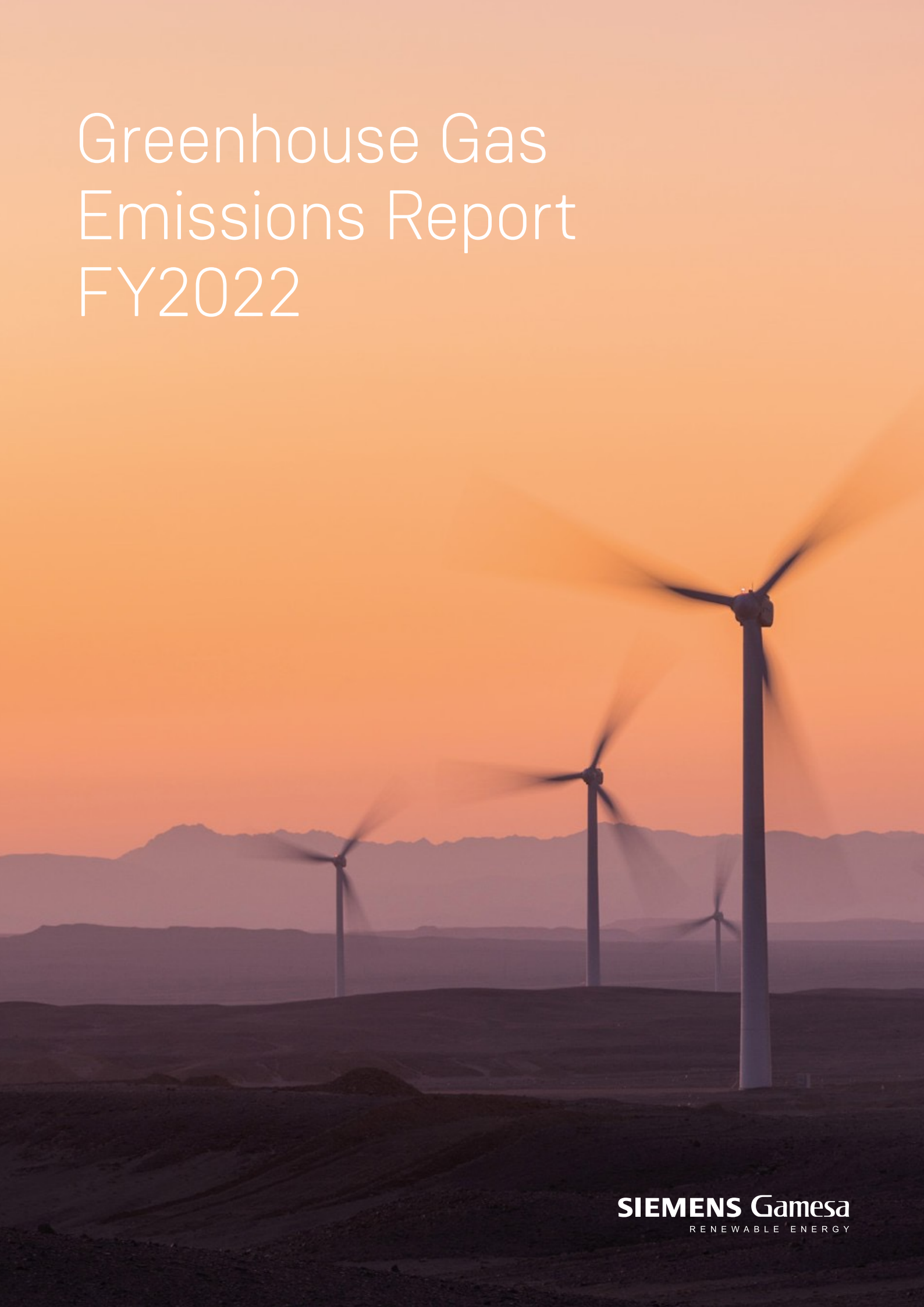


# Greenhouse Gas Emissions Report FY2022



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# Introduction

## Objectives and principles

The voluntary Greenhouse Gas (GHG) Emissions Report describes the emissions and details the verification of the inventory of greenhouse gas (GHG) for Siemens Gamesa Renewable Energy S.A., hereinafter referred to as “Siemens Gamesa Renewable Energy”, “Siemens Gamesa” or “the Company”.

The company publishes this report annually in order to transparently disclose to its stakeholders its GHG emissions in accordance with the commitments made in the Company’s environmental policy and strategy. Further, the report supports in measuring, monitoring and managing the environmental performance of Siemens Gamesa Renewable Energy.

The information contained in this report discloses the inventory of GHGs and associated emissions during fiscal year 2022, October 1, 2021 to September 30, 2022. The report covers all countries where commercial activities are performed under the scope of Siemens Gamesa Renewable Energy.

The GHG emissions report has been restructured in accordance to the requirements described in ISO 14064-1:2018 “Greenhouse gases - Part 1: “Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals”. It includes all required information, except those details that the standard does not consider mandatory and has not been considered relevant following the principle of relevance.

This report is carried out in accordance with the GHG Accounting and Reporting Principles found within the GHG Protocol Corporate Accounting and Reporting Standard.

As a result of the verification process in accordance with procedure 6-PS2 .670.00 TÜV Rheinland states that:

This is the fourth consecutive year that Siemens Gamesa publishes a GHG report that includes the three scopes, and the second year that includes the six categories described in the ISO 14064-1:2018. The report presents the targets certified by the Science Based Targets initiative (SBTi) to reduce Scope 1 and 2 emissions by 2025 that are aligned on the path to a complete decarbonization by 2040. This report also includes an overview of the direct actions performed based on internal targets and strategies to manage and reduce GHG emissions. As Corporate Head of Quality Management, Health, Safety and Environment, Mr, Gunnar Kleven is the person responsible for Siemens Gamesa’s GHG report.

This report is subject to external review by the accredited verifier, TÜV Rheinland.

It is considered that the SIEMENS GAMESA RENEWABLE ENERGY GREENHOUSE GAS EMISSIONS REPORT FISCAL YEAR 2022, as of 31 October 2022 and ratified by the Management of the organization, is substantially correct and corresponds to a faithful representation of the emissions of the activities for the scope defined by the company; in conformity requirements of standard ISO 14064-1:2018 for a reasonable level of assurance.

Gunnar Kleven  
Head of Corporate QM&HSE, Siemens Gamesa Renewable Energy

Andoni Mur Herrero  
Senior auditor TÜV, Rheinland

Almudena Bouza  
Reviewer, TÜV Rheinland

# 1. Organizational description

Siemens Gamesa Renewable Energy S. A. designs and manufactures wind turbines and provides onshore and offshore wind services.

Siemens Gamesa is a leading supplier of wind power solutions to customers all over the globe. It is committed to providing innovative and effective solutions for the energy challenges of tomorrow. Siemens Gamesa is thus leading the way forward in the renewable energy sector by providing cleaner, more reliable and affordable as well as integrated renewable technologies and services.

