

## GREENHOUSE GAS EMISSIONS - STATEMENT

### Introduction and objectives of work

BUREAU VERITAS Polska Sp. z o.o. (Bureau Veritas) has been engaged by the ORLEN Group (ORLEN) to determine the greenhouse gas emissions of ORLEN Group for the period 1.01.2022 - 31.12.2022. The hereby statement is the second party declaration.

### Organizational boundaries of GHG emissions:

- ORLEN S.A. Capital Group – companies under operational control (including companies of the former Lotos Group), companies of the former PGNiG Group are not included.
- - Rafineria Gdańska Sp. z o.o., for which ORLEN is not the operating control entity, but is included in ORLEN S.A.'s financial books and reports.

### Types of greenhouse gases included in the calculation:

- CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFC

### Organization carbon footprint:

GHG emissions – scopes and categories	GHG emissions 2019 [t CO <sub>2</sub> e]	GHG emissions 2020 [t CO <sub>2</sub> e]	GHG emissions 2021 [t CO <sub>2</sub> e]	GHG emissions 2022 [t CO <sub>2</sub> e]
<b>Scope 1</b>	<b>20 427 213</b>	<b>19 772 655</b>	<b>20 138 340</b>	<b>21 095 387</b>
Direct emissions	19 818 825	19 191 794	19 333 367	19 919 345
Direct fugitive emissions	375 307	347 885	360 692	378 427
Fuels	217 638	228 307	437 073	794 920
Refrigerants	15 183	4 350	7 209	2 695
Technical gases	260	319	0	0
<b>Scope 2</b>				
Market-based	2 199 544	1 826 183	1 430 330	1 560 250
Location-based	1 941 424	1 607 292	1 361 065	1 594 005
<b>Scope 3</b>	<b>95 665 374</b>	<b>84 620 151</b>	<b>84 978 372</b>	<b>107 508 801</b>
Category 11. Use of sold products	73 990 875	66 054 529	68 472 731	87 747 300
Category 1. Purchased raw materials and services	13 299 563	12 799 177	12 488 396	12 703 442
Category 3. Fuel and energy related activities not covered by Scope 1 and 2	5 898 604	3 321 791	1 909 108	3 937 105
Category 10. Processing of sold products	1 621 718	1 640 739	1 310 220	1 583 396
Category 4. Upstream transportation and distribution	562 449	545 561	545 653	1 251 400
Category 9. Downstream transportation and distribution	277 079	246 062	246 062	275 797
Category 5. Waste generated in operations	13 256	10 361	4 270	9 194
Category 6. Business travel	1 828	1 931	1 931	1 169

Data and information supporting the Scope 1, 2 and 3 GHG emissions assertion were historical in nature and in some cases estimated.

Due to the inclusion of the former Lotos Group companies, a recalculation of the base year (2019) and intermediate years was performed.

**Calculation standards:**

- *World Resources Institute and World Business Council for Sustainable Development, Greenhouse Gas Protocol. A Corporate Accounting and Reporting Standard REVISED EDITION, March 2004;*
- *World Resources Institute and World Business Council for Sustainable Development, GHG Protocol Scope 2 Guidance. An amendment to the GHG Protocol Corporate Standard, 2015;*
- *World Resources Institute and World Business Council for Sustainable Development, Corporate Value Chain (Scope 3) Accounting and Reporting Standard, Supplement to the GHG Protocol Corporate Accounting and Reporting Standard.*

The greenhouse gases identified and included in the calculation are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and HFCs, which have been expressed as CO<sub>2</sub> equivalent. The sources of emission factors were mainly publications: of KOBIZE (*National Centre for Emissions Balancing and Management*), URE (*Energy Regulatory Office*), IPCC (*Intergovernmental Panel on Climate Change*), JRC (*Joint Research Centre of the European Commission*), and databases: Ecoinvent 3.8, DEFRA (*Department for Environment Food and Rural Affairs*), as well as scientific publications. Emissions from externally purchased electricity consumption have been calculated according to two methods. For the location-based method, the country-specific average emission factor was used. The market-based method uses factors published by energy suppliers.

Our sole responsibility was to identify emission sources, develop a calculation methodology, select emission factors and perform calculations. Bureau Veritas was not responsible for the verification of the input data.

**BUREAU VERITAS POLSKA Sp. z o.o.**

Warsaw, 30 December 2022

Witold Dzigan



Member of the Board