

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



D7.3 FIRST REPORT ON DISSEMINATION ACTIVITIES AND MATERIALS

Deliverable information	
Deliverable no.:	D7.3 / D36
Work package no.:	WP7
Document version:	V.1.0
Document Preparation Date:	29.03.2019
Responsibility:	01 - PNO



Version management		
Filename:	D7.3_First_report_on_dissemination_activities_and materials.doc	
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Approved by:	Marijn Mulder (PNO)	
Revision no.	Date	Modification description

Dissemination level		
PU	Public	X
CO	Confidential, only for Members of the Consortium, including the EU Commission Services	

Type of deliverable		
R	Document, report, drawings	X
DEM	Demonstrator, pilot, prototype	
DEC	Website, patent filings, video's, etc	
OTHER		
ETHICS	Ethics requirements	

Project information	
Project acronym	ARBAHEAT
EC Grant Agreement no.:	818349
Project Coordinator:	PNO
Project start date:	01.10.2018
Duration:	48 months

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LIST OF ACRONYMS AND ABBREVIATIONS

CA: Consortium Agreement

CO: Confidential

DCP: Dissemination and Communication Plan

DMP: Data Management Plan

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

EC: European Commission

GA: Grant Agreement

PU: Public

WP: Work Package

EXECUTIVE SUMMARY

This deliverable provides an overview of all the dissemination activities in the first six months of the ARBAHEAT project. The document includes a description of the visual identity, communication channels and tools that have been developed and will be adopted to disseminate the ARBAHEAT project objectives and future results as well as a framework for the monitoring of project partners' dissemination activities.

This report contains the initiatives related to the first half year of the project and is also to be considered as a guide to support the consortium to carry out the dissemination activities using the right material and channels. For this reason, the deliverable will be updated on the basis of the project's evolution and the acquired new knowledge that will allow adding new dissemination opportunities. At the end of the project (M48), a final report will be developed (D7.6)

The document consists of 4 main sections:

- Section 1 - ARBAHEAT visual identity: Introducing the purpose of this deliverable and presenting the visual identity of the project.
- Section 2 - ARBAHEAT Dissemination tool and materials: Reports on the dissemination materials developed, including the project website and printed materials.
- Section 3 - ARBAHEAT social media channels: Describes the established channels and their purposes.
- Section 4 - Partners dissemination: Presents the dissemination tables for activities carried out and planned by each consortium partner including conferences, press release, presentations and papers.

1. Introduction

This deliverable deals with all the activities realized in the first six months of the project in order to disseminate the ARBAHEAT project results. The document includes a description of the communication channels and tools that have and will be adopted to disseminate the ARBAHEAT project objectives and future results as well as a description of the strategy to reach the different stakeholders.

The key point is to make sure that the project's outcomes are widely spread to the appropriate target stakeholders, at appropriate times, and with an appropriate methodology.

The main objectives of ARBAHEAT's dissemination activities are:

- Create awareness of the ARBAHEAT potential;
- Expand the project network as well as gathering and incorporating valuable input from all stakeholders;
- Ensure that there is an on-going reporting of the ARBAHEAT results to all the relevant stakeholders;
- Support the project partners in maximizing the impact of their participation in EC-funded projects.
- Further disseminate project results to the industry and general public;
- Provide visibility and create interaction with the project by developing the ARBAHEAT website and setting up project dedicated social media accounts;
- Create and distribute dissemination materials;
- Assure the widest possible visibility and engagement by organizing and attending events.

This report includes the initiatives related to the first half year of the project and is also to be considered as a guide to support the consortium to carry out the dissemination activities using the right material and channels. For this reason, the deliverable will be updated on the basis of the project's evolution and the acquired new knowledge that will allow adding new dissemination opportunities.