The company's scale, global reach and proven track record ensures that it will continue to play a central role in shaping the energy landscape of the future. As a key player and innovative pioneer in the renewable energy sector, the Company has installed products and technology in more than 90 countries, with a total capacity base of over 127 GW and 27,604 employees.

## Onshore wind power

106 GW installed since 1979

## Offshore wind power

21 GW installed since 1991. The most experienced offshore wind company

## Service

82 GW maintained in more than 65 countries worldwide

## Key facts as of September 30, 2022



+127 GW  
Globally installed



+27,604  
Employees



327 MTCO<sub>2</sub>  
Annual GHG savings to customers



106 GW installed  
Onshore

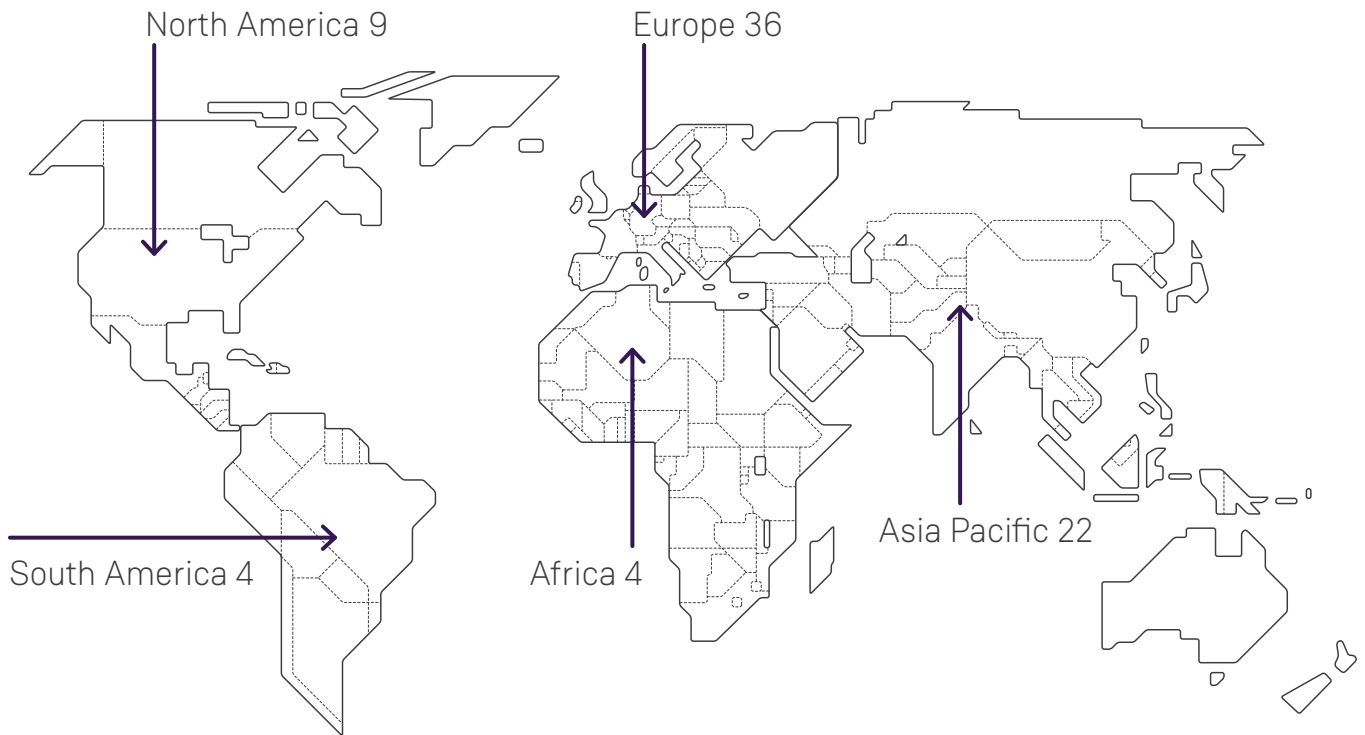


21 GW installed  
Offshore



82 GW maintained  
Services

## Siemens Gamesa global footprint



# Policies, strategies and goals

Siemens Gamesa strives to create as much value as possible for customers and investors that have tied their interests with those of the Company.

The company's commitment to its shareholders and the financial community is to provide transparent, accurate and comprehensive information that adequately reflects its current situation. The main tools used to engage with this stakeholder group include direct contact via the Investor Relations and Shareholders Office, as well as the Annual General Meeting.

Siemens Gamesa's sustainability performance is monitored constantly and has been externally endorsed by the most renowned and relevant sustainability indexes and ratings. These indexes are designed to measure the performance of companies capable of demonstrating strong Environmental, Social and Governance (ESG) practices.

The Company is also featured in rankings that are more specialized in the renewable energy, climate change fields, and decarbonizations such as the Cleantech Index (CTIUS), The Global Compact (GCX), the Clean200 list, the Paris Pledge for Action, Caring for Climate, The Science Based Targets Initiative, and the S&P Global Clean Energy Index which all showcase the Company's commitments to sustainability.

## Environmental policies

Preserving the environment is one of our guiding principles. Siemens Gamesa has established several policies that outline our obligatory and voluntary commitments to protect and enhance the environment.

These policies address different aspects of environmental protection appropriate to the context of our business, including the nature, scale and environmental impacts of our operations, products and services, in addition to the interests of our stakeholders.

Our policies are regularly reviewed and apply globally, covering our entire operations. They apply to all Siemens Gamesa employees and, furthermore, are relevant to our business partners.



Create value for  
Customers and Investors



Mission

We make real what matters – Clean energy for generations to come



Vision

Be the global leader in the renewable energy industry driving the transition towards a sustainable world



Sustainability indices

DJSI, CDP, SBTi, EcoVadis, FTSE4Good, Ethibel Sustainability Index, FTSE Russell, Sustainability Yearbook, Sustainalytics, Cleantech Index (CTIUS)

### Climate Strategy

Siemens Gamesa recognizes that climate change is a global issue requiring urgent and collective action by governments, businesses and citizens alike. As a provider of clean affordable energy, we contribute to the global economy's decarbonization in terms of the products and services we develop, the ways in which we operate and the partnerships we engage in with policymakers, industry associations and business partners to address climate change collectively. We are shaping the future's energy landscape. Siemens Gamesa climate change strategy covers the full scope of Siemens Gamesa's operations e.g. design and manufacture, pre-assembly and commissioning, operation and maintenance.

We are a member of multiple global communities who share our commitment to climate protection and decarbonization. For example, the Paris Pledge for Action, Caring for Climate and The Science Based Targets Initiative.

In addition, Siemens Gamesa is adapting the recommendations of the Task force on Climate-related Financial Disclosures (TCFD) for the voluntary reporting of the financial impact of climate risks in order to publicly disclose this information in a transparent manner. The Taskforce on Climate-related Financial Disclosures (TCFD) recommendations are voluntary principles that allows for a better understanding of business risks and opportunities that are derived from climate change impacts and greater transparency in companies' climate governance, strategy and performance in mainstream financial reporting.

### Climate Change Policy

Our Climate Change Policy applies company wide and covers the full scope of Siemens Gamesa's operations e.g. design and manufacture, pre-assembly and commissioning, operation and maintenance.



