

Environmental and Social Data Sheet

Overview

Project Name: GASUNIE NITROGEN PLANT
Project Number: 2018-0862
Country: Netherlands
Project Description: The project entails the construction of a nitrogen plant in Zuidbroek (NL), to regulate the calorific value of the natural gas supplied by the Promoter's network.

EIA required: NO

Project included in Carbon Footprint Exercise: YES

Environmental and Social Assessment

Environmental Assessment

The Project relates to the construction of a 180 000 m³/hr nitrogen production plant and its associated facilities (gas and electricity connections as well as gas blending stations). The Project will allow for the production of nitrogen of high purity to be mixed with incoming high-calorific gas to create a pseudo-Groningen gas of low calorific value and support the substitution of gas produced from the Groningen field. The excess nitrogen will be sent to an existing salt cavern when needed which was converted into an underground nitrogen storage at the time of the construction of a nearby nitrogen plant¹ operated by Gasunie Transport Services B.V. (GTS) since 2012.

Based on its technical characteristics and on the information provided by the Promoter, the nitrogen plant does not fall under the Environmental Impact Assessment (EIA) Directive 2014/52/EU Annex I nor Annex II requirements. The gas connections and the groundwater extraction activities (required to keep the soil dry during excavation works) are not subject to screening under the national EIA legislation as their technical characteristics are below the thresholds set out in the Dutch EIA Decree.

The Project is of strategic importance to the Netherlands, as it will support the official request from the Ministry of Economic Affairs and Climate Policy (EZK) to urgently decrease Groningen gas production to 12 bcm by 2020 and thereafter to proceed to a complete shutdown of this field by 2030, in order to reduce the induced-seismicity risk in the region. The Project is therefore categorised as an energy infrastructure project of national interest.

¹ Zuidbroek 1, 16 000 m³/hr nitrogen capacity.

Luxembourg, 06/12/2019

According to the national legislation, the Project (new nitrogen plant, gas blending station and, among other things, the associated construction of approximately 4 km of natural gas transmission pipelines) falls under the National Coordination Scheme (RCR). This means among other things, that the Project must fit within a Spatial Integration Plan (RIP) that is determined jointly by the Ministry of Economic Affairs and Climate and the Ministry of the Interior and Kingdom Relations. This procedure also includes the decisions required for the project (permits, approvals etc.) and is coordinated by the Ministry of Economic Affairs and Climate.

In the context of the RIP approval process, the gas pipeline and the water extraction activities were subject to a screening based on the criteria listed in Annex III of the EIA Directive. The Ministry of Economic Affairs and Climate and the Ministry of the Interior and Kingdom Relations decided that an environmental impact assessment is not required, stating the main reasons for not requiring such assessment, including the lack of cumulative impact of all components of the Project.

It has to be noted that the location of the Project was chosen based on a study which considers environment as one of the criteria. Out of five locations studied, the most appropriate is Tussenklappen, Zuidbroek, considering spatial integration and distance to existing facilities.

A separate procedure has also been launched by the Promoter to apply for a modification of the nitrogen storage plan² regarding the change in the utilisation of the existing salt cavern at Heiligerlee, which is already used as a buffer nitrogen storage to an existing nitrogen plant in Zuidbroek. Although the underground nitrogen storage is not part of the Project scope, taking a risk-based approach, the EIB will review and assess the E&S elements of this facility, once this information is made available to the Bank, as per undertakings included in the finance contract.

Environmental Impacts

The Project will be implemented within agricultural lands, in the vicinity where natural gas installations and nitrogen production infrastructure are already in place. As such, existing infrastructure will be used wherever possible. The gas and electricity connections will be buried.

The main environmental impacts estimated in the environmental assessment of the RIP during construction phase will mainly arise from increased traffic, especially as the Project will be constructed simultaneous with potential solar park and wind farms nearby as well as on noise, soil and landscape.

A traffic management plan to reduce the impact from increased traffic in the area will be prepared by the Promoter in agreement with local residents and the Central Groningen Municipality.

To reduce noise impact, the main project components will be insulated in purposed buildings and/or equipped with sound-proofed auxiliaries. Noise control points and regular inspections will be carried out to monitor and control cumulative noise levels from the existing and planned installations.

² The original integration plan for the utilisation of the Heiligerlee salt cavern as a nitrogen storage was obtained in April 2010. No modification to the pipe or wells design related to the storage is required to accommodate the additional nitrogen flows from the Project and the operating pressures of the storage will not change as a result of the Project.

Luxembourg, 06/12/2019

The emissions from the nitrogen production process will mainly consist of oxygen with a few impurities and will be in line with the emissions standards as defined in the relevant national legislation.

Cryogenic processes typically occupies large ground surfaces. The nitrogen plant will be designed such as to minimize landscape impacts through a specific landscape integration plan.

The Project is located in an industrial gas estate, at some distance from residential areas, therefore the impacts on population and human health due to these operations is considered low.

The Project is not located inside or in the vicinity of any Natura 2000 as defined by the Habitats and Birds Directives (92/43/EEC and 2009/147/EC respectively).

