



**VERIFICATION STATEMENT**

**(STATEMENT No. 1/16.06.2023)**

**FOR THE GHG EMISSIONS OF**

**TERNA ENERGY S.A.**

**85 Mesogeion Ave. 11526 Athens, Hellas**

**REPORTING PERIOD**

**2022**

## VERIFICATION STATEMENT

<b>Date of Verification Insurance:</b>	25/05/2023
<b>Verification Body:</b>	TÜV HELLAS
<b>Address:</b>	282 Mesogeion Ave, 155 62 Cholargos, Hellas
<b>Accreditation data Hellenic Accreditation System S.A (E.SY.D S.A.):</b>	Certificate No.: 884-3/ 10.09.2019

Information on Installation Owner	
<b>Name of Installation Owner:</b>	<b>TERNA ENERGY S.A.</b>
<b>Contact Person:</b>	Mr. Antonios Voutsis, QHSE Manager
<b>Address:</b>	85 Mesogeion Ave. 11526 Athens, Hellas
<b>Telephone/Fax:</b>	+ 30 2106968215/-
<b>E-mail of contact person:</b>	avourtsis@terna-energy.com

Information on Installation Identity:	
<b>Installation:</b>	Operation of Wind & Solar Parks & Head Offices
<b>Contact Person:</b>	Mr. Antonios Voutsis, QHSE Manager
<b>Address:</b>	See attached list of Wind & Solar Parks
<b>Geographic Location:</b>	
<b>Telephone/Fax:</b>	+ 30 2106968215/-
<b>E-mail of contact person:</b>	avourtsis@terna-energy.com
<b>Year for GHG Assertion Reporting:</b>	<b>2022</b>
<b>Type of Activity:</b>	Production of Energy from Renewable Energy Sources

Decision of TÜV HELLAS Technical Committee	
<b>Installation's GHG Assertion Report Accepted</b>	<input checked="" type="checkbox"/>
Installation's GHG Assertion Report Accepted with Comments	<input type="checkbox"/>
Installation's GHG Assertion Report not Accepted	<input type="checkbox"/>
Current Statement deals with GHG Assertion Report of date	06/2023

**Verification Scope**

TÜV HELLAS was contracted by TERNA ENERGY S.A. for the independent third party verification of direct and indirect carbon dioxide equivalent emissions CO<sub>2e</sub> consisting of CO<sub>2</sub> CH<sub>4</sub> N<sub>2</sub>O as provided in the **TERNA ENERGY S.A. Greenhouse Gas Statement 2022** to a **reasonable** level of assurance.

Verification activities were performed in accordance with ISO 14064-3:2018 *Specification with guidance for the validation and verification of greenhouse gas assertions* and the verification time period was 01.01.-31.12.2022.

**Roles and responsibilities**

The QHSE management of TERNA ENERGY S.A. is responsible for the organization's GHG information system, the development and maintenance of records and reporting procedures in accordance with that system, including the quantification and reporting of GHG emissions.

It is TÜV HELLAS's responsibility to express an independent GHG verification opinion on the emissions as provided in the **TERNA ENERGY S.A. Greenhouse Gas Statement 2022**.

**Title or description of activities**

The organizational boundaries were established following the financial control approach on a global basis. The scope of this verification covered coterminous emissions from the following GHG sources occurring within TERNA ENERGY S.A. facilities and head offices:

Scope 1 Emissions	Scope 2 Emissions	Scope 3 Emissions
<ul style="list-style-type: none"> <li>➤ Emissions from stationary combustion (fuels consumption other than used in fleet) (Diesel, Petrol),</li> <li>➤ Emissions from mobile combustion (fuels consumption used in fleet (Diesel, Petrol, LPG)</li> <li>➤ Fugitive emissions</li> </ul>	<ul style="list-style-type: none"> <li>➤ Indirect emissions from imported electricity (Market and location based)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Purchased goods and services</li> <li>➤ Capital goods</li> <li>➤ Fuel- and energy-related activities - Capital goods</li> <li>➤ Upstream transportation and distribution</li> <li>➤ Waste generated in operations</li> <li>➤ Business travel</li> <li>➤ Employee commuting</li> </ul>

**Objectives**

The objectives of this verification were, by review of objective evidence, to confirm whether the GHG emissions as declared in the organization's GHG assertion were:

- accurate,
- complete,
- consistent,
- transparent and
- free of material error or omission

in accordance with the criteria outlined below.