### Principles of Siemens Gamesa's Climate Change Policy:

- A. Taking urgent action to combat climate change and its impacts (SDG 13) while providing affordable and clean energy for generations to come (SDG 7)
- B. Subscribe to the global greenhouse gas emission reduction goals established in the Paris Climate Agreement
- C. Pursue innovative advances in our product that help to mitigate climate change impacts and reduce greenhouse gas emission
- D. Advocate for a global emissions market and ESG oriented finance sector to finance clean energy projects.
- E. Responsible use of energy and natural resources
- F. Develop training and awareness-raising activities concerning pro-environmental behavior and climate action
- G. Report transparently and in a timely manner with respect to our fight against climate change
- H. Promote industry alliances and partnerships to jointly address climate change

### Net-Zero carbon strategy

In 2019, 5 years ahead of schedule, Siemens Gamesa became carbon neutral - a major milestone towards the company's long-term ambition of net-zero CO2 emissions by 2040 – by .



Commitment to become  
Net-Zero Carbon by 2040

### The global roadmap towards Net-Zero emissions by 2040 involves six emission reduction levers:

- Energy reductions, substitution of energy resources and efficiency measures
- Electricity supply from renewable sources
- Green mobility plan to reduce fleet emissions
- Awareness campaigns and employee idea Engagement across the value chain
- Offsets of non-avoided emissions

Siemens Gamesa is engaging its key suppliers to encourage them to reduce their emissions affecting the products and services they supply to us and putting in place long-term sustainable practices.

### Science Based Targets

The Science Based Targets Initiative (SBTi) is an initiative between the Carbon Disclosure Project, the United Nations Global Compact, World Resources Institute, the World Wildlife Fund for Nature and the We Mean Business Coalition. The SBTi encourages companies to set carbon emissions reduction targets at a level necessary to meet the 1.5/2°C compared with preindustrial temperatures set in the Paris Climate Agreement.

Siemens Gamesa committed to the SBTi as the first renewable energy manufacturer in September 2018 and by 2020 the SBTi verified that Siemens Gamesa's emission reduction strategy is aligned with what climate science estimates necessary to meet the 1.5°C trajectory.



Target verified  
By the SBTi in August 2020





Figure 1: Siemens Gamesa verified Science Based Targets

Siemens Gamesa has set the following targets for the next five years until 2025 to meet its net-zero goal by 2040:

Reduce scope 1 and scope 2 greenhouse gas emissions by 70% per MW installed (compared to 2017)

Increase the annual sourcing of renewable electricity to 100% (up from 58% in 2017)

Minimum 30% of Siemens Gamesa's suppliers by spend covering purchased goods and services and transportation and distribution will have science-based targets by 2025

The first two targets have been achieved since FY21 and the company is working closely with its supply chain to deliver the third target, where progress is well underway.

#### Strategic focus for our Scope 3 emissions

The management of sustainability risks, such as the scope 3 emission reduction, is a key point in the supply chain strategy of Siemens Gamesa.

In line with the verified Siemens Gamesa targets of the Science Based Targets initiative (SBTi), minimum 30% of

Siemens Gamesa's purchasing volume (PVO) shall have science-based targets until 2025, covering the categories of purchased goods and services as well as transportation and distribution.

Therefore, in order to achieve this target, Siemens Gamesa is preparing collaborative measures with selected tier 1 suppliers in order to develop a global downstream supply chain strategy and goal setting. The global end-to-end strategy with the selected tier 1 suppliers, will derive following measure plan that will be developed in detail:

- Understand focus areas and increase the awareness and transparency in the supply chain.
- Specific target settings for tier 1 suppliers as well as reward suppliers with clear commitments to SBTi emission reduction.
- Develop suppliers to increase the overall maturity downstream supply chain and in the industry.

# Inventory objectives

The business goals of the GHG report are to: Understand and track GHG emissions produced by Siemens Gamesa in an accurate, consistent and transparent way to understand the Company's environmental impacts. This report has been performed in accordance with the GHG Protocol Corporate Accounting and Reporting Standard and the ISO 14064-1:2018.

**Identify cost effective reduction opportunities and early voluntary actions.**

Report progress against the already established GHG targets, that are certified by the Science Based Targets initiative (SBTi) in order to achieve measurable reductions in Siemens Gamesa's environmental impact.

Publicly disclose this information in a transparent and verified manner and voluntarily participate in GHG reduction programs and certifications.



Analyse GHG impacts



Identify reduction opportunities



Set measurable targets



Public disclosure & voluntary participation



# 2. Organizational boundaries

## Organizational boundaries

In order to define the boundaries of the organization, the operational control approach is selected, since it best represents the organization's activities with respect to the work centres performing operational control of the activity and it is the approach that allows greater potential for reducing GHG emissions.

A total of 68 Siemens Gamesa locations are considered for this GHG emissions report. These locations were selected following our internal Environmental Monitoring procedure that ensures a total amount of energy consumption (Scope 1+2) monitored shall cover 95 % of the total energy consumption of Siemens Gamesa Renewable Energy. The table shows number of locations and type per region included.

Business Type	APAC	INDIA	LATAM	NAM	NEME	SE&A	Total
Construction site	2	1	1	1	2	2	<b>9</b>
Distribution center				3	1		<b>4</b>
Office	1	1	1		3	3	<b>9</b>
Pre-assembly					1		<b>1</b>
Production Blades	1	1		1	3	4	<b>10</b>
Production Electrical/Gearbox			1			10	<b>10</b>
Production Nacelle/Hub/Generator	2	1	1	1	2	1	<b>8</b>
Service Wind Farms	1	1	1	1	1	1	<b>6</b>
Substations		1					<b>1</b>
Training location					1		<b>1</b>
Warehouse			1	1	3	2	<b>7</b>
Work Shop						1	<b>1</b>
							<b>68</b>

# Emission sources by component

Siemens Gamesa produces a variety of components such as blades, gearboxes, electronic components and nacelles that shape the final wind turbine product. The figure below illustrates the fuel input in each production process

