Carbon Reporting 2024

Publication September 2025

INTRODUCTION

Sustainability issues have always been present within Qair Group. In 2021, the company formalized its actions and commitments by creating a sustainable development team dedicated to these topics. As a first step, a sustainability strategy and a roadmap were implemented to structure this approach.

This sustainability roadmap is based on four pillars, with one about climate, which includes the realization of a carbon footprint of the group's activities, and a resulting action plan. Qair Group carried out its first carbon assessment in 2022, for 2021 data, referring to the GHG Protocol. Since then, there has been a carbon footprint exercise every year. These successive assessments have enabled Qair Group to improve its carbon footprint calculation process: defining the data to be collected, collecting the data, checking consistency, choosing emission factors, calculating the carbon footprint and analysing the results. After starting with an Excel collection and calculation tool (2021,2022), Qair Group developed with feedback and experience its own tool using Microsoft SharePoint and Power BI (2023,2024).

After four consecutive years, Qair Group is more mature on the subject, more confident in its methodology and results, which have been successfully audited. Thus in 2025, a carbon action plan has been defined based on the results of carbon emissions and the resulting challenges.

This carbon reporting describes the results of the carbon footprint exercise for the year 2024, but also the evolution of emissions from 2021 to 2024, key performance indicators, and the action plan to reduce these emissions.

This publication presents the situation at a given point in time. It will evolve each year depending on the intrinsic activities of the Qair Group, and possible changes in parameters (data precision, emissions factors reference, availability of LCA…). This work is part of a dynamic of continuous improvement.

Finally, this report is a great tool for both internal and external communication and for raising awareness about carbon footprint and decarbonization plan. It will enable every employee to review these results and understand the specific actions to be implemented within Qair Group's activities in order to achieve common decarbonization goals.

This document is the result of a collective effort that involved several departments within Qair Group and all subsidiaries concerned by the scope of the study. All the people involved made it possible to collect the data necessary for the writing of this report, and we thank them for their contribution.

Damien Granjon
Head of Sustainability

Elisa Collomb
Sustainability Officer

SUMMARY

I A RECENTLY ESTABLISHED RENEWABLE INDEPENDENT POWER PRODUCER

Who we are

The Group is an independent renewable energy company engaged across the entire value chain encompassing development, financing, construction, and operation of assets.

With a comprehensive global and local perspective, Qair operates in 20 countries, designing and implementing tailored solutions for each geography. Qair's expertise is rooted in the success of projects executed by its teams over the last 30 years.

St Clément, France

Marrubiu, Italy

What we do

Number of assets in operation or construction	Total capacity in operation or construction	Capacity's target by 2027
138	1.7 GW	3 GW

ONSHORE RENEWABLE

- ONSHORE WIND
- SOLAR PV
- HYDRO

OFFSHORE RENEWABLE

- OFFSHORE WIND
- OFFSHORE SOLAR PV
- TIDAL

ENERGY MANAGEMENT

- GREEN HYDROGEN
- WASTE TO ENERGY
- BATTERY

ELECTRICITY SUPPLY

primeo energie

II PERIMETER 2024

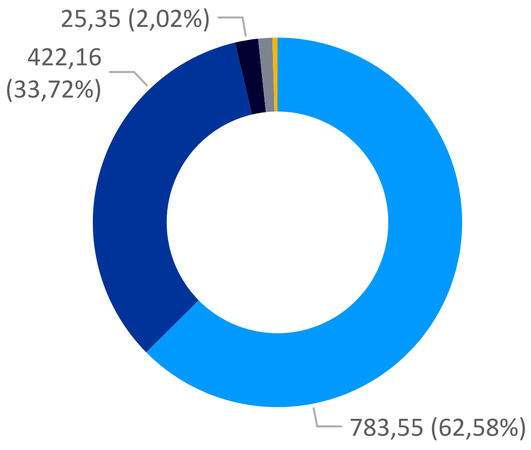
The total number of employees in this study perimeter represents 636 people spread over 3 continents and 19 agencies.

The total capacity of the assets included in the study scope is 1 252 MW in 2024.

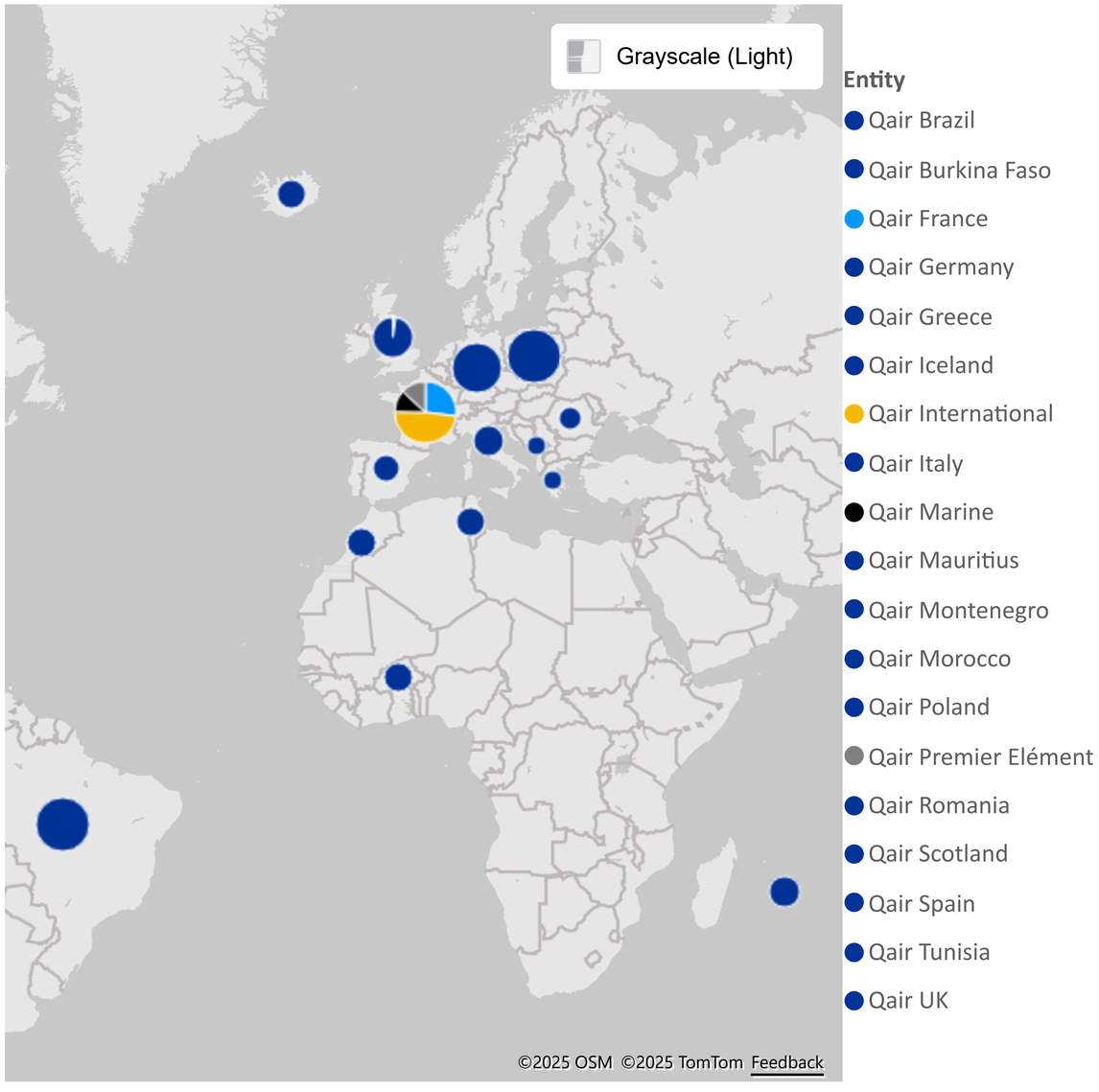
This represents a total of 52 power plants in operation on December 31, 2024 in the following technologies : wind onshore, solar and hydropower.

Qair's workforce - 2024	Plant capacity - 2024	Production - 2024
636	1 252	2 762 576
Employees	MW	MWh

Plant capacity by technology (MW)



Qair's offices in 2024



III METHODOLOGY

In 2021, Qair completed its first Carbon footprint exercise with the supervision of the consultant team UTOPIES, a French cabinet founded in 1993 with expertise in corporate sustainability integration.

To improve skills and independence to complete Carbon footprint exercise 2023, Qair created in 2024 its own carbon tool to manage the collection (1) and the calculation (2) of carbon emissions.

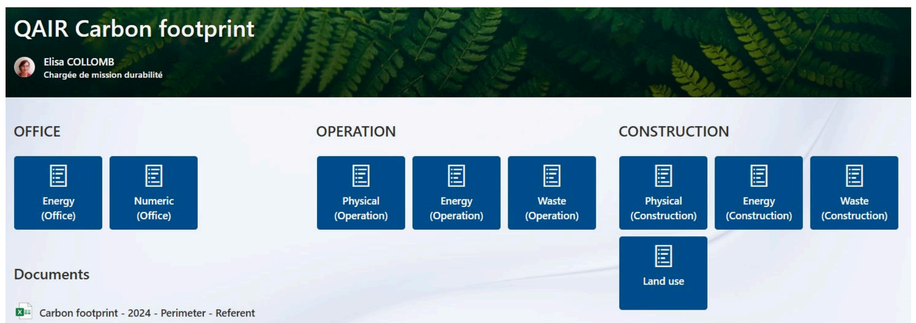
Qair is following the GHG Protocol Methodology, which includes Scopes 1, 2 and 3 of assets under operational control.
The totality of a plant is integrated once its construction is done : main component's production, transportation and end of life.
Emission factors are scientific coefficients provided by Ecoinvent V3.11 and ADEME V23.4 databases.

