



CONTOURGLOBAL®



# ContourGlobal Greenhouse Gas Emissions and Thermal Efficiency Calculation Methodology 2021

# Our Business

ContourGlobal is a power generation company committed to new growth in low and no-carbon technologies. Our mission is to develop, acquire and operate electricity generation businesses worldwide, creating economic and social value through better operations, and making the communities where we work better because we are there. Since our inception in 2005, we have grown to be an internationally recognized company with technologically diverse assets and best-in-class operations.

In 2021, we operated 138 thermal and renewable power generation assets in 20 countries across Europe, North America, Latin America and Africa, with a total installed capacity of over 6.3 GW. We are committed to providing safe, reliable, and low-cost electricity to many parts of the world where the electrification rate is below 50%. We also bring new forms of generation, including renewable energy, into markets which previously had few or no renewable sources of electricity.



# Sustainability Strategy

Our values and principles, outlined on our website at [www.contourglobal.com](http://www.contourglobal.com), are the foundation of our sustainable business strategy and are aligned with the Sustainable Development Goals (SDGs). We have been a proud signatory of the United Nations Global Compact since 2010. We are committed to a sustainable future and believe we can play an important role by increasing renewable energy and efficient co-generation energy capacity, as well as capturing carbon emissions and maximizing use of clean, natural resources. We are committed to continuing to reduce our CO2 emissions intensity in the short and medium-term and to achieve carbon neutrality by 2050.

## Our values



**We care about our people's health, safety, well-being and development.**



**We act transparently and with moral integrity.**



**We work hard and without boundaries as a multinational, integrated team.**



**We expect, embrace and enable excellence and continuous learning through humility, and the knowledge that we will fail but when we do, we will learn.**



**We honor the commitments of those who have placed their trust in us.**

## Our contribution to the Sustainable Development



The United Nations Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. The 17 SDGs address global challenges related to poverty, inequality, climate change, environmental degradation, peace and justice with a target to achieve all of them by 2030. The ones we believe we can influence the most, are integrated into our business strategy.



## Focused on where we can add value



**Affordable and clean energy**



**Decent work and economic growth**



**Climate action**



**Responsible consumption and production**

# Energy Production

Capacity split by source



| Breakdown                          | Capacity |
|------------------------------------|----------|
| Natural gas                        | 37.1%    |
| Coal                               | 17.0%    |
| Wind                               | 13.6%    |
| High Efficiency Cogen <sup>1</sup> | 13.6%    |
| Hydro                              | 9.1%     |
| Solar                              | 6.1%     |
| Liquid fuels                       | 3.1%     |
| Biogas                             | 0.4%     |

Capacity split by energy type



| Breakdown                          | Capacity |
|------------------------------------|----------|
| Thermal                            | 57%      |
| Renewable                          | 29%      |
| High Efficiency Cogen <sup>1</sup> | 14%      |

Capacity split by geographic region



| Breakdown     | Capacity |
|---------------|----------|
| Europe        | 42%      |
| Latin America | 29%      |
| Africa        | 4%       |
| North America | 25%      |

# Greenhouse Gas Emissions

ContourGlobal is committed to a sustainable future and believe we can play an important role in climate change by increasing renewable energy and efficient co-generation energy capacity, as well as capturing carbon dioxide emissions to utilize in food and beverages, and maximizing use of clean, natural resources.

ContourGlobal has been measuring and reporting its CO<sub>2</sub>e emissions since 2011. We began setting CO<sub>2</sub>e emissions targets in 2015, identifying CO<sub>2</sub>e emissions intensity as our key performance indicator, i.e., Net CO<sub>2</sub>e emissions in metric tonnes over electricity production in MWh. We selected this metric over absolute emissions because in many markets we do not control our dispatch, i.e., the regulator will dispatch us based on the network demand. Additionally, our production is impacted by maintenance outages. While many of these are planned, we often have flexibility around exact timing and work can shift between reporting periods. Thus, an intensity metric is more applicable to our business.

## **CO<sub>2</sub>e Intensity of Electricity Generation = Net CO<sub>2</sub>e Emissions / Net Electricity Generation**

- **CO<sub>2</sub>e Intensity of Electricity Generation** – tonnes of CO<sub>2</sub> equivalent emitted for each net MWh of electricity we produce
- **Net CO<sub>2</sub>e Emissions** - the tons of CO<sub>2</sub> equivalent emitted to the atmosphere
- **Net Electricity Generation** – electricity that we have generated and exported to our clients

Our Scope 1 emissions for 2021 include CO<sub>2</sub>, SF<sub>6</sub>, HFC, CFC, HCFC and PFC emissions. These are the most significant for our business as determined by an internal analysis of our businesses that includes reviewing emissions reporting and calculations at the power plants. We do not include CH<sub>4</sub>, N<sub>2</sub>O or NF<sub>3</sub> in our calculations because they are immaterial.

Our objective for 2015-2018 was to maintain or reduce our CO<sub>2</sub> intensity and we successfully achieved this. In 2019, we reset our greenhouse gas emissions targets and changed the intensity metric used for measuring results to better reflect the composition of our portfolio. We committed to continuing to reduce our CO<sub>2</sub>e emissions intensity by 40% by 2030 and to achieve net zero CO<sub>2</sub>e emissions by 2050, using a metric of Net CO<sub>2</sub>e emissions in metric tonnes over total energy production in MWh<sup>1</sup>, using the following intensity metric:

## **CO<sub>2</sub>e Intensity of Energy Generation = Net CO<sub>2</sub>e Emissions / Net Total Energy Generation**

- **CO<sub>2</sub>e Intensity of Energy Generation** – tonnes of CO<sub>2</sub> equivalent emitted for each net MWh of energy we produce
- **Net CO<sub>2</sub>e Emissions** - the tons of CO<sub>2</sub> equivalent emitted to the atmosphere
- **Net Total Energy Generation** – thermal and electrical energy that we have generated and exported to our clients as per documentation including invoices and meter readings

This report is our third Greenhouse Gas (“GHG”) Emissions Methodology Statement and is designed to increase the transparency around how we report our GHG emissions.

We base our methodology on the principles and requirements of the [Greenhouse Gas Protocol’s Corporate Accounting and Reporting Standard](#) to prepare our reporting and this report contains information about our methodology and reporting criteria for the 2021 reporting year (January 1-December 31, 2021).

## Scope of Emissions Reporting

Specifically, this report:

- Covers all global activities where we have operational control<sup>2</sup>

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<sup>1</sup> Our Net CO<sub>2</sub>e emissions in metric tonnes over total energy production has been changed from net CO<sub>2</sub> emissions in metric tonnes over total electricity production. With the expansion of our portfolio to include new combined heat and power assets, total energy includes our increased heat production in MWh and minimizes the risk of overstating our CO<sub>2</sub> impacts.

<sup>2</sup> Under the control approach, a company accounts for 100 percent of the GHG emissions from operations over which it has control. It does not account for GHG emissions from operations in which it owns an interest but has no control. A company has operational control over an operation if the former or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation. Our report includes our CO<sub>2</sub> emissions from the Termoemcali business in Colombia, where we have a minority equity interest but exercise operational control. The report excludes our minority interest in the Sochagota business in Colombia where we do not exert such control.

