The European *CPPA* Barometer

H1 2024

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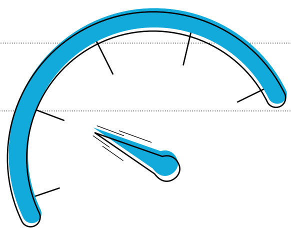


Introduction

To meet their Sustainability targets and protect themselves against the price volatility in energy markets, an increasing number of companies across Europe pay close attention to Corporate Power Purchase Agreements (CPPAs), direct contracts between a producer and a consumer to secure a supply of high-quality green energy for the long-term and at a firm price.

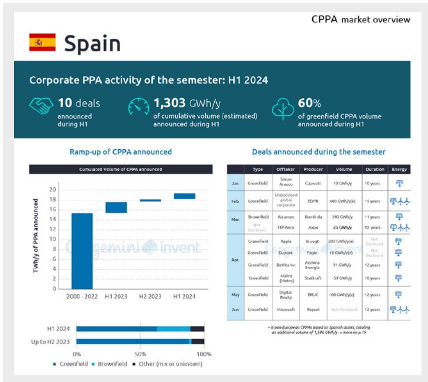
Every semester, Capgemini Invent publishes its **European CPPA Barometer, a comprehensive report on the latest deals and trends,** to bring more transparency to this dynamic market composed of over-the-counter contracts.

Following the record-breaking level of activity in 2023, the CPPA Market confirmed its dynamism in **H1 2024,** with an unprecedented number of new deals announced in a single semester (125, vs 98 in H2 2023) and a significant underlying volume of green energy (+16.5 TWh/y, vs +10.5 TWh/y in H2 2023). Though Tech giants continue to drive the sector with massive agreements, the panel of offtakers continue to diversify with smaller businesses signing their first PPAs.

Though Spain continues to score the largest cumulated volume announced (counting the cross-border deals sourced from the country), Germany and the UK are experiencing record activity as well. Another trend visible during the semester: several international corporates have opted to negotiate simultaneously multiple country-specific physical PPAs instead of large virtual pan-European agreements.

The materialization of cannibalization risk across Europe, especially in Spain, complexifies long-term pricing negotiations. However, the rising maturity of buyers and vendors is allowing for more and more sophisticated structures, with Baseload products leveraging the complementarity of wind and PV and innovative “solar + storage” contracts.

Methodology



The main section of the Barometer (p.5 to 19) covers the CPPA activity of 13 European countries during the Semester.

France is also covered in detail in the Baromètre des Achats d'Energie Verte, a quarterly green sourcing report published in parallel: https://www.capgemini.com/fr-fr/perspectives/publications/barometre-achats-energie-verte-france/

Only CPPAs that have been publicly announced are listed in the Barometer. All figures are public data, shared by the corporates in official press releases. In some cases, the annual volume of a CPPA has been estimated using the official capacity figure and an estimate of the capacity factor of the technology used in the country: such estimated volumes are indicated with an *"(e)"*. Characteristics that remain unknown and without the possibility to make an estimate are indicated with *"Not disclosed"*.

CPPAs referred to as "Greenfield" are based on new renewable energy production plants, under development at the time of the signature, while "Brownfield" CPPAs are based on already existing assets, typically leaving a public support scheme. In some cases, a CPPA covers both types of assets (or transitions from Brownfield to Greenfield during the contract), while in others the type of asset has not been officially disclosed.

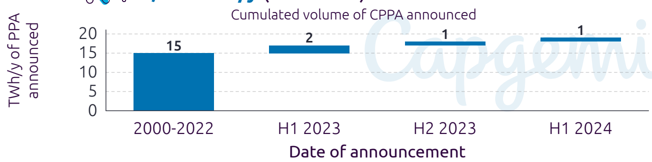
Small-scale onsite PPAs (for self-consumption) and Utility PPAs (for reselling and trading of renewable power) are not covered by this Report.

Cross-border CPPAs volumes are accounted for in the Offtaker's country (e.g., a CPPA signed for a Sweden-based asset to cover energy consumption in Norway is taken into account for Norway). The many explicitly pan-European CPPAs are studied in the "multi-country" category (p.19).