Carbon footprint referential	Qair first carbon footprint
GHG protocol Scopes 1, 2 and 3	2021

Data collection	Calculation and reporting
Microsoft SharePoint	Microsoft Power BI

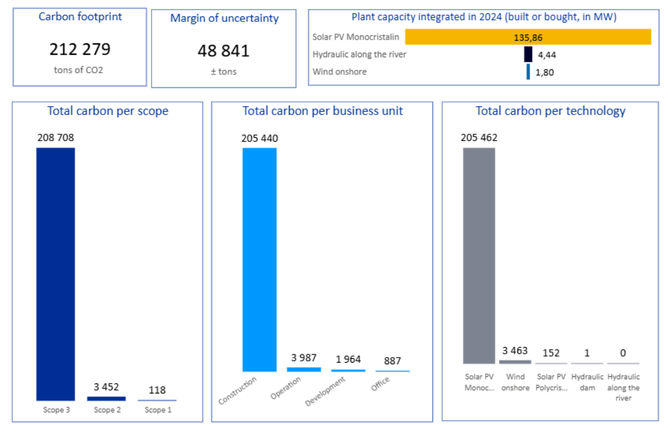
1. Carbon Footprint SharePoint page

Qair uses Sharepoint to collect the data and evidence documents associated with. This is the main interface with entities carbon referents. A chatbot enables both the sustainability team and carbon referents to ask about data description and source.



2. Power BI software

Qair uses Power BI to calculate the carbon weight of data previously collected in SharePoint. The calculation architecture is aligned with the GHG Protocol Methodology to obtain Qair's total carbon footprint following the principle of *Activity Data X Emission Factor*.



CARBON FOOTPRINT

2024

IV RESULTS

Qair's carbon footprint in 2024 is 212 279 tons of CO2, with a margin of uncertainty of 48 841 tons of CO2.

The margin of uncertainty, which is about one quarter of the total carbon emission reflects the scientific imprecision of the emission factors used.

In the exercise 2024, 13 plants were integrated into Qair's operation (142 MW). 96% of this added capacity is solar technology.

As previous years, scope 3 is by far the most emissive scope with 98% of the volume of emissions. Globaly, they represent the construction of solar assets.

Scope 1 and 2 over which Qair has direct power of action occupies about 2% of the carbon footprint.

Carbon footprint

212 279

tons of CO2

Margin of uncertainty

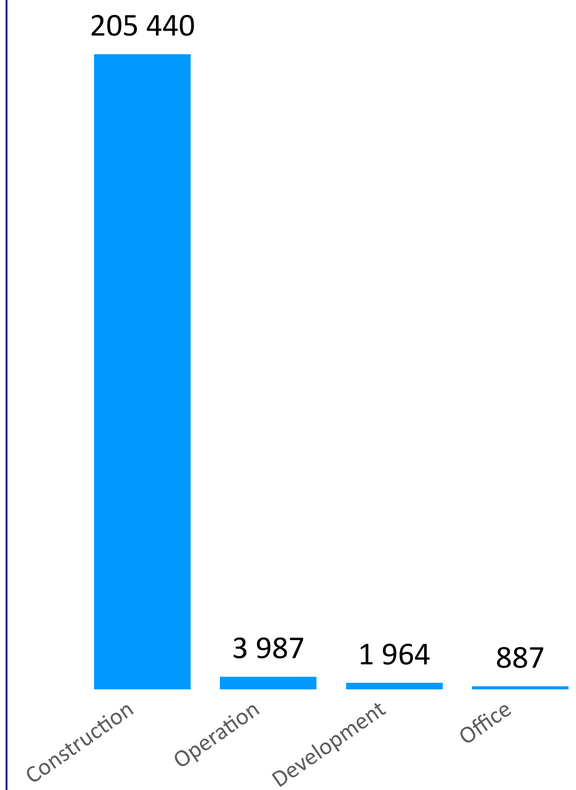
48 841

± tons

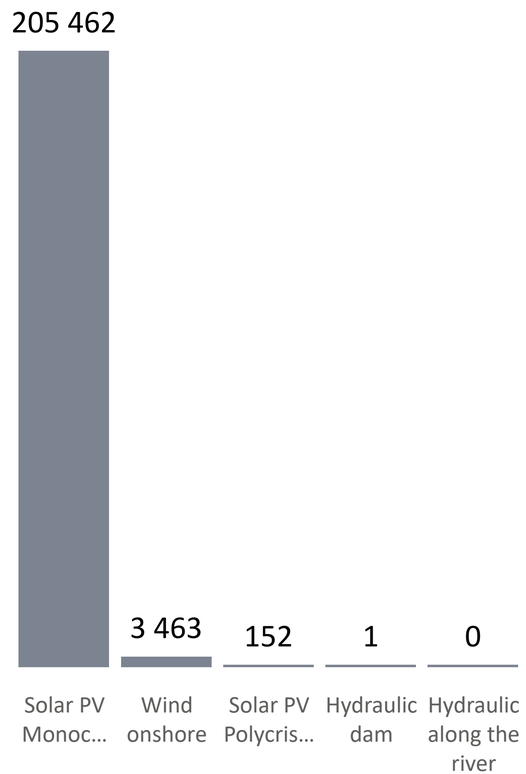
Plant capacity integrated in 2024 (built or bought, in MW)

Total carbon per scope

Total carbon per business unit



Total carbon per technology



IV.A RESULTS PER GHG CATEGORY

Total carbon by GHG category (tons)

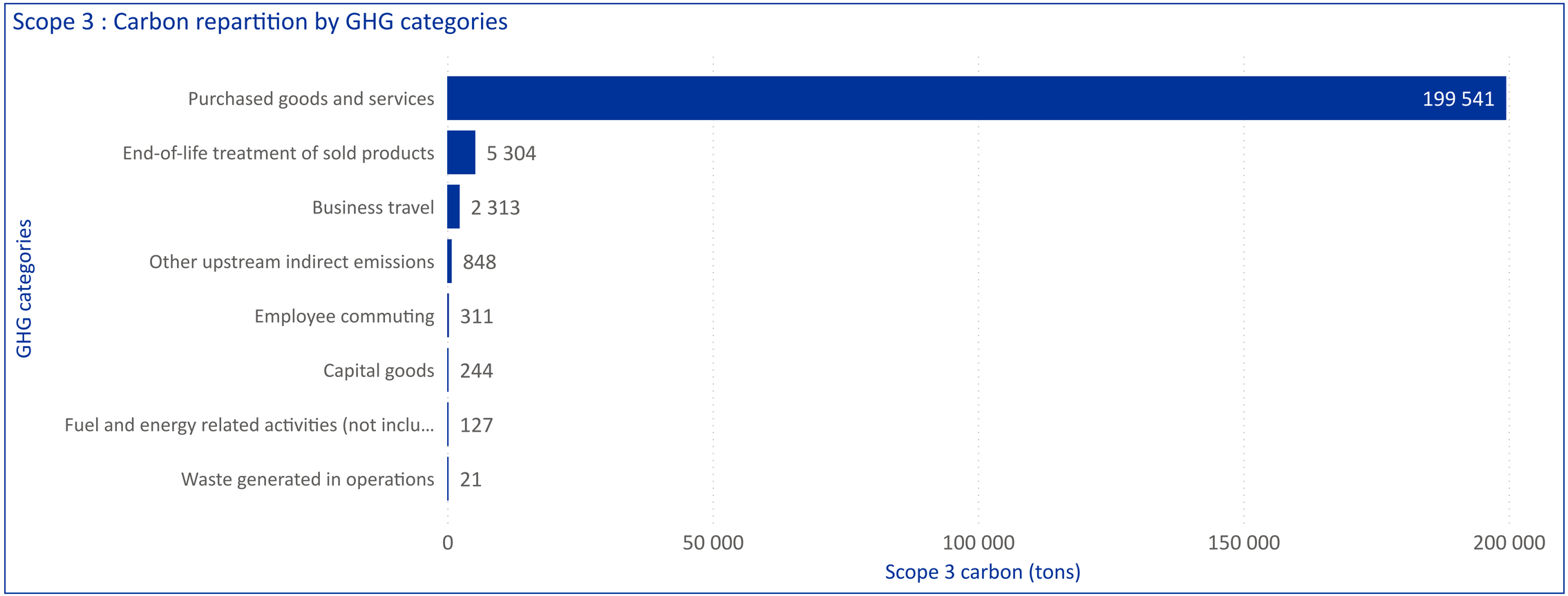
Scope	GHG Category	Carbon (tons)
Scope 1		
Direct fugitive emissions	1-4	118
Scope 2		
Indirect emissions related to electricity consumption	2-1	3 447
Indirect emissions related to steam, heat and cold consumption	2-2	5
Scope 3		
Purchased goods and services	3-1	199 541
End-of-life treatment of sold products	3-12	5 304
Other upstream indirect emissions	3-16	848
Capital goods	3-2	244
Fuel and energy related activities (not included in scope 1 or scope 2)	3-3	127
Waste generated in operations	3-5	21
Business travel	3-6	2 313
Employee commuting	3-7	311

GHG categories that do not appear in the table are either null or not taken into account in our carbon footprint.

SCOPES DEFINITION

- **Scope 1** : direct emissions from the organization's **controlled sources**.
- **Scope 2** : indirect emissions from the energy that the company consumes from **off-site sources**.
- **Scope 3** : indirect emissions from both upstream and downstream in the company's **supply chain.**

