GREENHOUSE GAS EMISSIONS – CORRECTED 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 for the period 1.01.2022 - 31.12.2022. The hereby statement is the second party declaration.

The statement is a correction to the original statement issued on January 2, 2024. The results were adjusted due to change of classification of flows within the Group, resulting in an increase in emissions of 37,851,542 tCO_2e (2019), 39,397,660 tCO_2e (2020), 40,696,495 tCO_2e (2021) 31,540,949 tCO_2e (2022).

A summary of the results before and after the adjustment is shown below. Originally, an internal flow type was assumed, so emissions were not included in the Group's carbon footprint. However, according to declaration of the Companies' and data submitted to Bureau Veritas, the flow should be classified as external. The largest change in emissions occurred in Scope 3, Category 11, in the case of Zespół Odziałów PGNiG, where the flow type was changed for natural gas and LNG sold.

Organizational boundaries of GHG emissions:

- ORLEN S.A. Capital Group – companies under operational control (including companies of the former Lotos Group and companies of the former PGNiG Group),
- Rafineria Gdańska Sp. z o.o., for which ORLEN is not the operating control entity, but which is included in ORLEN's financial books and reports.
- Grupa LOTOS S.A., which carried out transactions for the Rafineria Gdańska in 2019-2021; after the merger these tasks were taken over by ORLEN. Data on raw materials purchased (S3C1) and product sales transactions (S3C10/S3C11) were included.

Types of greenhouse gases included in the calculation:

- CO_2, N_2O, CH_4, HFC

Organization carbon footprint (after correction):

GHG emissions – scopes and categories	GHG emissions 2019 [t CO_2e]	GHG emissions 2020 [t CO_2e]	GHG emissions 2021 [t CO_2e]	GHG emissions 2022 [t CO_2e]
Scope 1	27 750 219	26 458 961	27 279 480	28 304 582
Direct emissions	20 014 927	19 280 718	19 363 985	19 999 923
Direct fugitive emissions	1 098 300	1 080 445	1 188 903	1 077 380
Technological emissions	14	10	15	5
Fuels	6 621 242	6 091 227	6 718 490	7 223 259
Refrigerants	15 475	6 243	8 088	4 014
Technical gases	260	319	0	0
Scope 2				
Market-based	2 315 852	1 938 215	1 538 054	1 690 165
Location-based	2 075 744	1 739 035	1 495 611	1 724 179
Scope 3	**168 273 809**	**158 744 441**	**163 793 164**	**157 040 748**
Category 11. Use of sold products	140 786 626	132 311 281	136 558 869	132 629 450
Category 1. Purchased raw materials and services	19 444 215	18 941 664	18 476 765	15 895 110
Category 3. Fuel and energy related activities not covered by Scope 1 and 2	5 097 552	4 596 034	5 954 991	5 432 191

Category 10. Processing of sold products	2 048 387	2 206 298	1 990 510	2 184 405
Category 4. Upstream transportation and distribution	580 631	431 846	551 025	603 848
Category 9. Downstream transportation and distribution	283 904	235 775	246 535	275 089
Category 5. Waste generated in operations	30 335	20 352	12 529	19 052
Category 6. Business travel	2 158	1 192	1 938	1 604
Outside the Scope				
Biogenic emissions	555 576	556 083	636 888	616 863

Organization carbon footprint (before correction):

GHG emissions – scopes and categories	GHG emissions 2019 [t CO_2e]	GHG emissions 2020 [t CO_2e]	GHG emissions 2021 [t CO_2e]	GHG emissions 2022 [t CO_2e]
Scope 1	**27 750 219**	**26 458 561**	**27 279 139**	**28 637 901**
Direct emissions	20 014 927	19 280 718	19 363 985	19 999 923
Direct fugitive emissions	1 098 300	1 080 445	1 188 903	1 077 380
Technological emissions	14	10	15	5
Fuels	6 621 242	6 091 096	6 718 379	7 556 579
Refrigerants	15 475	5 973	7 857	4 014
Technical gases	260	319	0	0
Scope 2				
Market-based	2 315 851	1 926 500	1 523 614	1 688 599
Location-based	2 066 452	1 716 836	1 467 680	1 722 228
Scope 3	**149 105 736**	**137 945 175**	**145 163 692**	**143 479 797**
Category 11. Use of sold products	120 425 203	110 336 776	116 535 731	116 923 260
Category 1. Purchased raw materials and services	20 638 482	20 133 577	19 890 975	17 284 811
Category 3. Fuel and energy related activities not covered by Scope 1 and 2	5 095 531	4 578 342	5 934 406	5 400 230
Category 10. Processing of sold products	2 048 387	2 206 298	1 990 510	2 303 380
Category 4. Upstream transportation and distribution	581 736	432 864	551 025	1 257 993
Category 9. Downstream transportation and distribution	283 904	235 775	246 535	276 362
Category 5. Waste generated in operations	30 335	20 352	12 571	32 157
Category 6. Business travel	2 158	1 192	1 938	1 604
Outside the Scope				
Biogenic emissions	555 576	556 084	636 888	616 863

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 and of the former PGNiG 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_2, CH_4, N_2O and HFC's; their emissions are expressed as CO_2 equivalent. The sources of emission factors were mainly publications: of KOBIZE (*National Centre for Emissions 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, 19 April 2024

Witold Dzugan

Member of the Board