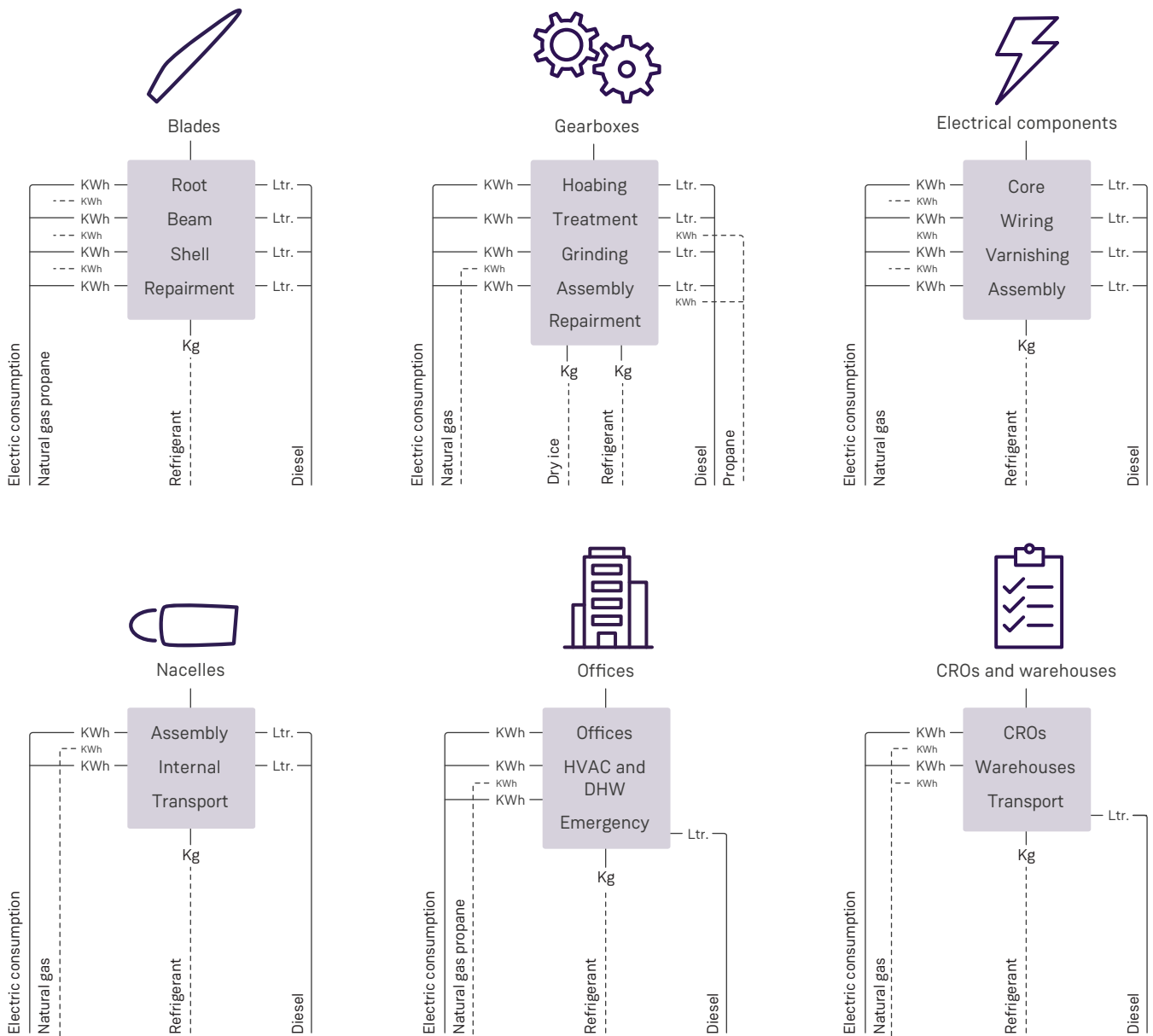


Figure 2: Overview of the emissions associated with the processes undertaken by Siemens Gamesa.

# 3. Reporting boundaries

Siemens Gamesa has since fiscal year 2017 reported its direct emissions (Scope 1) from sources it owns or controls and indirect emissions (Scope 2) resulting from the generation

of purchased electricity, heat, or steam in its annual non-financial report well as to those ESG indices requiring such information.

This report will account and report the six greenhouse gases covered by the Kyoto Protocol and in accordance to ISO 14064-1:2018.

Business Type	
Carbon Dioxide	CO2
Methane	CH4
Nitrous Oxide	N2O
Sulphur Hexafluoride	SF6
Perfluorocarbons	PFCs
Hydrofluorocarbons	HFCs

In addition, this report will account and report the six categories in accordance with the ISO 14064-1:2018 and the three scopes of GHG emissions separately in accordance with the requirements of GHG Protocol.

ISO Categories	Inclusion
Category 1: Direct GHG emissions and removals	✓
Category 2: Indirect GHG emissions from imported energy	✓
Category 3: Indirect GHG emissions from transportation	✓
Category 4: Indirect GHG emissions from products used by an organization	✓
Category 5: Indirect GHG emissions associated with the use of products from the organization	✓
Category 6: Indirect GHG emissions from other sources	✗

If a direct emission source is excluded, it may be justified in accordance with the principles expressed in the total coverage of ISO 14064-1:2018.

Scope 3 categories upstream & downstream	Inclusion
Transportation and distribution (upstream and downstream)	✓
Offshore Marine fuel	
Offshore jet fuel	
Service Marine fuel	
Service jet fuel	
Onshore Marine fuel	
Waste generated in operations	✓
Business travel	✓
Air Travel	
Rail Travel	
Car travel (new)	
Employee commuting	✓
Fuel- and Energy-Related Activities Not Included in Scope 1 or Scope 2	✓
Homeworking (new)	
Use of Sold Products	✓

**GHG Scopes:**

- GHG direct emissions (Scope 1) – Direct emissions that occur from sources that are owned or controlled by the Company.
- GHG indirect emissions (Scope 2) – Indirect emissions from the generation of purchased electricity consumed by the Company as well as district heating.
- Other GHG indirect emissions (Scope 3) – Indirect emissions that are a consequence of the activities of the Company but occur from sources not owned or controlled by the Company.

The GHG Protocol splits scope 3 emissions in 15 distinct categories that occur in the company’s value chain. It is the intention of Siemens Gamesa Renewable Energy to report scope 3 emission categories as reliable and transparent data becomes available and in future reports in accordance with the verified science-based target. The following Scope 3 emissions from both upstream and downstream sources were accounted for and included in this report:

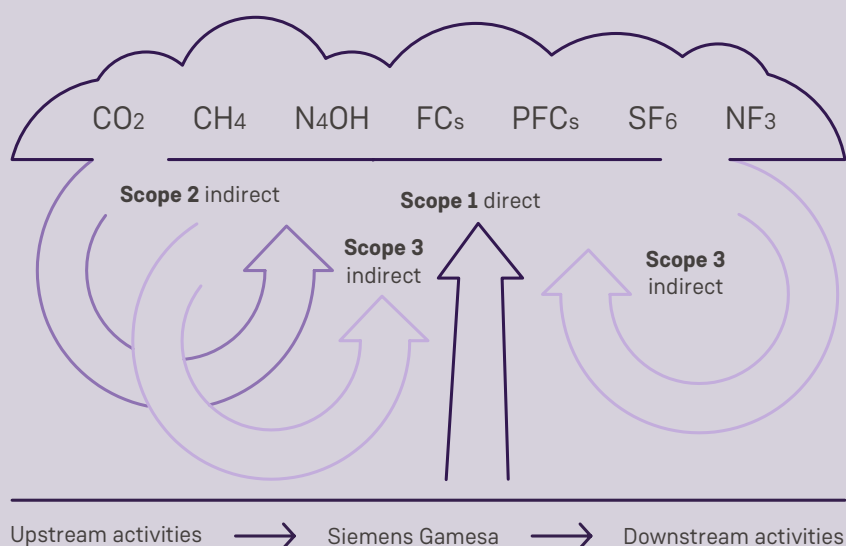
Scope 3 emissions categories such as “Business travel”, “waste generated in operations”, “Employee commuting”, “Use of sold products”, “Energy-related activities not included in Scope 1 or Scope 2” and “Upstream and downstream transportation and distribution” were quantified with a higher level of accuracy due to:

Data availability and reliability from suppliers and Siemens Gamesa facilities.

