

Cost-effective transformation of a Highly-Efficient Advanced Thermal Ultra-SuperCritical coal-fired power plant into a CHP by retrofitting and integrating an ARBAFLAME biomass upgrading process



D7.1 - Stakeholder Engagement Plan

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LIST OF ACRONYMS AND ABBREVIATIONS

BECCS: Bio Energy CCS

CA: Consortium Agreement

CCS: Carbon Capture and Storage

CO: Confidential

DoW: Description of Work, referring to the Annex I of the Grant agreement

EC: European Commission

GA: Grant Agreement

IPR: Intellectual Property Rights

PBL: Planbureau voor de Leefomgeving (Netherlands environmental assessment agency)

PU: Public

SEP: Stakeholder Engagement Plan

QA: Quality Assurance

WP: Work Package

1. Introduction

The success of the ARBAHEAT project depends on a large number of parties with a wide range of mutual, overlapping or conflicting interests. The main issue is the combination of biomass as a sustainable energy source and the role of coal-fired power plants in the Netherlands. Engaging these stakeholders in a way that maximizes their contribution to the success of the project is essential. Since the main focus of the stakeholder engagement strategy is on maximising the project success of Arbaheat, influencing the broader societal debate about biomass power plants and positioning Arbaheat in this context is also part of the plan. This document describes the Stakeholder Engagement Plan (SEP) that was developed for this purpose.

This document builds on the work presented in internal deliverable D1.3 – Report on the mapping of primary and secondary stakeholders. Where relevant, findings from that report are summarized in this document, so as to present a coherent description of the analysis and rationale behind the stakeholder engagement strategies and plan.

2. Methodology

2.1 What is stakeholder engagement?

Stakeholder engagement is the practice of interacting with and influencing project stakeholders, with the aim of maximizing the chance of success of the project and its supporters. This success depends to a large degree on how the stakeholders view it. Their requirements, expectations, perceptions, personal agendas and concerns will influence the project, shape what success looks like, and impact the outcomes that can be achieved.

The stakeholder engagement in ARBAHEAT is based on the Strategic Stakeholder Management practice that focuses on a Mutual Gains approach. The Mutual Gains Approach (MGA) is a proactive approach, in which the interests of relevant stakeholders are analyzed and weighed related to the project interests. The aim of MGA is preventing surprises from both the project organization and the stakeholders involved, and managing mutual expectations. Stakeholder Engagement is an essential part of project management, in particular with regard to the input of, or effects on, stakeholders of the project. MGA principles will also be used as guidance for the project culture (attitude, attitude, norms and values), both within the project organization and towards the stakeholders involved.

The ambition of MGA within the project is to map out (conflicting) interests and to build lasting relationships with all stakeholders when realizing the ARBAHEAT project, but also for the broader discussion of biomass as a sustainable energy source and the role of coal-fired power plants in the Netherlands.

2.2 Objectives and approach

The main objective of this Stakeholder Engagement Plan is to maximize the chance of success of the ARBAHEAT project by engaging key stakeholders through consultation, communication, negotiation, compromise and relation building. In this way, the stakeholder engagement process aims to:

- Gain stakeholder approval and support
- Minimize opposition
- Anticipate what human risks and opportunities might arise
- Enable plans to be laid and managed

Whereas in D1.3 the focus has been primarily on identification and assessment of stakeholders and their issues from the perspective of the stakeholders themselves, this SEP approaches this matter from the perspective of the ARBAHEAT project. The plan revolves around the identification and handling of issues that are relevant to the ARBAHEAT project and its success. It therefore concerns the primary stakeholders as identified and mapped in D1.3. The secondary stakeholders are engaged through the various communication and dissemination activities described in D7.2.

This document starts with an analysis of broader relevant societal trends and discussions. In this context, specific issues relevant to the ARBAHEAT are described. From this description, the translation is made to, first, a general engagement



Figure 1 - conceptual stakeholder engagement approach

strategy and message, and then specific strategies for key stakeholders. Finally, these strategies are translated into concrete actions.

3. Stakeholder analysis – issues and strategy

3.1 Identification and mapping

The stakeholder identification and mapping process and its results has been described in D1.3. This process has resulted in an assessment of the primary stakeholders along the dimensions of importance/support and influence, as well as a categorisation as enabler, supporter or disrupter. For illustration purposes, the anonymized overview from that document is shown in Figure 2 below.