- Includes CO<sub>2</sub>e data for acquired businesses for the period when we had operation control of the business, i.e, the month of acquisition. Full month of data is considered to align with the billing cycles and ensure high quality results.
- For base year calculations of our CO<sub>2</sub>e intensity metric, our methodology will include CO<sub>2</sub>e data for acquired businesses for the full year as required by the Greenhouse Gas Protocol<sup>3</sup>.
- Includes CO<sub>2</sub>, SF<sub>6</sub>, HFC, CFC, HCFC and PFC emissions in our reporting. We do not include CH<sub>4</sub>, N<sub>2</sub>O or NF<sub>3</sub> in our calculations
- Includes Direct Scope 1 emissions from the generation of electricity, heating, cooling and steam
- Includes CO<sub>2</sub>e data that is calculated based on fuel consumption<sup>4</sup>, and HFC, CFC, HCFC, PFC and SF<sub>6</sub> leakages
- Includes Indirect Scope 2 emissions, both location-based and market-based, for purchased electricity
- Applies a materiality threshold of 1% of total GHG emissions (i.e., gases that are <1% of the total tCO<sub>2</sub>e emissions are excluded from the calculation)

## Calculation Methodology

Our methodology is based on GHG Protocol Standards and Guidelines that can be found on this link:

<https://ghgprotocol.org/>

### Scope 1 Emissions

Scope 1 CO<sub>2</sub>e emissions are calculated based on fuel consumption and emissions factors at the individual asset level and the methodology by asset is set forth in Appendix A. Calculations utilize the most relevant emission conversion factors for the regions in which we operate, in line with the GHG Protocol for calculating Carbon Dioxide equivalent (CO<sub>2</sub>e)<sup>5</sup>. The emission factors used to calculate emissions are extracted from official sources and the global warming potential (“GWP”) values published by the Intergovernmental Panel on Climate Change (“IPCC”) with CO<sub>2</sub> having a GWP equivalent of 1. Values published by the IPCC are used for the GWP for HFC, CFC, HCFC, PFC and SF<sub>6</sub> also. GWP is used to convert the quantity of leaked gasses to tCO<sub>2</sub>e.

### Scope 2 Emissions

Scope 2 CO<sub>2</sub>e emissions, which include purchased electricity for ContourGlobal’s own use, make up a small proportion of our total CO<sub>2</sub>e emissions associated with generating energy. Following the GHG Protocol’s Scope 2 Guidance, Scope 2 emissions are calculated on a location-based method and market-based method, when information is available (see [Appendix B](#)).

### Scope 3 Emissions

All other indirect emissions that result from ContourGlobal’s upstream and downstream value chain activities are reported as Scope 3 emissions. A detailed list of categories and calculation methodologies are included in Appendix C.

For our 2021 Scope 3 emissions reporting we chose to exclude Category 8 emissions (Upstream leased assets). We performed screening, using spend-based method, of emissions related to leased land, offices, vehicles and equipment and found them to be immaterial. We currently don’t have activity data that is in line with the GHG Protocol guidelines for Category 8 calculation. We will improve our internal process for Category 8 activity to be in line with the GHG protocol guidelines and will report emissions associated with upstream leased assets in future reporting periods.

The emissions associated with processing of sold products (Category 10), are partially calculated with spend-based method (15.3% out of the total Category 10 emissions or 0.3% of our total Scope 3 emissions) which is not in line with

<sup>3</sup> Our base year calculation includes the full year of CO<sub>2</sub> emissions for our Mexico business, acquired and placed in service in 2019, and our USA and Trinidad businesses, acquired in 2021

<sup>4</sup> Fuel consumption data is gathered from commercial meters, fuel purchased, or other methodologies described in Appendix A.

<sup>5</sup> The emissions factors, for CO<sub>2</sub> and GWP for CO<sub>2</sub>e calculation, are extracted from a variety of sources (including factors in Directive 2003/87/EC, in Competent Authorities of EU member states, in the Intergovernmental Panel on Climate Change Assessment Report, and other sources) and are in line with ISO 14064-1:2012: “Greenhouse gases. Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals”. See Appendix A for additional details.

the GHG Protocol. We will work with our clients to improve the calculation methodology and report Category 10 fully in line with the GHG protocol in future reporting periods.

### **2019 Base Year Emissions Recalculation**

As per [GHG Corporate Standard](#), the base year emissions should be recalculated when:

- Structural changes occurred in the reporting organization that have significant impact on the company's base year emissions
- Changes in calculation methodology that have significant impact on the company's base year emissions
- Discovery of significant errors, or a number of cumulative errors, that are collectively significant

We have established a significance threshold of 5% of total base year GHG emissions and/or total base year energy produced.

In 2021 we have acquired a portfolio of natural gas-fired and combined heat and power assets with total installed capacity of 1 502 MW. Additionally, two businesses ceased operations in 2020. The impact on our base year emissions and energy production from the 2020 PPA expirations and 2021 acquisitions exceeded the 5% threshold defined as significant and thus triggered base year emissions recalculation.

When the base year is recalculated, we include or exclude the full year of emissions for acquisitions and disposals respectively in the current year data on which the emissions intensity metric is based. This results in emissions intensity metrics for the current year and the base year that are comparable.

The emission factor used are sourced from:

- US EPA for the assets located in USA (Hobbs, Borger, Waterside and Redwood)
- IPCC for the asset located in Trinidad (Trinity)

For emission factors and activity data sourcing please see [Appendix A](#).

## **Emissions Factors**

Combustion emissions factors are specific to each category of fuel source and sources differ business to business. The selection of these emission factors is intended to minimize uncertainty as much as possible. Where we have accurate data based on laboratory testing on the calorific values of fuels, we have utilized these values to give more accurate results.

CO<sub>2</sub> emissions data from our European assets is assured by the local regulations of countries participating in the EU ETS (Emission Trading System). Details on emissions factor by business can also be found in Appendix A.

Energy consumption emission factors are specific to the electrical grid (energy mix) to which each asset is connected (location-based emission factors), the type of energy we consume and to the contractual instruments that are available to us in different markets which allow us to purchase electricity from specific energy sources (market-based emission factors). Details on the calculation methodology for Scope 2 can be found in Appendix B.

## **Checks and Controls**

Greenhouse Gas Calculations are reviewed and approved by the Global Chief Operating Officer ("COO"), reporting directly to the Chief Executive Officer. The Global COO has day to day responsibility for managing all climate-related issues, including calculating and reporting CO<sub>2</sub>e emissions. The Global COO is supported by the Divisional COO – Thermal and the Executive Vice-President of Special Projects in executing these responsibilities. Each of our power plant managers is responsible for complying with all environmental regulations and monitoring emissions to ensure such compliance. Additionally, plant managers are responsible for identifying climate risks and impacts at their businesses.

## **Data Reporting and Storage**

Our data is collected and stored on a software platform. Our plant managers are responsible for providing data to that system and our Divisional Chief Operating Officer – Thermal is responsible for reviewing the data input into the system.

## Assurance

ContourGlobal PLC engaged KPMG LLP (“KPMG”) to undertake limited assurance using the assurance standard ISAE (UK) 3000 over selected information included within the ContourGlobal Annual Report and ContourGlobal Sustainability Report for the reporting year ended 31 December 2021. KPMG's assurance statements on our Scope 1 CO<sub>2</sub>e and Scope 2 CO<sub>2</sub>e emissions, CO<sub>2</sub>e Intensity for Electricity and Energy, and Scope 3 tCO<sub>2</sub>e emissions are available on our website at <https://www.contourglobal.com/reports>.

As noted above, direct combustion and technological CO<sub>2</sub> emissions data from our European assets is also reviewed and assured by third parties to comply with local regulations of countries participating in the EU ETS (Emission Trading System).

