



Position Green •

How energy companies should account for their emissions throughout the value chain

Executive summary

The energy sector accounts for more than 75% of global greenhouse gas emissions, with electricity and heat production representing the largest share. Delivering emissions reductions consistent with the Paris Agreement therefore depends on rapid decarbonization across the electricity value chain.

Robust carbon accounting is the starting point: structured, reliable emissions data enables organizations to identify hotspots, prioritize effective actions, allocate capital with confidence, and meet growing expectations for transparent, auditable reporting.

This white paper provides practical guidance for how key actors in the electricity value chain should account for greenhouse gas emissions in Morescope, aligned with the GHG Protocol.

It clarifies how fuel producers, power generators, utilities/energy distributors, and energy consumers should classify and report emissions across Scopes 1, 2, and 3, with a focus on the most material sources for each role (e.g., combustion, fugitive methane, SF₆, upstream fuel supply, and transmission and distribution losses). The aim is to improve consistency across organizations and reduce downstream reporting risk for customers who depend on supplier emissions data.

The paper also highlights why carbon accounting is strategically critical for energy companies. Because nearly all sectors depend on low-emission electricity to decarbonize, energy companies sit at the core of the transition while energy demand continues to grow.

This creates a market dynamic where demand for low-emission energy often outpaces supply, making decarbonization closely linked to scaling renewables and reducing CO₂ intensity per unit of energy delivered. In some markets, including Norway, building the renewable infrastructure required for economy-wide decarbonization can temporarily increase absolute emissions during construction, reinforcing the need for transparent accounting that tracks both short-term impacts and long-term reductions enabled by investment.

Finally, the white paper frames carbon accounting as a foundation for action. Decarbonization planning is most effective when emissions inventories are based on activity data that can be linked to assets and operational levers enabling credible scenarios, prioritized initiatives, and measurable progress over time.

Introduction

As the world accelerates its efforts to combat climate change, energy companies face increasing pressure to reduce their carbon footprint and embrace sustainable practices.

While many have made strides in addressing emissions from their own operations, a critical area often overlooked is the full value chain, encompassing everything from extraction and production to transportation and consumption. Accurately accounting for emissions throughout this entire process is essential not only for meeting regulatory requirements but also for enhancing transparency and building long-term environmental responsibility.

This guidance provides detailed information on accounting greenhouse gas (GHG) emissions related to electricity production throughout the value chain within the Morescope tool. The goal is to assist key players in the electricity value chain – fuel producers, power generators, energy distributors, and end consumers – in identifying relevant emissions within their inventories and reporting them correctly in accordance with the [GHG Protocol](#).