This first report on dissemination activities and materials will mainly look at the communication materials realized and the preliminary initiatives carried out since the start of ARBAHEAT. It therefore provides an overview of the following:

- The project logo
- The design of the project templates
- The ARBAHEAT website
- The design of the project leaflet
- The design of the project poster

Next to this, it will provide several dissemination tables for the monitoring of project partners' activities in the ARBAHEAT project regarding communication (social media posts on LinkedIn or Facebook, media coverage and articles), relevant events attended (with or without dissemination of the ARBAHEAT project) and publications (both non-scientific and peer reviewed).

2. Visual Identity

One of the first actions of the communication activities was the development of the project's identity. This identity is meant for non-verbal (often visual) representation of the ARBAHEAT brand, and it comprises important branding elements, namely: the project logo, printed materials and general brand style. It is worth mentioning that all current and future project related materials (and tools) are developed in English and formatted in line with the H2020 visual guidelines.

2.1 Project logo

The main branding element is the logo. The logo plays a crucial role in the brand recognition and is linked with a non-verbal representation of the project, which must be consistent. The logo serves as the project's identification and should be associated with the project. Therefore it should be included in all documentation and promotional materials.

The ARBAHEAT logo is displayed below. The red and green colours depict the renewable energy in the heat and power sectors. The project addresses to improve the flexibility of the energy grid and security of energy supply. This logo can be used in the project communication. The guidelines that describe how to use the logo can be found in the ARBAHEAT visual identity guide.



Figure 1: ARBAHEAT project logo (final version)

2.2 Obligations towards the European Commission

Unless the European Commission requests or agrees otherwise or unless it is impossible, any dissemination of results (in any form, including electronic) must:

- (a) Display the EU emblem and,
- (b) Include the following text: “This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 818349”.

An example is shown below:



This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 818349

When displayed together with another logo, the EU emblem must have appropriate prominence. For the purpose of their obligations under this Article, the partners may use the EU emblem without first obtaining approval from the Commission. However this does not give them the right to exclusive use.

Moreover, they may not appropriate the EU emblem or any similar trademark or logo, either by registration or by any other means. Moreover, any dissemination of results must indicate that it reflects only the author's view and that the Commission is not responsible for any use that may be made of the information it contains.

3. Dissemination materials and tools

Several dissemination materials and tools have been produced throughout the first six months of the project. The dissemination materials have been realized according to different communication needs and to various event typologies as well as to follow the project's evolution and results. In the following sections the dissemination tools realized are reported.

3.1 Project website

The purpose of the website is to gather all information and news about the project. All promotional materials should include a link to the website. It should be the portal where (external) stakeholders can get information on the ARBAHEAT project and connect with the project management and administration.

The website will be presented in English and all information should be as accessible as possible to a broad audience. Since the URL of the website should be listed on all promotional materials and press releases, it is to be expected that members of the general public are as likely to visit the website as policy members and potential users of the ARBAHEAT solutions and project results.

During the first consortium meeting, ARBAHEAT project partners stated that the project website should be active, attractive, professional and interactive. Based on this feedback, examples of websites were found that fit these requirements. Regarding design, this meant a simple but comprehensive scroll-down website with an image of the existing ENGIE 731 MWe Ultra-SuperCritical coal-fired power plant as a header. These requirements were used for the first design of the website (developed by Innovation Engineering). At the moment of writing, the website is online and the last feedback and input has been gathered.

The website can be accessed through the URL www.arbaheat.eu and a basic version was launched, and will be updated and expanded during the project's lifetime and depending on needs and requirements. The current homepage (Figure 2) contains a short summary of the project, links to all ARBAHEAT consortium partners, a form to subscribe to the ARBAHEAT newsletter for the latest news and events and the notification that the project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818349. The website comprises project related information and is divided into several sections:

- Home (Figure 2)
- The project (Figure 3): *Description of the project including objectives, short methodology and expected impact*
 - Background
 - Objectives
- Consortium (Figure 4): *short description per project partner*
- Contact

The homepage lists a form to subscribe to the ARBAHEAT newsletter. There will also be a restricted area, which is accessible to consortium members only. On this subsite, consortium members can exchange restricted reports and documentation. It also serves as a repository for dissemination and communication materials.