H1 2024 activity in national CPPA markets

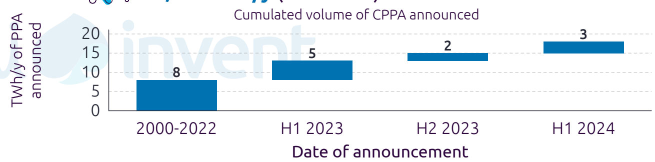
SPAIN

1,303 GWh/y (estimated) announced in H1 2024



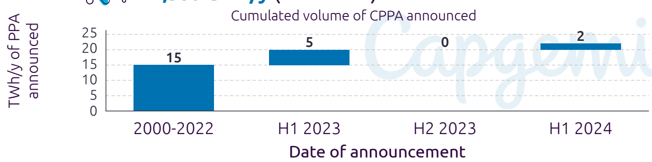
GERMANY

+2,620 GWh/y (estimated) announced in H1 2024



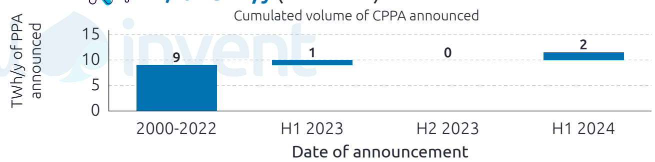
NORWAY

+1,560 GWh/y (estimated) announced in H1 2024



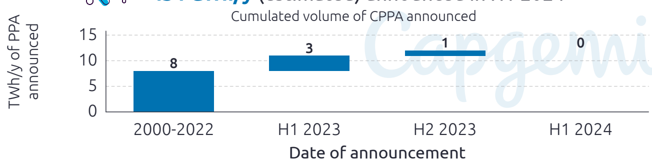
NETHERLANDS

+2,464 GWh/y (estimated) announced in H1 2024



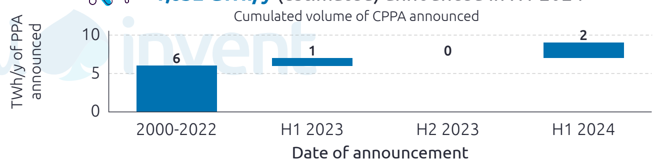
SWEDEN

+434 GWh/y (estimated) announced in H1 2024



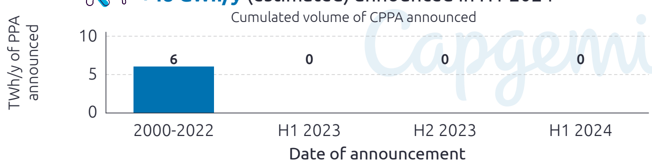
UNITED KINGDOM

+1,652 GWh/y (estimated) announced in H1 2024



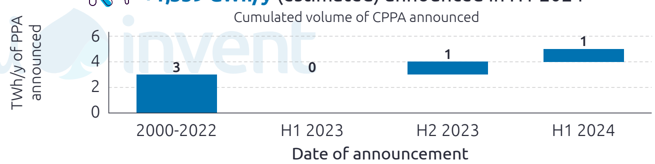
FINLAND

+48 GWh/y (estimated) announced in H1 2024



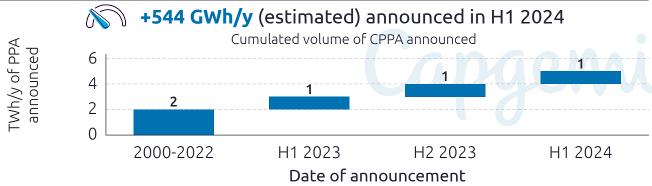
FRANCE

+1,359 GWh/y (estimated) announced in H1 2024



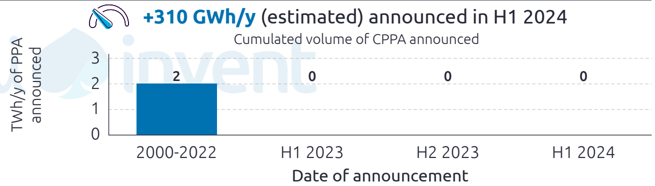
POLAND

+544 GWh/y (estimated) announced in H1 2024



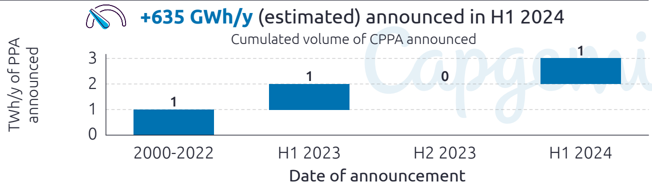
BELGIUM

+310 GWh/y (estimated) announced in H1 2024



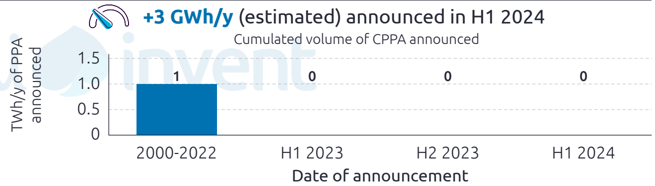
ITALY

+635 GWh/y (estimated) announced in H1 2024



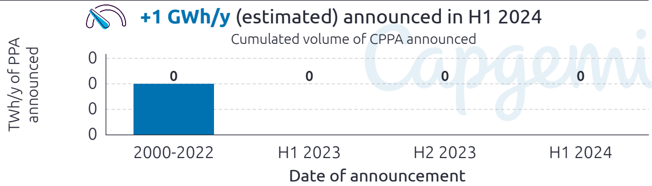
PORTUGAL

+3 GWh/y (estimated) announced in H1 2024



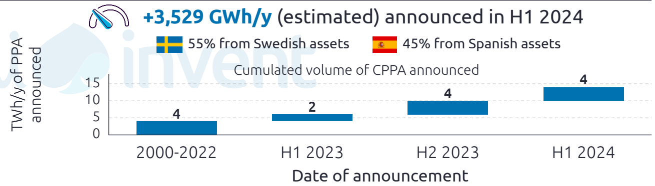
SWITZERLAND

+1 GWh/y (estimated) announced in H1 2024



MULTI-COUNTRY

+3,529 GWh/y (estimated) announced in H1 2024



Spain

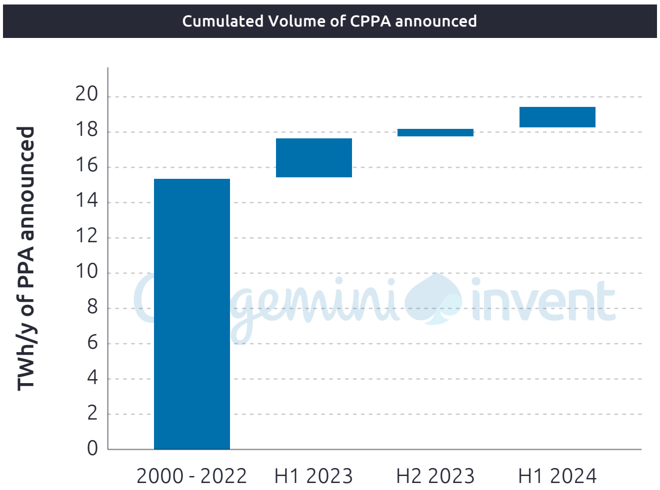
Corporate PPA activity of the semester: H1 2024

10 deals
announced during H1

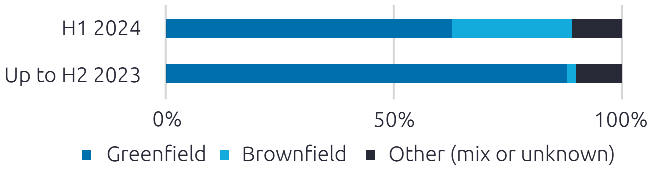
1,303 GWh/y
of cumulative volume (estimated) announced during H1

60%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Jan.	Greenfield	Sonae Arauco	Capwatt	10 GWh/y	10 years	