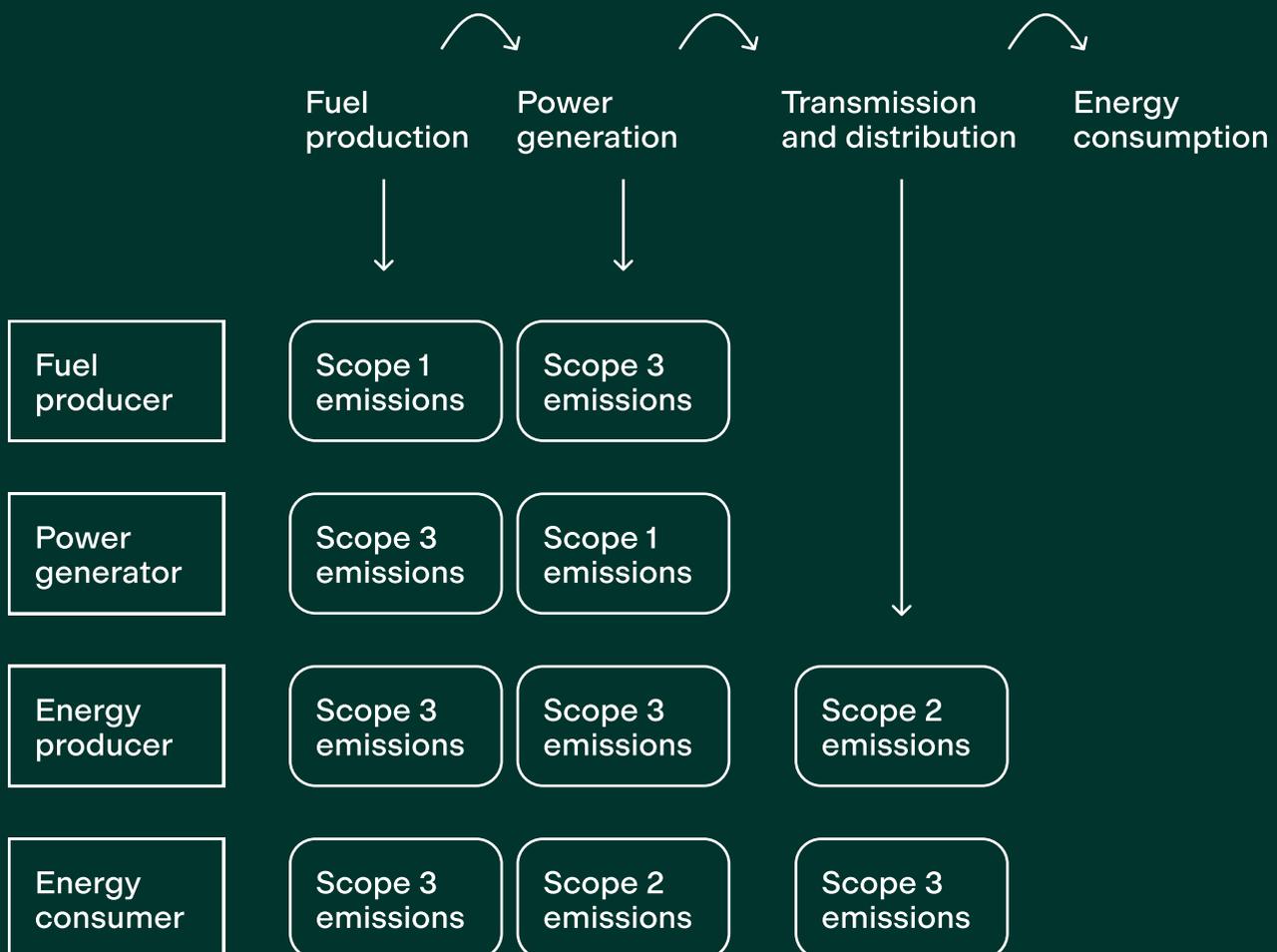


Figure B.1. Accounting for electricity emissions throughout the supply system (adapted from GHG Protocol Scope 2 Guidance, Appendix B).

1. Fuel Producers

Fuel producers are entities involved in extracting, refining, and supplying fuel, with direct emissions originating from fuel production processes, and indirect emissions related to use of sold fuels in power generation.

Under the GHG Protocol, fuel producers shall report direct emissions from fuel production processes under Scope 1 and indirect emissions from sold fuel combustion under Scope 3. Fuel producers shall also report emissions from purchased electricity and other energy used in their own operations under Scope 2.

Scope 1 - Mobile combustion

Fuel producers shall report fuel combustion emissions from vehicles owned or controlled by the organization, such as diesel trucks used for transporting fuels.

The screenshot shows the '1.1 Mobile combustion' section in the Morescope interface. It features a table for 'Emission sources (1)'. The first entry is 'Emission source 1', which is currently expanded to show input details. The 'Input type' is set to 'Distance'. The 'Mode of transport' search box contains 'truck', with a dropdown menu showing 'Refrigerated truck' and 'Truck'. The 'Input' is set to 'Monthly'. Below these fields is a 3x4 grid of monthly input boxes for January through December. The interface also includes a 'Name' field and an 'Emissions' field at the top of the table.

Mobile combustion covers fuel use in vehicles and mobile equipment owned or controlled by the fuel producer. In Morescope, users report emissions by selecting a vehicle type (e.g. articulated truck, tanker truck, service vehicle) and entering either fuel consumption or distance travelled, depending on data availability.

Typical examples include:

- articulated trucks transporting crude oil or refined fuels between company-operated sites,
- tanker trucks owned or operated by the fuel producer,
- service and maintenance vehicles operating at extraction or refining sites.

Fuel types commonly reported include diesel, petrol, biodiesel (e.g. HVO), and other transport fuels available in Morescope.

Only vehicles owned or controlled by the fuel producer should be included. Transport performed by third-party logistics providers should not be reported under Scope 1.

Stationary combustion

Fuel producers shall report emissions from on-site fuel combustion, such as burning natural gas or other fuels for heating, energy generation, or process operations in stationary equipment at refineries.

1.2 Stationary combustion ⓘ

Emission sources (1)

Name ↕ Emissions ↕

Emission source1 ▾

Input type: Fuel

Fuel type:

Input:

January

May

September

Aviation spirit

Aviation turbine fuel

Biodiesel HVO

Biodiesel ME (from tallow)

Biodiesel ME (from used cooking oil)

Any parameter

Emissions in CO2e

Input CO2-equivalents

March

April

July

August

November

December

Stationary combustion covers fuel use in fixed equipment at fuel production facilities. In Morescope, users report emissions by selecting the fuel type and entering the amount of fuel consumed in stationary equipment.

Typical examples include:

- natural gas or fuel oil used in boilers and heaters at refineries,
- fuels burned to generate heat or power for on-site operations,
- backup generators and other stationary engines.

Fuel types may include natural gas, fuel oil, diesel, refinery gas, biomass, or other stationary fuels relevant to extraction or refining processes.

Fugitive emissions

Fuel producers shall report fugitive emissions, including methane leaks or other greenhouse gases unintentionally released during fuel extraction, processing, storage, or pipeline and distribution infrastructure — such as from coal mines or natural gas pipelines.