Figure 2: Website homepage design template



THE PROJECT

BACKGROUND

The decarbonisation of the energy system is key for achieving long-term sustainability of the European society. Major actions should be taken to ensure secure, sustainable, affordable and competitive energy for households and industry. Achieving this goal will require a fundamental transformation of Europe's energy system. The energy sector – and the electricity sector in particular – has already dramatically evolved since the turn of the century. In its 2020 and 2030 climate-energy packages the EU has committed itself to lower GHG emissions and to higher shares of renewables and interconnection levels. These goals are being achieved (e.g. almost 30 % share of renewable electricity in gross electricity consumption in 2015, up from 16 % in 2007) and continued growth is expected. On the longer term, additional important milestones for this transformation have been set by the European Union. The European Commission's "Roadmap for moving to a competitive low carbon economy in 2050" suggests that by 2040 the EU should cut GHG to 60% below 1990 levels and to 80% by 2050.

Currently, in Europe alone over 300 coal-fired power plants are operational. The report – "A stress test for coal in Europe under the Paris Agreement", by climate research institute Climate Analytics shows that emissions from coal in the EU electricity sector need to be close to zero by 2030 (95% by 2030; 100% by 2031), with a quarter of operating coal-fired power plants switched off before 2020 and a further 47% going offline by 2025. This pressure on shutting down coal-fired capacity is not only dictated by the ambitions to limit CO2 emissions, but more urgent due to the implementation of the newest stringent emission rules, compiled in the EU Industrial Emission Directive¹. Compared with other parts of the World, Europe's coal-fired units are simply old. Upgrading those plants, not only the steam generation and use but also applying the prescribed Best Available Technologies (BAT) to arrive at the prescribed emission levels and efficiency, proves economically very challenging. Hence eliminating those plants potentially would benefit the environment not just in terms of reduced levels of CO2 and other emissions (SOx, NOx, particulates, toxic metals), but also makes economic sense.



OBJECTIVES

In the ARBAHEAT project an existing 731 MWe Ultra-SuperCritical coal-fired power plant will be transformed into a biomass-fired Combined Heat and Power plant by repowering with thermally-treated biomass produced on-site. This demonstration encompasses: (1) Transformation into CHP: This will be demonstrated by delivering a minor amount of heat to the on-site biomass treatment process, while envisaging large-volume heat delivery to nearby industry. This will provide renewable local heat, enhancing the overall efficiency of the plant from 46% electricity-only to 70-90% in CHP mode, (2) Biomass feedstock: An integrated thermal pre-treatment process will enable utilisation of diverse sustainable biomass feedstock. This will minimise investment and operating cost while broadening the possibilities in term of geographical feedstock sourcing and quality (3) Biomass pre-treatment: The thermal biomass upgrading process of ARBAFLAME will deliver biomass fuel with handling and milling characteristics approaching that of coal, allowing for retrofitting with minimal adaptations to the existing power plant. The technical capacity of the demonstration plant will allow for maximum flexibility in upscaling the technology for future replication, (4) Integration into power plant: The biomass pre-treatment and heat delivery system will be physically integrated within the existing power plant. Eliminating several cost and energy intensive steps (steam production, pelletizing) will be investigated, towards more cost-effective final design. This demonstration of an integrated very low-costs concept in large-scale energy production will pave the way to subsequent multiplication in commercial industrial projects, thus increasing the EU capacity for renewable power and heat generation. The renewable ARBAHEAT solution therefore has the potential to significantly contribute to the replacement of fossil-fuel in the heat and power sectors and increase the decarbonisation of the energy market.



