

# Report: greenhouse gas emission in POLENERGIA S.A. Capital Group in 2021

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External verification: The report has not been subject to independent third party accreditation.

## Introduction

This report presents scope 1 and 2 GHG emission generated in operational activities of POLENERGIA S.A. Capital Group in 2021.

Reporting period: GHG emissions generated from 01.01.2021. to 31.12.2021.

The organisation has not established base year for GHG accounting, therefore the report does not present change of GHG emissions against base year.

## Organisational boundaries

Organisational boundaries include POLENERGIA S.A. and all subsidiaries. Organisational chart of the Capital Group is included in Appendix 1 to the report.

Results of GHG emissions accounting include consolidated data for 100% of all emissions generated in all companies under operational control criterion.

## Operational boundaries

Accounted GHG emissions include energy emissions occurring during operational activities of all companies in the Capital Group.

Scope 1 (direct GHG emissions):

- ▶ Emissions from use of fuels in buildings, installations and vehicles (natural gas, heating oil, gasoline, diesel fuel, LPG)
- ▶ Emissions from released coolants and other gases

Scope 2 (indirect GHG emissions from purchased energy):

- ▶ Use of purchased electric energy

The analysis revealed that most companies in the Capital Group have not purchased heat. In case of the company's offices small amounts of purchased heat are used. This heat is purchased indirectly (heat purchased by the lessor and sold to the company as part of the office leasing contract). It was estimated that emissions from purchased heat represent an immaterial amount and were not included in further calculations.

## Accounting methods, assumptions and emission factors

Source data on the amount of fuels used, released coolants and purchased electricity were delivered in forms filled-in by Dział Ochrony Środowiska i Zrównoważonego Rozwoju of POLENERGIA S.A. All data used for accounting were delivered, not estimated were made.

Fuel / Coolant / Purchased energy	Unit	Amount	Energy [MWh]
natural gas	m <sup>3</sup>	53,531,540.00	544,534.72
heating oil	l	9,354.90	90.29
gasoline	l	6,091.85	56.04
diesel fuel	l	15,647.23	155.59
LPG	l	29.00	0.21
R-32	kg	0.45	-

SF6	kg	0.24	-
purchased electricity	MWh	5,810.60	5,810.60
<b>Total</b>			<b>550,647.44</b>

Vast majority of energy falls on energy generated in combustion of natural gas in thermoelectric power station Nowa Sarzyna (Polenergia Elektrociepłownia Nowa Sarzyna Sp. z o.o.), which used in 2021 53,5 mln m<sup>3</sup> of natural gas.

A detailed breakdown of used fuels, released coolants and purchased electricity per company in the Capital Group is included in calculation sheets delivered with this report.

Accounting of GHG emissions was based on emission factors from the following sources:

- ▶ For fuels and released coolants emission factors from GHG Protocol calculation tools were used<sup>1</sup>
- ▶ For electricity in location-based method the most up-to-date emission factor published by KOBiZE<sup>2</sup> was used
- ▶ For electricity in market-based method the most up-to-date emission factors published by contractors were used<sup>3</sup>

In case of GHG emissions generated in the thermoelectric power plant Nowa Sarzyna calculation was not performed using emission factors. Instead the report included emissions accounted and reported directly by the company (109,874 Mg CO<sub>2</sub>e) that were verified by independent third party (DNV).

### GHG emission of POLENERGIA Capital Group

GHG emissions in POLENERGIA Capital Group are generated predominantly by the thermoelectric power plant Nowa Sarzyna. Therefore, the results below are presented in two breakdowns: full and excluding GHG emission of this power plant.

[Mg CO <sub>2</sub> e]	GHG emissions excluding Nowa Sarzyna thermoelectric power plant	Total GHG emission of POLENERGIA Capital Group
Scope 1	61.54	109,960.66
Scope 2 location-based	4,328.90	4,328.90
Scope 2 market-based	3,779.54	3,779.54
Scope 1+2 location-based	4,390.44	114,289.56
Scope 1+2 market-based	3,841.08	113,740.20

In case of exclusion of GHG emission generated in Nowa Sarzyna thermoelectric power plant, the majority of GHG emissions falls on Scope 2. Results for market-based Scope 2 emissions are 13 percent lower than for location-based method, due to lower emission factors of energy purchased from contractors of the Capital Group.

All GHG emissions are generated on the territory of Poland.

No biogenic emissions were identified.

### Contact:

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<sup>1</sup> World Resources Institute (2015). GHG Protocol tool for stationary combustion. Version 4.1. oraz World Resources Institute (2015). GHG Protocol tool for mobile combustion. Version 2.6.

<sup>2</sup> Wskaźniki emisyjności CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, CO i pyłu całkowitego dla energii elektrycznej na podstawie informacji zawartych w Krajowej bazie o emisjach gazów cieplarnianych i innych substancji za 2020 rok, Krajowy Ośrodek Bilansowania i Zarządzania Emisjami, grudzień 2021

<sup>3</sup> Emission factors published by Polenergia Dystrybucja, Polenergia Obrót, Energia Obrót



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## Appendix 1: Organisational scheme of POLENERGIA S.A. Capital Group