1.3 Fugitive emissions ⓘ

Emission sources (1)

Name ↕ Emissions ↕

Emission source1 ▾

Gas type:

R-gases

CFC-gases

Halons

HCFC-gases

HCFE-gases

Emissions in CO2e

Input CO2-equivalents

Custom emission factors

Any parameter from library

February

March

April

June

July

August

October

November

December

Fugitive emissions include unintentional releases of greenhouse gases from these activities. In Morescope, users report fugitive emissions by selecting the emission source type and entering estimated emission quantities.

Typical sources include:

- methane leaks from oil and gas wells, pipelines, valves, or storage tanks,
- emissions from coal mining activities.

Fugitive emissions are reported separately from combustion emissions and are not linked to vehicle, fuel, or distance inputs.

Process emissions

Fuel producers shall report process emissions, including CO₂ and other gases released during chemical processes, such as hydrogen production or refining, as part of fuel production.

1.4 Process emissions ⓘ

Emission sources (1)

Name ⓘ Emissions ⓘ

Emission source1 ⓘ

Select process Select Process type Select

Input Monthly

January	February	March	April
May	June	July	August
September	October	November	December

Process emissions arise from chemical or physical processes that release greenhouse gases as an inherent part of fuel production, independent of energy use.

In Morescope, users report process emissions by selecting the process type and entering the relevant production or emission data.(e.g. hydrogen production volume, measured CO₂ emissions)

Typical examples include:

- CO₂ released during hydrogen production,
- emissions from refining reactions or chemical conversion processes.

If emissions result from burning fuel to power a process, they should be reported under stationary combustion rather than process emissions.

Scope 1 - Mobile combustion

Use of sold products

Fuel producers shall account for emissions resulting from the combustion of fuels sold to customers. Since these emissions occur after the fuels leave the producer's control, they are classified as indirect emissions and shall be reported under Scope 3, Category 11 – Use of Sold Products.



3.11 Use of sold products ⓘ

Emission sources (1)

Name ⓘ Emissions ⓘ

Emission source 1 ⓘ

Input type: Fuel combustion

Fuel type:

Input:

January

May

September

Aviation spirit

Aviation turbine fuel

Biodiesel HVO

Biodiesel ME (from tallow)

Biodiesel ME (from used cooking oil)

+ Create new emission factor

March

April

July

August

November

December

This category covers downstream emissions from the combustion of fuels sold by the fuel producer. In Morescope, users report emissions by entering the quantity of fuel sold by fuel type (e.g. coal, natural gas, fuel oil).

Emissions are calculated using standard combustion emission factors representing the use of fuels by customers, such as power generators or other end users. These emissions occur outside the operational control of the fuel producer and are therefore reported under Scope 3.

Summarized GHG emissions accounting requirements for Fuel Producers

Scope	Category	Emission Source	Explanation
Scope 1	Mobile combustion	Emissions from owned transportation (e.g., diesel trucks)	Emissions from vehicles owned by the producer, used for transportation of materials like crude oil or fuel.
Scope 1	Stationary combustion	Direct emissions from on-site fuel combustion	Emissions resulting from the burning of fuels to generate heat or power for the producer's own facilities (e.g., refineries).



Scope	Category	Emission Source	Explanation
Scope 1	Fugitive emissions	Fugitive emissions (e.g., methane leaks)	Emissions from unintentional releases of gases, such as methane leaks during fuel extraction or storage.
Scope 1	Process emissions	Process emissions (e.g., CO ₂ from hydrogen production)	Emissions from chemical reactions during fuel production, such as CO ₂ released in hydrogen manufacturing.
Scope 3	Use of sold products	Emissions from combustion of sold fuels by customers	Indirect emissions from the combustion of sold fuels in electricity generation by power producers or other customers.

NOTE: Fuel producers shall report emissions from purchased electricity used in their own operations under Scope 2. Emissions from the use of sold fuels are reported separately under Scope 3, Category 11 – Use of Sold Products.

2. Power generators

Power generators play a crucial role in the electricity supply chain, converting primary energy sources (coal, natural gas, biomass, nuclear fuel, renewable sources) into electricity. This process generates greenhouse gas (GHG) emissions, which shall be accurately identified and reported in accordance with the GHG Protocol.

Under the GHG Protocol, power generators shall report direct emissions from on-site fuel combustion under Scope 1, indirect emissions from purchased electricity under Scope 2, and indirect upstream emissions related to fuel supply under Scope 3.



Scope 1

Mobile combustion

Power generators shall report emissions from fuel combustion in vehicles and mobile equipment owned or controlled by the organization, where relevant. This may include emissions from vehicles and mobile equipment used for plant operation, maintenance, and fuel handling (e.g. service vehicles, maintenance trucks, mobile machinery). These emissions are typically minor compared to stationary combustion but shall be included where material.