Figure 3: Website The project design template

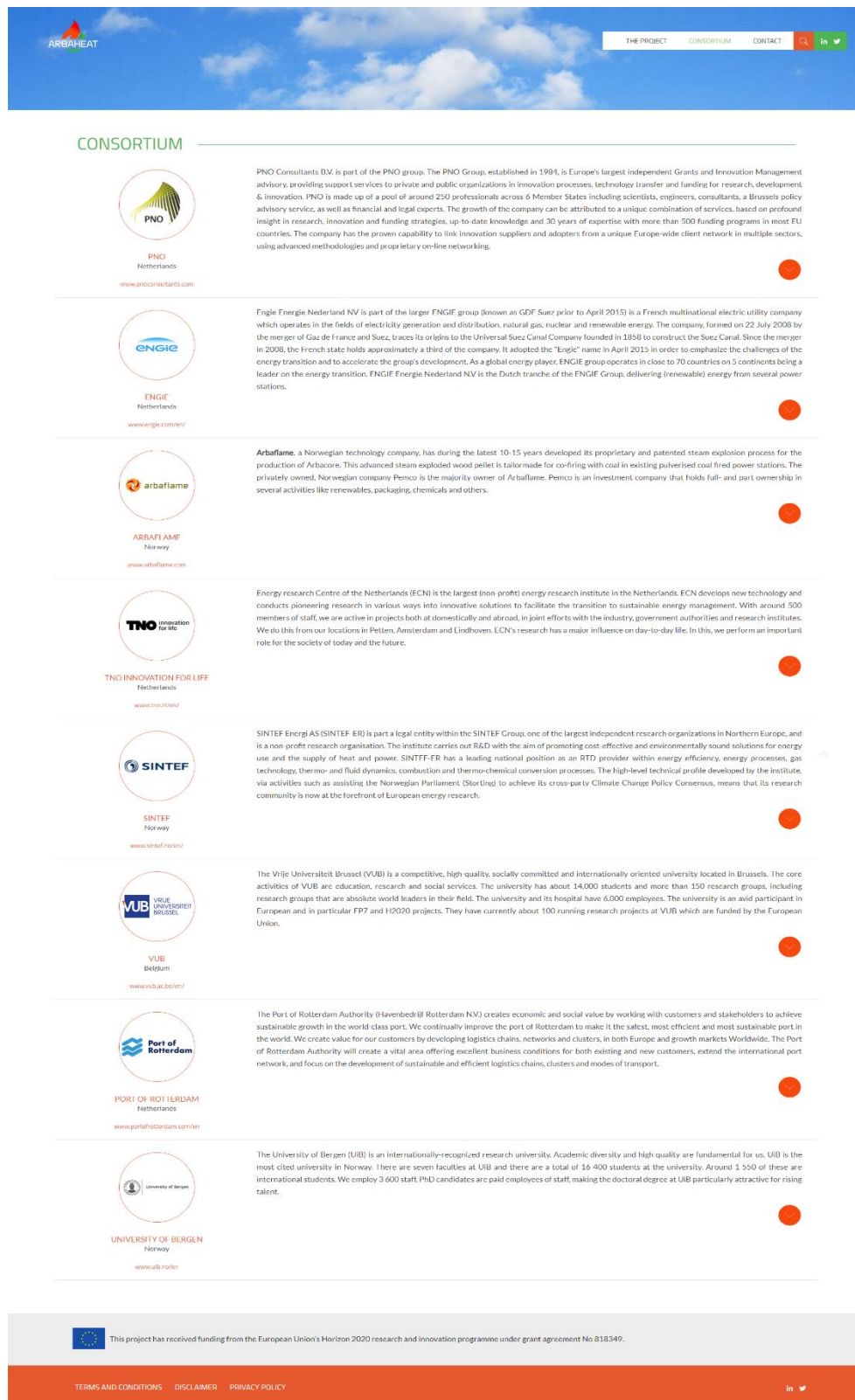


Figure 4: Website Consortium design template

3.2 Infographic

Several infographics, partly aimed at presenting the project outcomes to a technical audience and partly addressed to the general public, will be produced and made available on the project website and on the websites of the project partners. The first infographic is displayed below and depicts the possibilities in which sustainable heat and electricity is available at all times through the ARBAHEAT process.