IV.A ZOOM ON SCOPE 3

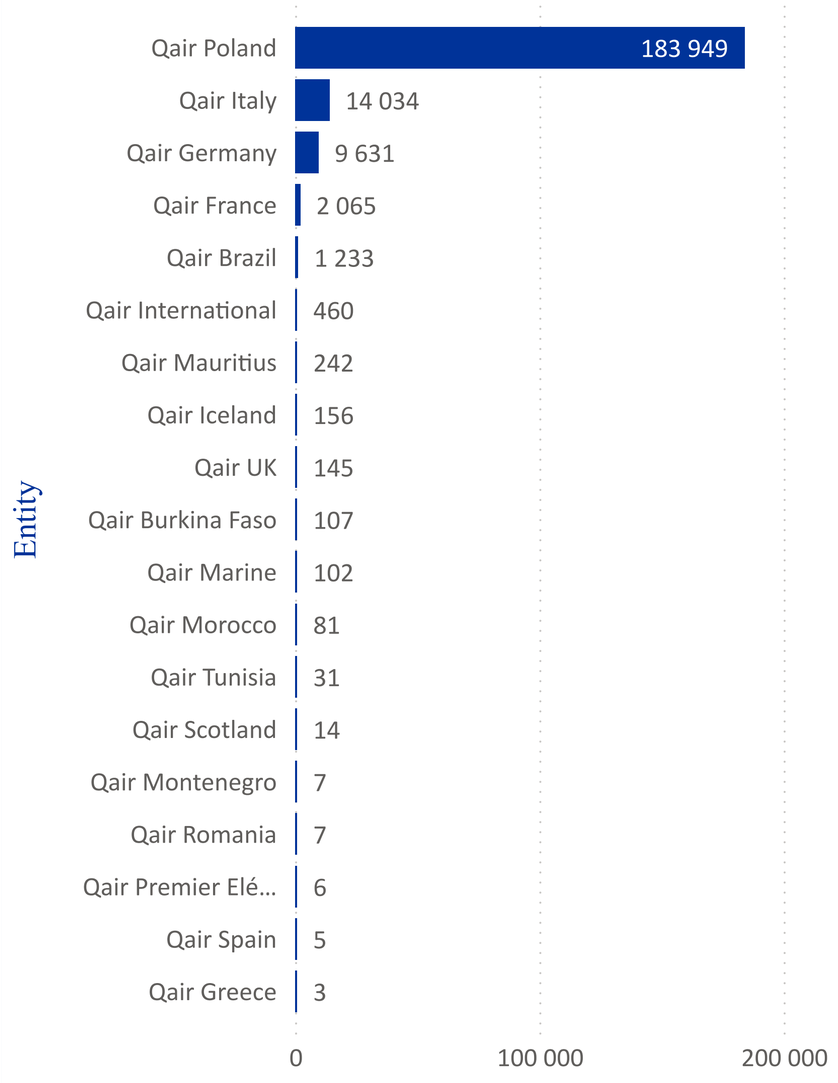


The repartition shows a clear dominance of scope 3, which accounts for 98% of total carbon emissions from the Group's activities. It represents indirect emissions from both upstream and downstream in the company’s supply chain.

The first category is Purchased goods and services. It accounts for almost all scope 3 emissions. Mostly it represents purchase of plants components such as PV panels, inverters, transformers, steel mounting structure, windturbine, concrete for foundation... and services costs of construction.

IV.B RESULTS PER ENTITY

Total carbon per entity (tons CO2)



The repartition shows the clear dominance of Qair Poland, which accounts for 86,5 % of emissions from the group's activities in 2024. This dominance is explained by an important construction activity : 120.91 MW of capacity were built with 3 new solar plants.

Qair's entities from Italy (6,5%), Germany (4,5%) and France (1%) also with construction activities in 2024 are following this top, showing that construction is the key factor of emission.

All other 15 entities of the group generate about 1% of the total carbon.

Qair Poland case

- **Construction** concentrates 98% of Qair Poland emissions. Within construction activity, the first category is the procurement of solar plants components and construction costs. 213 840 PV panels were installed.
- **Operation** activities are also emissive due to yearly energy consumption of 21 plants.

Category	Carbon (tons)
Construction	180 617
Operation	2 950
Development	223
Office	159
Total	183 949

GHG category	Carbon (tons)
Purchased goods and services	175 220
End-of-life treatment of sold products	4 715
Indirect emissions related to electricity consumption	2 978
Other upstream indirect emissions	539
Business travel	294
Fuel and energy related activities (not included in scope 1 or scope 2)	115
Employee commuting	47
Direct fugitive emissions	22
Waste generated in operations	13
Indirect emissions related to steam, heat and cold	5
Total	183 949

IV.C CONSTRUCTION

Construction emissions take into account the following elements :

- Purchase of main construction component (manufacturing, transportation and end of life of the product)
- Services costs of construction (on-site work)
- Land use (permanent transformation of forest, prairie or agricultural lands during construction).
- Construction's waste : steel, concrete, plastic, wood...

The most significant category concerns the purchase of PV panels with 88% of the construction's emissions.
Across 6 new plants built in 2024, 239 670 PV panels were installed in total. 89% of them are being used by Qair Poland.

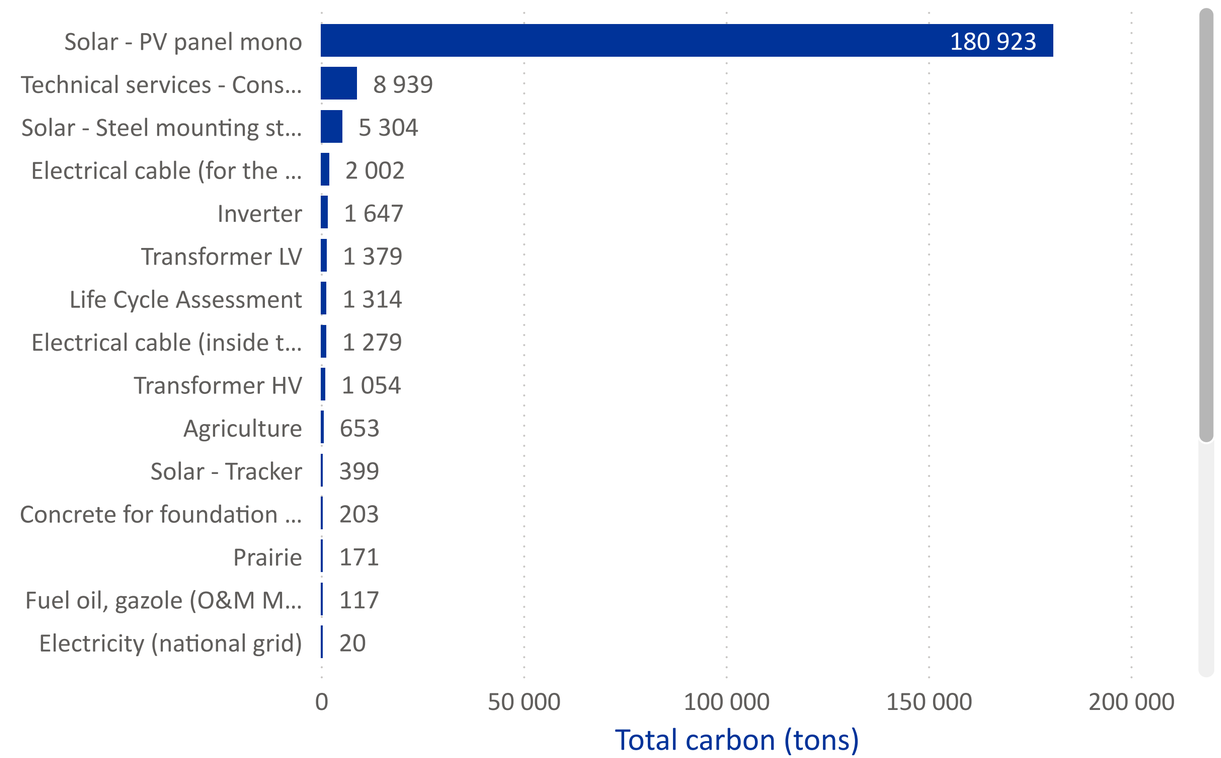
Total carbon construction
205 440 tons
96,8%

Plants built in 2024

Entity	Technology	Total carbon	Plant capacity (MW)
Qair Poland			
GOLCZEWO	Solar PV Monocristalin	117 489	80,00
ROKIETNICA	Solar PV Monocristalin	48 184	31,00
PAKOSC PV	Solar PV Monocristalin	14 939	9,91
Qair Italy			
MARRUBIU	Solar PV Monocristalin	13 911	8,70
Qair Germany			
JACOBSDORF	Solar PV Monocristalin	7 040	4,80
VOLKERTSHAUSEN	Solar PV Monocristalin	2 191	1,45
Qair France			
SAINT CLEMENT	Wind onshore	1 681	1,80

Values representing more than 50% of total volume

Construction in 2024 - Total carbon (tons)



IV.D OPERATION

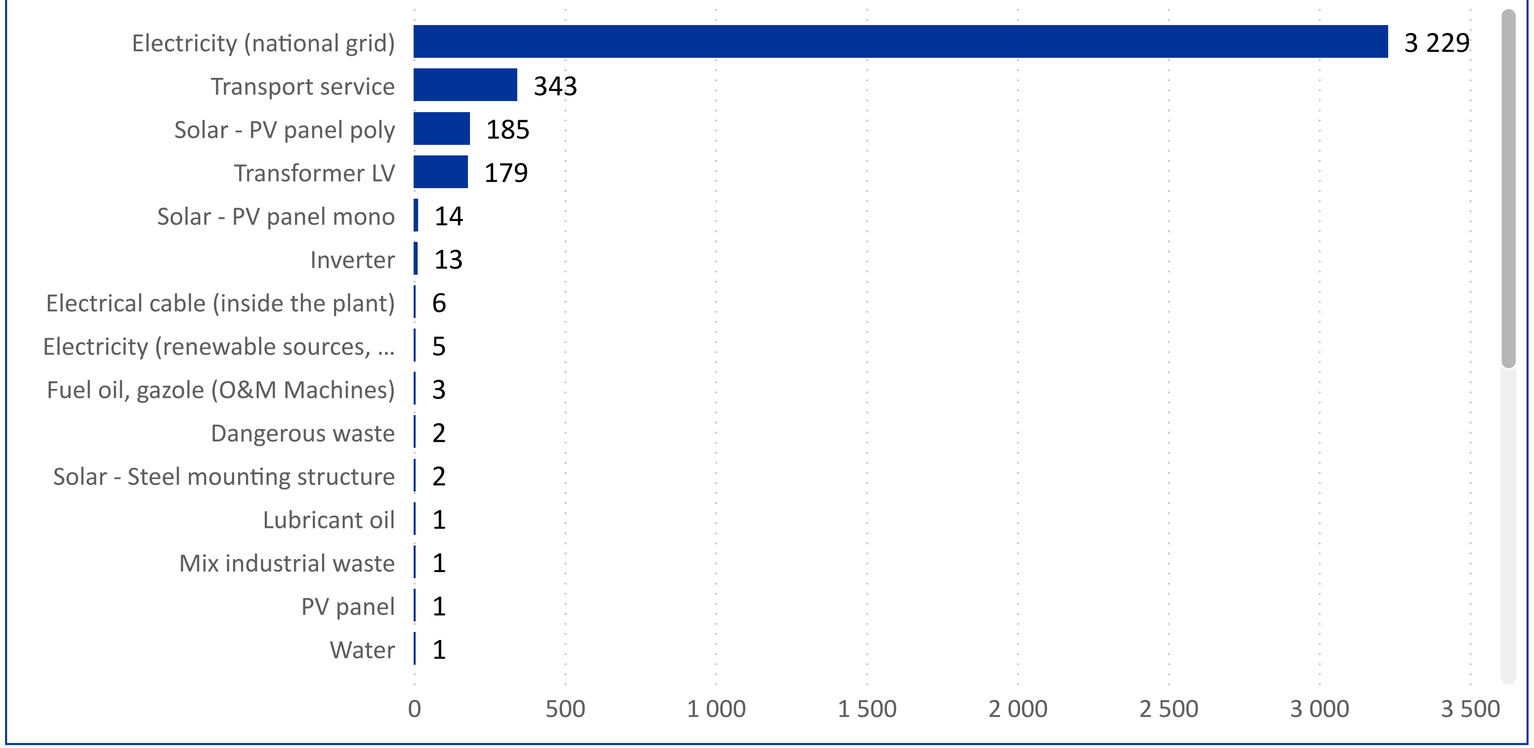
Operation emissions take into account the following elements :

- Energy use by auxiliaries : electriciy consumption
- Plant's maintenance with the replacement of defective parts and/or installation of spare parts
- Business travel of employees to plant's operationnal sites (transport service)
- Operational's waste : Industrial, dangerous, concrete...