The screenshot shows the '1.1 Mobile combustion' section in the Morescope software. It features a table for 'Emission sources (1)'. The first entry is 'Emission source 1'. The form includes fields for 'Input type' (set to 'Distance'), 'Mode of transport' (set to 'Truck'), and 'Type' (with a dropdown menu open showing options: 'Articulated truck', 'Heavy-duty truck', 'Light-duty truck', 'Medium-duty truck', and 'Rigid truck'). There are also 'Input' and 'Monthly' dropdowns, and a grid of 12 monthly input fields from January to December.

Mobile combustion covers fuel use in vehicles and mobile equipment owned or controlled by the power generator. In Morescope, users report emissions by selecting a vehicle type (e.g. articulated truck, service vehicle) and entering either fuel consumption or distance travelled, depending on data availability.

Typical examples include:

- articulated trucks used for fuel or equipment transport,
- service and maintenance vehicles operating within or between power plants,
- mobile machinery used for plant operations.

Fuel types commonly reported include diesel, petrol, biodiesel (e.g. HVO), and other applicable transport fuels.

Only vehicles owned or controlled by the organization should be included. Emissions from third-party logistics providers should not be reported under Scope 1.

Stationary combustion

Power generators shall report Scope 1 emissions from on-site stationary fuel combustion for electricity generation. This includes CO₂, CH₄, and N₂O emissions resulting from the combustion of coal, natural gas, oil, or biomass in power generation units.



1.2 Stationary combustion

Emission sources (1)

The screenshot shows the 'Emission sources (1)' section of the Morescope interface. It features a search bar for 'Name' and 'Emissions'. Below this, there is a form for 'Emission source 1'. The form includes a dropdown for 'Input type' (set to 'Fuel'), a search bar for 'Fuel type', and a grid of input fields for months from January to December. A dropdown menu is open under 'Fuel type', listing options such as 'Aviation spirit', 'Aviation turbine fuel', 'Biodiesel HVO', 'Biodiesel ME (from tallow)', 'Biodiesel ME (from used cooking oil)', 'Any parameter', and 'Emissions in CO2e Input CO2-equivalents'. There is also a 'Monthly' dropdown and a 'Custom emission factors' button.

Stationary combustion covers fuel use in fixed equipment used for electricity generation. In Morescope, users report emissions by selecting the fuel type and entering the amount of fuel consumed in stationary equipment, such as boilers, turbines, engines, and auxiliary generators at power plants.

Typical examples include:

- coal, natural gas, oil, or biomass combusted for electricity generation,
- fuels burned in auxiliary boilers or backup generators supporting electricity generation.

Fuel types may include natural gas, coal, fuel oil, biomass, and other stationary fuels relevant to the generation technology.

For nuclear power generation, direct combustion emissions are typically zero; however, auxiliary fuel use and fugitive emissions shall still be reported where applicable.

Fugitive emissions

Power generators shall report fugitive emissions from unintentional releases of greenhouse gases during on-site fuel handling, storage, and operation of power generation facilities. This includes methane leaks from natural gas infrastructure and emissions of SF₆ from electrical switchgear and circuit breakers.

1.3 Fugitive emissions

Emission sources (1)

The screenshot shows the 'Emission sources (1)' section of the Morescope interface for fugitive emissions. It features a search bar for 'Name' and 'Emissions'. Below this, there is a form for 'Emission source 1'. The form includes a search bar for 'Gas type' and a dropdown menu with options like 'R-gases', 'CFC-gases', 'Halons', 'HCFC-gases', and 'HFC-gases'. There is also a 'Custom emission factors' button and a 'Any parameter from library' button. A grid of input fields for months from February to December is visible.

Fugitive emissions include unintentional releases of greenhouse gases during fuel handling, storage, and operation of power generation facilities. In Morescope, users report fugitive emissions by selecting the emission source type (e.g. methane leaks, SF₆ from switchgear) and entering the estimated emission quantities.

Typical sources include:

- methane leaks from natural gas pipelines or valves,
- SF₆ emissions from electrical switchgear and circuit breakers.

Fugitive emissions are reported separately from combustion emissions and are not linked to fuel or distance inputs.

Scope 3

Upstream emissions from fuel supply (Category 3 – Fuel- and energy-related activities, Activity A)

Power generators shall account for emissions associated with the extraction, processing, refining, and transportation of fuels used for electricity generation. These emissions fall under Scope 3, Category 3 – Fuel- and energy-related activities (Activity A: Upstream emissions of purchased fuels).

3.3 Fuel and energy related emissions ⓘ

Emission sources (1)

Name ⓘ Emissions ⓘ

Emission source1 ⓘ ⚠

Type: Purchased fuel WTT

Fuel type: Avgas 100LL, Aviation spirit, Aviation turbine fuel, Avtur (renewable), BO diesel, + Create new emission factor

Input: Monthly

January, February, March, April, May, June, July, August, September, October, November, December

Upstream emissions from fuel supply cover well-to-tank emissions associated with the fuels purchased and used for electricity generation. In Morescope, users report upstream emissions by selecting the fuel type and entering the amount of fuel purchased or consumed.

