm about taking on an investment risk due to:
 - the effects of the economic crisis
 - an overcapacity of conventional power plants
 - the mediocre capital position of many energy companies
 - the risk related to energy demand due to the emergence of small-scale local types of energy
 - uncertainty about the subsidy scheme for energy from water.
3. Conclusions with respect to the invitation to tender system:
 - a. Market parties welcome the following:
 - tendering based on the early awarding of the contract

- (partial) integration with the procedures for spatial planning
 - adoption of (large parts of) the working method for the A2 motorway in Maastricht.
- b. Market parties do insist, however, that the total tender costs should be limited.

2.7 Follow-up

On the basis of these conclusions, the Brouwersdam Project Agency will undertake the following in the time to come:

- o further improve the business case, and
- o in a number of procedures, continue to further shape the structure of the project.

It will do this emphatically in interaction with the market parties and other stakeholders.

In this context, the activities will be aimed at reducing uncertainties and risks and monitoring the development potential of the Brouwersdam. We will do this by:

- o further exploring the technical side of the project;
- o looking for potential purchasers of sustainable energy;
- o improving the chances of receiving the subsidy – amongst other things by linking up with the energy agreement;
- o exploring and monitoring the opportunities presented by the project together with market parties, and reducing the uncertainties (Joint Fact Finding mission);
- o providing input for the study into the social benefits;
- o working out a tendering structure.

In this way, in April of this year a definitive contribution will be made to the Grevelingen and Volkerak-Zoommeer State Development Strategy. If the tidal power plant is deemed to have potential, this option will be included in the National Delta Programme, which will be presented on the next Budget Day (Prinsjesdag). If this is the case, we believe that a tidal power plant can be operational by 2020.

Leon Hombergen
January 2014

4. Journalistic report on the market consultation days

[Design: newspaper article]

SHARING THE IMPORTANT PROJECT QUESTIONS

Higher knowledge level after market consultation Brouwersdam tidal power plant

A long day at the cinema

Large round tables arranged in a movie theatre, brightly lit. The remainder of the space is darker. The theatre seats are evidently in storage, creating plenty of room in which to move, see each other, and talk. Against this background, a multitude of market parties, government organisations and their advisers work hard all day long, discussing the possibility of building a tidal power plant in the Netherlands. This is 19 November 2013: the day the Brouwersdam market consultation was held in Rotterdam's cultural centre Lantaren – Het Venster.

Intensive sessions

During a number of intensive sessions in the theatre, but also in the corridors during the lunch break and the drinks party, every aspect of an innovative project like this is brought to the fore. As a reality check, as a contribution to the follow-up process.

The day starts with a short series of compelling video messages presented on a large screen, in which administrators tell the participants how important this meeting is and ask them to make their best efforts and to be as inventive as possible. 'Be smart with energy, because this is an opportunity we can grasp now,' says Han Weber, South Holland delegate. 'The breadth of the collaboration shows just how important the project is. The Netherlands can again lead the way when it comes to innovation in this area. It has taken a long time.' His colleague from Zeeland, Ben de Reu, says: 'I can see significant social benefits. You can't see the turbines, but they're definitely working. Acceptance of the tide is an important point.' Jan Hendrik Dronkers, Director-General of Rijkswaterstaat: 'This is the moment to formulate the right conditions for the best possible innovative solution. It's a business case that's really worth a try.' The municipalities involved support the plan. Arend-Jan van der Vlugt, alderman of Goeree-Overflakkee: 'The region needs the tidal power plant. It's clean, safe and good for the economy.' Ad Verseput, alderman in Schouwen-Duiveland, appeals to market parties: 'Make sure you're involved! Nerve, flair, innovation: these are the attributes that are driving this great project.'

The right social conditions for maximum innovation

Leon Hombergen, chairman for the day and adviser to the Tidal Power Plant project agency: 'It's about government organisations creating the right conditions so that market parties can start innovating.' The main benefit of the day must be that the government organisations involved can now be sure that all the important questions about the project have been asked. That there's now an overview of which knowledge is available and which knowledge is still required. That a list has been drawn up of the most relevant choices and dilemmas. On this basis, the government organisations can collect the relevant answers in the time to come and the tendering process can be defined as clearly as possible. This is an important precondition for the step that comes after the market consultation: the competitive phase.

Sharing knowledge for a straightforward tendering process

All the information that is being shared today is public. Participants have to realise how important this transparency is, explains lawyer Arent van Wassenae (Allen&Overy). The opinions that were voiced and the earlier written answers to a series of questions about the project should only be used to validate whether the right questions are being asked. If people don't want to see particular information entering the public domain, they should say so. Later it will be possible to exchange confidential information during a meeting with the potential client.

Five birds with one stone

Wouter Groenen, Tidal Power Plant Project Manager for the Provincial Government of South Holland, says that the project aims to kill five birds with one stone by providing:

- * a stimulus for water quality
- * sustainable energy generation

Het Projectbureau Getijdencentrale Brouwersdam is een samenwerkingsverband van Rijkswaterstaat, provincie Zuid-Holland, provincie Zeeland, gemeente Goeree-Overflakkee en gemeente Schouwen-Duiveland.

- * a stimulus for the regional economy
- * a contribution to water safety – that is, reduced flooding
- * a spin-off in terms of innovation and export potential.

Bus excursion

The day before (18 November), a number of participants had explored the area and got to know each other. They visited Brouwersdam and the immediate surroundings, including Port Zélande, the Grevelingen area and the test location where the tidal laboratory will be located. Many aspects – including the opportunities and threats, of course – were discussed in the bus or while walking around in the chilly autumn wind.