## Thermal Efficiency

ContourGlobal has been measuring and reporting its thermal efficiency since 2011. Our efficiency targets are set at the asset level. The net thermal efficiency of our assets is calculated using the following formula:

**Net efficiency = net energy produced / total fuel energy input**

- **Net efficiency in % is the percentage of total fuel energy input that is converted to useful heat and electrical energy exported to our clients**
- **Net energy produced, MWh is the useful electrical and heat energy exported to our clients by our fossil fuel assets. Electrical energy that was consumed by auxiliary equipment in our power generation facilities or heat energy returned from our clients as condensate is excluded from the net energy produced**
- **Total fuel energy input, MWh is the energy released during combustion by all the fuels used in our fossil fuel assets measured in MJ on lower heating value (LHV) basis and divided by 3600 MJ/MWh for conversion to MWh**

Net energy production data is as per documentation including invoices and meter readings. Total fuel input data is as per documentation including invoices, meter readings and laboratory analysis to obtain LHV values where required.

Our Thermal portfolio includes all our assets (including Solutions) that burn fossil and bio fuels to produce electrical and heat energy. Our Solutions portfolio includes only cogeneration assets that burn fossil and bio fuels to produce electrical and heat energy, as listed in our 2021 Annual Report.

# Appendix A

For our combustion emissions calculations we have used the most recent guidelines/methodologies/emission factors provided by the Competent Authorities for each respective asset. Where the Competent Authority does not provide guidance on CO<sub>2</sub> emissions calculations, we have used internationally recognized methodologies based on energy input (tCO<sub>2</sub>/TJ or similar) rather than methodologies based on quantity of fuel (tCO<sub>2</sub>/t Fuel) as we believe the energy input-based calculations are more accurate as they take into account the variable fuel quality in different regions. Exceptions from the energy-based input were made when the Competent Authority is providing emission factors based on fuel quantity or the total quantity of specific fuel was negligible compared to the respective asset total fuel consumption. For our fugitive emissions calculations we have relied on the GWP values published by the IPCC.

The combustion CO<sub>2</sub> emissions are calculated with the following formula:

$$\text{Net CO}_2 \text{ Emissions} = \text{Fuel consumption} * \text{EF} * \text{OF} - \text{CO}_2 \text{ Captured}$$

where:

- Net CO<sub>2</sub> emissions are the tons of CO<sub>2</sub> emitted to the atmosphere
- Fuel consumption is the consumed fuel in TJ or tons for the period 01.01.2021 – 31.12.2021<sup>6</sup>
- EF is the emission factor for the respective fuel in tCO<sub>2</sub> per TJ or tCO<sub>2</sub>/t of fuel input<sup>7</sup>
- OF – Oxidation factor is the fraction of carbon that is oxidized during combustion<sup>8</sup>
- CO<sub>2</sub> Captured – CO<sub>2</sub> that is captured from the flue gases<sup>9</sup>

The Fugitive CO<sub>2</sub> emissions are calculated with the following formula:

$$\text{CO}_2\text{e Emissions} = \text{Gas emitted} * \text{GWP}$$

where:

- CO<sub>2</sub>e Emissions are the tons of CO<sub>2</sub> equivalent emitted
- Gas emitted is the amount of HFC, CFC, HCFC, PFC and SF<sub>6</sub> emitted. The emitted amounts are measured by the quantities of gasses that were used to refill or top up the equipment
- GWP is the global warming potential of the emitted gas

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<sup>6</sup>The fuel consumption is calculated based on the fuel mass flow and fuel quality (Lower Heating Value and/or chemical composition).

<sup>7</sup>The Emission Factor is calculated based on the fuel LHV and/or carbon content and the molar masses of the carbon, hydrocarbons and carbon dioxide for our Maritsa, Arrubal and KivuWatt assets. For the remaining assets it is either taken from the Competent Authority for the country where the asset is located or from internationally recognized sources when data from the Competent Authority is not available.

<sup>8</sup>The oxidation factor for our Maritsa asset is calculated based on laboratory analysis of unburned fuel in the bottom ash and fly ash. For the remaining assets the oxidation factor is sourced from the Competent Authority for the country where the asset is located or, if this is not available, the maximum value of 1 (complete oxidation) is used.

<sup>9</sup> Our Ploiesti, Nogara and Benin assets are capturing CO<sub>2</sub> from the flue gasses and are producing liquid CO<sub>2</sub> for use in the food industry, we are offsetting this amount from our Scope 1 emissions as it is not emitted to the atmosphere.

## Appendix A (continued)

| Asset                        | Emission factor source  | Oxidation factor source  | Fuel consumption data source   | Comments |
|------------------------------|---|--|--|----------|
| <b>Arrubal</b>               | Calculated on the basis of fuel quality for the main fuel and Ministerio para la Transición Ecológica y el Reto Demográfico for the secondary fuel  | Ministerio para la Transición Ecológica y el Reto Demográfico  | Calibrated flow meters on site. The data is crosschecked with the invoices for delivered fuel  |          |
| <b>Maritsa</b>               | Calculated on the basis of fuel quality for the main fuel and provided by the Bulgarian Environmental Agency for the secondary fuels  | Calculated on the basis of laboratory analysis for unburnt fuel in the slag and fly ash for the main fuel.<br>As per GHG emission permit (100% oxidation) for start-up fuels | Invoices for delivered fuel from the supplier and taking into account the stock at the beginning and at the end of the year  |          |
| <b>Togo</b>                  | 2006 IPCC Guidelines  | Assumed as 1 (100 % oxidation)   | Fuel consumption is calculated according to operational reports from the client who provides the fuel. NG LHV is based on laboratory analysis. HFO and LFO LHV are sourced from IPCC Guidelines, Chapter 2, Volume 1 |          |
| <b>Energies Saint Martin</b> | CG's asset is located on the client site with other stationary combustion sources. The client is responsible for calculating and reporting the total CO2 emissions from this site. The client is providing us with the fuel consumption data contributable to our asset. The emission factor is sourced from the Ministère de la Transition Écologique, and the oxidation is assumed as 100%. |  |  |          |
| <b>Termoemcali</b>           | EIA, Documentation for Emissions of Greenhouse Gases in the United States.2005, DOE/EIA-0638 (2005), October 2007, Tables 6-1, 6-2, 6-4, and 6-5  | All factors in this methodology assume 100% combustion, oxidation factor is assumed as 1   | Internal power plant measurements for both quantity and LHV  |          |
| <b>Bonaire</b>               | 2006 IPCC Guidelines  | Assumed as 1 (100% oxidation)  | Fuel consumption is as per invoices, fuel storage at the beginning and the end of 2021 is also considered. HFO and LFO LHV is as per fuel analysis.  |          |

## Appendix A (continued)

| Asset                 | Emission factor source  | Oxidation factor source                           | Fuel consumption data source   | Comments   |
|-----------------------|---|---|--|--|
| <b>Cap des Biches</b> | Emission factor is based 1996 IPCC Guidelines as per CG's commercial agreement with the Client  | Assumed as 1 (100% oxidation)                     | Fuel consumption is per invoices for received fuel and fuel storage at beginning and end of 2021. HFO LHV is weighted average of the fuel analysis in 2021, LFO LHV is assumed (considering the relatively low consumption, also we have assumed high LHV to assume worst case scenario) |  |
| <b>KivuWatt</b>       | This asset is using extracted lake gas to produce electricity. The emission factor is calculated based on the % content of CH <sub>4</sub> in the extracted gas and the molar masses of CH <sub>4</sub> and CO <sub>2</sub> . Small quantities of diesel are also used, and the emission factor is sourced from USA EPA | Oxidation factor is assumed as 1 (100% oxidation) | Lake gas mass flow and concentration is measured by calibrated measurement devices. Diesel consumption is as per internal measurements at the power plant  | The lake gas is mixture of CH <sub>4</sub> and CO <sub>2</sub> . The calculations are also taking into account the CH <sub>4</sub> combustion and the extracted CO <sub>2</sub> from the lake  |
| <b>Biogas Italy</b>   | This asset has no CO <sub>2</sub> emissions as it uses biogas   |   |  |  |
| <b>Ploiesti</b>       | Ministerul Mediului, Apelor și Pădurilor  | Oxidation factor is assumed as 1 (100% oxidation) | Fuel consumption is as per invoices (commercial meters), fuel LHV is per Competent Authority information   | Our asset in Ploiesti is producing liquid CO <sub>2</sub> for the beverage industry, the captured CO <sub>2</sub> from the flue gas that was converted into liquid CO <sub>2</sub> is subtracted from the calculated CO <sub>2</sub> emissions |
| <b>Nogara</b>         | Ministero della Transizione Ecologica   | Ministero della Transizione Ecologica             | Invoices from the fuel supplier  | Our asset in Nogara is producing liquid CO <sub>2</sub> for the beverage industry, the captured CO <sub>2</sub> from the flue gas that was converted into liquid CO <sub>2</sub> is subtracted from the calculated CO <sub>2</sub> emissions   |
| <b>Oricola</b>        | Ministero della Transizione Ecologica   | Ministero della Transizione Ecologica             | Invoices from the fuel supplier  |  |
| <b>Knockmore Hill</b> | UK Environmental Agency   | UK Environmental Agency                           | Invoices from the fuel supplier  |  |