These emissions represent indirect emissions from fuel extraction, processing, refining, and transportation and are calculated using fuel-specific well-to-tank emission factors. This category applies to fuels used in stationary combustion and does not include emissions from electricity generation itself, which are reported under Scope 1.



Scope	Category	Emission Source	Explanation
Scope 1	Mobile combustion	Direct emissions from fuel combustion in mobile sources	Emissions from fuel combustion in vehicles and mobile equipment owned or controlled by the power generator, such as service vehicles, maintenance trucks, and mobile machinery used for plant operations.
Scope 1	Stationary combustion	Direct emissions from fuel combustion	Emissions from burning fossil fuels to generate electricity.
Scope 1	Fugitive emissions	Gas leaks from fuel handling	Methane leaks from natural gas infrastructure, SF ₆ emissions from switchgear.
Scope 3	Fuel- and energy-related activities (Category 3)	Upstream emissions of purchased fuels (well-to-tank emissions)	Emissions from extraction, processing, refining, and transportation of fuels

NOTE: Power generators shall report emissions from purchased electricity used for auxiliary operations under Scope 2, where applicable. Emissions from electricity generation itself are reported under Scope 1.



3. Utility/energy distributor

Utility and energy distributors are entities responsible for the transmission and distribution of electricity from power generators to end users. While they typically do not generate electricity themselves, their activities give rise to greenhouse gas (GHG) emissions associated with electricity flowing through the transmission and distribution network and with upstream stages of electricity production.

In accordance with the GHG Protocol Scope 2 Guidance (Figure B.1), utility and energy distributors shall report:

- emissions from electricity used and lost within the transmission and distribution network under Scope 2, and
- indirect upstream emissions associated with purchased electricity under Scope 3.

Although Figure B.1 visually distinguishes Scope 3 emissions arising from fuel production and power generation, these emissions are reported together under a single Scope 3 activity for utilities, as explained below.

Scope 3, Category 3 includes four activities as defined in the GHG Protocol (see Table 3.1), which apply differently across actors in the electricity supply chain.

Activity	Description	Applicability
A. Upstream emissions of purchased fuels	Extraction, production, and transportation of fuels consumed by the reporting company Examples include mining of coal, refining of gasoline, transmission and distribution of natural gas, production of biofuels, etc.	Applicable to end users of fuels
B. Upstream emissions of purchased electricity	Extraction, production, and transportation of fuels consumed in the generation of electricity, steam, heating, and cooling that is consumed by the reporting company Examples include mining of coal, refining of fuels, extraction of natural gas, etc.	Applicable to end users of electricity, steam, heating, and cooling
C. Transmission and distribution (T&D) losses	Generation (upstream activities and combustion) of electricity, steam, heating, and cooling that is consumed (i.e., lost) in a T&D system – reported by end user.	Applicable to end users of electricity, steam, heating, and cooling

Activity	Description	Applicability
D. Generation of purchased electricity that is sold to end users	Generation (upstream activities and combustion) of electricity, steam, heating, and cooling that is purchased by the reporting company and sold to end users – reported by utility company or energy retailer Note: This activity is particularly relevant for utility companies that purchase wholesale electricity supplied by independent power producers for resale to their customers.	Applicable to utility companies and energy retailers

Table [3.1] Activities included in category 3 (Fuel- and energy-related emissions not included in scope 1 or scope 2)

While Category 3 includes four activities, not all activities are applicable to utility and energy distributors.

For utilities and energy distributors, electricity-related Scope 3 emissions primarily relate to Activity D – Generation of purchased electricity that is sold to end users.

Activities A and B apply only where the utility consumes fuels or electricity for its own operations. Activity C applies to end users of electricity, as for utilities and energy distributors transmission and distribution losses represent purchased electricity that is not delivered to end users and are therefore reported under Scope 2, in accordance with the GHG Protocol Scope 2 Guidance.

Transmission and distribution (T&D) losses refer to the difference between the amount of electricity entering the transmission and distribution network and the amount of electricity delivered to end users, due to technical and non-technical losses within the network. Well-to-tank (WTT) emissions refer to upstream emissions from the extraction, processing, refining, and transportation of fuels used to generate electricity.

Scope 2

Transmission and distribution losses

Utilities/energy distributors shall report emissions from transmission and distribution losses under Scope 2.



2.1 Purchased electricity ⓘ

Emission sources (1)

Name ⓘ Emissions ⓘ

Emission source1 ⓘ ⚠

Check integration availability We can integrate with Norwegian electricity meters to get your electricity consumption automatically.