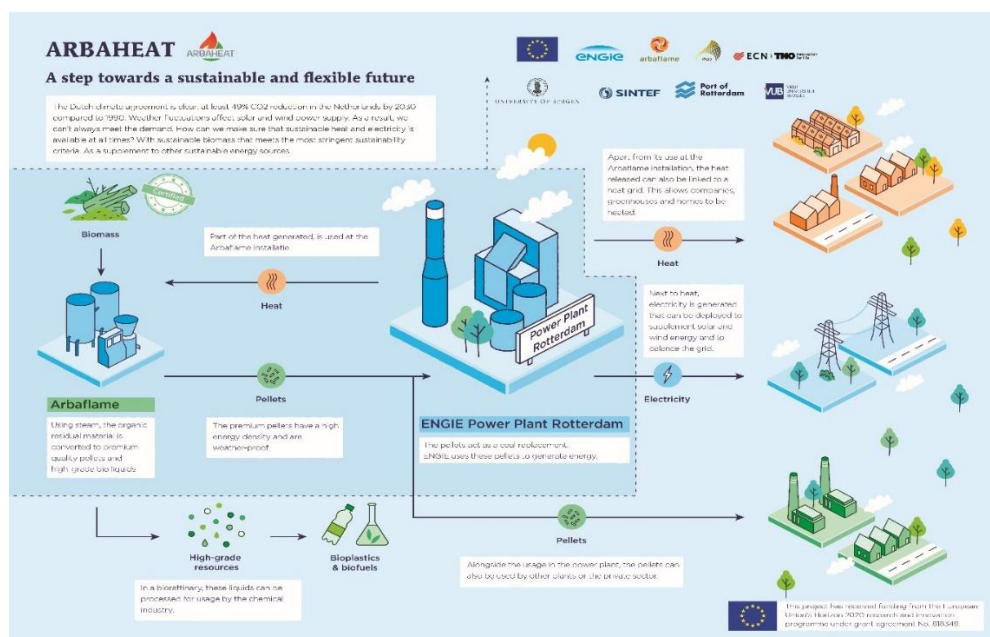


Figure 5: ARBAHEAT infographic

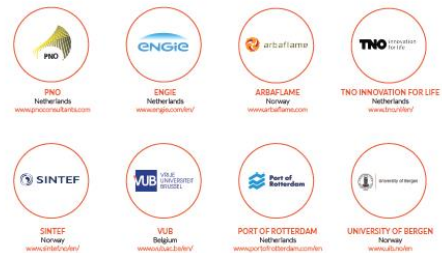
3.3 Printed materials

A visual identity itself is not enough to communicate the values and results of the project. Thus, additional materials need to be developed, like brochures, flyers, posters and other required physical materials (often printed). These materials are to be used at public and private events, conferences and will be available for download on the ARBAHEAT website. In the first year, printed copies will be provided for the dissemination and communication purposes/activities. These will include the following:

- Project leaflets and poster: informative project leaflets, roll-up banner, poster and other relevant dissemination materials will be produced to provide information about the project objectives. These will be available initially as an electronic document and a limited number of copies will be printed on environmentally friendly paper for outreach events. A final leaflet will be produced by M48 to inform about the project main outcomes and is intended for distribution at conferences and events (PNO, M6/M48). Preliminary design versions of the project leaflet can be found below (Figure 6).



PARTNERS



PROJECT

In the ARBAHEAT project an existing 731 MWe Ultra-SuperCritical coal-fired power plant will be transformed into a biomass-fired Combined Heat and Power plant by repowering with thermally-treated biomass produced on-site. This demonstration encompasses the transformation into combined heat and power delivery, diverse sustainable biomass feedstock and integration of biomass pre-treatment within the existing power plant. This demonstration of an integrated very low-costs concept in large-scale energy production will pave the way to subsequent multiplication in commercial industrial projects, thus increasing the EU capacity for renewable power and heat generation. The renewable ARBAHEAT solution therefore has the potential to significantly contribute to the replacement of fossil-fuel in the heat and power sectors and increase the decarbonisation of the energy market.