The first emissive category is electricity consumption of auxiliaries with 81% of operation emissions.
89 % of the electricity consumptions emissions comes from Qair Poland which operates 21 plants with a national grid very emissive.

Total carbon operation
3 987 tons
1,9 %

Operation in 2024 - Total carbon (tons)



Operation - Electricity consumptions - Total carbon per entities (tons)

Entity	Operation
⊞ Qair Poland	2 876
⊞ Qair Mauritius	180
⊞ Qair Burkina Faso	61
⊞ Qair Morocco	46
⊞ Qair Italy	44
⊞ Qair Brazil	21
⊞ Qair France	1
⊞ Qair Iceland	0

Values representing more than 50% of total volume

IV.E DEVELOPMENT

Development emissions take only into account the business travels' costs per entity.

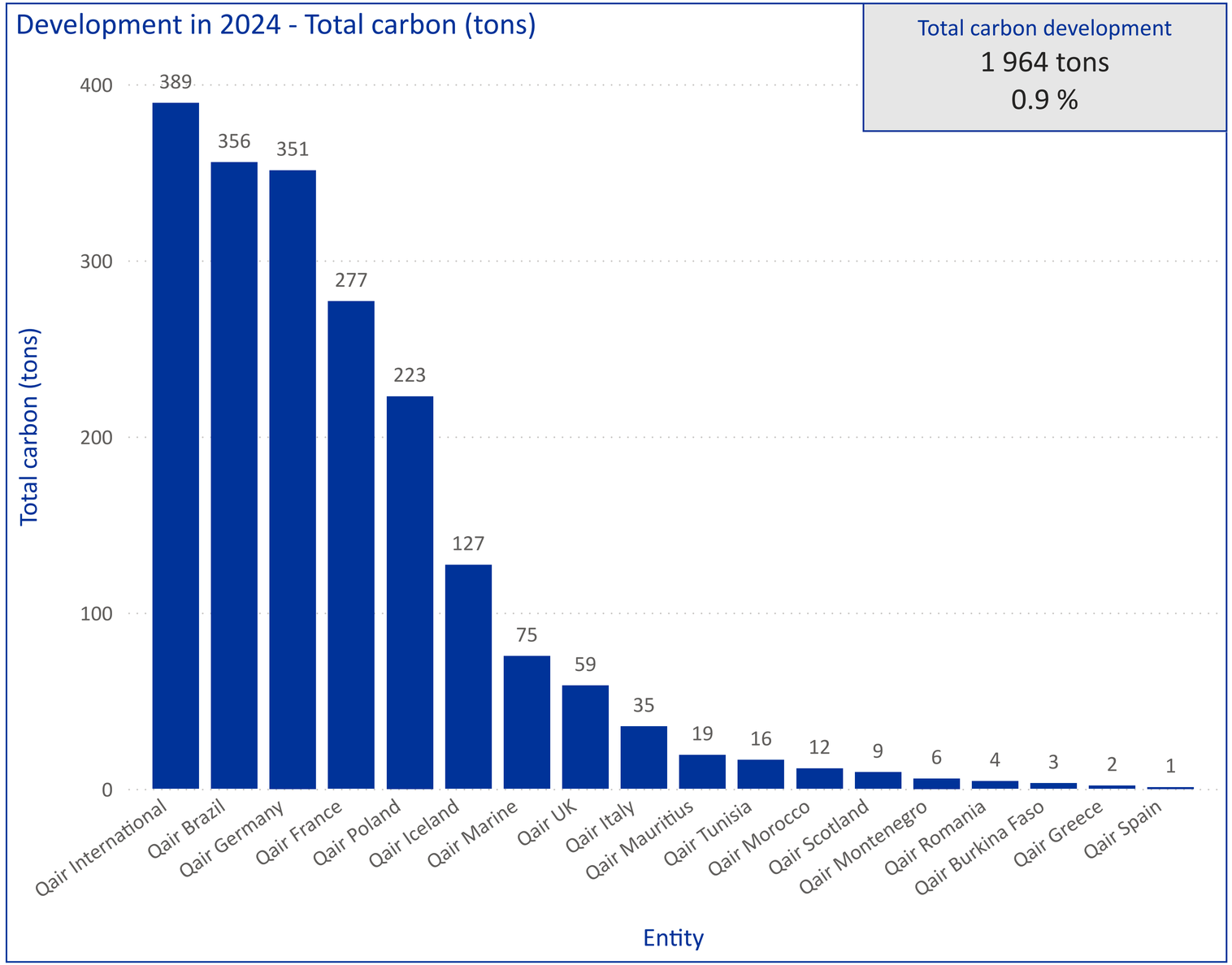
These global costs are combining different type of transportation (plane, train, car) and accomodations.

The top 5 entities with the most emissions highlight the dynamism of their activity and the need for exchange with stakeholders during project development.

Share of entity in development emissions :

- Qair international 20%
- Qair Brazil 18%
- Qair Germany 18 %
- Qair France 14%
- Qair Poland 11%

Serra Do Mato, Brazil



IV.F OFFICE

Office emissions take into account the following elements :

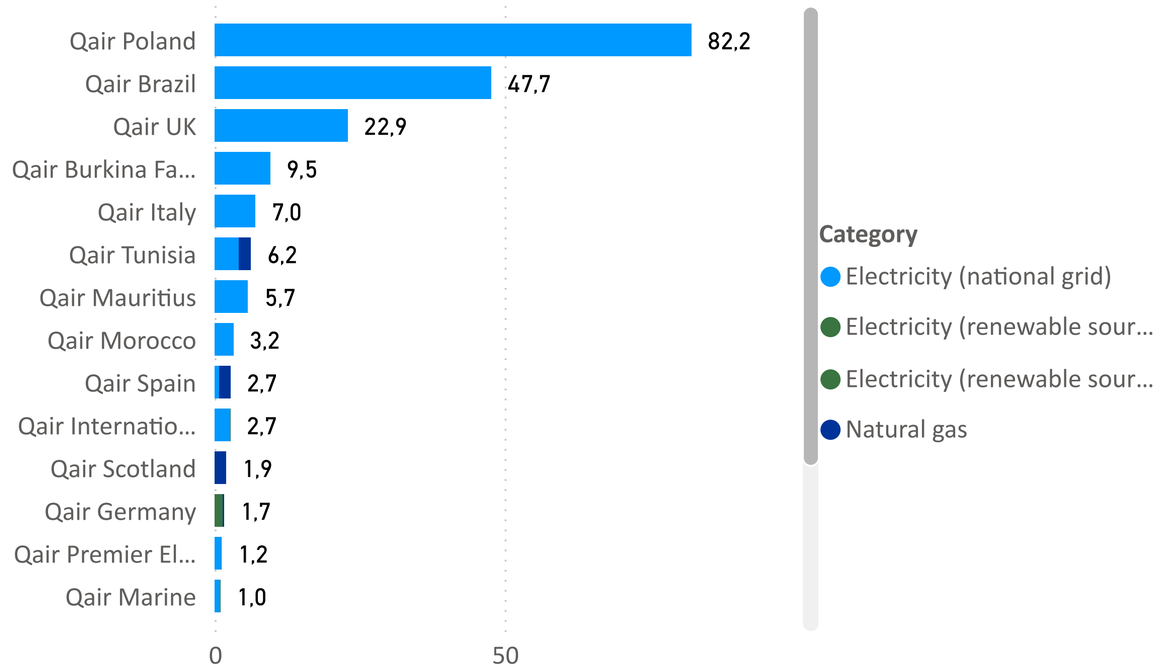
- Energy consumptions [1] : Electricity, Natural Gas
- Water [1], Air conditioning [2], Digital storage
- Goods immobilized : office furnitures, computer, smartphone.
- Waste [2] : Paper, plastic, food waste....
- Travel commute : Employees commuting from their home to their workplace. A group survey is send to all employees every year.

Qair Poland and Qair Brazil are both dominating the volume of emissions in office, in regard of their number of employees (119 and 121).
Moreover, the polish grid carbon intensity factor is higher than the brazilian one : 717 gCO^2/kWh VS 234 gCO^2/kWh.
Over all entities, only 6,6% of the electricity consumption is from a renewable source.

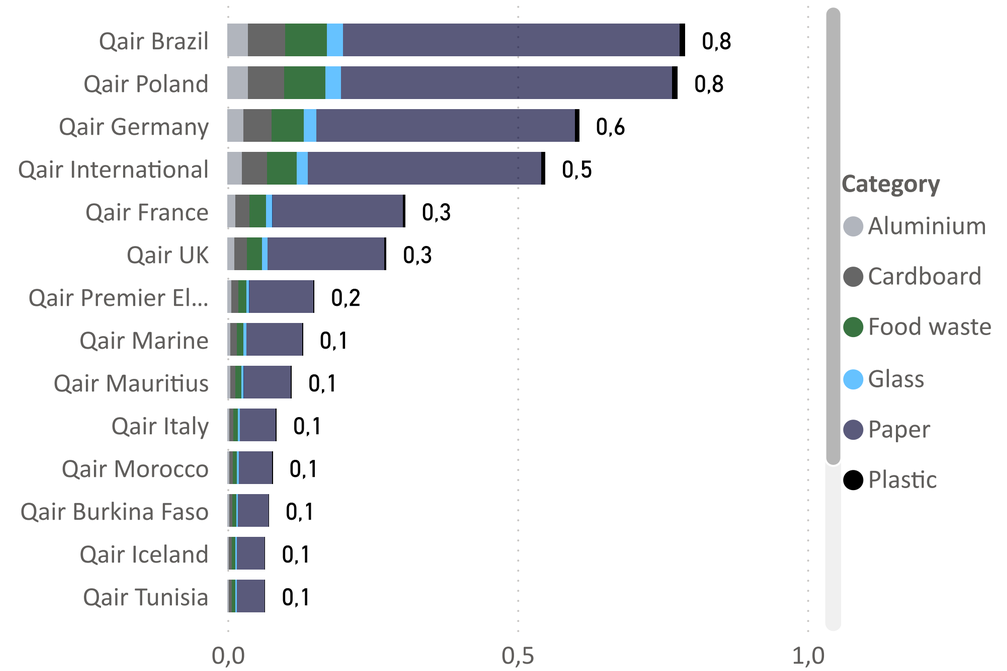
Total carbon office
887 tons
0,4 %

[1] We use consumptions invoices for all offices except for shared offices to which we use a ratio per employee.
[2] Data calculated with a ratio per employee.