Verifier's work involved review and substantiation of information through selected interrogation of both source and consolidated data in conjunction with interviews with corporate staff responsible for data collation, management and report content.

**Criteria**

Criteria against which the verification assessment was undertaken:

**1. Reporting standards:**

- World Resources Institute/World Business Council for Sustainable Development Greenhouse Gas Protocol: *A Corporate Accounting and Reporting Standard*, Revised Edition (the GHG Protocol),

## 2. Reference calculation methodologies:

- National Inventory Report for Greece (NIR 2022), IEA 2021 (for Bulgaria, Poland)
- UK Government GHG Conversion Factors for Company Reporting 2021 v. 2.0, v. 2.1, v. 2.2, v. 2.3

### Level of Assurance and Materiality

The level of assurance agreed was the “**reasonable**” one and a 5% materiality threshold was applied at the gross organizational level. The assessment of compliance and materiality was undertaken against the stated calculation methodology. An overall (GHG emissions) uncertainty of below 5% was calculated.

### Conclusion

TÜV Hellas's Lead Verifier has planned and executed the TERNA ENERGY S.A. GHG Assertion verification obtaining information, explanations and evidence considered necessary to provide a reasonable level of assurance for a fair statement of the reported GHG emissions for the indicated time period.

TÜV Hellas's Lead Verifier has conducted TERNA ENERGY S.A. GHG Assertion verification including evaluation of the company's GHG information system and monitoring and reporting methodology.

Based on the data and information provided by TERNA ENERGY S.A. and the processes and procedures conducted, TÜV Hellas's Lead Verifier concludes that the TERNA ENERGY S.A. GHG Assertion

- is materially correct and is a fair representation of the GHG data and information, and
- is prepared in accordance with the related International Standard on GHG quantification, monitoring and reporting, or to relevant national standards or practices

The TERNA ENERGY S.A. GHG Assertion for the time period 01.01. - 31.12.2022 disclosing **emissions of 207.878 tn CO<sub>2eq</sub>** is verified by TÜV HELLAS to a **reasonable level of assurance**, consistent with the agreed verification scope, objectives and criteria as follows:

# VERIFICATION STATEMENT

<b>Reference Period:</b>	<b>01.01. – 31.12.2022</b>
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<b>Overall GHG during the reference period:</b>
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<b>Total Emissions</b>	<b>207.877,63</b>	<b>tn CO<sub>2eq</sub></b>
<b>Scope 1 Emissions</b>	<b>372,42</b>	<b>tn CO<sub>2eq</sub></b>
<b>Scope 2 Emissions</b>	<b>0.00</b>	<b>tn CO<sub>2eq</sub></b>
<b>Scope 3 Emissions</b>	<b>207.505,21</b>	<b>tn CO<sub>2eq</sub></b>

<b>Energy Carrier / Fuel used: (Scope 1 &amp; 2)</b>	1: Electricity from National Interconnected Transmission Grid
	2: Diesel
	3: Petrol
	4 LPG
<b>Emissions categories: (Scope 3)</b>	1. Purchased goods and services
	2. Capital goods
	3. Fuel- and energy-related activities - Capital goods
	4. Upstream transportation and distribution
	5. Waste generated in operations
	6. Business travel
	7. Employee commuting

## GHG Emissions Information

### 4.1 Direct non-biogenic emissions (Scope 1)

➤ Emissions from fuels consumption other than used in fleet

Fuel Type	Fuel Quantity (lt)	Emission factor CO <sub>2</sub> (kgCO <sub>2</sub> /lt)	Emission factor CH <sub>4</sub> , (kgCO <sub>2</sub> /lt)	Emission factor N <sub>2</sub> O, (kgCO <sub>2</sub> /lt)	Greenhouse gas emissions (kg CO <sub>2e</sub> )
Diesel	17.443,79	2,52058	0,00026	0,037	44.618,42
Petrol	273,70	2,14805	0,0072	0,0066	591,7
<b>Total Emissions</b>					<b>45,210.12</b>