Potential emissions reductions that could be undertaken or influenced by the Company.

CO2 emissions from biomass combustion and other sources of carbon emissions from short-cycle are not used by Siemens Gamesa.

Together the three emissions scopes provide a comprehensive accounting framework for managing and reducing direct and indirect emissions. The following picture provides an overview of the direct and indirect emissions, the relationship between the scopes and the upstream and downstream sections.



**Scope 1**

Company facilities and vehicles.

**Scope 2**

Purchased electricity, steam, heating and cooling for own use.

**Scope 3**

Transport and distribution (upstream & downstream), waste generated in operations, business travel, employee commuting, energy-related activities not included in Scope 1 or Scope 2 and use of sold products.

Figure 3: Overview of scope 1, 2 and 3 emissions



# Direct and indirect emissions sources reported

## GHG direct emissions sources (Scope 1)

Energy direct emissions			
Point	Activity / Category	Generated GHG	Details
1.1	Natural gas combustion	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Boilers
1.2	Diesel combustion	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Power generator units and boilers
1.3	Propane combustion	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Production lines, forklifts
1.4	Combustion of diesel and gasoline for automotive	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Vehicles (pickups)
1.5	Refrigerants	PFCs, HFCs	Air conditioning
1.6	Dry ice	CO <sub>2</sub>	Dry ice

## GHG indirect emissions sources (Scope 2)

Energy indirect emissions			
Point	Activity / Category	Generated GHG	Details
2.1	Electricity consumption	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Power and lighting
2.2	District heating	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Heating

## Other GHG indirect emissions (Scope 3)

Other Indirect Emissions			
Point	Activity / Category	Generated GHG	Details
3.1	Transportation and distribution	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Marine and jet fuel
3.2	Waste generated in operations	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	All facilities listed in section 2.1
3.3	Business travel	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	Air, car and rail travel
3.4	Employee Commuting	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	All Siemens Gamesa Renewable Energy employees
3.5	Energy-related activities not included in Scope 1 or Scope 2	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O	All Siemens Gamesa Renewable Energy homeworking employees
3.6	Use of sold products	No GHG generation	Siemens Gamesa Renewable Energy sold products are powered with wind renewable energy



# Exclusions

## Reporting locations

The Siemens Gamesa Renewable Energy procedure PRO-15083 “Environmental Monitoring” describes the internal assessment and energy consumption threshold for locations that need to be included in the environmental monitoring in which Siemens Gamesa Renewable Energy has operational control.

A total of 68 facilities have being considered for the report following our internal Environmental Monitoring procedure that ensures a total amount of energy consumption (scope 1+2) monitored shall cover 95 % of the total energy consumption of Siemens Gamesa Renewable Energy. This corresponds approximately to an annual energy consumption above 2.000 GJ per location/site. For more details about these sites, please refer to section 2.1. Locations excluded from the inventory therefore do not exceed 5% of total issuance due to our internal cut off criteria. The exclusions have been estimated according to the following:

- Employees assigned to locations without data information is 635 employees.
- Ratio of t CO2e per employee: 0.82 t CO2e.
- Maximum GHG emissions not counted: 522 t CO2e.
- % Total GHG emissions not counted: 2,30%

## Other indirect emissions (Scope 3)

The following table express the upstream and downstream categories that are included and exclude of the report.

Scope 3 categories upstream and downstream	Inclusion
Purchased goods, services and capital goods	✗
Fuel- and energy-related activities not included in Scope 1 or Scope 2 Homeworking (new)	✓
Transportation and distribution (upstream and downstream) Offshore marine fuel Offshore jet fuel Service marine fuel Service jet fuel Onshore marine fuel	✓
Waste generated in operations	✓
Business travel Air Rail Car (new)	✓
Employee commuting	✓
Upstream leased assets	✗
Processing of Sold Products	n.a
Use of Sold Products	✓
End-of-Life Treatment of Sold Products	✗
Downstream Leased Assets	✗
Franchises	n.a
Investments	✗

Emissions excluded from upstream and downstream value chain are not accounted in this report due to lack of completeness and accuracy principles.



# 4. Inventory of emission and offsets

## Reporting period and general methodology

### Base year

The base year is Siemens Gamesa's fiscal year 2019, or the period between October 1, 2018 and September 30, 2019.

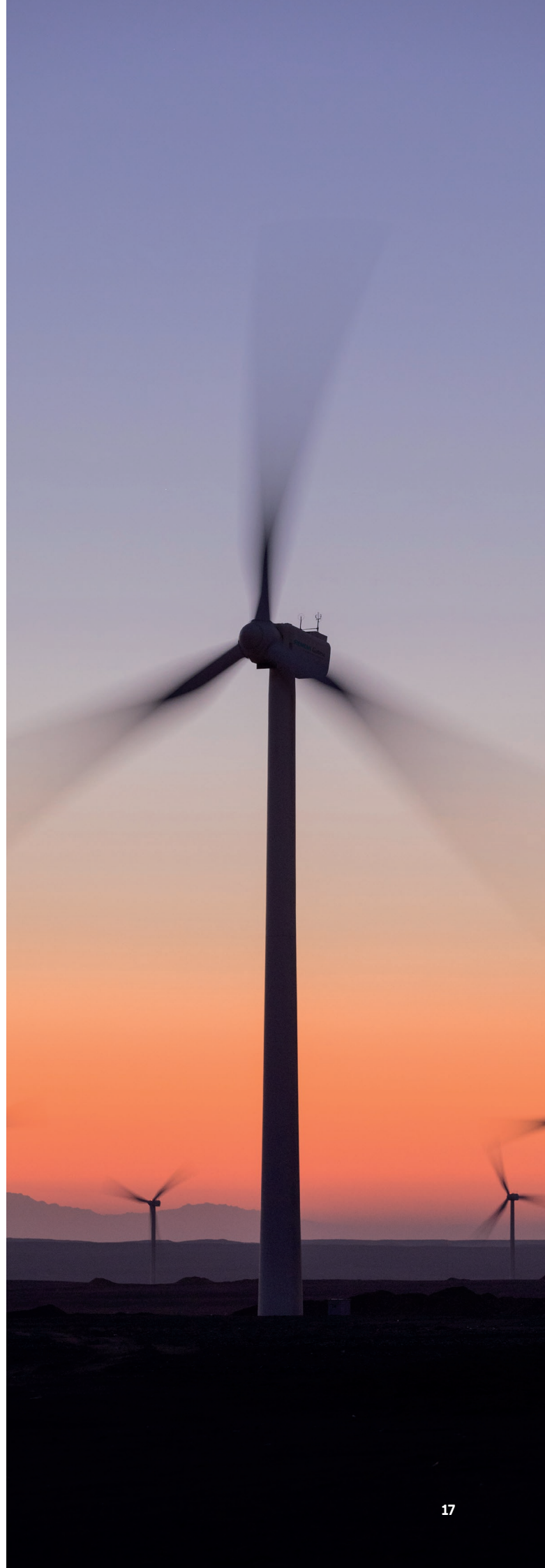
### Reporting period

This GHG emissions report reflects the situation of Siemens Gamesa's fiscal year 2022, or the period between October 1, 2021 and September 30, 2022.