Office Energy - in tons of CO2



Office Waste - in tons of CO2



IV.G OFFICE : Travel commute

Travel commute is the transportation of employees between their home and their workplace. It includes various type of transport and take into account employees daily journeys.

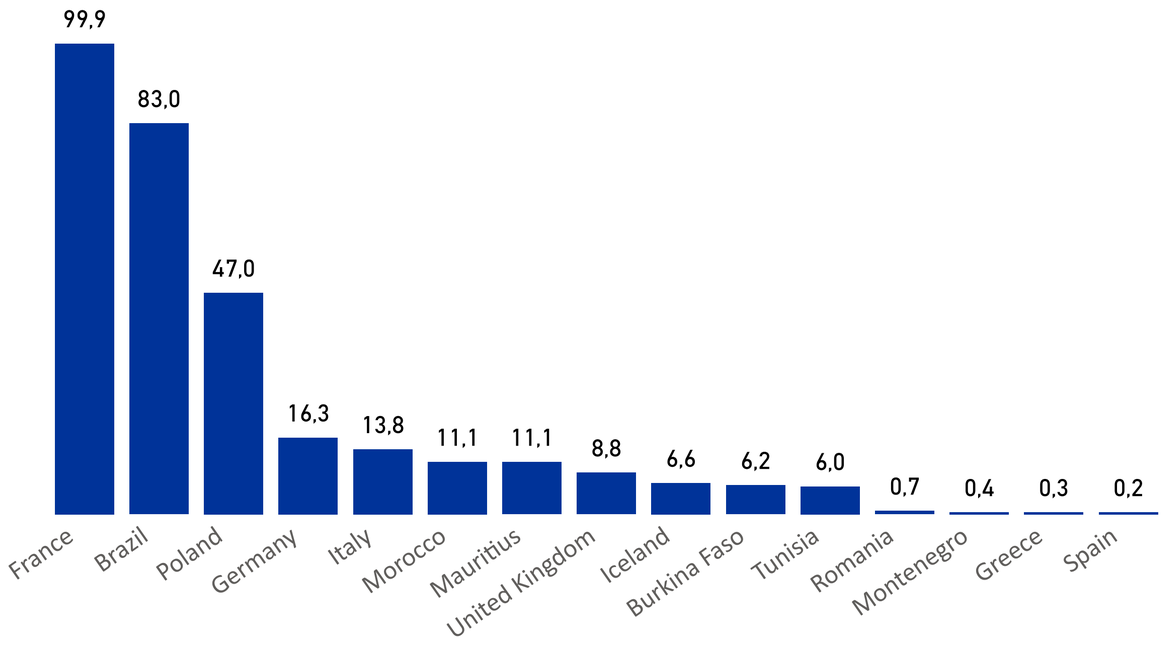
Every year Qair asks employees about their mobility habits in order to measure its evolution.

Diesel/gasoline cars remains the primary means of transport used for mobility, with a share of 40 %, representing 71% of travel commute carbon emissions.
Whereas the share of train is 28% and represents about 2% of travel commute emissions.

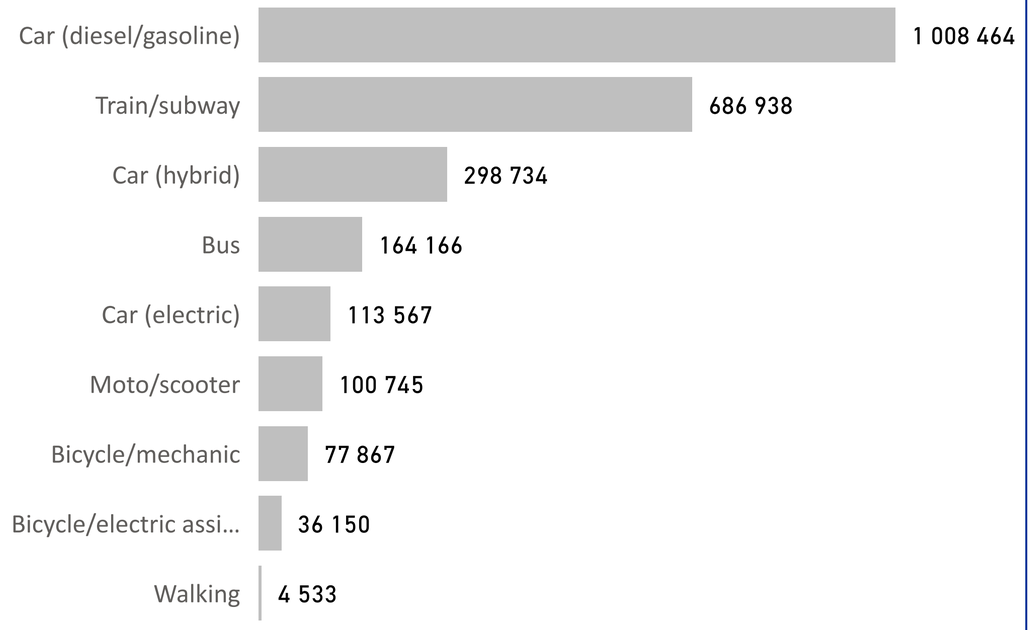
Travel commute in tons	Travel commute share
311	35 % of office emissions 0,15 % of total emissions

Distance in Km	Average per employee
2 491 164	4 571 km 571 kgCO2

Travel Commute - Total Carbon (tons)



Travel commute per type of transport in km



V AVOIDED EMISSIONS 2024

DEFINITION

Avoided emissions are defined as the CO2 emissions that are prevented because of the use of a company's products or services, compared to a baseline where these products or services were not used.

Results depend upon plants production efficiency and electricity national grid emissions factor of plant's country which can be more or less decarbonized.

Avoided emissions

1 039 987

tons of CO2

CALCULATION

Avoided emissions = Plant year production (MWh) * [Electricity grid emission factor of plant's country – Qair plant's Operation Intensity (gCO2/kWh)]

Source The IFI Dataset of Default Grid Factors V3.2 UNFCCC

Indicators

Entity	Production (MWh)	Electricity Grid EF	Operation intensity (gCO2/kWh)	Avoided Emissions (tons CO2)
Qair Poland	890 827	717	30,49	613 500
Qair Brazil	1 637 343	234	19,84	350 852
Qair Mauritius	49 344	641	37,71	29 782
Qair Burkina Faso	39 547	672	50,14	24 607
Qair Germany	22 907	523	31,33	11 544
Qair Morocco	8 591	660	48,85	5 250
Qair Italy	14 175	343	74,58	4 363
Qair France	1 393	124	60,91	88
Qair Iceland	98 449	0	2,30	0
Total	**2 762 576**	**3914**	**23,89**	**1 039 987**

Anahita Queen Victoria, Mauritius

CARBON KEY DATA EVOLUTION

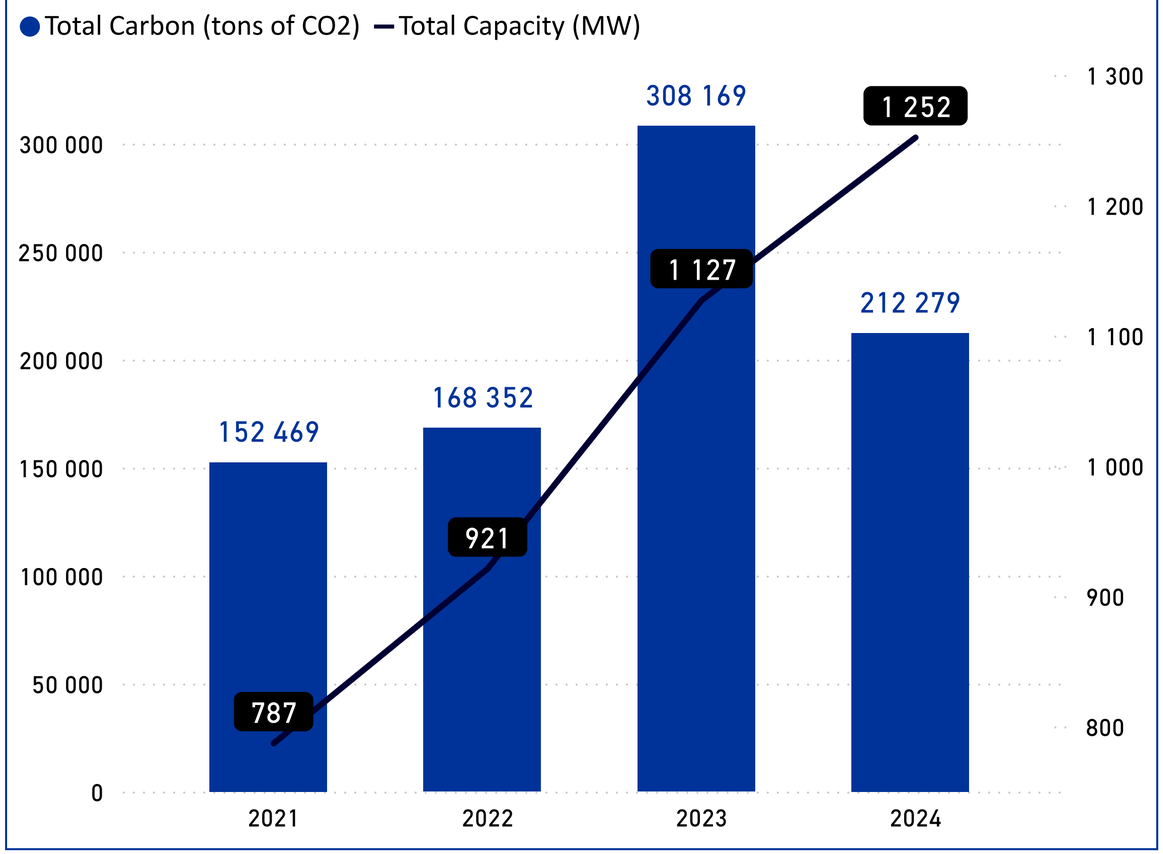
2021 - 2024

VI.A CARBON FOOTPRINT'S EVOLUTION 2021 - 2024

Carbon footprint 2024 is the fourth exercise of Qair group. This history enables us to put the results into perspective in order to better understand our business and improve our strategy towards decarbonization.