## Appendix A (continued)

| Asset       | Emission factor source | Oxidation factor source       | Fuel consumption data source  | Comments  |
|-------------|------------------------|-------------------------------|---|---|
| Benin       | 2006 IPCC Guidelines   | Assumed as 1 (100% oxidation) | Fuel consumption is as per information from the Client (the Client provides the fuel for this asset). The LHV for NG is taken from gas analysis report, LFO LHV is according to IPCC guidelines   | Our asset in Benin is producing liquid CO <sub>2</sub> for the beverage industry, the captured CO <sub>2</sub> from the flue gas that was converted into liquid CO <sub>2</sub> is subtracted from the calculated CO <sub>2</sub> emissions |
| Ikeja       | 2006 IPCC Guidelines   | Assumed as 1 (100% oxidation) | Fuel consumption is as per information from the Client (the Client provides the fuel for this asset). The LHV for NG is taken from gas analysis report, LFO LHV is according to IPCC guidelines   |   |
| Corn Mogi   | 2006 IPCC Guidelines   | Assumed as 1 (100% oxidation) | Fuel consumption is according to invoices (commercial meters). Fuel LHV is as per information from the supplier   |   |
| Corn Balsa  | 2006 IPCC Guidelines   | Assumed as 1 (100% oxidation) | Fuel consumption is according to invoices (commercial meters). Fuel LHV is as per information from the supplier   |   |
| Brahma Rio  | 2006 IPCC Guidelines   | Assumed as 1 (100% oxidation) | Fuel consumption is according to invoices (commercial meters). Fuel LHV is as per information from the supplier   |   |
| CELCSA - MX | 2006 IPCC Guidelines   | Assumed as 1 (100% oxidation) | Fuel consumption is according to commercial metering (invoices and information provided by the supplier).<br><br>As the supplied fuel is measured in HHV supplied energy we calculated the LHV energy by calculating the HHV to LHV factor using available fuel analysis data |   |

## Appendix A (continued)

| Asset   | Emission factor source  | Oxidation factor source                                       | Fuel consumption data source   | Comments |
|---|---|---|--|----------|
| <b>CGA - MX</b>                                     | 2006 IPCC Guidelines  | Assumed as 1 (100% oxidation)                                 | Fuel consumption is according to commercial metering (invoices and information provided by the supplier).<br><br>As the supplied fuel is measured in HHV MMBTU supplied energy we calculated the LHV energy by converting MMBTU to GJ calculating the HHV to LHV factor using available fuel analysis data |          |
| <b>Spain CSPs</b>                                   | Ministerio para la Transición Ecológica y el Reto Demográfico | Ministerio para la Transición Ecológica y el Reto Demográfico | Invoices for delivered fuel from the supplier and taking into account the stock at the beginning and at the end of the year  |          |
| <b>Hobbs, NM<br/>Joined<br/>February 21</b>         | U.S. Environmental Protection Agency                          | U.S. Environmental Protection Agency                          | Fuel consumption is according to commercial metering   |          |
| <b>Borger, TX<br/>Joined<br/>February 21</b>        | U.S. Environmental Protection Agency                          | U.S. Environmental Protection Agency                          | Fuel consumption is according to commercial metering   |          |
| <b>Waterside, CT<br/>Joined<br/>February 21</b>     | U.S. Environmental Protection Agency                          | U.S. Environmental Protection Agency                          | Fuel consumption is according to calibrated on-site metering equipment   |          |
| <b>Redwood, CA<br/>Joined<br/>February 21</b>       | U.S. Environmental Protection Agency                          | U.S. Environmental Protection Agency                          | Fuel consumption is according to commercial metering   |          |
| <b>Trinity, Trinidad<br/>Joined<br/>February 21</b> | 2006 IPCC Guidelines  | Assumed as 1 (100% oxidation)                                 | Fuel consumption is according to commercial metering   |          |

CO2e emissions from our renewable portfolio (excluding Spain CSPs) represent less than 0.001% of our total CO2e emissions. The fuel consumed by internal combustion engine driven pumps and generators, used in extraordinary circumstances, is measured using supplier invoices data or on-site metering equipment. The emission factors are from public sources like IPCC and US EPA

# Appendix B

For our indirect Scope 2 emissions calculations we have followed the GHG Protocol Guidelines and used the most recent emission factors provided by the competent authorities or other reputable source (location-based) or provided by the energy supplier (marked-based).

The combustion CO<sub>2</sub> emissions are calculated with the following formula:

$$\text{Scope 2 CO}_2 \text{ Emissions} = \text{Energy Consumption} * \text{EF}$$

where:

- Energy consumption is the amount of energy provided by an external party, usually a utility provider or energy generation company.
- EF is the emission factor associated with that energy, in line with the GHG protocol, we have used location-based emission factors, and market-based emission factor where they are available.

The emission factor that we use in our calculations is the highest-ranking emission factor available from the following:

## Location-based emission factors hierarchy

1. Regional or subnational emission factors
2. National production emission factors

## Marked-based emission factors hierarchy

1. Energy attribute certificates
2. Contracts
3. Supplier/Utility emission rates
4. Residual mix
5. Other grid-average emission factors

The table below outlines the sources for emission factors and energy consumption data for each asset or cluster of assets.

| Asset                 | Emission factor source  |                   | Energy consumption data  | Comments |
|-----------------------|---|-------------------|--|----------|
|                       | Location-based  | Market-based      |  |          |
| Arrubal               | National Grid Operator  | Supplier invoices | Merchant representative and supplier invoices                        |          |
| Maritsa               | European Environmental Agency   | Not available     | Bilateral protocols from the National Grid Operator                  |          |
| Togo                  | This asset does not consume energy from the grid  |                   |  |          |
| Energies Saint Martin | This asset does not consume energy from the grid  |                   |  |          |
| Termoemcali           | Climate Transparency Report 2020 Colombia   | Supplier website  | Supplier invoices  |          |
| Bonaire               | Not applicable as our power plant in Bonaire is the sole energy producer on the Island  |                   |  |          |
| Cap des Biches        | Ecometrica Technical Paper – Electricity Specific emission factors for grid electricity | Not available     | Commercial metering reading bilateral reports (signed by the Client) |          |
| KivuWatt              | The Economics of Low Carbon Cities, Kigali Rwanda, International Growth Centre          | Not available     | Commercial metering reading bilateral reports (signed by the Client) |          |
| Biogas Italy          | This asset does not consume energy from the grid  |                   |  |          |