Constantly changing groups

On 19 November, Project Director Ben Spiering again emphasised the key issues, which are to strengthen the business case, define the precise conditions that the government must create so that market parties innovate as much as possible, and determine how the project can best be organised, including the appropriate risk allocation.

The dialogues were organised around seven question categories, one for each table. In three rounds of more than ninety minutes, between five and fifteen participants exchanged opinions. The table chairperson summed up the findings, first at the end of the sessions themselves and later in the day for the entire hall. Students of the Delft University of Technology recorded the minutes of the discussions. As listeners or as onlookers, a cartoonist, photographer, reporter and translator all had a role to play.

State Development Strategy

One of the determining factors for the project is the State Development Strategy for Grevelingen and Volkerak-Zoommeer, which will be defined in mid-2014. What must that strategy include or not include? The discussion at one of the tables focuses on this subject. People are heard to say: 'Focus mainly on the functionalities of the project rather than on the details. Concentrate on the scope and the objectives.' 'Make sure the responsibilities are defined properly.' One suggestion is to appoint a public owner or another stakeholder for each target. 'Reintroduction of the tide by 50 centimetres is the minimum necessary; leave the maximum open for the moment,' is also heard. For the funding, a number of different aspects can be combined, such as linking the tides to wind energy.

Project structure

Another table discusses the choice of a structure for the project, where the subjects include the character and content of the ADMINISTRATIVE AGREEMENT that will soon be signed. Somebody says: 'Make the scope as integral as possible, but ecology and safety are the main dish, while energy is really the dessert. The government must be crystal clear about the public objectives and must specify what is needed to achieve them.' The ADMINISTRATIVE AGREEMENT should determine the co-involvement of companies and private citizens. A type of open project and/or regional development.

Suggestions: 'If necessary, split the dam and the tidal power plant or make sure the Environmental Impact Analysis can stay very broad and open.' Many people believe that it is important to have a figurehead or coordinator, a face that inspires confidence and has a mandate.

Proven technology

The technical output specifications and scope are discussed in detail at another table. This produces a wide range of reactions. One conclusion is that the required technology already exists, it has already been proven. Guarantees can be issued for some of the planned components, while there is still some uncertainty about other components. The desired functions should be described broadly so that the plan has more elbow room. Homework includes working to gain a clearer picture of various operational models and estimates. For example, the technical life expectancy of a tidal power plant is probably much longer than the economic life expectancy. One suggestion is that the pumping function (to quickly transfer the surplus water from the major rivers into the North Sea when there is a build-up of extreme amounts of water) should only be added after several decades, when it is needed.

How must the contract be put out to tender?

Another theme involves the tendering procedure. One recommendation made in this context is: consider using the model of the short competition-specific dialogue. After one round choose one party to work with. With an alliance-type approach, this results in an Environmental Impact Analysis and a Programme of Requirements. With this type of phased tendering procedure, in the second phase (DBFM or State NV, concession) the risk can be taken out of the

Het Projectbureau Getijdencentrale Brouwersdam is een samenwerkingsverband van Rijkswaterstaat, provincie Zuid-Holland, provincie Zeeland, gemeente Goeree-Overflakkee en gemeente Schouwen-Duiveland.

project. The challenge is to create a business case that offers maximum opportunities to market parties, lowers the risks and reduces the costs.

Public cooperation

At another table the main focus is on public cooperation in the project.

It is important to involve the local population, especially in terms of co-creation with the surroundings. Steps have already been taken in this direction, but this is a point of focus that should be paid more attention during the follow-up.

Optimising the public business case

'The public parties involved are like a bucket with five frogs. That has to change.' This is the first condition required to optimise the public business case. There may have to be just one client. There are possible ways of making the business case less expensive on the government side. A report published by ECN on the perspective of tidal energy should be updated in order to show a more honest comparison between wind energy and tidal energy.

Energy table

During the discussion at the energy table, which took place in the morning in the performers' bar of the cultural centre, the participants pointed out which aspects need to be studied in more depth. The cost price for generating energy is still high, and there are still many uncertainties as far as this specific project is concerned. On the whole, the future development of the energy market is uncertain. Energy parties will target guarantees and other collateral, such as the size of the energy subsidy (SDE scheme). The business case will have to be as straightforward as possible if private financiers are going to take part.

Results: refining the follow-up process

'Today we've climbed to a much higher knowledge level,' Ben Spiering concludes at the end of the day. 'That's important for the follow-up procedure. We've laid the foundations for the upcoming joint fact-finding mission. Then we'll come up with a realistic vision. There's plenty of homework to be done. We need to be ready to work together with the market in the time to come and that has to be done proportionally. We'll give market parties several assignments in order to test, enhance and supplement their existing knowledge. Co-creation is the guiding principle. It's important that the private citizens in the project are paid more attention.' Spiering points out which initiatives will be taken to gain support and achieve consensus. Together with other Dutch redevelopment projects, the project organisation will apply for European money for co-funding. Talks are being held with the Ministry of Economic Affairs about, for example, the available energy subsidies. It may be possible to make productive use of the recently agreed closer cooperation in the world of innovation between various top sectors (water, energy) for the project.

Step by step

Spiering: 'We'll follow this up step by step and build it up in a balanced way. Finding a quick solution and throwing money at it is not what we're aiming for here. But we do need to take a realistic approach and make sure we have a level playing field.'

Derk van der Laan
14 December 2013