Qair carbon footprint increases linearly as the company's activity grows (Capacity in MW), except in 2023 due to particularly significant land use in Brazil during the construction of Serra Do Mato Solar Plant.
Scopes emissions repartition along the fourth exercices stays stable with Scope 1 with less than 0,06%, Scope 2 less than 1,6% and Scope 3 around 98%.

Carbon footprint evolution 2021-2024



Scope 1 average repartition

0,006% % < S1 < 0,06

Year	Scope 1 (tons CO2)
2021	38
2022	41 ↑
2023	17 ↓
2024	118 ↑

Scope 2 average repartition

1,02 % < S2 < 1,6 %

Year	Scope 2 (tons CO2)
2021	2 263
2022	1 998 ↓
2023	3 157 ↑
2024	3 452 ↑

Scope 3 average repartition

98,3% < S3 < 99%

Year	Scope 3 (tons CO2)
2021	150 168
2022	166 312 ↑
2023	304 995 ↑
2024	208 708 ↓

Volkertshausen, Germany

VI.B TRAVEL COMMUTE'S EVOLUTION 2021 - 2024

Travel commute results enable us to track Qair mobility evolution and to define a common target to reach by 2030.

Main evolutions from 2023 to 2024

- An increase of 22% of km traveled, for an increase of 2% of carbon emission.
- A decrease of 14% in the modal share of diesel cars
- An increase of 9 % in the modal share of trains
- A progression in the modal share of soft mobility : buses (+2%), electric cars (+3%), motorcycle (+1%) and bicycles with electric assistance (+1%)
- A reduction of 24.8% in carbon weight per employee between 2023 and 2024

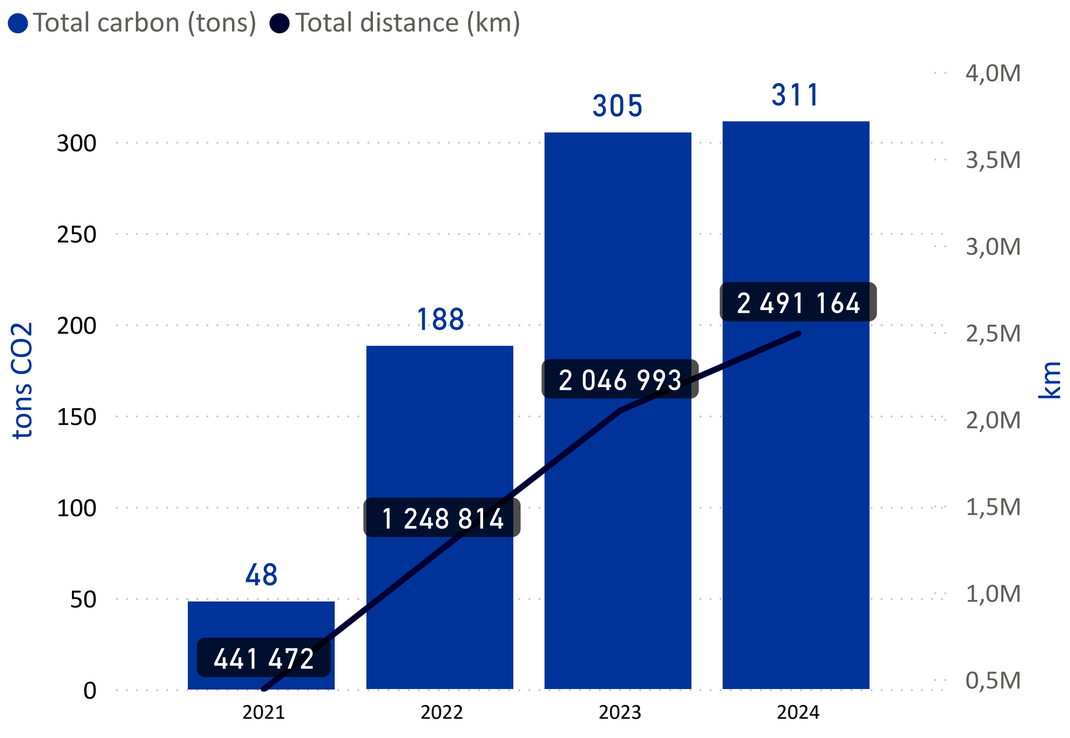
Average per employee in 2023

5 092 km
759 kgCO2

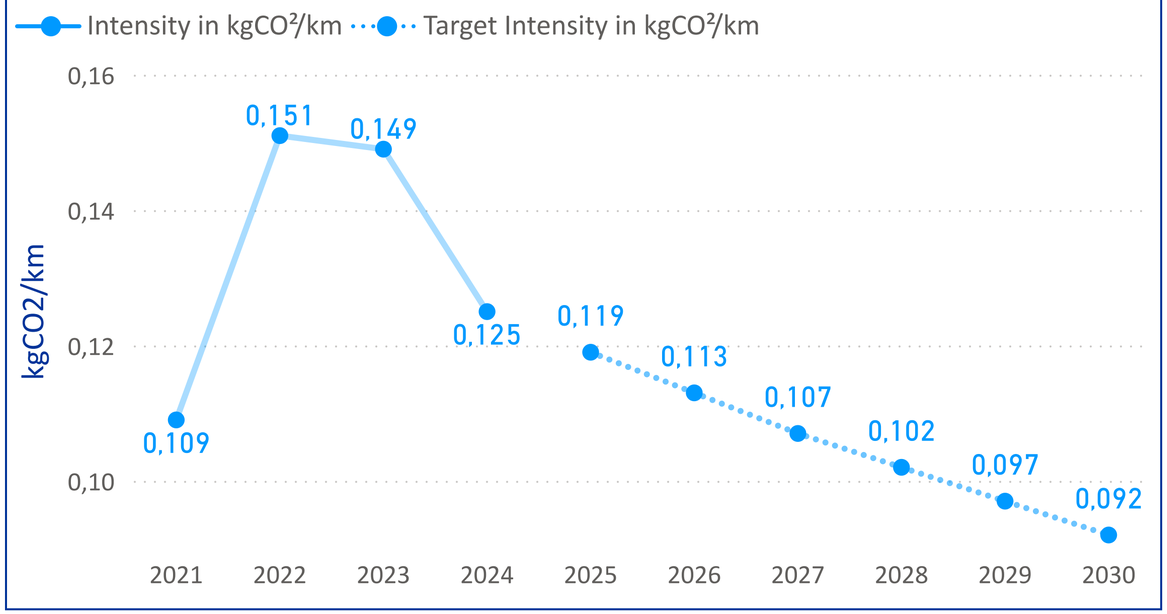
Average per employee in 2024

4 571 km
571 kgCO2

Travel commute's evolution



Carbon indicator : Intensity in kgCO²/km per year



The carbon intensity indicator represents the kg of CO2 generated for 1 km. With this intensity, Qair mesures its progress towards its targets of 0.092 kgCO2/km in 2030.

VI.C CARBON INTENSITY EVOLUTION 2021 - 2024

Construction intensity
This ratio concerns the carbon intensity of the construction phase. It describes the weight of carbon for the construction of each plant with a ratio of 1 MW.

Calculation = *Plant total carbon weight construction (tCO2) / Plant capacity (MW)*

- For Solar technology, the construction intensity is increasing from 1 290 to 1 423 tCO2/MW.
- For Wind technology, the construction intensity oscillates between 819 and 893 tCO2/MW.

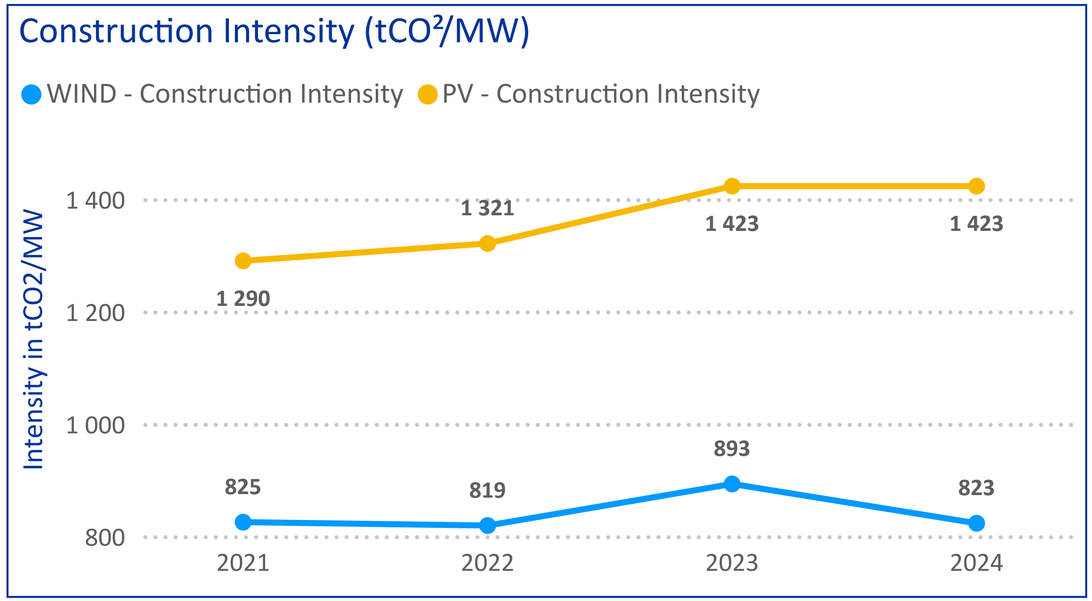
Operation Intensity
This ratio concerns the carbon intensity of the operation phase. It describes the weight of carbon of each plant in operation with a ratio of 1 kWh.