| Asset                          | Emission factor source   |  | Energy consumption data | Comments |
|--------------------------------|--|--|-------------------------|----------|
|                                | Location-based   | Market-based   |                         |          |
| Ploiesti                       | Location-based, sourced from National Energy Regulatory Authority                      | Not available  | Supplier invoices       |          |
| Nogara                         | Istituto Superiore per la Protezione (Superior institute for Environmental Protection) | Not available  | Supplier invoices       |          |
| Oricola                        | Istituto Superiore per la Protezione (Superior institute for Environmental Protection) | Not available  | Supplier invoices       |          |
| KMH                            | European Environmental Agency  | Supplier invoices  | Supplier invoices       |          |
| Benin                          | This asset does not consume energy from the grid                                       |  |                         |          |
| Ikeja                          | This asset does not consume energy from the grid                                       |  |                         |          |
| Corn Mogi                      | Ministério da Ciência, Tecnologia e Inovações  | Not available  | Supplier invoices       |          |
| Corn Balsa                     | Ministério da Ciência, Tecnologia e Inovações  | Not available  | Supplier invoices       |          |
| Brahma Rio                     | This asset does not consume energy from the grid                                       |  |                         |          |
| CELCSA - MX                    | Mexican Energy Regulatory Commission (CRE)   | Not available  | Supplier invoices       |          |
| CGA – MX                       | Mexican Energy Regulatory Commission (CRE)   | Not available  | Supplier invoices       |          |
| Spain CSP Palma Del Rio 1      | National Grid Operator   | Supplier invoices  | Supplier invoices       |          |
| Spain CSP Palma Del Rio 2      | National Grid Operator   | Supplier invoices  | Supplier invoices       |          |
| Spain CSP Alvarado             | National Grid Operator   | Supplier invoices  | Supplier invoices       |          |
| Spain CSP Orellana             | National Grid Operator   | Supplier invoices  | Supplier invoices       |          |
| Spain CSP Majadas              | National Grid Operator   | Supplier invoices  | Supplier invoices       |          |
| Vorotan                        | UN Convention on Climate Change report   | Not available  | Supplier invoices       |          |
| Solar Italy                    | Istituto Superiore per la Protezione (Superior institute for Environmental Protection) | Not available  | Supplier invoices       |          |
| Solar Slovakia                 | European Environmental Agency  | Market-based sourced from supplier website                     | Supplier invoices       |          |
| Solar Romania                  | National Energy Regulatory Authority   | Not available  | Supplier invoices       |          |
| Brazil Renewables              | Ministério da Ciência, Tecnologia e Inovações  | Not available  | Supplier invoices       |          |
| Inka                           | This asset does not consume energy from the grid                                       |  |                         |          |
| Austria Wind                   | European Environmental Agency  | Supplier invoices  | Supplier invoices       |          |
| Hobbs, NM Acquired February 21 | U.S. Environmental Protection Agency – based on state                                  | U.S. Environmental Protection Agency – based on grid subregion | Supplier invoices       |          |

| Asset   | Emission factor source  |  | Energy consumption data             | Comments |
|---|---|--|-------------------------------------|----------|
|   | Location-based  | Market-based   |                                     |          |
| Borger, TX<br>Acquired<br>February 21           | U.S. Environmental Protection Agency- based on state                                    | U.S. Environmental Protection Agency – based on grid subregion | Supplier invoices                   |          |
| Waterside, CT<br>Acquired<br>February 21        | U.S. Environmental Protection Agency- based on state                                    | U.S. Environmental Protection Agency – based on grid subregion | Supplier invoices                   |          |
| Redwood, CA<br>Acquired<br>February 21          | U.S. Environmental Protection Agency - based on state                                   | U.S. Environmental Protection Agency – based on grid subregion | Supplier invoices                   |          |
| Trinity,<br>Trinidad<br>Acquired<br>February 21 | Ecometrica Technical Paper – Electricity Specific emission factors for grid electricity | Not available  | Supplier commercial metering system |          |

# Appendix C – Scope 3 Formulas

## Category 1 – Purchased goods and services

The calculation of emissions from purchased goods and services utilizes a spend-based methodology with emission factors from USA EPA that are based on Environmentally-Extended Input-Output (“EEIO”) models. The emission factors were updated in 2022 but are based on 2018 dollars, therefore an inflation coefficient is used to reflect 2021 USD spending in 2018 USD equivalents. The activity data for operational spending (OPEX) for the reporting year was obtained from our accounting system and adjusted for inflation, the OPEX vs CAPEX split is determined in the same manner as they are for financial reporting purposes.

The following formula was used to calculate the tCO<sub>2</sub>e Category 1 emissions:

$$\text{Category 1 tCO}_2\text{e} = \text{IA} * \left[ \sum_{i=0}^n (\text{AD}_{1i} * \text{EF}_{\text{ICO}_2} + \text{AD}_{1i} * \text{EF}_{\text{ICH}_4} * \text{GWP}_{\text{CH}_4} + \text{AD}_{1i} * \text{EF}_{\text{IN}_2\text{O}} * \text{GWP}_{\text{N}_2\text{O}} + \text{AD}_{1i} * \text{EF}_{\text{i other}}) \right]$$

where:

- Category 1 tCO<sub>2</sub>e – tons of CO<sub>2</sub>e emissions resulting from purchased goods and services
- AD<sub>1i</sub> – Activity Data for the i type of goods and services – the amount of USD spend for different type of goods and services in the reporting year, 2018 USD
- EF<sub>ICO<sub>2</sub></sub> – CO<sub>2</sub> emission factor for the i type of goods and services in tCO<sub>2</sub>/2018 USD
- EF<sub>ICH<sub>4</sub></sub> – CH<sub>4</sub> emission factor for the i type of goods and services in tCH<sub>4</sub>/2018 USD
- EF<sub>IN<sub>2</sub>O</sub> – N<sub>2</sub>O emission factor for the i type of goods and services in tN<sub>2</sub>O/2018 USD
- EF<sub>i other</sub> – emission factor for other greenhouse gasses (HFCs, CFCs, SF6, NF3) for the i type of goods and services in tCO<sub>2</sub>e/2018 USD
- GWP<sub>CH<sub>4</sub></sub> - CH<sub>4</sub> Global Warming Potential tCO<sub>2</sub>e/tCH<sub>4</sub> – equal to 28 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)
- GWP<sub>N<sub>2</sub>O</sub> – N<sub>2</sub>O Global Warming Potential tCO<sub>2</sub>e/tN<sub>2</sub>O - equal to 265 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)
- IA – inflation adjustment, for the period 2018 to 2021 the inflation is considered at 8% and the IA is equal to 1/1.08 - 0.92592592592

## Category 2 – Capital goods

The calculation of emissions from capital goods purchases utilizes a spend-based methodology with emission factors from USA EPA that are based on Environmentally-Extended Input-Output (“EEIO”) models. The emission factors were updated in 2022 but are based on 2018 dollars, therefore an inflation coefficient is used to reflect 2021 USD spending in 2018 USD equivalents. The activity data for capital goods purchases (CAPEX) for the reporting year was obtained from our accounting system and adjusted for inflation, the OPEX vs CAPEX split is determined in the same manner as they are for financial reporting purposes.