The overarching objective of the ARBAHEAT project is to increase the share of renewable energy in the heat and power sectors and improve the flexibility of the energy grid and security of energy supply, thus contributing to the European and global energy goals. To achieve this overall objective, the ARBAHEAT project will demonstrate the technical and economic feasibility of a new retrofit concept for the cost-effective transformation of existing coal-fired power plants into Combined Heat and Power (CHP) plants. Within this project this is achieved by using up to 100% biomass.

OBJECTIVES



PROJECT

In the ARBAHEAT project an existing 731 MWe Ultra-SuperCritical coal-fired power plant will be transformed into a biomass-fired Combined Heat and Power plant by repowering with thermally-treated biomass produced on-site. This demonstration encompasses the transformation into combined heat and power delivery, diverse sustainable biomass feedstock and integration of biomass pre-treatment within the existing power plant. This demonstration of an integrated very low-costs concept in large-scale energy production will pave the way to subsequent multiplication in commercial industrial projects, thus increasing the EU capacity for renewable power and heat generation. The renewable ARBAHEAT solution therefore has the potential to significantly contribute to the replacement of fossil-fuel in the heat and power sectors and increase the decarbonisation of the energy market.

OBJECTIVES

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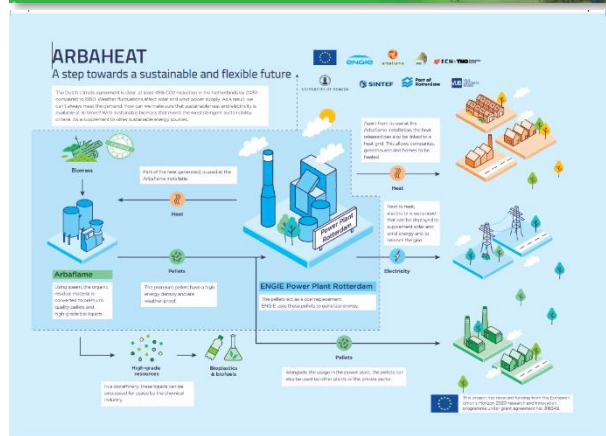


Figure 6: ARBAHEAT project leaflet (front and back) & roll-up banner

4 Social media channels

ARBAHEAT will be prominently present on social media, in particular on the LinkedIn and Twitter as these platforms are most relevant in the scientific and academic world. The social media channels that are currently being created for the ARBAHEAT project are the following:

- LinkedIn: ARBAHEAT project <https://www.linkedin.com/company/arpaheat>
- Twitter: @arpaheat_h2020 https://twitter.com/arpaheat_h2020

4.1 LinkedIn

LinkedIn is oriented at “business crowd” and it is a strategic choice to begin disseminating here, as this is a platform where most of the professional stakeholders are present. Furthermore, ARBAHEAT can benefit from the existing LinkedIn networks and communities involved in the area of nature-based solutions. The aim is to amplify the message and get it to the target audience in the shortest amount of time. Below a screenshot of the ARBAHEAT LinkedIn page is shown.