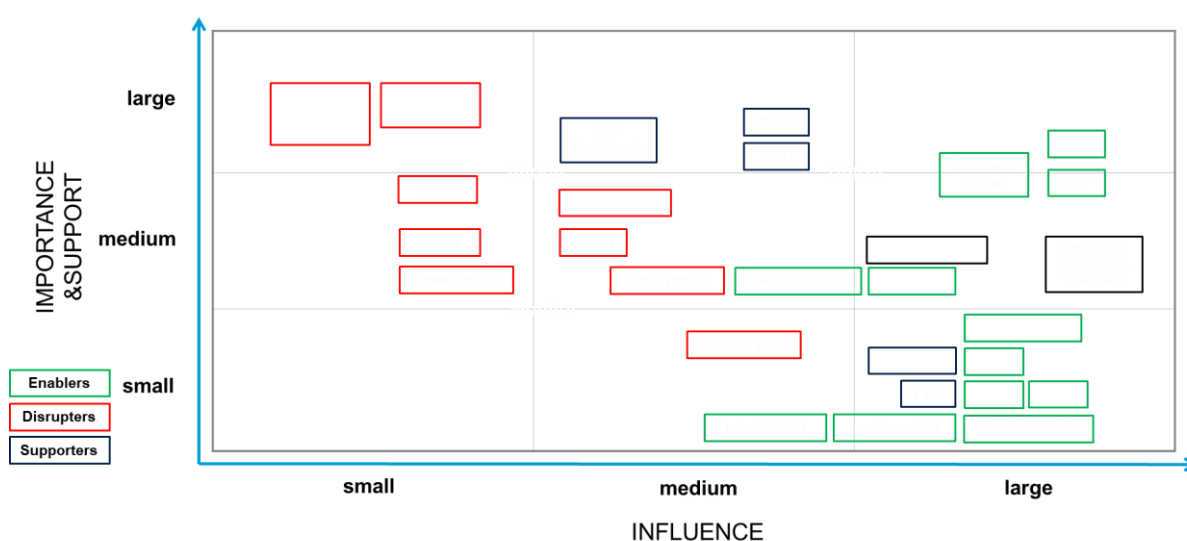


Figure 2 - result from stakeholder mapping process

From this starting point, further analysis has been performed with respect to the broader societal context of the ARBAHEAT project, which issues are important to which stakeholders and how the interactions between these aspects translate into a strategy for stakeholder engagement. This analysis is presented next.

3.2 Societal trends and discussions

There are two main ongoing societal discussions regarding the energy system which directly impact the ARBAHEAT project, revolving around the following questions:

- 1) What should be the role of coal-fired power plants in the coming years, in particular with respect to the required dispatchable power in the energy system?
- 2) What should be the role of biomass in the renewable energy mix?

Since ARBAHEAT overlaps quite clearly with both these topics, it is important that stakeholder engagement activities focus on participating in these discussions with the aim of aligning knowledge, interests and goals of the most important stakeholders and minimising the risks for the project, such as blocking permit procedures.

Relevant aspects of these two topics are described next.

3.2.1 The role of coal-fired power plants

In the Netherlands, the government has decided that coal for electricity production should be phased out and removed from the energy mix by 2030 at the latest. When this should happen precisely is much debated. The CO₂ emission reduction targets for 2020 are at risk of not being reached. In addition, the “Urgenda case¹” forces the Dutch government to take serious steps. Closure of coal-fired power plants will make reaching these targets much more feasible. Current discussion revolves around which plants to close and when. An important factor determining the feasibility of closing down coal-fired power plants is the availability of dispatch able power to supplement wind and solar.

3.2.2 The role of biomass

Biomass as a renewable energy source is currently controversial. The discussion centers around two main arguments: the sustainability of firing biomass and the availability of supply, particularly when biomass would replace a large portion of the power supply currently delivered by fossil fuels.

Some stakeholders are against the use of biomass for energy production because they are either opposed to biomass on principle or consider the risks regarding either or both of these issues too large.

The position of the ARBAHEAT project partners is that sustainable biomass has a viable and necessary role to play in the current and future energy systems. It is not an all-or-nothing discussion, however; the nature and scope of the role of sustainable biomass is determined by a large number of dependent factors which warrants nuanced discussion.