The following formula was used to calculate the tCO<sub>2</sub>e Category 2 emissions:

$$\text{Category 2 tCO}_2\text{e} = \text{IA} * \left[ \sum_{i=0}^n (\text{AD}_{2i} * \text{EF}_{\text{ICO}_2} + \text{AD}_{2i} * \text{EF}_{\text{ICH}_4} * \text{GWP}_{\text{CH}_4} + \text{AD}_{2i} * \text{EF}_{\text{IN}_2\text{O}} * \text{GWP}_{\text{N}_2\text{O}} + \text{AD}_{2i} * \text{EF}_{\text{i other}}) \right]$$

where:

- Category 2 tCO<sub>2</sub>e – tons of CO<sub>2</sub>e emissions resulting from capital goods purchase
- AD<sub>2i</sub> – Activity Data for the i type of goods – the amount of USD spend for different type of goods in the reporting year, 2018 USD
- EF<sub>ICO<sub>2</sub></sub> – CO<sub>2</sub> emission factor for the i type of goods in tCO<sub>2</sub>/2018 USD
- EF<sub>ICH<sub>4</sub></sub> – CH<sub>4</sub> emission factor for the i type of goods in tCH<sub>4</sub>/2018 USD
- EF<sub>IN<sub>2</sub>O</sub> – N<sub>2</sub>O emission factor for the i type of goods in tN<sub>2</sub>O/2018 USD

- $EF_{i\text{ other}}$  – emission factor for other greenhouse gasses (HFCs, CFCs, SF6, NF3) for the  $i$  type of goods in  $tCO_2e/2018\ USD$
- $GWP_{CH_4}$  -  $CH_4$  Global Warming Potential  $tCO_2e/tCH_4$  – equal to 28 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)
- $GWP_{N_2O}$  –  $N_2O$  Global Warming Potential  $tCO_2e/tN_2O$  - equal to 265 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)
- $IA$  – inflation adjustment, for the period 2018 to 2021 the inflation is considered at 8% and the  $IA$  is equal to  $1/1.08 - 0.92592592592$

### Category 3 - Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2

The calculation of emissions resulting from fuel-and-energy-related activities for the assets under our operational control is based on quantity of fuels consumed for electricity, heat, cooling and CO2 production (and matches the quantity of fuels used for our Scope 1 GHG inventory) and purchased electricity as activity data and emission factors from the following sources:

- For Coal
  - IPCC 2006 Guidelines for fugitive emissions during coal mining.
  - Specific electricity consumption per tonne of coal mined, which is based on the mine annual report information, as activity data and CO2 emission factor for the electrical grid in Bulgaria (source European Environmental Agency)
- For LFO – UK DEFRA emission factor for gas oil well-to-tank
- For HFO – UK DEFRA emission factor for fuel oil well-to-tank
- For natural gas – UK DEFRA emission factor for natural gas well-to-tank
- For upstream CO2e emissions associated with purchased electricity – UK DEFRA emission factors for Well-to-Tank emission from electricity generation and from T&D losses
- For emissions associated with T&D losses from the third-party generator to our assets – percentage of grid losses sourced from World Bank database and grid emission factors (most recent data is from 2014) as per Appendix B table (Scope 2 emission factors sources)

The selected method to determine emissions associated with coal mining is better suited for our case as the only coal plant that we operate is mine mouth (located adjacent to the mine) and the transportation is exclusively on conveyor belts which consume electricity. To cover any and all electrical consumption associated with the coal produced for our power plant we have also calculated the specific electrical consumption, per tonne of coal produced, of the mine and then multiplied it by our purchased quantity and the emission factor for the grid in Bulgaria where the mine is situated.

$$\text{Category 3 } tCO_2e = CC3E + LFOC3E + HFOC3E + NGC3E + UPETD$$

- Category 3  $tCO_2e$  – tons of  $CO_2e$  emissions resulting from Fuel-and-energy-related activities not reported in Scope 1 and Scope 2
- $CC3E$  – coal category 3 emissions,  $tCO_2e$

$$CC3E = AD_c * EF_c + SC_{cm} * AD_c * GEF_{bg}$$

- $AD_c$  – Activity Data for coal – the amount of coal consumed in tonnes,  $t$
- $EF_c$  - Emission Factor for coal (mining) – the amount of  $tCO_2e$  emissions resulting from surface coal mining. The EF used is the upper limit provided by IPCC ( $2\ m^3CH_4/t$ , converted to  $tCH_4/t$  using conversion factor provided by IPCC and the converted to  $tCO_2e$  using the GWP of  $CH_4$  as per IPCC Fifth Assessment Report). IPCC recognizes that during coal mining there might be other gasses ( $CO_2$ ) released but their quantity is immaterial and therefore emission factor for them is not provided,  $tCO_2e/t$
- $SC_{cm}$  – coal mine specific electricity consumption In  $MWh/t$ . The specific consumption is calculated based on the quantity of purchased electricity by Maritsa East mine in 2021 and

the total amount of coal produced by Maritsa East mine in 2021 (data sourced from Maritsa East mine annual report), MWh/t

- $GEF_{bg}$  – Bulgaria grid emission factor sourced from the European Environmental Agency,  $tCO_2/MWh$
- LFOC3E – LFO category 3 emissions,  $tCO_2e$

$$LFOC3E = AD_{LFO} * EF_{LFO}$$

- $AD_{LFO}$  – Activity Data for LFO – the amount of LFO consumed in cubic meters
- $EF_{LFO}$  – Well-to-tank emission factor for gas oil sourced from UK DEFRA,  $tCO_2e/m^3$
- HFOC3E – HFO category 3 emissions,  $tCO_2e$

$$HFOC3E = AD_{HFO} * EF_{HFO}$$

- $AD_{HFO}$  – Activity Data for HFO – the amount of HFO consumed in tonnes
- $EF_{HFO}$  – Well-to-tank emission factor for fuel oil sourced from UK DEFRA,  $tCO_2e/t$
- NGC3E – Natural gas category 3 emissions,  $tCO_2e$

$$NGC3E = AD_{NG} * EF_{NG}$$

- $AD_{NG}$  – Activity Data for natural gas – the amount of natural gas consumed in  $m^3$
- $EF_{NG}$  – Well-to-tank emission factor for natural gas sourced from UK DEFRA,  $tCO_2e/m^3$
- UPETD – Upstream  $CO_2e$  emissions from fuel and energy related activities for purchased electricity and T&D losses,  $tCO_2e$

$$UPETD = \sum_{i=0}^n AD_{pe\ i} * (EF_{WTT\ EG\ i} + EF_{WTT\ T\&D\ i} + GL_{CoR\ i} * GEF_i)$$

- $AD_{pe\ i}$  – purchased electricity for each asset that is in our reporting boundary (operational control), MWh
- $EF_{WTT\ EG\ i}$  – UK DEFRA Well-to-Tank emission factor for electricity generation (upstream fuel and energy related emissions) for countries/regions where assets in our reporting boundary are located,  $tCO_2e/MWh$
- $EF_{WTT\ T\&D\ i}$  – UK DEFRA Well-to-Tank emission factor for T&D losses (upstream fuel and energy related emissions) for countries/regions where assets in our reporting boundary are located,  $tCO_2e/MWh$
- $GL_{CoR\ i}$  – grid losses for each country/region where assets that are in our reporting boundary are located, %
- $GEF_i$  – market-based emission factors for grids/regions where that are in our reporting boundary are located,  $tCO_2e/MWh$

#### Category 4 - Upstream transportation and distribution

The calculation of emissions from upstream transportation and distribution utilizes a spend-based methodology with emission factors from USA EPA that are based on Environmentally-Extended Input-Output (“EEIO”) models. The emission factors were updated in 2022 but are based on 2018 dollars, therefore an inflation coefficient is used to reflect 2021 USD spending in 2018 USD equivalents. The activity data for the reporting year was obtained from our accounting system and adjusted for inflation.

The data available for Category 4 calculation was limited to separate transportation and distribution payments due to the fact that for some goods the delivery costs are included in a lump sum contract and/or price and the split is not available to us. The emissions associated with such lump sum payments are included in our Category 1 or Category 2 depending on the type of expenditure (OPEX or CAPEX). We are working on improving the activity data collection for Category 4 and expect to provide better split of Category 4 from Category 1 and 2 in future reporting periods.

