

## Environmental and Social Data Sheet

### Overview

Project Name:	HVC DISTRICT HEATING NETWORK EXPANSION
Project Number:	2020-0115
Country:	Netherlands
Project Description:	The Project concerns HVC's 2020-2023 investments into both the expansion of its existing district heating networks in Alkmaar and Dordrecht, as well as investments in geothermal sources for the heating of greenhouses in the Westland area.
EIA required:	yes/no (on-going screening)
Project included in Carbon Footprint Exercise <sup>1</sup> :	yes
(details for projects included are provided in section: "EIB Carbon Footprint Exercise")	

### Environmental and Social Assessment

#### Environmental Assessment

The Project will support the Promoter's investment programme to develop sustainable district heating (DH) in different municipalities in which the Promoter is already active. It will increase the substitution of natural gas heating by more sustainable heating sources<sup>2</sup> and increase the reach of the DH network on existing building stock. The investments will thus generate environmental benefits by reducing emissions of greenhouse gas and air pollutants from heat generation.

Given the relatively small scale of each individual operation, nature of the investments and expected locations in urban areas, the investments are not likely to have a significant negative environmental impact. Temporary nuisance due to construction works (traffic, road interruption, dust, noise) will be mitigated through appropriate site organisation and construction management.

The extension of the existing DH assets will be carried out in Alkmaar and Dordrecht and will not affect any environmentally sensitive or protected areas. Horizontal Directional Drilling will be used to cross highways, water courses and complicated streets. The DH network will continue to be supplied mainly by the existing bio-energy and waste-to-energy plants. There

---

<sup>1</sup> Only projects that meet the scope of the Carbon Footprint Exercise, as defined in the EIB Carbon Footprint Methodologies, are included, provided estimated emissions exceed the methodology thresholds: 20,000 tonnes CO<sub>2</sub>e/year absolute (gross) or 20,000 tonnes CO<sub>2</sub>e/year relative (net) – both increases and savings.

<sup>2</sup> through existing bio-energy, waste-to-energy CHPs; and three new geothermal heat sources to be implemented as part of the Project

Luxembourg, 11/11/2020

will be no increase in capacity of these plants nor any additional combustion of waste as a result of the Project. Instead, the steam destined to drive the turbines producing electricity will be redirected as direct steam for heat production, which will cater for the additional heat supply required as a result of the networks extension.

The waste-to-energy plant feedstock is regulated by the National Waste Management Plan, does not include plastic and is considered sustainable at 50-60%. The bio-energy plant mostly processes B-wood<sup>3</sup>, with the remaining proportion composed of sludge or non-compostable wood fractions. No forest biomass is processed in the plant. The feedstock is audited and fully guaranteed on an annual basis by nationally-accredited auditors.

The selection of best available materials should ensure reliability during operation. The heat pipes will be insulated as per best practice and a permanent leak detection system will be installed on some sections, while the rest of the sections will be measured manually twice a year.

Due to the type of activity associated with DH network extensions, their location in urban areas outside cultural heritage sites and protected nature sites, the typically expected low impacts as well as available suitable mitigation measures, EIA processes are not likely to be required. The works are subject to building permits to be provided by the local authorities.

The implementation of the geothermal heat generation sources<sup>4</sup> will be realised within the industrialised Westland area, where several oil and gas projects have been under exploitation since the 1960s and where geothermal activities have developed more recently. The drilling locations have been selected in accordance with the Dutch Mining Law to minimize environmental disturbances, with well pads located at a minimum of 3 metres distance from households. There will be no hydraulic stimulation involved and only submersible pumps will be installed to support the geothermal water production. Disposal of drilling waste is also optimised through the use of technologies such as adapted shakers to increase the disposal efficiency.

The geothermal system will operate as a closed-loop, with return water being re-injected into the exploited reservoir, thus minimizing subsidence or seismic risk through volumes balancing. The reinjection process is subject to SodM<sup>5</sup> regulations, which limit injection pressures to avoid stressing the reservoir. Seismic risk assessments will be undertaken within a nationally-recognized framework, to ensure those risks are minimal and/or mitigated through real-time monitoring<sup>6</sup>. This process was on-going at the time of the appraisal and will be subject to further monitoring by the Bank, but the outcomes of these assessments applied so far on existing geothermal wells in the area revealed that the risks of induced seismicity were low and no such event of significance had been reported in the geothermal exploitation history of the Westland.

The three geothermal project components fall under Annex II of the Environmental Impact Assessment Directive (2014/52/EU amending the 2011/92/EU) leaving it to the national competent authority to determine whether an environmental impact assessment is required according to criteria defined in Annex III of the Directive. At the time of appraisal the

---

<sup>3</sup> According to the Dutch nomenclature: non-contaminated waste wood which cannot be further recycled, such as wood from the construction/demolition sector or used wood (old furniture, construction materials, wooden packaging and pellets).

<sup>4</sup> Three components: Polanen, Maasdijk and Kralingerpolder

<sup>5</sup> The Dutch State Supervision of Mines

<sup>6</sup> In particular, there is a plan to expand the national seismic stations network managed and published by the KNMI (Royal Netherlands Meteorological Institute) to improve detection of seismic events in the Westland area

Luxembourg, 11/11/2020

screening process had been initiated for the Polanen geothermal source, while the Maasdijk and Kralingerpolder components will go through the screening process later.

The Polanen and Maasdijk drilling sites are located at ca. 1.5 km from the Junes natural reserve area, which is classified as a Natura 2000 site.