Feb.	Greenfield	Undisclosed global corporate	EDPR	400 GWh/y(e)	15 years	
Mar.	Brownfield	Alcampo	Iberdrola	340 GWh/y	11 years	
	Not Disclosed	ITP Aero	Axpo	25 GWh/y	10 years	
Apr.	Greenfield	Apple	Ib vogt	200 GWh/y(e)	Not Disclosed	
	Greenfield	Dupont	Engie	18 GWh/y(e)	Not Disclosed	
	Greenfield	DaVita Inc	Acciona Energia	91 GWh/y	12 years	
	Greenfield	Makro (Metro)	Statkraft	59 GWh/y	10 years	
May	Greenfield	Digital Realty	BRUC	160 GWh/y(e)	12 years	
Jun.	Greenfield	Microsoft	Repsol	Not Disclosed	12 years	

+ 6 pan-European CPPAs based on Spanish assets, totaling an additional volume of 1,586 GWh/y → more on p.19

The usual leader of the European CPPA market still scores the highest cumulated volume announced during H1 2024, accounting both deals aimed at covering energy needs within the country and pan-European VPPAs sourced from Spanish solar assets. Corporates continue to leverage the favorable production conditions to source large and small Pay-as-Produced solar contracts.

However, this volume and the associated number of deals represent a noticeable slowdown compared with the level of activity of previous semesters. As a strong cannibalization effect arises, negotiating long-term prices for a non-Baseload profile proves increasingly difficult. As a result, more complex structures are tested by vendors and buyers, combining both solar and wind assets to propose a flatter curve.

Germany

Corporate PPA activity of the semester: H1 2024

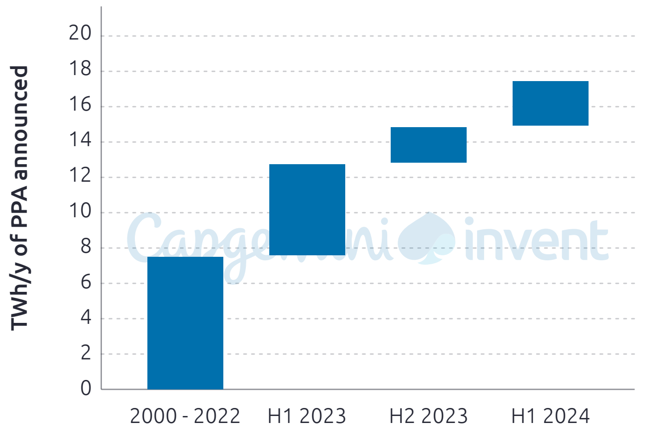
27 deals
announced during H1

2,620 GWh/y
of cumulative volume (estimated) announced during H1

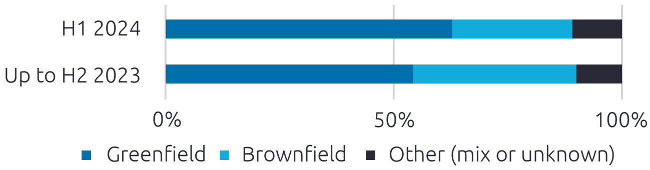
62%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced

Cumulated Volume of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Jan.	Brownfield	Schott	Statkraft	42 GWh/y	3 years	
	Greenfield	Lhyfe	EDPR	58 GWh/y	15 years	
	Greenfield	DHL	RWE	104 GWh/y	10 years	
Feb.	Brownfield	Ensinger	RWE	30 GWh/y	10 years	
	Brownfield	Evonik	RWE	38 GWh/y	*Not Disclosed*	
	Brownfield	ThyssenKrupp Steel	RWE	112 GWh/y	10 years	
	Brownfield	Vodafone	RWE	250 GWh/y	*Not Disclosed*	
	Brownfield	Infraserv Höchst	RWE	*Not Disclosed*	*Not Disclosed*	
	Not Disclosed	Flender	Eco2 Grow	*Not Disclosed*	*Not Disclosed*	
	Greenfield	Evonik	Vattenfall	120 GWh/y	10 years	
	Not Disclosed	Novelis	Statkraft	58 GWh/y	10 years	
	Greenfield	Salzgitter	Octopus Energy	126 GWh/y	10 years	
	Greenfield	Rehau	Engie	90 GWh/y(e)	5 years	
	Greenfield	O2 Telefónica	Iberdrola	200 GWh/y	15 years	
	Greenfield	Wieland Group	Vattenfall	46 GWh/y	10 years	
	Not Disclosed	Maincubes	Stadtwerke Gottingen	40 GWh/y(e)	10 years	
Mar.	Mix	TVitesco echnologies	Statkraft	28 GWh/y	3 years	
	Greenfield	Lyondellbasell	Encavis	210 GWh/y	12 years	
Apr.	Greenfield	Stahl Holding Saar (SHS)	EnBW	170 GWh/y(e)	15 years	
	Brownfield	Deutsche Bahn	Statkraft	44 GWh/y	8 years	
	Not Disclosed	Deutsche Bahn	Statkraft	49 GWh/y	3 years	
	Not Disclosed	Bayer AG	Wuppertaler Stadwerke	120 GWh/y	*Not Disclosed*	
	Greenfield	Salzgitter	Iberdrola	390 GWh/y(e)	15 years	
Jun.	Brownfield	Wacker Chemie	Verbund	88 GWh/y	5 years	
	Greenfield	*Unnamed US tech group*	EDPR	108 GWh/y(e)	20 years	
	Greenfield	Metrans	Sunnic Lighthouse	30 GWh/y(e)	*Not Disclosed*	

Germany is progressively taking the helm of the European CPPA market, closing the gap with Spain in terms of cumulated volume and even surpassing it in deal count.

The multiple heavy industries present in the country drive the demand for more PPAs, to power steelmaking operations, chemicals production and electrolyzers for Green Hydrogen to name a few examples. As the offtakers' understanding of the market and its trends grows, new structures (such as Baseload and Pay-as-Nominated) are tested, in addition to the traditional Pay-as-Produced configuration.

Offshore Wind continues to play an important role in addressing the needs of German corporates: we continue to observe producers selecting multiple offtakers among which to split the volume to be produced by large future projects, like RWE's Kaskasi Offshore Wind farm or Iberdola's Baltic Eagle farm.

Norway

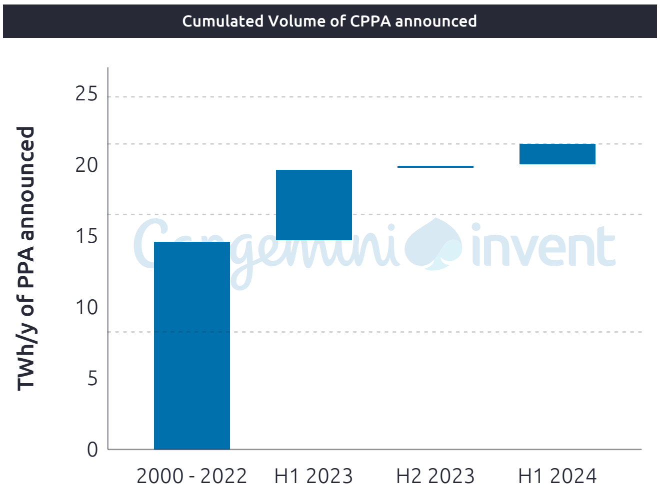
Corporate PPA activity of the semester: H1 2024