A multitude of research is currently being done on this topic by various parties and institutions. Currently, the Planbureau voor de Leefomgeving (PBL), together with the Sociale Economische Raad (SER) is researching the consequences of large-scale biomass usage in the Netherlands for the purpose of guiding policy makers. CE Delft has performed research on the viability of the ARBAFLAME technology but has also recently – assigned by NGO’s - investigated the (financial) effects of closing down the newest coal-fired power plants, related to the Urgenda case. It is expected that the coming year is crucial for determining the potential for large-scale biomass use in the Netherlands.

3.2.3 The role of ARBAHEAT in this context

ARBAHEAT bridges these two topics by providing an alternative to switching off coal-fired power plants. By demonstrating a technically feasible and cost-effective installation for combined heat and power, it will support the transition to a sustainable energy supply by making use of plants that are already fully integrated in the energy system. However, because the project revolves around not one but two sensitive topics in which a broad range of mechanisms, forces and opinions converge, it is important to be fully aware of all issues that play a role, so as to best address them in a way that maximizes the chance of success of the project. Issues, interests and dependencies

¹ The Urgenda Foundation brought a legal case against the Dutch government, arguing that it is liable for knowingly exposing its citizens to danger. The District court of The Hague ruled in its favour, effectively forcing the Dutch government to take action.

<https://www.urgenda.nl/en/themas/climate-case/climate-case-explained/>

Within the context of the discussions described, concrete issues and interests can be identified which will affect and/or determine the success of the ARBAHEAT project. Stakeholder engagement will revolve around addressing these issues and interests.

3.2.4 Description of issues

From the context of the above discussion, issues have been identified that affect the success of the ARBAHEAT project. These issues have been grouped by topic. The first 4 topics can be regarded as more “fundamental” to the discussion (biomass origin, security of supply, CO2 abatement, the role of coal-fired power plants), whereas the other 5 topics are more practical and/or circumstantial.

Origin of biomass/sustainability (incl certification)

- developing National policy for sustainable biomass: monitor progress and influence. Sourcing of biomass is key
- assignment from Ministry of Economic Affairs and Climate (“climate tables”) to analyze the availability and potential uses of biomass
- Domestic supplier(s) of feedstock: why are they in? Maintenance of forests, useful application of materials from forests. Also discussion about cutting national forests in the NL
- Potential worries about new owner (see below) in relation to ARBAHEAT project/future development of plant. Will new owner support ARBAHEAT? ARBAHEAT could be option for plant to switch to biomass before 2030
- Some NGOs are very much against the use of biomass for energy production.
- Some stakeholders see sustainable biomass applications as essential for the energy transition. Also for energy production. Sourcing and cascading are important topics.
- Local political parties have their own vision on sustainable biomass. ARBAHEAT can be seen as an opportunity for Rotterdam to be pioneer in Europe.

Security of energy supply:

- Sustainable heat and power plants are necessary to achieve the objectives of the Paris Climate agreement, especially after 2030. Biomass is one of the few options.
- Global supply and demand are coordinated through market forces and political decision-making neighbouring countries.
- Sustainable biomass as fuel positive, sourcing is seen as key by some stakeholders. Plant is needed for sustainable dispatchable power (capacity mechanism).
- The outlook security of supply and capacity in NL energy grid.
- Industry (in Rotterdam, NL): security of supply and acceptable energy prices are very important for competitiveness
- Security of supply and acceptable energy prices are important for business climate

CO2 abatement/cost effectiveness related to alternatives

- Calculations confirm that cost effectiveness of biomass as sustainable alternative for regulated power and heat is good. There are very few alternatives. Nuclear power is cheaper but not considered very seriously at the moment so far. Hydrogen and green gas are very expensive and/or not available in large amounts at least until 2030, probably much later. Combination of biomass and CCS (BECCS) is the only possibility to create negative emissions

Coal-fired powerplants are subject to political discussion regarding closure.

- Following the Urgenda case: more closure of coal plants in the NL in 2020 to meet demand. Alternatives are difficult to find
- Some political parties and NGOs are in favor of earliest possible closure (even in 2020). Others don't want earlier closure. They don't want to destroy capital and they are also afraid of the risk of lack of security of supply

Green Deal developments in sustainable heat and cold techniques

- Ministry of Economic Affairs and Climate is in favor of developing green deal program to stimulate development of sustainable energy

Permitting

- Permitting procedure for the ARBAHEAT plant includes the opportunity for the public to voice concerns and objections. Objections in permitting procedure anticipated.
- DCMR²: environmental issues check, questions from DCMR anticipated.
- Environmental impact ARBAHEAT in relation to spatial planning/land management

Availability/delivery guarantees of sustainable electricity and heat

- Broader development of heat network for Rotterdam and surrounding municipalities. Needs large amounts of sustainable (low temperature) heat in cold seasons.
- Greenhouses in greenhouse area need sustainable replacement for gas for heat.
- Bio refineries and biochemical industry need large amounts of sustainable high temperature heat 24/7 all year round. Their residuals are available to produce energy.