Pre-investigation surveys are also planned to be conducted in the Westland area to identify any potential sites of archaeological or cultural heritage importance.

### **EIB Carbon Footprint Exercise**

The estimated annual absolute emissions of the Project in a standard year of operation are 45 kt CO<sub>2</sub>eq and the estimated emissions savings are 62 kt CO<sub>2</sub>eq/year. The absolute emissions include: For the DH network extensions, the emissions related to the existing fuel mix burnt to meet the incremental demand served by the new DH connections; for the geothermal components, the emissions related to some associated gas expected to be produced along with the geothermal water, as well as the emissions related to electricity consumption by pumps installed to support vertical production lifting and return water re-injection. The baseline comprises of emissions related to natural gas burnt in existing individual boilers displaced by the DH extension and to natural gas burnt in existing greenhouses boilers and CHPs, which will be replaced by the new geothermal generation.

In the context of the EED (Energy Efficiency Directive), an EED audit report has been drawn up for HVC's waste and biomass incineration plants and the reporting confirmed that the required energy efficiency measures were already in place. The emissions from those plants are regularly monitored and reported to environmental competent authorities, as well as subject to annual environmental audits, in particular with regards to emissions to the atmosphere, odour and potential impacts on near-by agricultural crops. Based on the outcome of this monitoring, HVC is taking appropriate actions on its installations to reduce any potential impacts, which in particular occurred in the field of odour nuisances.

The waste incineration plants supplying the Alkmaar and Dordrecht DH networks are equipped with a multi-stage flue gas cleaning system, reducing emissions and metals residues of the combustion.

In collaboration with TNO, HVC also implemented a small-scale pilot plant to capture and re-use a portion of the CO<sub>2</sub> from the flue gases of HVC's biomass incineration plant in Alkmaar. The captured CO<sub>2</sub> is transported in liquid form to supply horticulture greenhouses and to the Promoter's bottom ash plant nearby, substituting CO<sub>2</sub> respectively from natural gas CHPs and caustic soda.

On the geothermal side, electricity rather than diesel will also be used for drilling, minimizing environmental emissions.

For the annual accounting purposes of the EIB Carbon Footprint, the Project emissions will be prorated according to the EIB lending amount signed in that year, as a proportion of Project cost.

### **Social Assessment, where applicable**

The Promoter has demonstrated sound practice with respect to environmental, health and safety management. In addition to procedures to meet regulatory requirements, the Promoter has a quality, safety as well as an environmental asset and risk management systems in place, which are applied to new projects and monitor ongoing operations. A Sustainable Improvements Team was also set-up to facilitate and monitor the Promoter's compliance in environmental and fire safety requirements, as well as to promote a culture of safety and

Luxembourg, 11/11/2020

awareness and continuous improvement at all levels of the organisation. A particularly thorough fire safety management system was set-up, which includes collaboration with external experts in fire prevention as well as annual fire safety audits. The safety and reliability of the installations are also supported by a comprehensive inspection and maintenance programme and an incident management application was launched so that everyone in the company has access to and can quickly report any safety events.

The Promoter is following similar standards as those required in: ISO 9001; ISO 14001, OSHAS 18001, ISO 31000 and NTA 8620.

### **Public Consultation and Stakeholder Engagement**

Public consultations, meetings and walk-ins on site have been carried out as part of the area permitting process for the geothermal components in the Westland. If these components were screened in for a full EIA, a public consultation would also take place as part of the EIA process.

During the implementation of the DH networks, anyone, including local residents, would be able to monitor the progress of construction on dedicated heat networks websites, as well as to contact HVC' environmental management team shall any concerns arise.

## **Conclusions and Recommendations**

The Project will reduce emissions of greenhouse gases and other air pollutants by replacing individual natural gas heat sources in residential and commercial buildings with centralised heat generation, by adding new renewable heat generation as well as by extending the reach of its existing DH network assets.

The Bank reviewed the environmental and social capacity of the Promoter including its organisation, processes and procedures, and deemed them to be good. Based on the information available, the Project is expected to have minor negative residual impacts and thus is acceptable for Bank financing from an environmental and social perspective, subject to the following conditions, to be included in the Finance Contract to be signed with the Borrower:

- The Promoter will provide to the Bank with any environmental screening decisions related to the Project components. If for any reason at a later stage any of the Project components were screened in and required an EIA, the Promoter undertakes not to allocate the Bank's funds to those components of the Project until the EIA and/or the necessary nature assessments have been finalized and approved by the competent authority in form and substance satisfactory to the Bank.
- For each individual geothermal components (Polanen, Maasdijk and Kralingerpolder):
  - The reports on seismicity risks by Q-con or other nationally accredited independent experts, as well as any associated significant issues known by the Promoter, should be provided to the Bank in order to confirm readiness of these components for funding.
- The Project should not result in any increase in capacity nor in any additional combustion of waste.
- For any geothermal components in the Project:

Luxembourg, 11/11/2020

- The Promoter undertakes to inform the Bank on the permitting status (specifically on area, environmental, building, extraction, handling and disposal of light radioactive material) and in particular on any material public comments or appeals.
- The Promoter undertakes to immediately inform the Bank should any materially adverse event occur during implementation or operation, which would prevent the Project to perform as planned, in particular with regards to induced seismicity.
- The Promoter undertakes to take into account and implement conditions expressed in any screening-out decision or EIA consent granted by the competent authority for nature and environment.