

Environmental and Social Data Sheet

Overview

Project Name:	PKN ORLEN BIOREFINERY & RDI
Project Number:	2019-0328
Country:	POLAND
Project Description:	The project concerns (i), the construction of a new R&D Centre to regroup RDI activities in the development of renewable chemical and biofuels technologies at the promoter's site at Plock, (ii) the construction of two "flag ship" facilities for the production of advanced bioethanol from cereal straw and bio-propylene-glycol from biogenic glycerine, in the industrial sites in Jedlicze and Trzebinia

EIA required: yes

Project included in Carbon Footprint Exercise¹: yes

(Details for projects included are provided in section: "EIB Carbon Footprint Exercise")

Environmental and Social Assessment

Environmental Assessment

The promoter is a leading refinery, fuel retailer and petrochemical company in the EU. The promoter's project supports the company's decarbonisation and energy transition strategy that was announced in September 2020. The goal of the company is to reach emission neutrality by 2050 through the development and implementation of innovative renewable energy and material solutions for low-carbon transport and industry (pharmaceutical, construction and food sectors). The promoter's emission neutrality strategy is based on four pillars: energy efficiency in production, zero- and low-emission power generation, alternative fuels and green financing.

The projects components are subject to the Polish environmental Laws that transpose the Environmental Impact Assessment (EIA) Directive (2014/52/EU) (amending 2011/92/EU) and Industrial Emission Directive (IED) 2010/75/EU.

Research and development centre

The project concerns the construction of the Research and Development Centre (RDC) adjacent to the promoter's refinery in Plock, Poland. This investment aims at driving the implementation of promoter's decarbonisation strategy through developing new innovative technological solutions, focusing on energy efficiency, renewables and green hydrogen.

¹ 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 CO₂e/year absolute (gross) or 20 000 tonnes CO₂e/year relative (net) – both increases and savings.

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The Polish competent authority screened out the construction of the research and development centre. The screening decision, issued by the Mayor of the city of Plock in 12 June 2018 and amending decision in 25 October 2018, provides conditions for the construction and operation of RDC according to the environmental decision.

The construction and building permits were granted by the mayor of the city of Plock on 8 March 2019 following the promoter's application dated 11 January 2019.

Bio Propylene Glycol plant

The project concerns the construction of a greenfield bio propylene glycol production plant at the premises of the existing industrial facility of ORLEN Poludnie in the town of Trzebinia in Poland. The production plant converts the by-product stream from existing biodiesel production into bio propylene glycol. This high-value added biochemical product will substitute fossil-based equivalent product in pharmaceutical, construction and food sectors applications. It further backs the transition to a low-carbon economy. The bio propylene glycol plant falls under "Types of projects likely to have significant effects on the environment" according to Polish Law. This corresponds to Annex I Projects of the EIA Directive.

The promoter submitted the environmental impact report (EIA) for the bio propylene glycol plant to the competent authority (the Mayor of Trzebinia, Poland) in August 2017. The initial favourable Environmental decision was granted on 05.12.2018.

Due to the subsequent change in the engineering design, the promoter submitted a revised application to amend conditions of the earlier obtained environmental decision. The application together with updated environmental impact assessment report were submitted in August 2020 and the decision was issued on 22 February 2021.

As part of the EIA procedure, the Mayor of Trzebinia Municipality announced the public consultation on 25 August 2020. The authority received one comment from an inhabitant of Trzebinia town within the indicated notice of 30-days period. This comment was reflected in the amended decision.

The plant is expected to be operating in line with the best available techniques and the requirements under the Industrial Emission Directive 2010/75/EU. The relevant local authorities will grant the integrated and operational permits after completion of the plant construction.

The plant will not be situated within areas protected under Nature Protection Act of 16 April 2004 (Natura 2000 sites and other environmentally important locations) as well as within historical sites. The possible effects of the project on protected areas situated in its vicinity were assessed together with the birds and habitats species. According to the information provided to the EIA report, the project has no significant impact on these sites.

Second-generation bioethanol plant

The second-generation bioethanol project will be implemented in a 26.7 ha area within an existing industrial site of ORLEN Poludnie² located in Trzecieckiego 14, 38-40 Jedlicze. The production site area that holds an integrated permit, is already fenced and enclosed for years and based on an approximately 93 ha area. The project is not situated within a Natura 2000 or historical site. The possible effects of the project on Natura 2000 sites situated in its vicinity

² cadastral section: Jedlicze 180704_4.0001

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(Jasiołka PLH 180011 and OZW Wisłoka) were assessed together with the birds and habitats species. The additional volume of treated waste water to be discharged from the existing waste water treatment plant into the Jasiołka river will be limited to approximately 1.3 % of the current volume discharges. It will not lead to a deterioration of the quality of the receiving water, nor in a deterioration of the good ecological status of the water body. According to the information provided to the EIA report, the project has no significant impact on Natura 2000 sites.

The new premise falls under Annex I of EIA Directive 2014/52/EU (amending 2011/92/EU) and under IE Directive 2010/75/EU. Following the Polish permitting procedure, the project has obtained a valid environmental and operation permits approved by the local authorities.