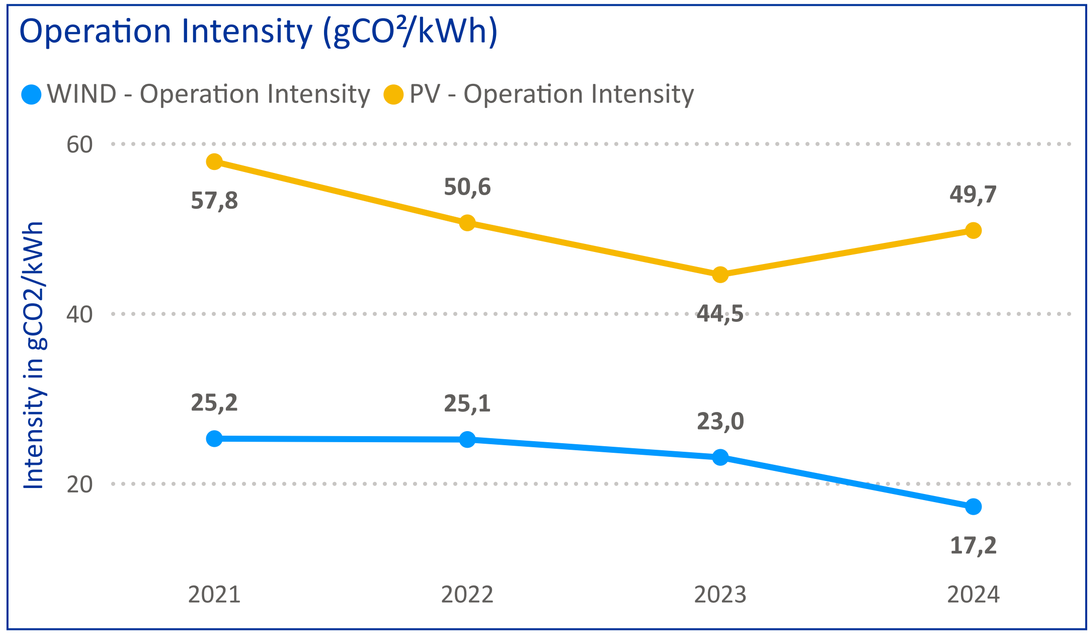
We take into consideration the emissions due to operation during the year and amortize the emissions from construction during an average time of 20 years for wind plants and 25 years for solar plants. New added plants on the actual year are not integrated as their production is not representative of a full production year.

Calculation = *[(Plant total carbon weight construction (tCO2) / amortized years) + Plant carbon weight in operation year n (tCO2)] / Plant Real Year production (MWh) x1 000*

- For Solar technology, operation intensities is decreasing since 2021, with an increase in 2024.
- For Wind technology, operation intensities is decreasing since 2021.

Operation intensities references from french dataset ADEME Version 23.6 (28/04/2025)
- WIND technology : 14 gCO2/kWh (Data from an LCA study from French onshore wind generation capacity in 2013)
- PV technology : 44 gCO2/kWh (photovoltaic panels China production)

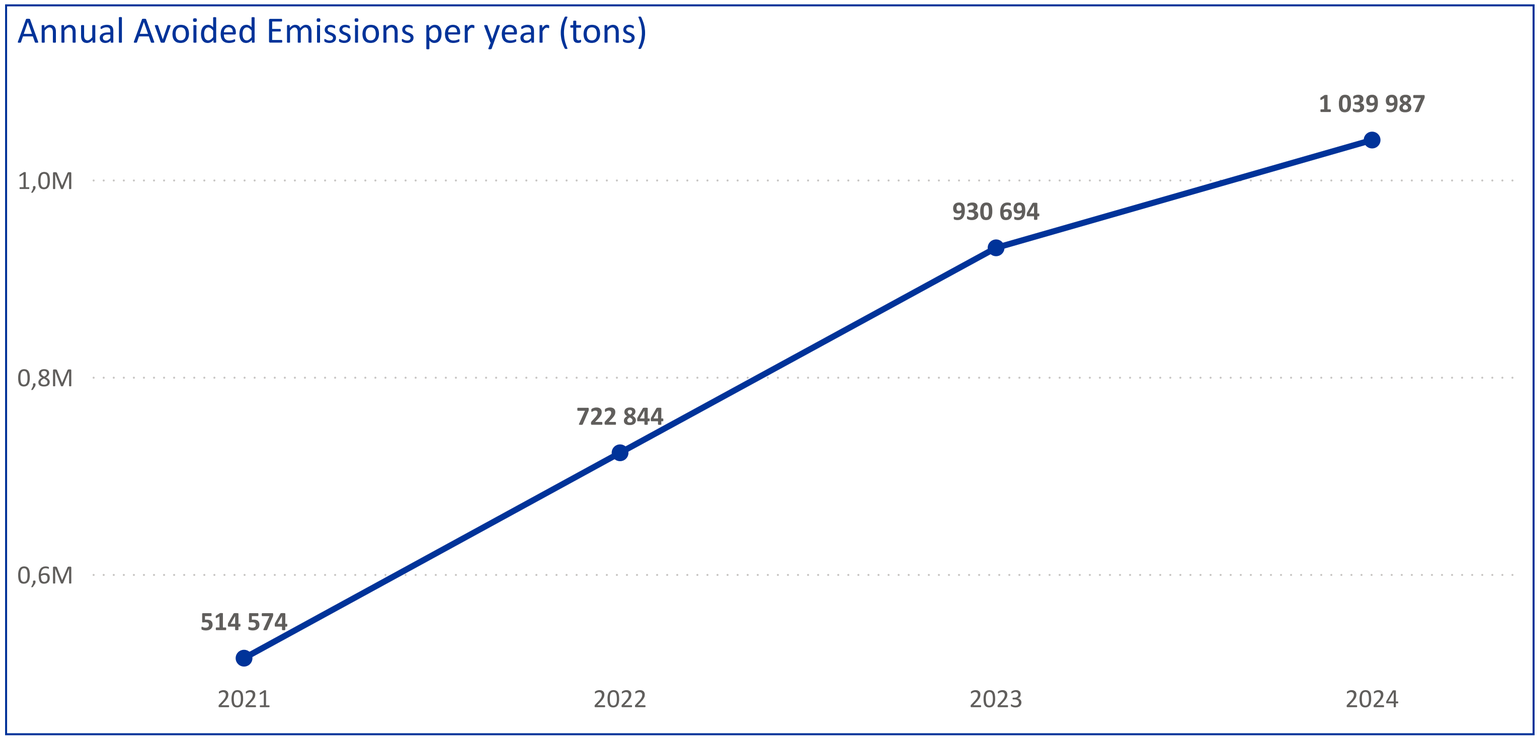




VI.D AVOIDED EMISSIONS EVOLUTION 2021 - 2024

Avoided emissions are defined as the CO2 emissions that are prevented because of the use of a company's products or services, compared to a baseline where these products or services were not used.

This graph shows the growth of the avoided emissions volume due to the develoment of Qair assets in operation since 2021.



Rokietnica commissioning, Poland

CARBON STRATEGY

VII.A METHODOLOGY

Framework

The **Net Zero Initiative** framework (Avril 2020 – Carbone 4), is based on the idea that an organization must, at its level, act in three complementary ways in order to contribute to global neutrality.

A. Reduce its direct and indirect emissions on scope 1,2 and 3

B. Reduce the emissions of others
- By marketing low-carbon solutions, under certain conditions
- By financing low-carbon projects outside of its value chain

C. Improve carbon sinks
- By developing carbon removals within its operations and in its value chain
- By financing carbon sequestration projects outside its value chain

The two levers to reach global net zero		GLOBAL DECREASE IN EMISSIONS		GLOBAL INCREASE OF CARBON REMOVALS
NZI's three pillars		A/ Reducing the company's emissions	B/ Reducing others' emissions	C/ Removing CO_2 from the atmosphere
		Induced emissions	*Avoided emissions*	*Negative emissions*
Inside the value chain	Operations	Direct emissions *(scope 1+2)*	-	Direct removals
	Upstream & downstream	Indirect emissions *(scope 3)*	Emissions avoided by goods and services	Indirect removals
Outside of the value chain		-	Financing of reduction/avoidance projects	Financing of carbon removal projects

VII.B CARBON ACTION PLAN

Based on the carbon footprint results, the Group has defined a carbon strategy with the aim of reducing our impact over Scopes 1, 2 and 3.

Qair's carbon action plan is divided in 3 pilars deploying 12 actions.

The first pilar concerns our construction and operation activities. It is the most impacting but also the most challenging as we need to work with supply chain, energy market and regulations actors.

The second and third pilars can be directly conducted by Qair management and executives.