Finance and investment guarantees:

- Uncertainty around the maturity of the market. Price uncertainties with large volatility and upward trend last years

3.3 Strategy and message

The starting point of a successful engagement strategy is a convincing and unifying message. In D1.3 a "line of reasoning" was presented. Based on the analysis presented above, this line of reasoning was extended and refined. The result is intended to encompass a complete and nuanced argument in favor of the ARBAHEAT project and approach and serves as the basis from which to engage stakeholders. This line of reasoning is presented next. It forms the basis from which specific stakeholder engagement strategies are devised (see chapter 4).

In the coalition agreement of the Rutte III government, it was agreed that the use of coal for electricity generation in the Netherlands would cease by 2030. The recently opened ENGIE power station on the Maasvlakte is less than fifteen years old, even though it has a technical lifespan of about 40 to 50 years. The power station costed about 1.4 billion euros. ENGIE is therefore investigating how the power station can play a valuable role in the Dutch energy landscape and make a contribution to the transition to a sustainable energy system, even after coal has been phased out.

In order to be able to use a much higher % or even 100% sustainable biomass, ENGIE is conducting research into the pre-treatment of sustainable biomass and the (limited) adjustments to the power

² Environmental protection agency of Province South Holland and 15 municipalities in the Rijnmond area.

station that are required to use this processed sustainable biomass as fuel. For example, ENGIE is carrying out a study with the Norwegian company Arbaflame (called ARBAHEAT) to see what is needed to convert the power station so that it can run entirely on sustainable biomass. Sustainable biomass means all biomass that meets the Dutch sustainability criteria. These are the strictest criteria in the world. This is guaranteed by an extensive system of certification and verification. Examples include FSC (Forest Stewardship Council) and PEFC (Programme for the endorsement of Forest Certification schemes). A separate independent committee is currently being set up to check whether the power stations that co-fire biomass in the Netherlands actually meet the sustainability criteria. More than enough sustainable biomass is available to meet the demand. In order to remove any doubts about this, a separate committee of the PBL and the SER will, in the near future, in addition to all the studies that have already been carried out in the past, investigate the availability and application possibilities of biomass.

In addition to sustainable electricity, the power station will also have to supply sustainable heat. Arbaflame has developed a process by which sustainable biomass is pre-treated so that it is comparable to coal and modifications to the power station could be relatively limited. In 2018, the European Union made € 19 million in subsidies available for this research. The ARBAHEAT concept can serve as a blueprint for other power stations in Europe. With this approach, ENGIE in Rotterdam is a pioneer in this field. By subsidising this project, the European Union also aims to obtain a proof of concept for a more cost-efficient conversion of existing installations vs. the construction of new installations. This will prevent the destruction of capital.

In addition, this modern power station can quickly adapt its production level to changing demand, which is increasingly necessary for the stability of the energy system ('Dunkelflaute') in view of the increase in renewable energy sources. As a result, not only ENGIE itself, but also Dutch society as a whole, has a concrete interest in the continuity of the power station in the post-coal era.

The power station generates electricity by burning coal and the most obvious idea is therefore to replace coal with another fuel. By July 2019, the ENGIE power station will already be replacing about 10% of its coal with biomass, with an SDE+ subsidy from the Dutch government. During the ARBAHEAT research project, the (co)combustion of biomass will be increased in several steps. In the course of 2020, the power station will be made fully technically suitable to run entirely on sustainable biomass. In 2021, for the first time, 100% sustainable biomass will be used during a certain test period. During this period, it will be examined whether there are any side-effects of the biomass fuel that could lead to problems if the biomass is heated for a long period of time. In the first instance, woody biomass will be used. Further on in the research programme, other types of sustainable, non-woody biomass streams will also be investigated for their suitability for co-firing. The project will be completed in 2023. By that time it should be clear what potential the application of this type of sustainable biomass really has.