An application for an environmental decision was submitted to the Mayor of Jedlicze Municipality in March 2019, ref. RGK.6220.8.2019.JM³. Subsequently, an environmental impact assessment report was submitted as part of the proceedings in October 2019. As part of the conducted EIA procedure, 30 days public consultation was carried out, about which the Mayor of the Municipality of Jedlicze informed by means of the Announcement dated 11 February 2020 ([Obwieszczenie Burmistrza Gminy Jedlicze z 11 lutego 2020r. \(bip.gov.pl\)](#)). The announcement indicated a 30-day period for the public to submit comments and applications related to the investment. Comments could be submitted in both paper and electronic versions. No public comments or applications were received by that deadline. The decision on environmental conditions was issued on 30 April 2020.

The draft decision of the planning permit (pol. WZiZT) was sent for consultations to (6 entities): District Starost Office, State Water Management Company Polish Waters, Provincial Inspector for Environmental Protection, Civil Aviation Office, State Fire Service and Polish Railways.

The building permit for the second-generation bioethanol plant is expected to be granted in July 2021 by the local authorities.

The enzymes and yeast produced on site for the process are transported directly to the ethanol fermentation unit. During the production, the fermentation process is optimized by using Genetically Modified Micro-organism (GMM) strains. According to the Directive 2009/41/EC on the contained use of GMMs the facility is classified under level 1. In order to prevent the release of GMMs into the environment, the facility ensures that: (i) all GMMs are only processed in closed containers and therefore no aerosols are produced; (ii) all GMMs are heat-inactivated before leaving the installation; (iii) waste water streams are treated separately and; (iv) all equipment containing GMMs is placed in sealed trays. The GMMs authorization will be delivered by the local authorities before the commissioning.

EIB Carbon Footprint Exercise

Bio propylene glycol plant

The absolute annual emissions of the project in a standard year of operation are 35.8 k/tons CO₂e per year. This estimate comprises the Scope 1 emissions (direct emissions from production processes) and Scope 2 emission (indirect emission from energy consumption). However, the project will result in substantial CO₂ emission reductions, if compared to the project's baseline scenario, which represents a scenario that enables the final bio-based product to displace the equal quantity of a fossil-based equivalent product. Based on the

³ The notice and the decision are available on the website www.jedlicze.bip.gov.pl under <https://jedlicze.bip.gov.pl/ochrona-srodowiska/obwieszczenia/>, the Office's bulletin board and other customary places.

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bank's carbon footprint exercise methodology and promoter's information it is estimated that the overall project will result in emission savings of 85.2 k/tons of CO_e per year.

Second-generation bioethanol plant

The absolute annual emissions of the project in a standard year of operation are 12.7 k/tons CO_{2e} per year. This estimate comprises the Scope 1 emissions (direct emissions from production processes) and Scope 2 emission (indirect emission from the cultivation of the biomass, energy consumption). The project will result in substantial avoided CO₂ emission, if compared to the project's baseline scenario, which represents a scenario that considers the final bio-ethanol product to displace the equal quantity of a fossil-based equivalent fuel-product. Based on the bank's carbon footprint exercise methodology, it is estimated that the overall project will result in emission saving of 55.6 k/tons of CO₂ per year.

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.

Other Environmental and Social Aspects

PKN Orlen has an overall ambition to achieve emission neutrality by 2050. By 2030, the company will reduce CO₂ emissions from its current refining and petrochemical assets by 20% and emissions from power generation by 33% in CO₂/MWh. The promoter is engaged in a wide variety of activities to increase the energy efficiency of its plants, to invest in renewable energy and low emission fuels (notably hydrogen and biofuels). It reports under the Carbon Disclosure Project.

The promoter has an implemented Integrated Management System including the Quality Management System according to the ISO 9001 standard, the Environmental Management System according to the ISO 14001 standard and the Occupational Health and Safety System according to the PN-N-18001 standard.

The promoter conducts regular monitoring of the environmental activities and reporting of their results on a regular basis. In addition, the promoter has a modern automated air quality monitoring station, fitted with state-of-the-art instruments. Measurements are automatically uploaded to a database maintained by the Provincial Inspectorate of Environmental Protection and published on the Inspectorate's website.

In accordance with the Act on the Trading System for Greenhouse Gas Emission Allowances, the promoter submitted the documents to the National Centre for Emissions Balancing and Management with respect to the installations covered by the EU ETS in order to monitor and receive allowance for the first phase of the fourth trading period, i.e. 2021-2025.

Conclusions and Recommendations

Condition for disbursement:

For the tranche related to the bio propylene glycol plant, the Promoter shall submit to the Bank the EIA-IED permits, following EIA directive 2014/52/EU, amending 2011/92/EU and IE directive 2010/75/EU and submit the relevant assessment reports to the satisfaction of the Bank.



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Undertakings:

The Promoter shall:

- Submit to the Bank, the integrated permit (EIA-IED permits), following IE directive 2010/75/EU, before the start of operation, where applicable for each project component;
- Inform the Bank about any change/modification/extension of the project that could trigger an EIA-IED permitting process, following EIA directive 2014/52/EU, amending 2011/92/EU and IE directive 2010/75/EU and submit the relevant assessment reports to the satisfaction of the Bank;
- Provide the Bank with the GMMs authorisation for the commissioning of the bioethanol unit.

Subject to the above-mentioned contractual conditions, the project is acceptable for Bank financing in environmental and social terms.