The Project underwent a Nature Test (screening) as defined in the national legislation³ upon which the competent authorities concluded that the Project does not have any significant impact on Natura 2000 sites (reported in the Draft Spatial Integration Plan), the closest Natura 2000 site being located at 10 kms distance. Some general conditions to mitigate disturbances related to the Project activities on birds and fish species in the area are included in the Draft Spatial Integration Plan.

Climate change considerations

Given the low temperatures and the high volumes involved, cryogenic nitrogen production processes are energy-intensive; the selection procedure was partly based on Total Cost of Ownership (energy consumption, operations and maintenance), with emphasis placed on overall energy consumption levels, such as using more efficient electromotors, installing centrifugal compressors and integrating heat exchangers in the ASU.

Given its proximity to the Groningen area, the Project is designed seismic-proof, in line with the Eurocode 8 Directive and the national legislation⁴.

The Project is located on a low-lying polder which constitutes a flood prone environment. The flooding risk is exacerbated by observed climate change in the area, such as rising sea levels, wetter winters and drier summers. This has been taken into consideration in the Draft Spatial Integration Plan. The flooding risk and associated safety standards are controlled regionally by the Groningen Province in consultation with the Waterschap Hunze en Aa's which sets the safety policy objectives on these matters. An adjacent dyke is planned to be completed in 2021, which will reduce the flooding probability in the Project area to 1:1000 years⁵. The Project infrastructure will be raised on higher grounds to further mitigate flooding risk on its components. Additional flood-proofing elements might be incorporated in the Project design, which will be captured in the Final Spatial Integration Plan.

EIB Carbon Footprint Exercise

Greenhouse gases emissions related to nitrogen production activities mainly relate to the electricity intensity of this type of processes. The Project plant will be electrically-driven with green electricity supplied by TenneT from solar and wind sources, supplemented by a back-up power generation (diesel) that can operate continuously for a period of 3 days and would

³ Nature Protection Act (2017).

⁴ NPR9998 practical guideline version of December 2015, issued by the Dutch Standardization Institute (NEN).

⁵ From currently 1:300 years.

Luxembourg, 06/12/2019

potentially run on an occasional basis. The national electricity grid factor has been used to account for the energy supply emissions.

According to the Promoter, insignificant fugitive emissions are expected on flanges and valves at the blending stations. The Promoter has provided some estimates for the operating plant Zuidbroek 1, which has been scaled up to Zuidbroek 2 capacity to calculate the rough emissions from the plant. The resulting absolute emissions from the Project total ca. 125 kt CO₂-eq/yr.

Concerning the baseline emissions, there are two possible alternatives to the Project, which are: (i) to convert all consumers' boilers and appliances so that they are compatible with high-calorific gas; (ii) to convert heating and appliances running with gas to run with non-gas alternatives (heat pumps and electricity). The costs of these two options will be borne by end-consumers. The latter option may be the long-term solution for

decarbonisation, but the least cost alternative to the Project (including GHG savings) would be the first option, which is selected as the baseline and which therefore corresponds to all consumers' appliances being converted to be compatible with high-calorific gas. This alternative would not have different emissions levels when compared to the Project. The relative emissions are therefore similar to the absolute emissions, 125 kt CO₂-eq/yr.

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.

Public Consultation and Stakeholder Engagement

In 2016, the pre-draft RIP has been consulted by regional authorities (municipality, province, water, conservancy, etc.) for a period of two months. According to the information provided by the Promoter, relevant opinions and comments have been incorporated into the RIP. As the Project has been newly activated in 2018, the consultation process by the Promoter took place in January and February 2019, with the final draft of the RIP made publicly available at the end of May 2019. A public hearing near Heiligerlee also took place on 14 of May 2019.

Most of the comments raised by the public refer to the salt cavern in Heiligerlee, which is not part of the RIP but is connected with the nitrogen production plant.

The outcome of the public consultation have been integrated in the final RIP documentation and the design of the Project was slightly modified to further mitigate flooding risks and noise pollution. The comments concerning the salt cavern in Heiligerlee were addressed in the form of clarifications in the final RIP documentation and will be further incorporated as much as applicable and feasible in a separate permitting procedure submitted by the Promoter for the modification of the nitrogen storage plan.

Other Environmental and Social Aspects

The operator has a well-established integrated health, safety and environmental (HSE) management system, the Safe@Gasunie policy, and is ISO 14001 and NTA 8120⁶ certified. Gasunie is also experienced in managing similar activities as the Project, and has proven its respect of the environmental and HSE laws in past projects. HAZOP, HAZID, project risk and SIL (Safety Integrity Level) studies have been undertaken and a monitored risk log and an emergency plan have been set up for the Project.

⁶ Dutch standard on asset safety, quality and capacity management for energy network operations.

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Conclusions and Recommendations

The final draft of the RIP was made available to the public at the end of May 2019.

The Bank set signature conditions requiring all permitting that entitles the Promoter to start the works to be in place, which have been fulfilled.

The Bank has included undertakings related to the new storage plan and corresponding authorizations, to monitor this process as it is still on-going. Undertakings related to potential public comments as well as on the fulfilment of the mitigation measures outlined in the permitting documentation pertaining to the Project have also been included.

With the contractual conditions described above in place, the Promoter's environmental capability and the relatively low impact from the various components as per available information at this stage, the Project is acceptable for EIB financing in E&S terms.