Input type ⓘ Emission factor ⓘ

Electric vehicles

Electricity

T&D (losses) ✓
Only for utilities/energy distributors

T&D (losses) market-based

Emissions in CO2e

Input CO2-equivalents

February ⓘ March ⓘ April ⓘ

June ⓘ July ⓘ August ⓘ

October ⓘ November ⓘ December ⓘ

Transmission and distribution (T&D) losses represent the difference between the amount of electricity entering the transmission and distribution network and the amount of electricity delivered to end users. These losses represent a portion of the purchased electricity that is not delivered to end users. As they form part of the purchased electricity acquired by the utility, the associated emissions are reported under Scope 2, in accordance with the GHG Protocol Scope 2 Guidance.

Scope 2 electricity consumption for utilities and energy distributors includes:

- electricity lost in transmission and distribution lines and transformers (technical losses),
- non-technical losses occurring within the network,
- electricity used to operate substations, grid control systems, and other network infrastructure,
- electricity used in offices and other operational facilities.

In Morescope, transmission and distribution losses are reported explicitly under Scope 2 for utilities and energy distributors. The associated upstream (well-to-tank) emissions are calculated separately under Scope 3, Category 3, to ensure transparency and to avoid double counting.

Methodologically, these upstream emissions correspond to Activity D – Generation of purchased electricity that is sold to end users, as defined under Scope 3, Category 3 of the GHG Protocol.

Scope 3

Scope 3 electricity-related emissions for utilities

For utility and energy distributors, Scope 3 electricity-related emissions for utilities and energy distributors arise from upstream stages of the electricity value chain associated with purchased electricity sold to end users, including::

- fuel extraction, processing, refining, and transportation, and
- electricity generation through fuel combustion.

In accordance with the GHG Protocol Scope 3 Standard, these emissions are reported together under Scope 3, Category 3 (Fuel- and energy-related activities), Activity D – Generation of purchased electricity that is sold to end users.



Activity D – Generation of purchased electricity sold to end users

Utilities and energy distributors that purchase electricity for resale shall report upstream emissions associated with the generation of that electricity under Scope 3, Category 3, Activity D.

Activity D includes both:

- upstream fuel production (well-to-tank) emissions, and
- electricity generation (combustion) emissions associated with the total volume of electricity purchased and sold to end users.

3.3 Fuel and energy related emissions ⓘ

Emission sources (1)

Name ↕

Emission source 1 ⓘ

Type: Purchased energy WTT

Type of energy: Electricity

Input: Monthly

Search: T&D (losses), WTT

Month	Input
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	

Transmission and distribution losses represent a portion of this purchased electricity volume. Accordingly, upstream emissions associated with purchased electricity are proportionally allocated to the portion of electricity that is lost within the transmission and distribution network.

In Morescope, when Scope 2 transmission and distribution losses are reported, the tool calculates the upstream emissions associated with purchased electricity and allocates them to the electricity lost within the network, in line with Scope 3, Category 3, Activity D.

Applicability of other Category 3 activities

For utility and energy distributors:

- Activity A – Upstream emissions of purchased fuels applies only where fuels are directly consumed by the utility for its own operations (e.g. heating or backup generators).
- Activity B – Upstream emissions of purchased electricity applies only where the utility consumes electricity as an end user for its own operations.
- Activity C – Transmission and distribution losses applies to end users of electricity and is not applicable to utilities, as T&D losses are reported under Scope 2.



Summarized GHG emissions accounting requirements for utility/energy distributors

Scope	Category	Emission Source	Explanation
Scope 2	Purchased electricity	Transmission and distribution losses	Emissions from the electricity lost within the transmission and distribution network, occurring within the operational boundary of the transmission and distribution network.
Scope 3	Fuel- and energy-related activities (Category 3)	Generation of purchased electricity sold to end users (Activity D)	Upstream emissions associated with electricity purchased for resale, including both fuel production (well-to-tank) emissions and electricity generation (combustion) emissions. These emissions are proportionally allocated to the portion of electricity lost during transmission and distribution.

NOTE: Utility and energy distributors shall report emissions from purchased electricity used in their own operations under Scope 2. Upstream emissions associated with electricity purchased for resale and sold to end users are reported under Scope 3, Category 3, Activity D, where applicable.

4. Energy consumers

Energy consumers (also referred to as end users in the GHG Protocol) are entities that purchase and use electricity for their own operations, including industrial, commercial, and residential users. While they do not generate electricity themselves, their electricity consumption results in indirect greenhouse gas (GHG) emissions that shall be reported in accordance with the GHG Protocol.

In line with the GHG Protocol Scope 2 Guidance and Figure B.1, energy consumers shall report:

- emissions from purchased electricity consumed in their operations under Scope 2, and
- indirect upstream emissions associated with purchased energy (Category 3) and emissions associated with transmission and distribution losses (Category 3).

Scope 2

Purchased electricity

Energy consumers shall report emissions from purchased electricity that is delivered to and consumed by the organization under Scope 2.