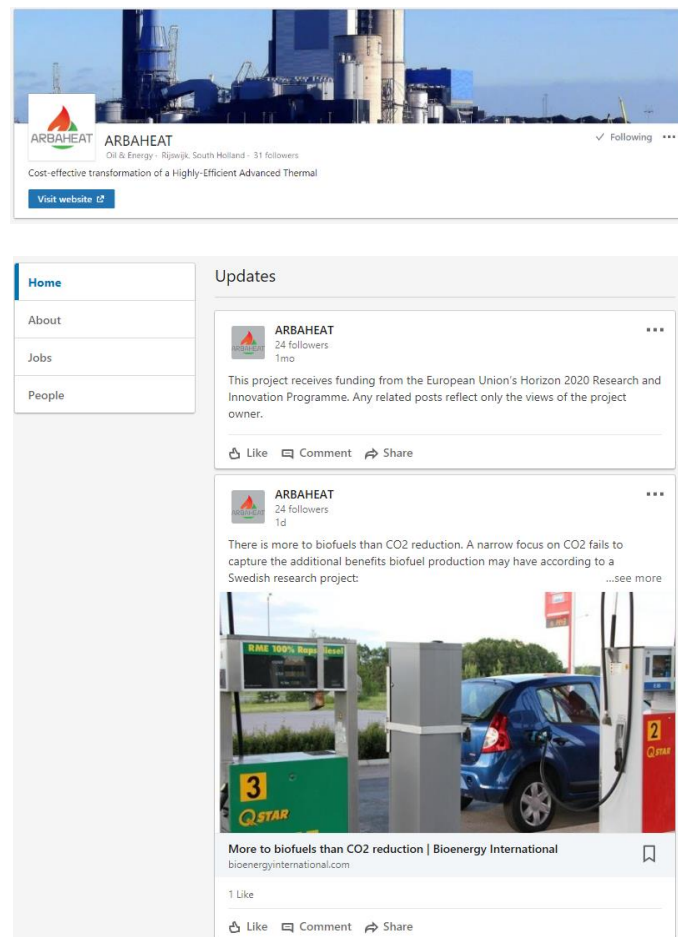


Figure 7: ARBAHEAT LinkedIn page

4.2 Twitter

Twitter will be mainly used to take part in the public debate as this platform is the most relevant in the scientific and academic world. One of the key features of Twitter is filtering information by using hashtags. Hashtags allow to quickly search and find information throughout the platform related to a certain topic. Therefore, the basic hashtags relevant for the project will be (non-exhaustive list): #ARBAHEAT; #energyefficiency; #Horizon2020; #H2020; #biomass; #renewableenergy.

Twitter accounts that are related to the environment, climate, energy, research and innovation, European Commission and H2020 (non-exhaustive) are; @EU_Commission; @EU_H2020; @MSCActions; @EUhorizon2020; @EUClimateAction; @Energy4Europe; @INEA_EU; @EU_ENV; @ERC_Research; @EU_Growth; @EU_EASME; @IMI_JU; @BBI2020; @EU_ScienceHub; @H2020SME; @NAIAD2020; @ThinkNatureEU; @BiomassResearch; @EITeu; @EU_ecoinno.