➤ Emissions from biogas production

Fuel Type	Energy (tn)	Emission factor (kgCO <sub>2</sub> /tn)	Greenhouse gas emissions (kg CO <sub>2e</sub> )
Biogas	3.865,00	1,21919	4.712,17
<b>Total Emissions:</b>			<b>4.712,17</b>

➤ Emissions from fuels consumption used in fleet

Fuel Type	Fuel Quantity (lt)	Emission factor CO <sub>2</sub> (kgCO <sub>2</sub> /lt)	Emission factor CH <sub>4</sub> (kgCO <sub>2</sub> /lt)	Emission factor N <sub>2</sub> O (kgCO <sub>2</sub> /lt)	Greenhouse gas emissions (kg CO <sub>2</sub> e)
Diesel	102.087,70	2,52058	0,00026	0,037	261.124,00
Petrol	27.142,30	2,14805	0,0072	0,0066	58.677,58
LPG	1.734,40	1,55491	0,00121	0,00097	2.700,62
<b>Total Emissions</b>					<b>322.502,20</b>

4.2 Indirect non-biogenic emissions (Scope 2) – Location Based

➤ Electrical energy consumption

Electrical energy consumption (kWh)	Country	Emission factor (gCO <sub>2</sub> /kWh)	Greenhouse gas emissions (kg CO <sub>2</sub> e)
6.105.609,63	Greece	420,02	2.564.478,16
233.688,00	Bulgaria	375,00	87.633,00
32.422,00	Poland	625,90	20.292,93
<b>Total Scope 2 emissions – Location Based (kg CO<sub>2</sub>e)</b>			<b>2.672.404,09</b>

➤ Indirect non-biogenic emissions (Scope 2) – Market Based

➤ Electrical energy consumption

Electrical energy consumption from RES (kWh)	Country	Emission factor (gCO <sub>2</sub> /kWh)	Greenhouse gas emissions (kg CO <sub>2</sub> e)
6.105.609,63	Greece	420,02	0,00
233.688,00	Bulgaria	375,00	0,00
32.422,00	Poland	625,90	0,00
<b>Total Scope 2 emissions – Market Based</b>			<b>0,00</b>

4.3 Scope 3 emissions

Category	tCO <sub>2</sub> e
1. Purchased goods and services	76.467,83
2. Capital goods	125.029,28
3. Fuel- and energy-related activities - Capital goods	702,00
4. Upstream transportation and distribution	5.033,80
5. Waste generated in operations	31,96
6. Business travel	103,24

7. Employee commuting	137,10
<b>Total</b>	<b>207.505,21</b>

### KPI Data Assurance

In addition to the GHG data verification detailed above, a total quantity of **3.963.200.745,60 m<sup>3</sup>** of water withdrawn from freshwater for the operation of TERNA ENERGY hydropower stations has also been verified as follows:

- Dafnozonara hydropower station (Achelooos River Basin): **1.240.422.336,00 m<sup>3</sup>**
- Eleousa hydropower station (Axios River Basin): **2.722.778.409,60 m<sup>3</sup>**

**Installation's GHG Assertion Accepted:**

The **GHG Assertion of TERNA ENERGY S.A.** for the year 2022 is considered as accepted.