### Methodology

Quantifying GHG emissions includes the data collection process and the application of documented emission factors. The quantification is based on two calculation-based methodologies, depending on the type of emission source:

- Emission sources in which there is a chemical transformation process (combustion, fixed or mobile) and indirect emissions from electricity consumption:  
Emissions of CO<sub>2</sub> (t CO<sub>2</sub>e) = Activity data x Emission factor
- Emission sources where there is no chemical transformation process (fugitive emissions), or in case the results in GHG are different than CO<sub>2</sub> are converted to tones of CO<sub>2</sub>e using the Global Warming Potential (GWP) values provided by the IPCC (e.g. tones of CH<sub>4</sub>):  
Emissions of CO<sub>2</sub> (t CO<sub>2</sub>e) = Activity data x Global warming potential



# Activity data, emissions factors and methodology per emission type

Siemens Gamesa collects environmental information through a software tool that tracks energy and fuel consumption, and waste generation of all locations. In this way the Company minimizes the uncertainty, enables to standardize the information and allows to compile the data in order to obtain accurate activity data to calculate global emissions. The activity data that is not tracked by the software is requested to suppliers and different internal areas such as spend reports.

Emission Type	Activity Data	Emission Factors	Methodology	Methodology Details
Direct emissions (Scope 1)	Energy consumption and Fuel volume	GHG Protocol <a href="#">Link</a>	Fuel volume and energy consumption converted to GJ x Emission Factors	Purchased volumes of commercial fuels such as natural gas, LPG, diesel, gasoline, heating oil and jet fuel were converted into Gigajoules (GJ) and multiplied by the published emission factors in the GHG Protocol.
Indirect emissions (Scope 2)	Electricity consumption	IEA <a href="#">Link</a>	Purchased electricity x Emission Factor District heating x emission factor	Purchased electricity in kWh multiplied by the published emission factors in the IEA 2016 report. When Energy Attribute Certificates are bought, zero emission is applied.
Other indirect emissions (Scope 3)				
Transportation and distribution (upstream and downstream)  Marine fuel (OF-ON-SE)  Jet fuel (OF-SE)	Fuel volume and Distance travelled	<a href="#">IMO-Link p.58</a> <a href="#">GHG Protocol-Link</a> DEFRA <a href="#">Link</a>	Fuel-based method Distance-based method	Purchased m3 district heating multiplied by the emissions factors published by the district heating provider.
Waste generated in operations	Amount of waste generated in operations (t)	DEFRA <a href="#">Link</a>	Waste-type- specific method in accordance with GHG Protocol	"Waste generated in operations" emissions were calculated using waste volumes at facility-level and emission factors from DEFRA.
Business travel Air, rail and car Travel	Supplier data -Distance Travelled (miles) Supplier data - Emissions Factors	DEFRA <a href="#">Link</a>	Supplier calculations - Distance-based method	Travel emissions for air, car and rail were calculated using activity data and emission factors provided by the supplier. The emission factors source is DEFRA.
Employee commuting	Siemens Gamesa Renewable Energy workforce Modal split per representing countries Distances travelled per country (km)	DEFRA <a href="#">Link</a>	Distance-based method in accordance with GHG Protocol	Employee commuting emissions were calculated using Siemens Gamesa Renewable Energy workforce number per country, multiplied by the average transport commute distance by country and the modal split multiplied by the emissions factor DEFRA.
Home working (new)	Siemens Gamesa Renewable Energy workforce	DEFRA <a href="#">Link</a>	Work-from-home days per employee	Employee Home working emissions were calculated using Siemens Gamesa Renewable Energy workforce number per country, multiplied by homeworking days per employee and by the emissions factor DEFRA.
Use of Sold Products	Energy consumption in sold products (kWh)	IEA <a href="#">Link</a>	Energy consumption	Energy consumption multiplied by the published emission factors from the IEA.

# GHG emissions inventory quantification by scope

The following table shows the quantification of GHG emissions related to scope 1, scope 2 and scope 3 where data has been found available.

Indicator	Fiscal Year			
	2019 (Base year) t CO2e	Fiscal Year 2020 t CO2e	Fiscal Year 2021 t CO2e	Fiscal Year 2022t CO2e
Total Direct GHG emissions (Scope 1)	26.437	26.052	26.788	20.597 <sup>4</sup>
Carbon dioxide (CO2)	26.389	26.009	23.834	19.658
Methane (CH4)	0,41	0,43	0,43	0,30
Nitrous oxide (N2O)	0,14	0,12	0,14	0,10
Total Indirect GHG emissions (Scope 2)	44.262	1.857 <sup>1</sup>	2.017	2.116
Total Other indirect emissions (Scope 3)	71.825	516.853	856.082	780.722
Business travel total	9.739	5.101	2.777	17.917 <sup>5</sup>
Disposal of waste generated in operations	3.061	10.666 <sup>2</sup>	6.376	5.694
Employee commuting	4.841	3.041	3.077	3.211
Home working (new)				9.293
Transport and Distribution	54.183	498.045 <sup>3</sup>	843.852 <sup>3</sup>	744.510
Use of sold products	0	0	0	0
<b>TOTAL GHG EMISSIONS (Scope 1, 2 and 3)</b>	<b>142.523</b>	<b>544.762</b>	<b>884.887</b>	<b>803.435</b>

<sup>1</sup> Decrease in Scope 2 emissions is due to the purchase of Energy Attribute Certificates (EACs) which ensure that the origin of the electricity is from renewable sources.

<sup>2</sup> Increase in the amount of waste emissions is due to the increase of waste tones reported compared with FY19.

<sup>3</sup> Increased in transport and distribution category between FY19-21 is due to the addition of jet and marine fuel data for construction and service activities.

<sup>4</sup> Decreased in Scope 1 emissions is due to some factories (ex. Fort Madison, Hutchinson and Hull) being temporarily closed, and moreover this FY we have had fewer EPC contracts and production as well as benefits of efficiency measures.

<sup>5</sup> Increased in business travel emissions is due to the end of COVID-19 restrictions and also, this year we have included the data reported from Concur, our global booking tool

# Consolidated statement of GHG emissions FY22

In the table below, GHG emissions quantification breakdown by business unit and category in conformity requirements of standard ISO 14064-1:2018.