3 deals
announced during H1

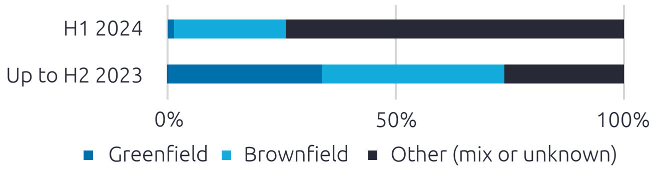
1,560 GWh/y
of cumulative volume (estimated) announced during H1

1%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Jan.	Greenfield	Workspace	Statkraft via Gresham House	20 GWh/y(e)	10 years	
Apr.	*Not Disclosed*	SkiGA	Hafslund	1,100 GWh/y	15 years	
Mar.	Brownfield	Hydro	Statkraft	440 GWh/y	15 years	*Renewable Energy*

True to the trends observed in the previous year, the Norwegian CPPA market saw large volumes through a limited number of new agreements, mostly dedicated to industrial offtakers and using the extensive hydropower capacity in place to deliver flat supply curves.

In addition to Statkraft, the main seller of PPAs in the country, Hafslund is providing most of the cumulated volume of the semester through a PPA with green ammonia producer SkiGA: the deal leverages hydropower capacity to deliver a baseload profile. Though much smaller, Workspace's PPA is a rare example of solar-based contract in the country, with a volume to be converted by Statkraft into baseload to integrate its supply contract.

Netherlands

Corporate PPA activity of the semester: H1 2024

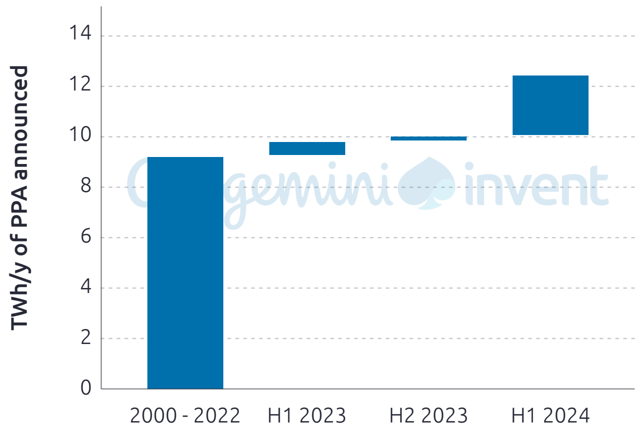
5 deals
announced during H1

2,464 GWh/y
of cumulative volume (estimated) announced during H1

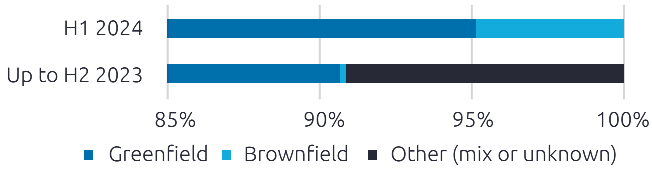
95%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced

Cumulated Volume of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Feb.	Brownfield	Air Products	Eneco	120 GWh/y(e)	10 years	
	Greenfield	Fastned	GLP Clean Energy	15 GWh/y	8 years	
	Greenfield	Google	Eneco & Shell	2,260 GWh/y(e)	*Not Disclosed*	
Mar.	Greenfield	KPN	Eneco	47 GWh/y	15 years	
May.	Greenfield	Fastned	Ecorus	22 GWh/y	15 years	

After a slowdown in activity in 2023, Netherlands experienced a noticeable rise in new volumes, although few new deals were announced.

Most of this activity is actually driven by Google's PPA, its largest-ever offshore wind project: to power its Dutch data centers and offices, the tech giant signed for 478 MW from the Hollandse Kust Noord and Hollandse Kust West VI plants, built by a joint-venture between Eneco and Shell. Interestingly, Google announced in parallel several other country-specific PPAs, in Belgium, Poland and Italy.

Most of the other deals of H1 2024 are smaller, based on greenfield solar plants and announced by offtakers entering the Dutch PPA market for the first time: this is an interesting reversal of the previous trend of large-scale wind agreements regularly signed by the same major tech players.