For the Verification  
Athens, 14/06/2023

Dr.-Ing. Panagiotis Achladas  
Lead Verifier

For Technical Reviewing  
Athens, 16/06/2023

Dr.-Ing. Dionisios Giannakopoulos  
Lead Verifier



For the Approval  
Athens, 16/06/2023

Savvas Peltekis  
Managing Director





ANNEX

COMPANY NAME	COUNTRY	PROJECT INSTALLATION
TERNA ENERGY S.A.		<ul style="list-style-type: none"> <li>▪ Wind farms Louzes and Skopia, Nafpaktos</li> <li>▪ Wind farms Profitis Ilias, Tsouka, Tsilikoka and Pyrgari, Aliveri, Evia</li> <li>▪ Wind farm Perdikorfi, Crete</li> <li>▪ Hydropower station in Dafnozouara, Aitolokarnania</li> <li>▪ PV park, Louzes, Nafpaktos</li> <li>▪ Offices</li> </ul>
DELTA AXIOU ENERGIKI SA		Adendro Biogas Production Unit, Thessaloniki, Greece
PPCR-TERNA ENERGY SA		Hydropower station in Eleousa, Thessaloniki, Greece
ENERGIKI DERVENOCHORION SA		Wind farm Krekeza, Voiotia, Greece
AIOLIKI PANORAMATOS DERVENOCHORION SA	<b>GR</b>	Wind farms Mavrovouni I, II, Voiotia, Greece
AIOLIKH RACHOULAS DERVENOCHORION SA		Wind farms Rachoula I,II,III, Voiotia, Greece
VATHICHORI ENA PHOTOVOLTAIKI SA		PV park, Vathichori I, Psatha, Attica, Greece
VATHICHORI DYO ENERGIKI SA		PV park, Vathichori II, Psatha, Attica, Greece
TERNA ILIAKI PANORAMATOS SA		Wind farm Mavroplagia, Voiotia, Greece
TERNA ILIAKI VIOTIAS SA		Wind farm Plagia Psiloma, Voiotia, Greece
TERNA ILIAKI PELOPONISOU SA		Wind farm Mougoulis, Voiotia, Greece
AIOLIKI PASTRA ATTIKIS SA		Wind farm Gkouri Meles, Voiotia, Greece
ENERGIKI SERVOUNIOU SA		Wind farm Didymos Lofos, Thrace, Greece
TERNA ENERGIKI EVROU SA		Wind farm Mytoyla, Thrace, Greece
ENERGIKI FERON EVROU SA		Wind farm Xylos, Thrace, Greece
AIOLIKI DERVENI TRAIANOUPOLEOS SA		Wind farm Derveni, Thrace, Greece
ENERGIKI XIROVOUNIOU SA		Wind farm Xsirovouni, Thrace, Greece
IWECO CHONOS KRITIS SA		Wind farm Chonos, Crete, Greece
ENERGIKI PELOPONISOU SA		Wind farm Eressos, Veroia, Greece
ENERGIKI NEAPOLEOS LAKONIAS SA		Wind farm Lefkes, Veroia, Greece
EUROWIND SA	<b>GR</b>	Wind farm Stavroti, Rodos, Greece
AIOLIKI ILIOKASTROU SA		Wind farm Loggarakia, Argolida, Greece
TERNA ENERGY ST. GEORGE SA		Wind farm Agios Georgios Island, Greece
TERNA AIOLIKI AMARINTHOU SA		Wind farms Vorina Litharia & Kalogeriki Rachi, Aliveri, Evia, Greece
AIOLIKI ANATOLIKIS ELLADOS SA		Wind farms Pyrgari II, Voureza, Koskina-Lakka, Aliveri, Evia, Greece
ENERGIKI DISTION EVIAS SA		Wind farms Agriachladi and Mesokipi, Aliveri, Evia, Greece
AIOLIKI MARMARIOU EVIAS SA		Wind farms Karampila, Gkalosi, Pyrgari Dardiza, Evia, Greece
ENERGIKI STYRON EVIAS SA		Wind farm Exostis, Marmari, Evia, Greece
AIOLIKI PROVATA TRAIANOUPOLEOS SA		Wind farm Taratsa, Voiotia, Greece
ECO ENERGY DOBRICH 2 EOOD	<b>BG</b>	Wind farm Karapelite 1, Bulgaria
ECO ENERGY DOBRICH 3 EOOD		Wind farm Karapelite 2, Bulgaria
ECO ENERGY DOBRICH 4 EOOD		Wind farm Karapelite 3, Bulgaria
HAOS INVEST 1 EAD		Wind farm Vranino and Office in Varna, Bulgaria
EOLOS POLSKA SP ZOO	<b>PL</b>	Wind farms Gorzkowice and Krzyzanow, Poland
EOLOS NORTH SP ZOO		Wind farms Sieradz and Nasielsk, Poland

EOLOS NOVO SP ZOO		Wind farms Czarnozyly and Szadek, Poland
EOLOS EAST SP ZOO		Wind farm Makow, Poland
BALLADYNA SP ZOO		Wind farm Chelmza, Poland
WIRON SP ZOO		Wind farm Chojnice, Poland
JP GREEN SP ZOO		Wind farm Tuchola, Poland