In addition, it is important for the development of biorefinery in Rotterdam that installations are in place that can convert residual material from a biorefinery into electricity or heat. Approximately half of the vegetable material consists of sugars and half of lignin. The sugars can be converted into fuels and chemical products. For lignin and some other residual products, there is no useful application other than electricity and/or heat generation. One or more power stations capable of processing this type of waste stream are lowering the threshold for the development of biorefinery.

The presence of biomass-consuming power plants can also be useful for other reasons. If an overshoot occurs and we are unable to keep global warming within 2 degrees, 'Bio Energy CCS' (BECCS) is an option to extract CO2 from the atmosphere and store it in empty gas fields under the North Sea. Plants absorb CO2 from the air. By burning biomass in power stations, CO2 is created again. If the CO2 is captured and stored (CCS), the amount of CO2 in the atmosphere will decrease structurally. This can be seen as a so-called back up plan.

Finally, the employment aspect. ARBAHEAT as a project for the coming years already provides a number of extra jobs (10 to 15 FTEs). If ARBAHEAT is successful, a considerable number of jobs can be saved. This applies to the plant itself, but also to the logistics sector, suppliers, contractors, etc. This can be considerable if the associated biorefinery is successful. In time, this will replace existing refining capacity, thus contributing to the preservation of employment and may form an important basis for a bio-based cluster in the port of Rotterdam.

4. Stakeholder engagement

4.1 Engagement process

The analysis in chapter 3 shows a very dynamic playing field with many stakeholders, trends, developments, policies and other factors. To engage flexibly with stakeholders in this context, an engagement process has been defined that allows for continuous adaptation and updating of the engagement actions, depending on the project phase and external developments. This process is shown in Figure 3 and briefly illustrated below for the situation at the time of writing.

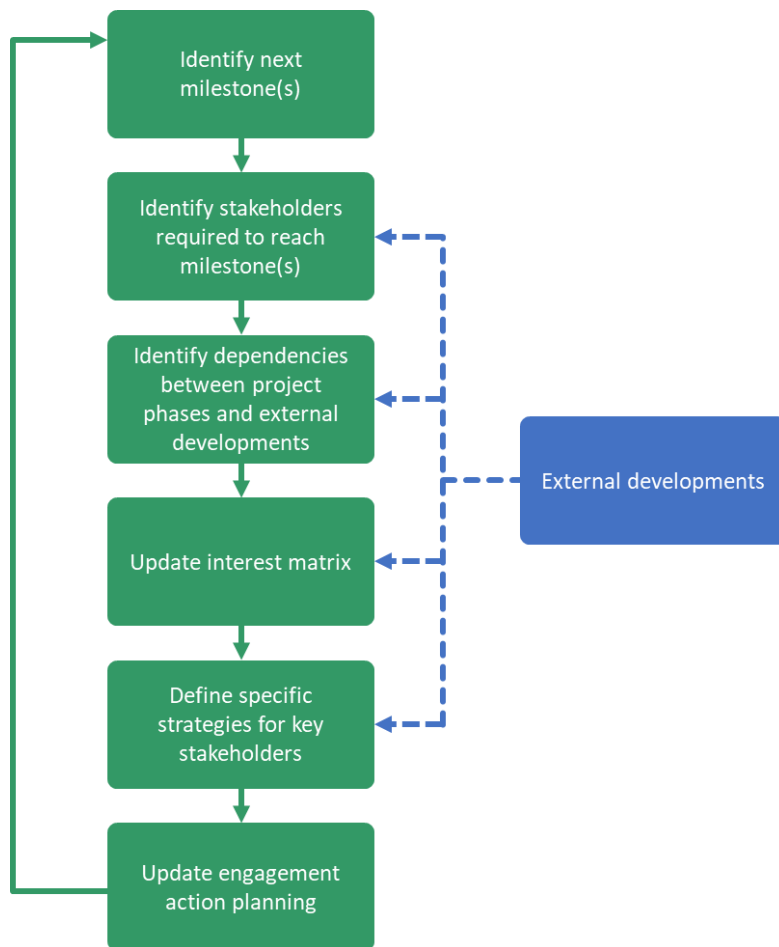


Figure 3 - stakeholder engagement process

- Identify next milestones
The next important milestone is obtaining the permit for the ARBAHEAT plant.
- Identify stakeholders
Stakeholders involved are public authorities, political parties, NGOs, (nearby) industry, etc.
- Identify dependencies
Several studies are being performed on e.g. coal-fired power plants, biomass and the energy grid. These affect the policy/decision making that takes place in parallel, as well as the public discussion on these topics. This in turn can affect the public participation in the permit process. A schematic example representation is provided in Figure 4