Sweden

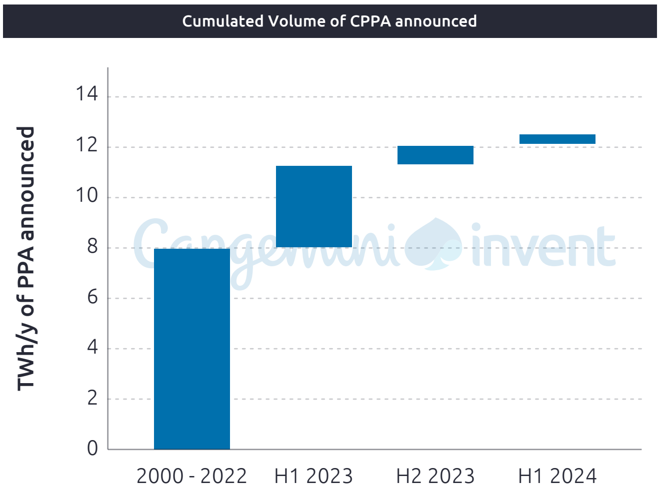
Corporate PPA activity of the semester: H1 2024

6 deals
announced during H1

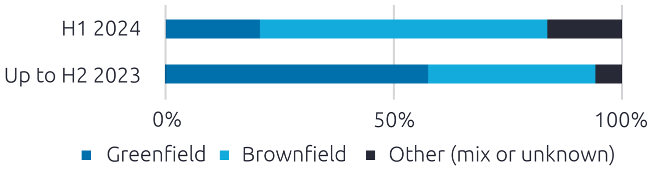
434 GWh/y
of cumulative volume (estimated) announced during H1

17%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Jan.	Greenfield	Vestre	Better Energy	25 GWh/y	10 years	
	Greenfield	H&M	Alight	24GWh/y	*Not Disclosed*	
Feb.	Brownfield	Borealis	Axpo	125 GWh/y	10 years	
Mar.	Brownfield	Borealis	Vattenfall	175 GWh/y	10 years	
Apr.	*Not Disclosed*	Hydro	Alpiq	60 GWh/y	9 years	*Renewable Energy*
May.	Greenfield	Scan Global Logistics	Better Energy	25 GWh/y	10 years	

*+ 5 **pan-European CPPAs** based on Swedish assets, totaling an additional volume of **1,943 GWh/y** → more on p.19*

Already one of the most dynamic markets among the Nordic countries thanks in particular to its land-based wind sector, Sweden witnessed yet another surge in activity during H1 2024, although the large-sized PPAs are explicitly pan-European (accounted for in the "multi-country" page, even surpassing the volume of pan-European deals based on Spanish solar farms).

Brownfield hydro, onshore wind and greenfield Solar PV PPAs are all represented, mostly signed by seasoned companies (often extending existing partnerships, such as H&M with Alight or Borealis with Axpo) though some offtakers enter the market for the first time (Vestre, Scan Global Logistics).

United Kingdom

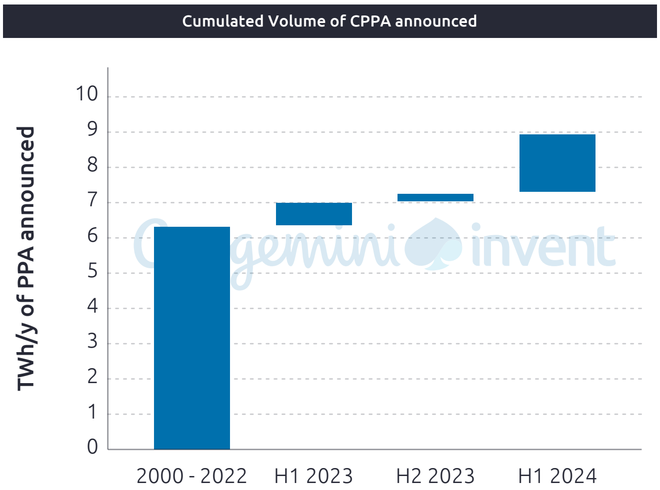
Corporate PPA activity of the semester: H1 2024

11 deals announced during H1

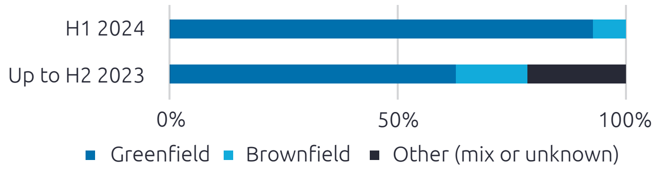
1,652 GWh/y of cumulative volume (estimated) announced during H1

94% greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Jan.	Greenfield	Yorkshire Water	Capital Dynamics	100 GWh	*Not Disclosed*	
	Greenfield	Amazon	Engie	430 GWh/y(e)	*Not Disclosed*	
Mar.	Greenfield	Llyods Banking Group	Low Carbon	50 GWh/y	10 years	
	Greenfield	Amazon	Iberdrola	700 GWh/y	*Not Disclosed*	
	Greenfield	Bristol Airport	Luminous Energy	*Not Disclosed*	10 years	
Apr.	Greenfield	Kerry Group	RWE	90 GWh/y(e)	10 years	
	Brownfield	Sky	Octopus Energy	99 GWh/y	10 years	
	Greenfield	Co - op	Iberdrola	8 GWh/y(e)	15 years	
May.	Greenfield	Tesco	EDF Renewables	150 GWh/y	15 years	
	Greenfield	BAE Systems	EDF Renewables	*Not Disclosed*	*Not Disclosed*	
Jun.	Greenfield	*UK-based FTSE100 company*	Lynher Energy	25 GWh/y(e)	15 years	

The United Kingdom experienced a strong level of activity during the semester, with more volume announced than during the whole of 2023.