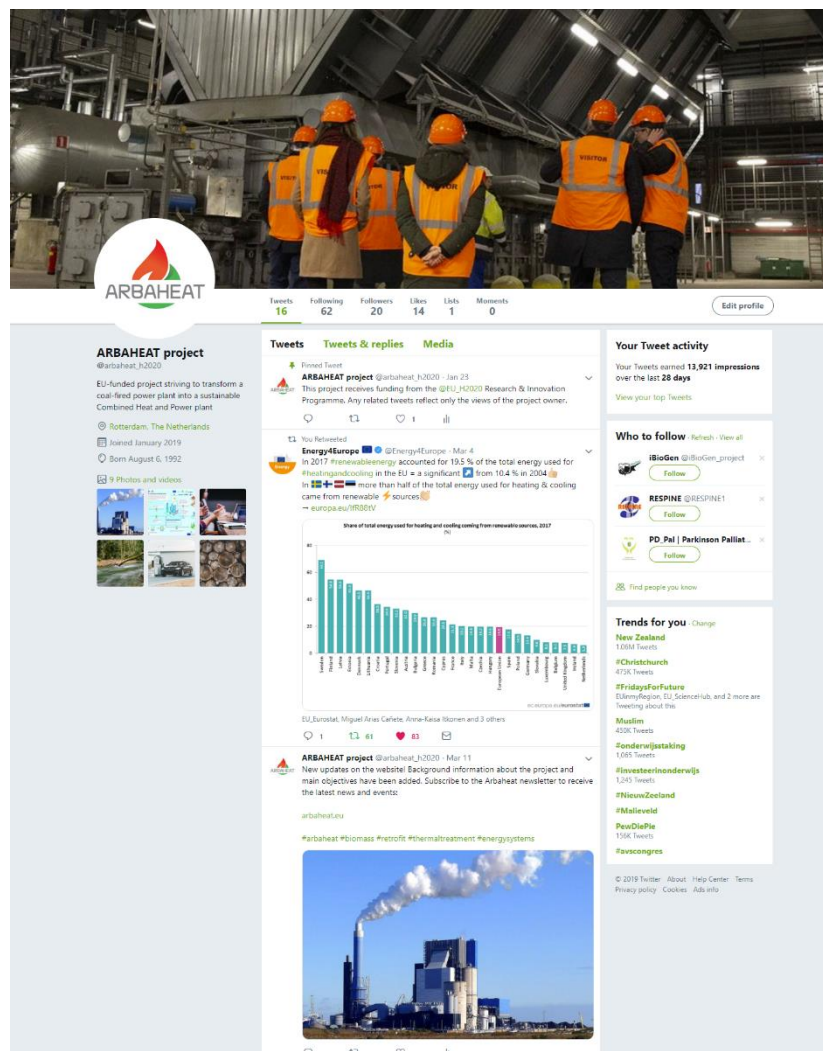


Figure 8: ARBAHEAT Twitter page

5. Dissemination activities of project partners

Partners are requested to maintain an active participation within the dissemination strategy. Proactive and balanced levels of participation will have profound effects throughout the whole project and will guarantee that the dissemination techniques are applied to the fullest possible extent. Dissemination tables (table 2, 3, 4) have been distributed to each partner in order to collect and monitor dissemination progress. Every 6 months, these tables will be updated with input from the partners, which will be gathered using a Google form. By using a Google form, input from partners can be gathered in an efficient way and moreover, different predefined answers will be included where possible (for instance type of event: workshop, presentation, conference etc.).

On the next pages, the following dissemination tables can be found:

- Description of events attended/planned
 - o These could be different types of events (conferences, meetings of related projects, expert groups etc.) and should be filled out in case there is active dissemination of the project (through for instance a presentation), and in case of participation in an event.
- Description of other dissemination activities (press releases, news, non-scientific publications, social media activity etc.)
 - o This could be any activity where the project is disseminated to the public through a communication platform.
- Scientific publications (peer reviewed)
- Datasets
 - o In case of the creation of a data set within the project (for instance as input for a scientific publication), this table needs to be filled out.

After receiving input from the ARBAHEAT partners on dissemination activities, the following table will be completed with information on outreach goals:

Table 1: Outreach of ARBAHEAT dissemination activities

Audience	Reach
Scientific Community (Higher Education, Research) audiences in research conferences/academia	
Industry (audiences in exhibitions, general conferences)	
Civil Society	
General Public (social media like LinkedIn, Twitter, partner corporate websites)	
Policy Makers (in case of dedicated workshops/conferences)	
Media (number of channels involved in the dissemination activities)	
Investors (in case of pitch)	
Other	

Table 2: Description of events attended/planned

Type of event	ARBAHEAT partner	Type of activity	Title	Date	Place	Type of audience	Size of audience	Countries addressed	Link to the website

Table 3: Description of other dissemination activities (press releases, news, non-scientific publications, etc.)

Type of activity	ARBAHEAT partner	Title	Date	Place	Type of audience	Size of audience	Countries addressed	Link to the website

Table 4: Scientific publications (peer reviewed articles)

Type of scientific publication	Title of the scientific publication	DOI	ISSN/Essn	Authors	Title of the journal or equivalent	Number, date	Publisher	Place and year of publication	Relevant pages	Public & private participation

Table 5: Data sets

Data set (fill out a table for each data set)	
Data set Title	[insert title]
Identifier	[insert DOI]
DMP	[Indicate the DMP version in which data set is described] [Indicate the number of the data set in the DMP] [Indicate if the data set description in the corresponding WP paragraph and data set table in the DMP is different from the deposited data set] [Specify the differences in the data set description that must be updated in the DMP]
Open Access	[Choose correct option: - YES. Indicate embargo period, if present. Or if data set will be openly accessible in the future, specify when; - NO, ever.]
Data set Re-usability	[Indicate number of files and format/s] [Indicate license]
Repository	[Indicate repository for sharing and for long term preservation]