- Update interest matrix
An interest matrix is created and kept up-to-date, showing the importance of the issues identified in 3.2.4 to relevant stakeholders. An anonymized example is provided in annex A The importance of specific issues to specific stakeholders might change over time, or insight might be improved. The matrix (see Annex A) is updated accordingly.
- Define specific strategies for key stakeholders
Depending of the outcome of the previous steps, the way to engage relevant stakeholders is determined.
- Update engagement action planning
Specific actions planned to engage with relevant stakeholders. A baseline engagement action planning is provided in 4.2.3, to be modified accordingly.

	Phase	Y	2019				2020				2021			
			Q 1	2	3	4	1	2	3	4	1	2	3	4
Arbaheat internal	Permitting													
	Biomass sourcing study													
	Business case / investment study													
	Construction													
	Commissioning and scale-up													
External	Policy/decision making on closure of coal-fired power plants													
	Policy/decision making on biomass (co)firing													
	PBL/SER study on biomass in the Dutch energy mix													
	Tennet study on grid capabilities <-> closure CFPP													
	Study municipality Rotterdam on biomass													
	"havenvisie" (19 juni in de Raad)													
	Warmterotonde decision making													

Figure 4 -Example of dependencies between Internal and external phases

4.2 Engagement tools, channels and actions

This section lists available tools and channels through which to engage relevant stakeholders. These are then used in the engagement actions.

4.2.1 Tools

- Informal meetings
- Formal meetings
- Public meetings
- Regular meetings
- Workshops/knowledge sessions
- Surveys
- Site visits
- Correspondence by phone/email/text etc.
- Media announcements / press releases
- Animation and infographic
- Social media

4.2.2 Channels

- Working groups and knowledge sessions (maybe organized by ourselves): stakeholders to be defined during coming year(s), depending on incoming signals

- Rotterdam Climate Agreement (organized by Deltalinqs and Municipality of Rotterdam): participation a lot of large industries, but also by Port of Rotterdam and energy companies. Meetings in May, June, July and maybe September/October 2019
- Rotterdam Biomass Commodity Network: this is a network of a large number of stakeholders with an interest in the development of the biobased economy in the Rotterdam area
- Deltalinqs Energy Forum (ao workshop on biomass): DEF is organized by Deltalinqs. They organize meetings and workshops for companies in the Rotterdam region around sustainable energy several times a year. Subject could also be developments related to biomass like ARBAHEAT
- PBE (Platform Bio-energie): this is a network of a large number of stakeholders with an interest in the development of the biobased economy in the Netherlands. Frequency several times a year
- Universities: have a lot of knowledge about sustainable biomass. Well-known and respected PhD's are influential in the Netherlands and could give their independent opinion on certain developments that are beneficial for the Arbaheat project

4.2.3 Actions

The table below forms the basis for engagement actions to be undertaken throughout the project.

Stakeholder	Interest	Area of influence per project phase	Stakeholder manager	Engagement approach	Engagement tools	Frequency
Municipality Rotterdam	Reputation of Rotterdam as innovative, sustainable port city. Alignment of Arbaheat project with municipal energy transition strategy and 'Vision on Sustainable Biomass'	Authority for Construction permits Business case Construction Commissioning/scale up	PoR and Engie	Inform	Current meeting cycle, Knowledge session	On a regular basis
Port of Rotterdam	Stable energy system for port industrial area, reputation of port as innovative, sustainable cluster	All phases	Engie	Inform Participate in consortium	Consortium meetings	Continuous
Government	Reach goals of Paris agreement. Use of sustainable biomass is part of it	Biomass sourcing business case Commissioning/scale up	PoR, Engie and TNO/ECN	Inform and provide data/advice	Dedicated meeting, regular meetings	Policy milestones, actuality
Politics	Reach goals of Paris agreement	Biomass sourcing Construction Commissioning/scale up	Engie, PoR, TNO/ECN	Inform Provide arguments for debate	Workshops, knowledge session	Actuality, planned debates
Province South Holland	Permit authority	All project phases	PoR and Engie	Inform, share knowledge	Regular meetings, knowledge session	On a regular basis
Programmabureau Warmte & Koude Zuid-Holland	Develop heat roundabout in Zuid-Holland	All project phases	Engie and PoR	Inform	Regular meetings, knowledge session	On a regular basis
NGOs	Minimize use of biomass for energy production	Biomass sourcing	ENGIE, PoR and CE Delft	Inform & share (possibly through NGO partners)	Regular meetings, knowledge session	Occasional
	Use of biomass in a sensible way according the sust. Criteria, sustainable	All project phases	ENGIE, PoR and CE Delft	Inform & share	Regular meetings,	On a regular basis