Amazon is singlehandedly driving most of the new volume with over 280 MW of offshore wind capacity contracted from Engie and Iberdrola in the first quarter. Though smaller, the other deals of the semester illustrate the diversity and maturity of the British PPA market, with examples of both Physical and Virtual contracts, small-scale and large-scale, Solar- and Wind-based, Pay-as-Produced and firm volumes. The offtakers are evenly split in numbers between experienced consumers and new entrants, and come from the banking, tech/telco, nutrition, defense and retail sectors.

An interesting new development is the appearance of the first renewable project in the country to benefit from both a public Contract for Difference and a private CPPA, signed between Luminous Energy and Bristol Airport.

Finland

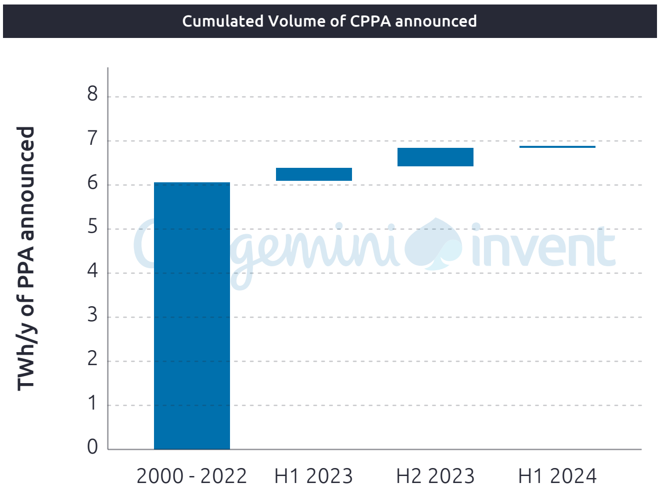
Corporate PPA activity of the semester: H1 2024

2 deals announced during H1

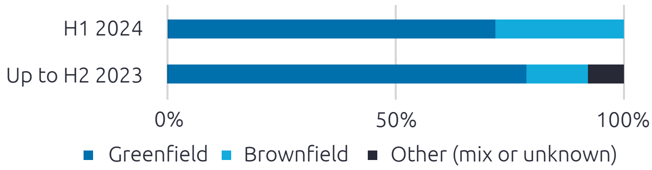
48 GWh/y of cumulative volume (estimated) announced during H1

73% greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Feb.	Brownfield	Mölnlycke Health Care	Neoen	13 Gwh/y(e)	10 years	
May.	Greenfield	Umicore	Gasum	35 GWh/y	10 years	

H1 2024 marks a noticeable slowdown for the Finnish CPPA market, with three times less deals and ten times less volumes compared with the previous semester.

The two contracts announced during the period follow the usual 10-year, onshore wind-based formula, with experienced market players, though at a smaller scale than before.

Neoen signed with MedTech company Mölnlycke Health Care: the volume is to be delivered from the Mutkalampi wind farm, which already had 5 others corporate offtakers. Meanwhile, Gasum and Umicore contracted another PPA together in the country, following a previous agreement of similar size in 2022.

France

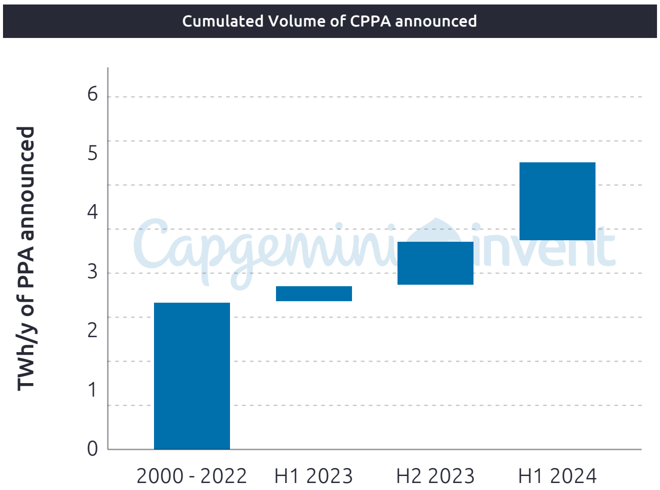
Corporate PPA activity of the semester: H1 2024

24 deals
announced during H1

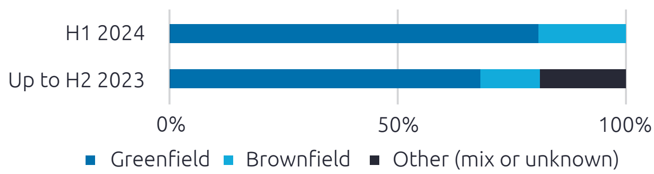
1,359 GWh/y
of cumulative volume (estimated) announced during H1