The following formula was used to calculate the  $tCO_2e$  Category 4 emissions:

$$\text{Category 4 } tCO_2e = IA * (AD_4 * EF_{TCO_2} + AD_4 * EF_{TCH_4} * GWP_{CH_4} + AD_4 * EF_{TN_2O} * GWP_{N_2O} + AD_4 * EF_{T\ other})$$

where:

- Category 4 tCO<sub>2</sub>e –tons of CO<sub>2</sub>e emissions resulting from upstream transportation and distribution
- AD<sub>4</sub>– Activity Data for upstream transportation and distribution – the amount of USD spend upstream transportation and distribution in the reporting year. As our accounting system does not recognize different types of transportation (rail, air, road etc.) and we had to use the combined spending for upstream transportation and distribution. We have assumed the worst case scenario (the type of transport with the highest emissions per USD spend – truck transportation).
- EF<sub>TCO2</sub> – CO<sub>2</sub> emission factor for upstream transportation and distribution by truck in tCO<sub>2</sub>/USD
- EF<sub>TCH4</sub> – CH<sub>4</sub> emission factor for upstream transportation and distribution by truck in tCH<sub>4</sub>/USD
- EF<sub>TN2O</sub> – N<sub>2</sub>O emission factor for upstream transportation and distribution by truck in tN<sub>2</sub>O/USD
- EF<sub>T other</sub> – emission factor for other greenhouse gasses from truck transportation (HFCs, CFCs, SF<sub>6</sub>, NF<sub>3</sub>) for the i type of goods in tCO<sub>2</sub>e/USD
- GWP<sub>CH4</sub> - CH<sub>4</sub> Global Warming Potential tCO<sub>2</sub>e/tCH<sub>4</sub> – equal to 28 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)
- GWP<sub>N2O</sub> – N<sub>2</sub>O Global Warming Potential tCO<sub>2</sub>e/tN<sub>2</sub>O - equal to 265 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)
- IA – inflation adjustment, for the period 2018 to 2021 the inflation is considered at 8% and the IA is equal to 1/1.08 - 0.92592592592

#### Category 5 - Waste generated in operations

The calculation of emissions from waste generated in operations utilizes the IPCC 2006 guidelines, Volume 4 model, downloaded from the IPCC website. The activity data is hazardous and non-hazardous waste generated from operations from 2015 – 2021, data for prior years is not available for waste. The degradable organic carbon percentage is the IPCC model’s default for bulk waste, and the methane generation rate assumes worst case scenario (moist and wet tropical climate). The waste is categorized as industrial for the purposes of the IPCC model calculation.

The model results are in ktCH<sub>4</sub>, the value for 2021 was multiplied by 1000 and then by 28 (CH<sub>4</sub> Global Warming Potential tCO<sub>2</sub>e/tCH<sub>4</sub>)

#### Category 6 - Business travel

The calculation of emissions from business travel utilizes a spend-based methodology with emission factors from USA EPA that are based on Environmentally-Extended Input-Output (“EEIO”) models. The emission factors were updated in 2022 but are based on 2018 dollars, therefore an inflation coefficient is used to reflect 2021 USD spending in 2018 USD equivalents. The activity data for the reporting year was obtained from our accounting system.

The following formula was used to calculate the tCO<sub>2</sub>e Category 6 emissions:

$$\text{Category 6 tCO}_2\text{e} = \text{IA} * \left[ \sum_{i=0}^n (\text{AD}_{1i} * \text{EF}_{i\text{CO}_2} + \text{AD}_{1i} * \text{EF}_{i\text{CH}_4} * \text{GWP}_{\text{CH}_4} + \text{AD}_{1i} * \text{EF}_{i\text{N}_2\text{O}} * \text{GWP}_{\text{N}_2\text{O}} + \text{AD}_{1i} * \text{EF}_{i\text{ other}}) \right]$$

where:

- Category 6 tCO<sub>2</sub>e –tons of CO<sub>2</sub>e emissions resulting from business travel
- AD<sub>1i</sub> – Activity Data for the i type of business travel expense – the amount of USD spend for different type upstream transportation and distribution in the reporting year
- EF<sub>iCO2</sub> – CO<sub>2</sub> emission factor for the i type of business travel expense in tCO<sub>2</sub>/ 2018 USD
- EF<sub>iCH4</sub> – CH<sub>4</sub> emission factor for the i type of business travel expense in tCH<sub>4</sub>/ 2018 USD
- EF<sub>iN2O</sub> – N<sub>2</sub>O emission factor for the i type of business travel expense in tN<sub>2</sub>O/ 2018USD
- EF<sub>i other</sub> – emission factor for other greenhouse gasses (HFCs, CFCs, SF<sub>6</sub>, NF<sub>3</sub>) for the i type of goods in tCO<sub>2</sub>e/ 2018 USD

- $GWP_{CH_4}$  - CH<sub>4</sub> Global Warming Potential tCO<sub>2</sub>e/tCH<sub>4</sub> – equal to 28 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)
- $GWP_{N_2O}$  – N<sub>2</sub>O Global Warming Potential tCO<sub>2</sub>e/tN<sub>2</sub>O - equal to 265 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)
- IA – inflation adjustment, for the period 2018 to 2021 the inflation is considered at 8% and the IA is equal to 1/1.08 - 0.92592592592

### Category 7 - Employee commuting

The calculation of emissions from employee commuting is based on distance travelled in the reporting year. The activity data was estimated based on number of employees, trips per year and average distance travelled for the employees of each of our businesses. Emission factors for the types of transport were obtained from USA EPA.

$$\text{Category 7 tCO}_2\text{e} = AD_7 * EF_{7\ CO_2} + AD_7 * EF_{7\ CH_4} * GWP_{CH_4} + AD_7 * EF_{7\ N_2O} * GWP_{N_2O}$$

- Category 7 tCO<sub>2</sub>e –tons of CO<sub>2</sub>e emissions resulting from employee commuting
- AD<sub>7</sub> – Activity Data – miles travelled from and to work
- EF<sub>7 CO<sub>2</sub></sub> – CO<sub>2</sub> emission factor in tCO<sub>2</sub>/vehicle-mile
- EF<sub>7 CH<sub>4</sub></sub> – CH<sub>4</sub> emission factor in tCH<sub>4</sub>/ vehicle-mile
- EF<sub>7 N<sub>2</sub>O</sub> – N<sub>2</sub>O emission factor in tN<sub>2</sub>O/vehicle-mile
- $GWP_{CH_4}$  -CH<sub>4</sub> Global Warming Potential tCO<sub>2</sub>e/tCH<sub>4</sub>– equal to 28 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)
- $GWP_{N_2O}$  – N<sub>2</sub>O Global Warming Potential tCO<sub>2</sub>e/tN<sub>2</sub>O - equal to 265 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)

### Category 8 - Upstream leased assets

We do not report emissions from Category 8 for 2021. We performed an initial screening of Category 8 emissions (according to Section 7.1 of the GHG Protocol Corporate Value Chain Accounting and Reporting Standard) and determined that emissions associated with upstream leased assets are immaterial (estimated at 1.689.79 tCO<sub>2</sub>e or less than 0.1% of our total Scope 3 emissions) and require extensive data collection efforts.

### Category 9 - Downstream transportation and distribution

This category is not applicable for our business due to the nature of our product – electricity, heat, chilled water and liquid CO<sub>2</sub> and our operational control boundary. The electricity and heat losses, in facilities under our operational control, are considered in our Scope 1 emissions calculation along with any auxiliary consumption for pumps to transport water. If the energy consumed by pumps is purchased from the grid it is included in our Scope 2 emissions. The liquid CO<sub>2</sub> transportation is via direct connection with the main off taker and the electricity auxiliary consumption is considered in our Scope 1/Scope 2 emissions and the relatively small amounts of liquid CO<sub>2</sub> that is transported from our site via trucks is purchased by a third party at the site, we are not responsible for the transportation and the location of the intermediate product user is unknown.