	region in which Nature and Economy are balanced (People, Planet & Profit)				knowledge session	
	Minimize use of biomass for energy production	Biomass sourcing	ENGIE, PoR and CE Delft	Inform & share (possibly through NGO partners)	Regular meetings, knowledge session	Occasional
	Minimize use of biomass for energy production?	Biomass sourcing	ENGIE, PoR and CE Delft	Inform & share (possibly through NGO partners)	Regular meetings, knowledge session	Occasional
	Maintain Dutch forests in a sustainable way. Positive on use of sustainable biomass	Biomass sourcing	ENGIE, TNO/ECN	Participate in consortium?	Regular meetings, workshops	Occasional
Universities	Academic research on the use of sustainable biomass (positive)	Biomass sourcing	ENGIE, TNO/ECN	Engage	Informal meetings, workshops	Occasional
Utilities	Use sustainable biomass as fuel if economically feasible	All external phases	ENGIE/PoR	Inform	Informal meetings	Occasional
Advisory	Research and advice for government		Engie, PoR,	Inform	Formal meetings, workshops	Occasional
	Execute consultancy at strategic level on sustainable energy (incl. sust. Biomass)	All project phases	Engie, PoR	Inform and discuss	Surveys, formal and informal meetings	On a regular basis
RVO	Develop and execute SDE++ (subsidy program for sustainable energy)	Consultation phase of SDE++ program	ENGIE	Inform	Formal meetings, site visit	Occasional
Industry associations organizations	Use sustainable heat	All project phases	ENGIE	Inform	Informal meetings, workshops	On a regular basis

5. Implementation of the stakeholder engagement plan

5.1 Planning, monitoring and evaluation

In order to ensure maximal effectiveness of the engagement strategy, it is necessary that the results of the SEP be monitored and evaluated, and the activities adjusted where needed. For this reason, a shared database will be put in place on the Matchpoint platform that keeps track of the different stakeholders and the actions taken towards them.

This database will be filled initially on the basis of the analysis from D1.3 and this document but will be expanded and updated continuously. The purposes of this system to collect and update all information relevant to stakeholder engagement by:

- Defining, and implementing a database of all the stakeholders relevant for the ARBAHEAT project;
- Identifying which partner is in charge of maintaining contact with the stakeholder and to keep the information on the database up-to-date;
- Maintaining the database along the project lifetime;
- Triggering other WPs as needed.

In addition to the stakeholder database, the engagement actions will also be included in the system and updated as needed.

A stakeholder engagement working group will be formalized which will monitor the planning and execution of engagement actions and evaluate the stakeholder engagement strategy on a regular basis. Metrics by which to evaluate the strategy are:

- Feedback results
- Number of meetings and workshops
- Number of critical meetings with NGO's and influential parties like PBL

An external advisory board (EAB) for the ARBAHEAT project is currently being formed. The working group will consult this EAB on a regular basis to discuss relevant aspects of stakeholder engagement, among which:

- If and how the approach and strategy is working;
- How external trends and developments affect the engagement strategy;
- Which stakeholder engagement activities and which stakeholders should have priority at a given time;
- If and how the advisory board can play a role, e.g. by utilizing its network, in the stakeholder engagement activities.

The EAB will ideally contain influential representatives from all sectors relevant to ARBAHEAT. Currently, the following persons and roles are considered to be invited to participate.

- Patrik Klintbom: Vice Chair of the European Technology and Innovation Platform Bioenergy;
- Kees de Gooijer: Director of Top consortium for Knowledge and Innovation Agro and Food;
- Les Marshall: Senior Technical Officer, Combustion and Fuels Ontario Power Generation;

- T.b.d. Contact person: Norwegian Research Council;
- Martin Junginger: Lead professor of leads bioenergycluster Energy & Resources (E&R) of the Utrecht University;
- T.b.d. Contact person: Renewable Energy Sources Cooperative Europe (REScoop);
- Maria Georgiadou: European Commission Official in the field of Biofuels and Bioenergy of 'Renewable Energy Sources'

5.2 Partner responsibilities

The stakeholder engagement working group will consist of representatives from the project partners, initially from Engie, Port of Rotterdam and from PNO. Depending on the project phase and possible internal or external developments, other project partners will join the working group as needed.