Direct GHG Emissions	Fiscal Year 2021 t CO2e	Fiscal Year 2022 t CO2e
Category 1: Direct GHG emissions and removals	26.788	20.597
<b>Onshore</b>	<b>15.609</b>	<b>11.573</b>
Gasoline	628	180
Diesel	10.357	8.342
Natural Gas	3.270	1.717
LPG	1.125	1.017
Heating fuel oil	0	7
Refrigerants	230	310
<b>Offshore</b>	<b>6.112</b>	<b>5.519</b>
Gasoline	20	0
Diesel	1.710	789
Natural Gas	4.066	4.252
LPG	176	158
Heating fuel oil	101	260
Refrigerants	39	60
<b>Service</b>	<b>2.118</b>	<b>1.294</b>
Gasoline	147	167
Diesel	1.594	839
Natural Gas	288	220
LPG	39	20
Heating fuel oil	37	45
Refrigerants	13	3
<b>Corporate</b>	<b>2.949</b>	<b>2.210</b>
Gasoline	0	0
Diesel	104	120
Natural Gas	914	898
LPG	434	533
Heating fuel oil	187	129
Refrigerants	1.310	530

Indirect GHG Emissions	Fiscal Year 2021 t CO2e	Fiscal Year 2022 t CO2e
Category 2: Indirect GHG emissions from imported energy	2017	2116
<b>Onshore</b>	<b>241</b>	<b>228</b>
Electricity from non-renewable sources	0	0
District heating	241	228
<b>Offshore</b>	<b>1775</b>	<b>1888</b>
Electricity from non-renewable sources	0	0
District heating	1775	1888
<b>Service</b>	<b>0</b>	<b>0</b>
Electricity from non-renewable sources	0	0
District heating	0	0
Category 3: Indirect GHG emissions from transportation	849.706	765.512
<b>Transportation and distribution (Upstream and Downstream)</b>	<b>843.852</b>	<b>744.510</b>
Onshore (deep sea component transport)	726.785	669.181
Offshore (installation vessels and helicopters)	19.804	32.310
Service (service vessels and helicopters)	97.262	43.019
<b>Business Travel (air, car and rail)</b>	<b>2.777</b>	<b>17.791</b>
Air	2.739	16.539
Car		1.228
Rail	37	24
<b>Employee Commuting</b>	<b>3.077</b>	<b>3.211</b>
Category 4: Indirect GHG emissions from products used by an organization	6.376	15.210
<b>Waste generation in operations</b>	<b>6.376</b>	<b>5.917</b>
<b>Homeworking</b>		<b>9.293</b>
Category 5: Indirect GHG emissions associated with the use of products from the organization	0	0
<b>Use of sold products</b>	<b>0</b>	<b>0</b>

# Offsetting

Siemens Gamesa has been investing in Clean Development Mechanism (CDM) projects and sink projects involving reforestation actions that aim to reduce future emissions to balance its carbon footprint.

The wind power project Bii Nee Stipa in Oaxaca, Mexico, was registered as a Clean Development Mechanism (CDM) under the United Nations Framework Convention for Climate Change (UNFCCC). This project generates Certified Emission Reductions (CER) for Siemens Gamesa that are used to offset the non- avoided emissions. Siemens Gamesa has again this year chosen to cancel CERs equivalent to its scope 1 and 2 emissions.

Siemens Gamesa is continuously working to decrease the need for offsetting towards the achievement of the net-zero emissions target by 2040.



22.713 CERs  
cancelled in FY22

Figure 4 Wind power project in Bii Nee Stipa



# Uncertainty in GHG emissions inventory

Uncertainty in the emissions inventory is a combination of the uncertainties in the emission factors and in the corresponding activity data.

## Emission Factors

The emission factors, calorific data value and oxidation factors used are considered null uncertain as they come from official sources and they are beyond the control of the organization.

## Activity Data

Direct emissions (Scope 1) and Indirect emissions (Scope 2):

Data for Scope 1 and 2 is obtained from commercial invoices. As activity data from commercial operation is governed by legal procedure is not necessary to calculate the uncertainty.

Other indirect emissions (Scope 3): Uncertainties in the accounting of the Scope 3 emissions are related to generic assumptions made.

Emission Type	Uncertainty description
Transport and Distribution	Emission subcategories such as marine fuel in Onshore, Offshore and Service for either component transport or construction services, as well as jet fuel in Offshore and Service are included as data becomes available following the ISO and GHG Accounting and Reporting Principles.
Waste generated in operations	Lack of emissions factors for some waste types and waste treatment methods in the DEFRA source. Allocation of emissions factors for waste types and waste treatment methods that do not have value in DEFRA emissions source.
Business travel	Concur air, car and rail emissions were provided for the FY22 period. Concur is our global booking tool, the data is the total, independent of which travel agency handled the bookings. It is never cover 100% as some bookings happen outside Concur.
Employee commuting	Employee commuting uses average distances travelled by country and generic modal split (public transport and private vehicle) in big cities which are then multiplied by DEFRA emissions factors. Lack of certainty in emissions calculations due to lack of data from employees regarding distance commuted.
Homeworking	As a result of "Smart Working Policy", work from home percentages have been taken into consideration in FY22.



# Reducing uncertainty

Uncertainties in this GHG inventory arise mainly from Scope 3 emissions. As a result, Siemens Gamesa is engaging its supply chain towards a complete decarbonization in line with its Scope 3 science-based target. The company is on the way to implement a procurement approach, that will give to suppliers an opportunity to present their environmental efforts translated in CO2 reductions. The intention of Siemens Gamesa is to improve the future inventory quality and increase the level of confidence users have in the inventory results. For more details see section 1.1 Strategic focus for our Scope 3 emissions.

**COVID -19 has been impacting our employees commuting category from scope 3 since4 fiscal year 20.**

Business travel activity was carried out in accordance with national and international regulations.

Consequently, business travel emissions were significantly increased due to the end of COVID-19 travel restrictions as a result of the recovery of the pandemic.

In addition to the already mentioned, Siemens Gamesa will follow concrete steps to reduce the uncertainty in the Scope 3 categories reported in this inventory:

**Other indirect emissions (Scope 3):**

Emission Type	Reduce Uncertainty Actions
Transport and Distribution	Keep tracking additional sources of GHG emissions within the Transport and Distribution (upstream and downstream) category, and report emissions based on the ISO and GHG Accounting and Reporting Principles.
Waste generated in operations	Siemens Gamesa has been improving the reporting of waste generation, and the data quality and reliability. Siemens Gamesa will continue to encourage facilities and projects to improve the reporting and the classification of waste destination; recovery, recycling and reuse.
Business travel Air Travel Rail Travel  Car Travel	Siemens Gamesa has been improving the reporting of air and rail, and has obtained the information of FY22 car emissions, through Concur.  Concur is our global booking tool, the data provided is independent of which travel agency handled the bookings, representing the total of the business travels. It is never covered 100% as some bookings happen outside Concur
Employee commuting	For FY23 Siemens Gamesa will consider applying an internal survey to calculate Siemens Gamesa Renewable Energy employees commuting data. Communicate to employees the efforts that Siemens Gamesa Renewable Energy is making towards the development of a GHG inventory and the net-zero emissions target.
Homeworking	A new "Smart Working" procedure will be carried out in FY23.





# 5. Performance tracking & reductions project

## Performance tracking

Since fiscal year 2019, Siemens Gamesa committed to report its companywide GHG emissions. The GHG emissions report of FY19 represents the baseline year for GHG emissions reporting.