The emissions from liquid CO<sub>2</sub> sold to third parties via trucks are excluded due to:

- Most notably due to the uncertainty of the end user location as per Section 5.6 of the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (transportation and distribution of **intermediate** product between the point of sale by the reporting company and the business customers when the eventual end use of the intermediate product is unknown)
- Low overall quantity of liquid CO<sub>2</sub> transported by trucks (approx. 137 trucks for 2021 with estimated emissions of 90 tCO<sub>2</sub>e)

### Category 10 - Processing of sold products

The calculation of emissions associated with processing of sold products include emissions associated with the capture and utilization of food-grade CO<sub>2</sub> from our Solutions portfolio and emissions from processing of sold gypsum which is a byproduct from a flue gas desulphurization process. Activity data for the processing of sold liquid CO<sub>2</sub> was obtained from our accounting system and the emission factor was obtained from US EPA and is based on EEIO models, this method is a deviation from the GHG protocol. The spend-based emissions represent 15.3% of our total Category 10 emissions.

$$\text{Category 10 tCO}_2\text{e} = AD_{10} * EF_{10 \text{ CO}_2} + AD_{10} * EF_{10 \text{ CH}_4} * GWP_{\text{CH}_4} + AD_{10} * EF_{10 \text{ N}_2\text{O}} * GWP_{\text{N}_2\text{O}}$$

- Category 10 tCO<sub>2</sub>e – tons of CO<sub>2</sub>e emissions resulting from processing of sold products
- AD<sub>10</sub> – Activity Data – revenues from sold CO<sub>2</sub> in USD
- EF<sub>10 CO<sub>2</sub></sub> – CO<sub>2</sub> emission factor for compressed gases value chain in tCO<sub>2</sub>/USD
- EF<sub>10 CH<sub>4</sub></sub> – CH<sub>4</sub> emission factor for compressed gases value chain in tCH<sub>4</sub>/ USD
- EF<sub>10 N<sub>2</sub>O</sub> – N<sub>2</sub>O emission factor for compressed gases value chain in tN<sub>2</sub>O/USD
- GWP<sub>CH<sub>4</sub></sub> -CH<sub>4</sub> Global Warming Potential tCO<sub>2</sub>e/tCH<sub>4</sub>– equal to 28 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)
- GWP<sub>N<sub>2</sub>O</sub> – N<sub>2</sub>O Global Warming Potential tCO<sub>2</sub>e/tN<sub>2</sub>O - equal to 265 as per GHG protocol recommendation to use 100-year time horizon values of the latest IPCC report (AR5 or Fifth Assessment Report)

The CO<sub>2</sub> emissions from processing of sold gypsum are based on the gypsum processing plant CO<sub>2</sub> emissions report. This report is verified by a third party and approved by the Bulgarian Executive Environmental Agency.

#### Category 11 - Use of sold products

The calculation of emissions associated with the use of products sold include emissions associated with the capture and utilization of food-grade CO<sub>2</sub> from our Solutions portfolio. We assume that 100% of the sold CO<sub>2</sub> is emitted in our downstream value chain. The emissions associated with produced energy are already included in our Scope 1 emissions. The emissions associated with the use of sold gypsum are not applicable as there are no direct use-phase emissions, our gypsum is an intermediate product and does not directly consume fuels or electricity and energy usage during processing is already accounted for in Category 10.

#### Category 12 - End-of-life treatment of sold products

Category 12 emissions are not applicable for our business due to the nature of our products (electricity, heat energy, CO<sub>2</sub> and gypsum). The CO<sub>2</sub> is assumed as 100% emitted to the atmosphere and covered in Category 11 and gypsum is inert product and it is not biologically degradable and therefore will not produce any greenhouse gases when disposed as waste.

#### Category 13 - Downstream leased assets

This category is not applicable for our business as the emissions associated with operational leases are reported in our Scope 1 and Scope 2 emissions.

#### Category 14 - Franchises

Category 14 emissions are not applicable for our business as we are not franchisor.

#### Category 15 - Investments

In Category 15 we have reported emissions of businesses that are not under our operational control, but where we have an equity investment. The emissions here represent direct combustion emissions and indirect emissions from purchased electricity. Direct combustion emissions are calculated based on each fuel energy input in TJ and emission factors were sourced from IPCC Guidelines, Chapter 2. Indirect emissions from purchased electricity were calculated based on purchased electricity data obtained from commercial metering and emission factor provided by the supplier (market-based EF).

$$DC_{15} \text{ tCO}_2\text{e} = \sum_{i=0}^n AD_{DC \ 15 \ i} * EF_{DC \ 15 \ i} * GWP_i$$

- $DC_{15}$  tCO<sub>2</sub>e –tons of CO<sub>2</sub>e emissions resulting from direct combustion of fuel
- $AD_{DC\ 15\ i}$  – Direct Combustion Activity Data - fuel energy input for LFO, HFO and coal in TJ
- $EF_{DC\ 15\ i}$ – CO<sub>2</sub>, N<sub>2</sub>O and CH<sub>4</sub> emission factor for fuel used by the asset

$$IE_{15}\ tCO_2e = AD_{E\ 15} * EF_{E\ 15\ CO_2}$$

- $IE_{15}$  tCO<sub>2</sub>e – tons of CO<sub>2</sub>e emissions resulting from electricity purchased
- $AD_{E\ 15}$  – Purchased electricity activity data in MWh
- $EF_{E\ 15\ CO_2}$  - CO<sub>2</sub> emission factor for purchased electricity in tCO<sub>2</sub>/MWh

$$\text{Category 15 tCO}_2e = [DC_{15}\ tCO_2e + IE_{15}\ tCO_2e] * ES$$

- Category 15 tCO<sub>2</sub>e - tons of CO<sub>2</sub>e emissions resulting from investments
- $DC_{15}$  tCO<sub>2</sub>e –tons of CO<sub>2</sub>e emissions resulting from direct combustion of fuel
- $IE_{15}$  tCO<sub>2</sub>e – tons of CO<sub>2</sub>e emissions resulting from electricity and fuel purchases (excluding combustion)
- ES – our proportional equity share in the investee, %

# Appendix D – Glossary

|                            |  |
|----------------------------|--|
| <b>CEO</b>                 | Chief Executive Officer  |
| <b>CG</b>                  | ContourGlobal  |
| <b>Competent Authority</b> | Governmental agency/department that has the legally delegated, capacity, or power to perform a designated function |
| <b>COO</b>                 | Chief Operating Officer  |
| <b>EIA</b>                 | Energy Administration Agency   |
| <b>EU ETS</b>              | European Union Emission Trading Scheme   |
| <b>GHG</b>                 | Greenhouse Gasses  |
| <b>GJ</b>                  | Gigajoule  |
| <b>GWP</b>                 | Global Warming Potential   |
| <b>HFC</b>                 | Hydrofluorocarbon  |
| <b>HFO</b>                 | Heavy Fuel Oil   |
| <b>IFC</b>                 | International Finance Corporation  |
| <b>IPCC</b>                | Intergovernmental Panel on Climate Change  |
| <b>LFO</b>                 | Light Fuel Oil   |
| <b>LHV</b>                 | Lower Heating Value  |
| <b>MMBTU</b>               | Million British Thermal Units  |
| <b>NG</b>                  | Natural gas  |
| <b>SDGs</b>                | Sustainable Development Goals  |
| <b>UK DEFRA</b>            | United Kingdom Department for Environment, Food & Rural Affairs  |
| <b>USA</b>                 | United States of America   |
| <b>US EPA</b>              | United States Environmental Protection Agency  |