This working group will manage the stakeholder engagement process and is responsible for sharing findings, requesting input and updating the strategy.

Guided by the working group, each partner is responsible for actively engaging stakeholders with which they are in contact and to provide the findings and results of this engagement to the working group.

6. Compliance with ethics requirements

The stakeholder analysis involves the use of personal data and in the following information is provided regarding the criteria and procedures performed for identification, collection, storage and management of personal data. More details can be found in the ethics report on the involvement of human participants (D9.1 POPD Requirement No.1)

6.1 Data collection

The Stakeholders' Analysis is based on publicly available information, mainly considering the following data sources:

- The identification of the value chain segments that could benefit from the project results;
- The identification of relevant stakeholders belonging to the identified value chain segments based on the exploration of different databases such as:
 - The CORDIS database where innovators and potential end-users will be identified;
 - Patent databases where innovators and potential investors and end users will be identified
- Desktop research e.g. recent scientific publications, market reports, press releases where relevant stakeholders will be identified.

6.2 Data storage and protection

The research on the above-mentioned channels involve the collection of personal data: personal details and identification will be kept confidential in any public documents that may be produced using data. Data will be stored on the PNO corporate platform Innovation Place, which relies on a secured private server with the following main characteristics:

- Innovation Place is totally under secure connection using SSL (Secure Sockets Layer) protocol;
- The application stands on a dedicated machine not accessible from other/applications or domains;
- The machine is hosted by a primary world leading service with high-level physical and IT security;
- The entire management is under PNO control and its access is restricted by certificates own by PNO administrators.

In addition, Innovation Place is provided with a back-up system, which:

- is done daily on the entire system with a complete snapshot of the Linux virtual machine;
- executes application backups (database, files, etc.) with 24 hours frequency;
- Backup are stored on a separate storage disks provided by the hosting service.

6.3 Data retention

Data will be stored on a secured private server and under secure connection using SSL (Secure Sockets Layer) protocol and will be deleted no later than 2 years after the project ends, taking into account the right to be forgotten – concerning the erasure of personal data (Article 17, GDPR) that an individual may request in some circumstances, such as when data is no longer needed to fulfil the processing purpose.

Annex A – example interest matrix

Miscellaneous	Parallel developments of alternatives by energy companies																		
	Relationship between political parties, ministry of EZK and regulatory framework																		
	Maturity of biomass market: price uncertainties and volatility																		
Finance and investment guarantees	Effect of new ownership of plant on ARBAHEAT project																		
	Biorefineries and biochemical industry needs large amount of high temperature heat																		
Availability/ guarantees of sust. elect. and heat	Greenhouses need sustainable replacement for gas																		
	Heat network for Rotterdam and surroundings requires large amounts of low temperature heat																		
	Image of biomass cofiring in Coal-fired power plants																		
Permitting	Environmental issues check																		
	Voicing of concerns and objections																		
	Development of green deal program to stimulate development of sustainable heat and cold																		
Green deal	Capital destruction and security of supply due to closure																		
Coal-fired power plants	Impact closure as early as possible																		
	Necessity of closure of CFPPs to meet "Urgenda" target																		
CO2 abatement / cost effectiveness	The potential of Bio-energy Carbon Capture & Storage																		
	Feasibility of alternatives (nuclear, hydrogen, green gas)																		
	Cost effectiveness of biomass for power and heat																		
Security of energy supply	Security of supply vs. acceptable energy prices for (Rotterdam) industry																		
	The role of disabled gas fired power plants in security of supply																		
	The role of sustainable biomass as source of dispatchable power																		
	Global supply and demand depend on market and politics in neighboring countries																		
	Sustainable heat and power plants necessary to achieve Paris targets																		
Origin of biomass / sustainability	<i>Sourcing and cascading of biomass</i>																		
	<i>NGOs objection to use of biomass for energy production</i>																		
	<i>Domestic supply of feedstock (forest maintenance)</i>																		
	<i>Assessment of availability and potential uses of biomass</i>																		
	<i>Development of national policy for sustainable biomass</i>																		