The screenshot shows the '2.1 Purchased electricity' section in the Morescope application. It features a form for 'Emission sources (1)'. The form includes a search bar for 'Name', a 'Check integration availability' button, and a 'Location of facility' search field with a dropdown menu showing options like Afghanistan, Africa, Albania, Algeria, and American Samoa. There are also fields for 'Input type' (set to Electricity), 'Input' (set to Monthly), and a 'Guarantee of origin' toggle. A calendar grid is visible for selecting months from January to August.

Scope 2 emissions represent indirect emissions from the generation of purchased electricity consumed by the energy consumer and shall be calculated and reported using both the location-based and market-based methods, where applicable, in accordance with the GHG Protocol Scope 2 Guidance.

Scope 2 electricity consumption includes electricity used for:

- production processes,
- buildings and facilities,
- equipment, machinery, and other operational uses.

In Morescope, users report Scope 2 emissions by entering the amount of electricity consumed. Emissions are calculated using the selected electricity emission factors. Transmission and distribution losses shan't be reported under Scope 2 by consumers.

These emissions represent indirect emissions from fuel extraction, processing, refining, and transportation and are calculated using fuel-specific well-to-tank emission factors. This category applies to fuels used in stationary combustion and does not include emissions from electricity generation itself, which are reported under Scope 1.

Scope 3

Scope 3 electricity- and energy-related emissions

For energy consumers, Scope 3 electricity- and energy-related emissions arise from upstream stages of the energy value chain and are reported under Scope 3, Category 3 – Fuel- and energy-related activities.

The following Category 3 activities are relevant for energy consumers:

Activity A – Upstream emissions of purchased fuels

Energy consumers shall report upstream emissions associated with fuels purchased and consumed directly in their operations (e.g. fuels used for heating, backup generators, or industrial processes) under Scope 3, Category 3, Activity A.

These emissions represent upstream emissions from fuel extraction, processing, refining, and transportation.

In Morescope, users calculate these emissions by selecting purchased fuel WTT under Scope 3, Category 3 and entering the amount of fuel consumed. Fuel-specific well-to-tank emission factors are applied.

Activity B – Upstream emissions of purchased electricity

Energy consumers shall report upstream emissions associated with the generation of purchased electricity that is consumed by the organization under Scope 3, Category 3, Activity B.

These emissions represent upstream well-to-tank emissions from fuel extraction, processing, refining, and transportation associated with the electricity consumed.

In Morescope, users calculate these emissions by selecting purchased energy WTT under Scope 3, Category 3.

Electricity-specific upstream emission factors corresponding to the consumed electricity are applied.

Activity C – Transmission and distribution losses

Energy consumers shall report emissions associated with the generation of electricity that is lost in the transmission and distribution network under Scope 3, Category 3, Activity C, that does not reach the point of consumption due to transmission and distribution losses.

These emissions represent both:

- upstream fuel-related emissions, and
- electricity generation (combustion) emissions associated with the portion of purchased electricity that is lost before delivery to the energy consumer.

In Morescope, users calculate emissions from transmission and distribution losses by selecting the relevant T&D losses option under Scope 3, Category 3 and entering the applicable electricity consumption data.

The tool applies electricity generation emission factors and associated upstream emission factors to the reported losses.



3.3 Fuel and energy related emissions ⓘ

Emission sources (1)

Name ⓘ Emissions ⓘ

Emission source 1 ⓘ

Type: Purchased energy WTT | Type of energy: Electricity | Type: Q | | Country: Select

Input: Monthly

January | February | April | August | December

May | June | November

September | October

T&D (losses)
T&D (losses), WTT
WTT
WTT + T&D ✓

Important clarification on Scope 2 and Scope 3 interaction

For energy consumers:

- Scope 2 includes only electricity that is delivered to and consumed by the organization, and
- Scope 3 includes upstream emissions associated with electricity consumption (Activity B) and electricity lost in transmission and distribution (Activity C).

This separation ensures consistency with the GHG Protocol Scope 2 Guidance, avoids double counting, and aligns with the allocation of emissions across the electricity supply chain as illustrated in Figure B.1.

Summarized GHG emissions accounting requirements for energy consumers

Scope	Category	Emission Source	Explanation
Scope 2	Purchased electricity	Emissions from electricity consumption	Emissions from the generation of purchased electricity that is delivered to and consumed by the energy consumer for its own operations (calculated using location-based and market-based methods, where applicable).

Scope	Category	Emission Source	Explanation
Scope 2	Purchased electricity	Emissions from electricity consumption	Emissions from the generation of purchased electricity that is delivered to and consumed by the energy consumer for its own operations (calculated using location-based and market-based methods, where applicable).
Scope 3	Fuel- and energy-related activities (Category 3)	Upstream emissions of purchased fuels (Activity A)	Emissions from the extraction, processing, refining, and transportation of fuels purchased and consumed directly by the energy consumer (e.g. fuels used for heating or backup generators).
Scope 3	Fuel- and energy-related activities (Category 3)	Upstream emissions of purchased electricity (well-to-tank) (Activity B)	Upstream emissions from fuel extraction, processing, refining, and transportation associated with the generation of purchased electricity that is consumed by the energy consumer.