QAIR CARBON ACTION PLAN

I. Improve the sustainability of our power plants

1. Switch the plant energy consumption to renewable energy
2. Develop sustainable procurement
3. Generalize our best operational practices
4. Anticipate recycling in the renewable energy industry

II. Build a low-carbon culture

1. Implement a common software for the carbon footprint tracking
2. Increase transparency of carbon performance to stakeholders
3. Raise carbon awareness among top management
4. Systematically request components' LCA from suppliers
5. Prioritize physical data over monetary data (construction and operation activities)

III. Be exemplary at source

1. Promote sustainable transportation
2. Use a low carbon fleet of cars
3. Use renewable energy in our offices

VII.C IMPROVE THE SUSTAINABILITY OF OUR PLANTS

1. Switch the plant energy consumption to renewable energy

% of plants in operation with electricity consumption data

88,4

Target 2030 : 90

% of renewable electricity consumption within plants in operation

2,3

Target 2030 : 50

2. Develop sustainable procurement

Identify relevant low carbon components alternatives for PV technology

0

Target 2030 : 5

Identifiy relevant low carbon components alternatives for WIND technology

0

Target 2030 : 5

3. Generalize our best operational practices

Identify best practices that can be generalized (water, cleaning, waste, energy, land use)

1

Target 2030 : 10

4. Anticipate recycling in the renewable energy industry

% of recycling actors identified over the total assets in operation

0,14

Target 2030 : 100

% of recycling services over the total assets in operation

0

Target 2030 : 50

VII.C BUILD A LOW-CARBON CULTURE

1. Implement a common software for the carbon footprint tracking

2. Increase transparency of carbon performance to stakeholders

3. Raise carbon awareness among top management

4. Systematically request components' LCA from suppliers

5. Prioritize physical data over monetary data (construction and operation activities)

Dedicated carbon tool	Carbon reporting	% of COMEX members who participated in a specific carbon awareness initiative	% of LCA's obtained	% of total carbon in construction, calculated with physical data
1	0	0	0	95,6
Target 2024: 1	**Target 2025: 1**	**Target 2028: 100**	**Target 2030 : 50**	**Target 2030 : 90**

% of board members who participated in a specific carbon awareness initiative	% of total carbon in operation, calculated with physical data
0	91,4
Target 2028: 100	**Target 2030 : 90**

VII.C BE EXEMPLARY AT SOURCE

1. Promote sustainable transportation

% of employees which have been offered an incentive about ST

80

Target 2030 : 100

% of diesel/gasoline cars in travel commute

40,5

Target 2030 : 20

% of employees with access to public transportation (less than 250 meters)

56

Target 2030 : 70

% of public transportations in travel commute

34,2

Target 2030 : 50

Travel commute's carbon indicator in kgCO2/km

0,125

Target 2030 : 0,092

2. Use a low carbon fleet of cars

% of electric company's cars

16

Target 2030 : 25

% of hybrid company's car

38

Target 2030 : 60

% of diesel/gasoline company's car

43

Target 2030 : 5

% of hydrogen company's cars

3

Target 2030 : 10

3. Use renewable energy in our offices

% of offices with electricity consumption data (coworking excluded)

100

Target 2030 : 100

% of renewable electricity in office consumption

6,6

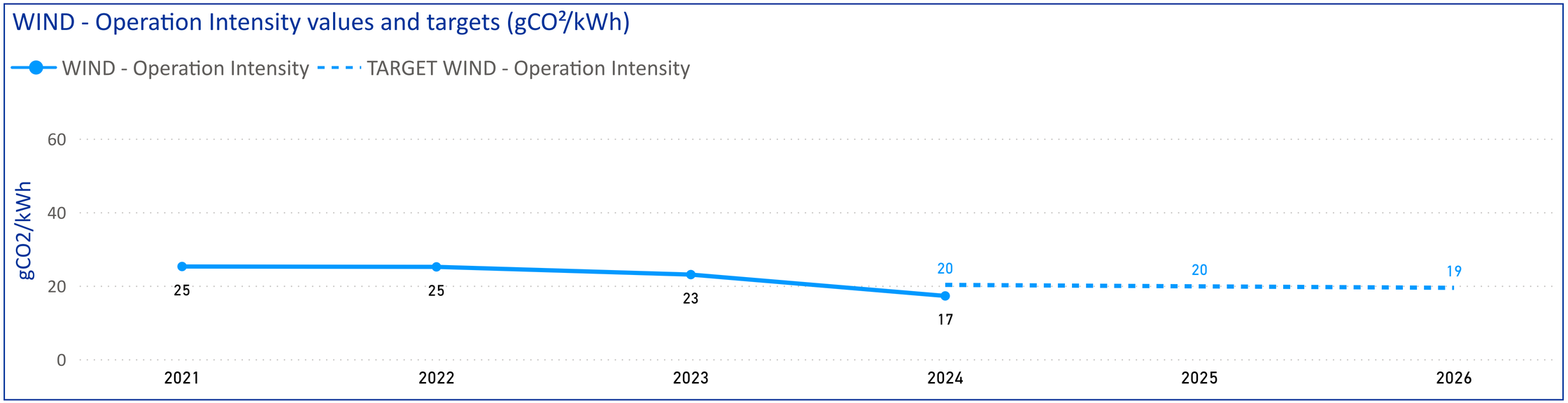
Target 2030 : 70

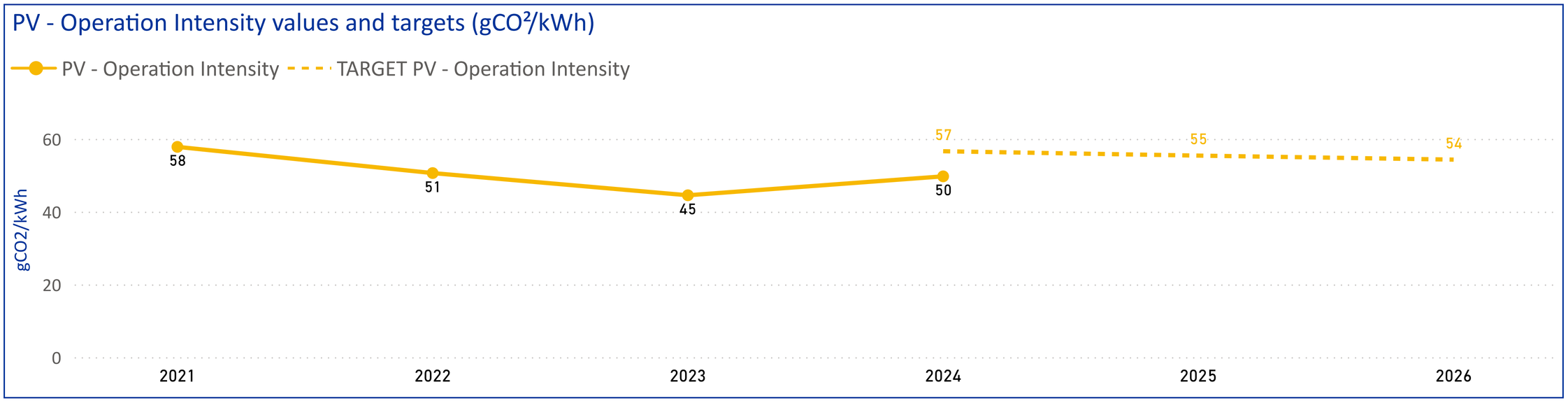
CARBON TARGETS

2021 - 2026

VIII.A OPERATION INTENSITIES TARGETS

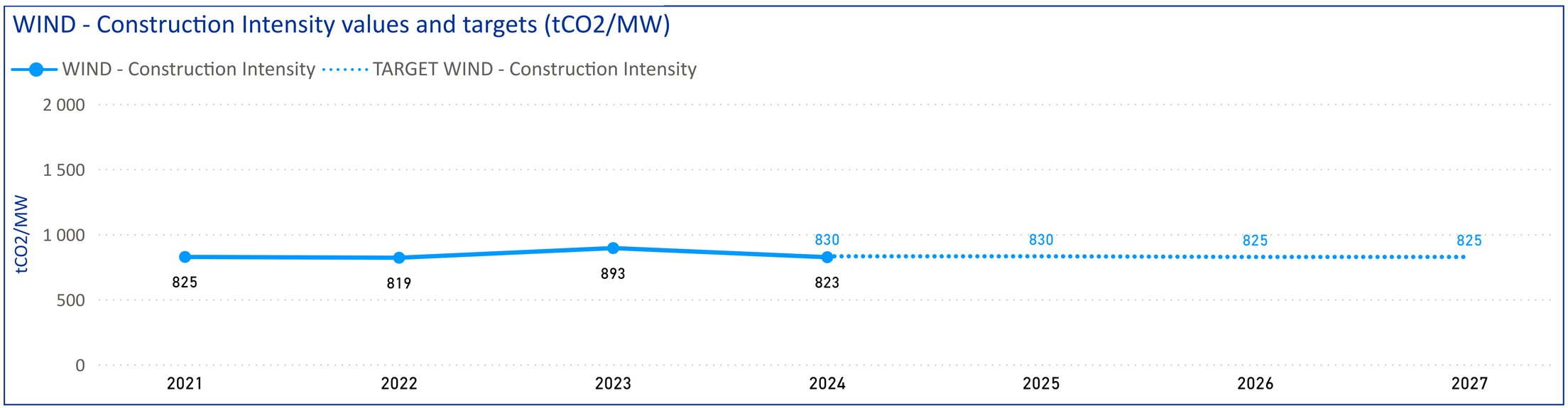
Qair established operation intensity targets in June 2024.

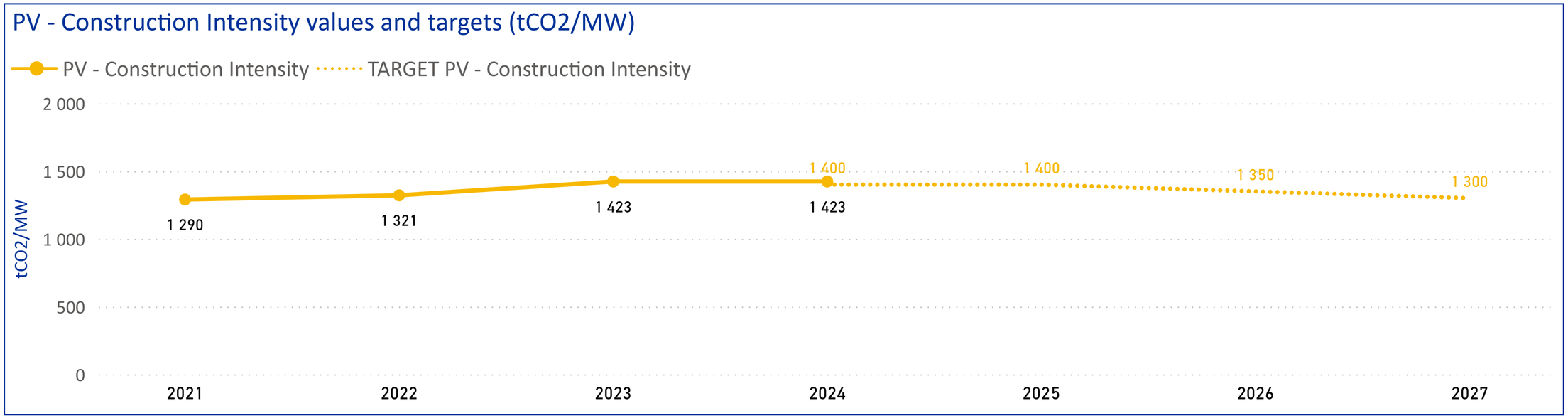




VIII.B CONSTRUCTION INTENSITIES TARGETS

Qair established construction intensity targets in June 2024.





VIII.C CUMULATED AVOIDED EMISSIONS TARGETS