The next section will present trends and a comparative analysis between FY19 baseline and current fiscal year data.

**Relevant trends to monitor are:**

- Emissions per MW installed capacity:  
In Fiscal Year 2022, 9.810 MW of capacity was installed on the market. This means that the emissions per MW installed equals:  $22.713 \text{ t CO}_2\text{e} / 9.810 \text{ MW installed} = 2,32 \text{ t CO}_2\text{e per MW installed}$
- Emissions per employee:  
End of Fiscal Year 2022, 27.604 persons were directly employed by Siemens Gamesa Renewable Energy. This means that the emissions per employee equals:  $22.713 \text{ t CO}_2\text{e} / 27.604 \text{ employees} = 0,82 \text{ t CO}_2\text{e per employee}$

Going forward, Siemens Gamesa will monitor and compare its CO<sub>2</sub>e. trends with this baseline year to follow the progress towards the achievement of its SBT in 2025 and net-zero carbon in 2040.

Scope 1 & Scope 2 emissions [absolute]

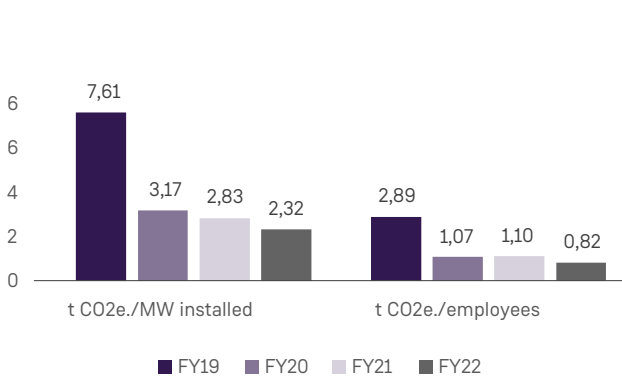


Figure 5 Scope 1 & Scope 2 intensity emissions FY19-FY22

Scope 1 & Scope 2 emissions [intensity]

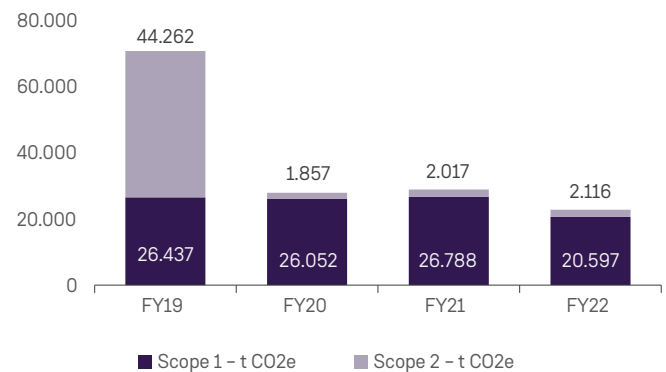


Figure 6 Scope 1 & Scope 2 absolute emissions FY19-FY22

## Reduction projects

Siemens Gamesa continues to make reductions and implement energy efficiency and waste reduction measures related to their operations across production facilities and project sites to fulfill its emissions targets. Energy and waste improvement projects are being monitored through energy improvement actions plans.

In FY22, several improvement actions were proposed and with which energy savings of 4.318 GJ were achieved, as well as savings of 63.695 t in waste management.

The following actions are examples of initiatives that have been implemented at different plants and offices during the reporting period. The below actions aimed at reducing consumption and increasing energy efficiency and waste reduction cover 80% of the total reductions projects in FY22:

### Energy

Country	Location	Initiative	Savings (GJ)	t CO2e Saved
GE	NEME	Recycled IT equipment	1.250	91
DK	Aalborg	Replacement of old ventilation	1.373	79
US	Fort Madison	Reduce Quantity of LPG Forklifts	578	70
IN	Mamandur	Introduction of VFD in STP Blower Motor	85	6
SP	Lerma	Changes to building use resulting in reductions in equipment, heating and lights	21	1

### Waste

Country	Location	Initiative	Savings (GJ)	t CO2e Saved
DK	Aalborg	Auction - Selling material instead of disposing as waste	63.260	562
DK	Aalborg	Packaging reduction in warehouse goods	52	0,500
SEA	SEA	Reuse of sewage water in local farms	178	0,048
SP	Lerma	Reduction of the volume of waste wash water	135	0,037
SP	Sigëiro	Reduction of the volume of waste wash water	17	0,005

# Conclusion

Siemens Gamesa recognizes that climate change is a global issue requiring urgent and collective action and is committed to contributing to the global economy's decarbonization. We believe that companies can play a pioneering role in the fight against climate change.

The Company has pledged its commitment to the Paris Pledge for Action, the Science Based Target Initiative and expanded its ambitions by incorporating a long term target of achieving net-zero emissions by 2040. These commitments demonstrate Siemens Gamesa's agreement to contribute to the accomplishment of the objectives established by the United Nations Sustainable Development Goals.

Total scope 1 and 2 emissions of the Company in FY22:

22.713 t CO<sub>2</sub>e

Total scope 3 emissions of the Company in FY22:

780.722 t CO<sub>2</sub>e

Total energy savings achieved in FY22:

4.318 GJ

Total waste savings achieved in FY22:

63.695 t

Total CERs cancelled in FY22

22.713

The company will work continuously to reduce its emissions towards the achievement of the net-zero emissions target through the following emission reduction levers:

- Energy reductions and energy efficiency measures
- Electricity supply from renewable energy-based sources  
Green mobility plan to reduce fleet emissions
- Employee awareness campaigns and idea management as a way to capture and implement employee ideas related to sustainability
- Supplier engagement across the value chain
- Offset of non-avoided emissions through compensation projects

Siemens Gamesa is working on strengthening the accuracy and reliability of the data through the HSE reporting software by improving the methods to collect and track data such as energy consumption, fuel consumption and waste generation for all locations of the Company. This software minimizes the uncertainty, standardizes the information flow and compiles analytics from the data to calculate global emissions related to the organization.

Siemens Gamesa continues reporting the six categories described in the ISO 14064-1:2018. In addition, the company continues reporting the three scopes in accordance with the GHG Protocol Corporate Accounting and Reporting Standard, and five GHG inventory categories of the Scope 3 upstream and downstream value chain. Siemens Gamesa has currently established a new strategic program in light of its SBT for Scope 3 to engage more with key suppliers to encourage them to reduce their Scope 1 and Scope 2 emissions affecting the products and services they supply us. This program is the

basis for the development of company-wide program to reduce emission in the company's value chain.

#### **Overall, the GHG emissions report supports in:**

- Obtaining an improved overview of Siemens Gamesa's direct and indirect GHG emissions and supporting the decision-making process towards the reduction of GHG impacts.
- Identify cost effective reduction opportunities and early voluntary actions.
- Setting ambitious GHG reduction targets as well as effectively measuring and reporting progress towards these targets.
- Publicly disclose this information in a transparent and verified manner and voluntarily participate in GHG reduction programs and certifications

**Siemens Gamesa Renewable Energy S.A.**

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