Scope	Category	Emission Source	Explanation
Scope 3	Fuel- and energy-related activities (Category 3)	Transmission and distribution losses (Activity C)	Emissions associated with the generation (combustion) and upstream fuel supply of electricity that is lost in the transmission and distribution network before delivery to the energy consumer.

NOTES:

- Transmission and distribution losses are not reported under Scope 2 by energy consumers; they are reported under Scope 3, Category 3, Activity C, in accordance with the GHG Protocol Scope 3 Standard and Scope 2 Guidance.
- In Morescope, emissions corresponding to Scope 3, Category 3 Activities A, B, and C may be calculated automatically based on Scope 1 fuel inputs and Scope 2 electricity data. Manual entries under Scope 3, Category 3 provide an alternative calculation approach and shall be used with care to avoid double counting.
- The GHG Protocol illustration in Figure B.1 presents aggregated Scope 3 electricity-related emissions for energy consumers. In this guidance, Scope 3 Category 3 emissions are further disaggregated into Activities A, B, and C for clarity and alignment with reporting requirements.

The energy sector's unique role in economy-wide decarbonization

Energy companies sit at the core of the climate transition. While most sectors decarbonize primarily by reducing their own direct emissions, energy companies enable decarbonization across the wider economy - because nearly all businesses depend on electricity and energy supply to reduce their own footprints. At the same time, energy demand is rising globally due to electrification, population growth, industrial expansion, and increased digital infrastructure.

This creates a unique market dynamic: demand for low-emission energy is increasing faster than supply. As a result, many are actively seeking to transition toward the lowest-emission energy available in their markets, and competition for clean energy is growing. In this context, the decarbonization case for energy companies is tied to scaling renewable generation and reducing the CO₂ intensity per unit of energy delivered to customers. For many energy companies, competitiveness increasingly depends on their ability to provide reliable energy with a lower emissions factor than alternatives.

This dynamic also highlights an important transition challenge: even for energy companies with high renewable shares today, further decarbonization depends on building additional renewable capacity.

However, developing new generation and grid infrastructure can be both capital-intensive and emissions-intensive in the short term due to construction activities, materials, logistics, and supply chain impacts. This is particularly relevant in markets such as Norway, where expanding renewable capacity is essential for enabling broader economy-wide decarbonization—yet may temporarily increase absolute emissions as projects are built.

This reinforces the importance of transparent carbon accounting: energy companies need to track not only operational emissions, but also the emissions and reductions impact of investment decisions over time, including transition-related trade-offs.

Decarbonization for Energy Companies

Carbon accounting provides the baseline but value is unlocked when emissions data can be used to drive action. Energy companies increasingly face expectations not only to report emissions, but to demonstrate credible progress through measurable reductions and lower carbon intensity.

For many energy companies, decarbonization is less about a single operational change and more about managing a portfolio-level transition. This includes:

- scaling renewable generation and enabling customer electrification
- improving emissions intensity per unit of energy delivered
- reducing operational emissions such as methane leakage, flaring, and SF₆ losses
- prioritizing investments and initiatives based on real abatement impact
- building transition plans that reflect technical and economic constraints
- tracking progress over time and validating results

In this context, decarbonization planning works best when emissions inventories are built on activity-based data, enabling companies to connect emissions to specific assets, initiatives, and operational levers. Spend-based estimates can support completeness, but typically lack the resolution required to define practical actions or quantify reduction potential with confidence.

**Conclusion on next
page**



Conclusion

Carbon accounting is rapidly becoming a core capability for energy companies—not only to meet growing regulatory and stakeholder expectations, but to manage emissions as a material operational and financial variable. A robust carbon accounting system provides consistent baselines, traceability, and governance across Scopes 1, 2, and 3, enabling organizations to understand where emissions originate, how they change over time, and how they relate to specific assets and activities.

However, measurement alone is not enough. The ability to translate emissions insight into a credible decarbonization pathway is increasingly what separates compliance from competitiveness. This is especially true for the energy sector, where decarbonization is closely linked to enabling reductions across the wider economy. As demand for low-emission energy grows faster than supply, energy companies increasingly compete on the emissions intensity of the energy they deliver - while simultaneously needing to invest in capital-intensive infrastructure to scale renewable production.

To support this shift, Morescope combines carbon accounting with an AI-powered decarbonization module designed to help companies generate actionable scenarios, build transition plans, and prioritize reduction initiatives based on real business impact. Importantly, the module is built on principles of user control and transparency: recommendations are presented as editable suggestions, with clear assumptions, calculations, and sources made available for validation and audit confidence.

By linking credible carbon data with practical planning workflows, Morescope helps energy companies move from reporting emissions to reducing them - faster, with greater clarity, and with decisions that stand up to scrutiny.