80%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Jan.	Greenfield	Les Mousquetaires	Valorem	57 GWh/y	20 years	
	Greenfield	Orano	JPEE	16 GWh/y	20 years	
	Brownfield	Carrefour	VSB, Voltalia	104 GWh/y	15 years	
	Greenfield	SNCF	Solveo Energies	33 GWh/y	25 years	
	Greenfield	Equinix	WPD	300 GWh/y	20 years	
Feb.	Greenfield	Groupe Pochet	ABO Wind	30 GWh/y(e)	20 years	
	Greenfield	Bayer	Alpiq	Not disclosed	20 years	
	Greenfield	Groupe Iliad	Engie	35 GWh/y	15 years	
	Greenfield	Crédit Agricole	JPEE	18 GWh/y	20 years	
	Brownfield	Colruyt	Eurowatt	19 GWh/y(e)	5 years	
	Brownfield	Crédit Agricole	Valeco	3 GWh/y(e)	Not Disclosed	
Mar.	Brownfield	Data4	Eurowatt	80 GWh/y	Not Disclosed	
	Brownfield	Data4	Photosol	70 GWh/y	Not Disclosed	
	Greenfield	Tokai COBEX	Clearvise AG	47 GWh/y	11 years	
	Greenfield	Lesaffre	Qair	34 GWh/y	18 years	
Apr.	Greenfield	Suez	Engie	32 GWh/y(e)	20 years	
	Greenfield	Suez	Engie	19 GWh/y(e)	20 years	
	Greenfield	Société Générale	JPEE	17 GWh/y	20 years	
May	Greenfield	SNCF	Valorem	93 GWh/y	25 years	
	Greenfield	Orange	ZE Energy	90 GWh/y	15 years	
	Greenfield	Digital Realty	WPD	50 GWh/y(e)	15 years	
	Greenfield	Alliance Groupe	Valorem	12 GWh/y	20 years	
Jun.	Greenfield	SNCF	Neoen	172 GWh/y	25 years	
	Greenfield	US-based tech group	EPD R	28 GWh/y(e)	20 years	

Already among the most dynamic markets of the Barometer's panel, France has experienced in H1 2024 an unprecedented level of activity, with record-high deal count (the second highest among the panel, after Germany) and volume (as much as for the whole of 2023).

The offtakers are evenly split between experienced consumers and new entrants signing their first CPPA in the country, and predominantly come from the transportation, banking, tech/telco and retail sectors.

French PPAs are once again characterized by small individual deal sizes (below 60 GWh/y on average) and the longest durations of the panel (18 years on average). Most volume come from new assets, with Greenfield Wind being increasingly sought-after as it provides a long-term complementary profile to the classic Solar PV PPAs. The semester also saw the signing of the first CPPA with storage in France, signed between Orange and ZE Energy.

- *You can learn more about the French CPPA market in the Barometer's sister publication, the quarterly Baromètre des Achats d'Energie Verte en France : https://www.capgemini.com/fr-fr/perspectives/publications/barometre-achats-energie-verte-france/*

Poland

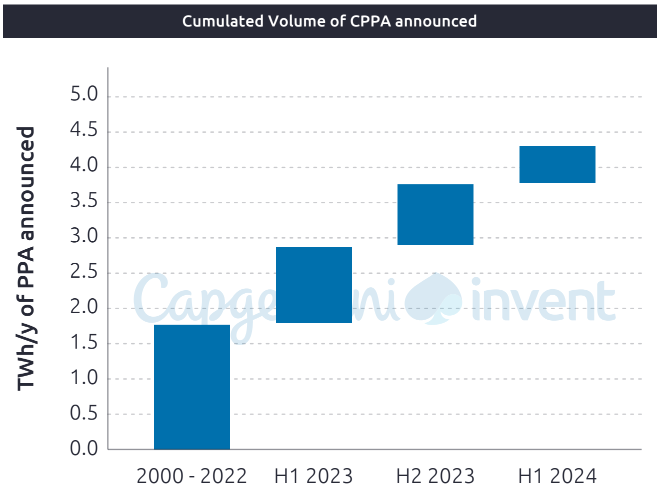
Corporate PPA activity of the semester: H1 2024

8 deals
announced during H1

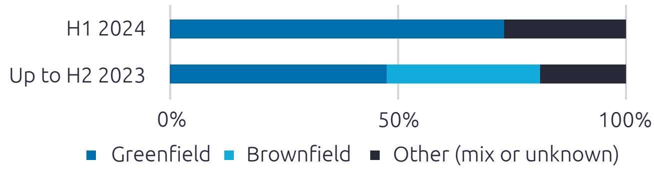
544 GWh/y
of cumulative volume (estimated) announced during H1

75%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Jan.	Greenfield	Boryszew	Golden Peaks Capital	24 GWh/y	10 years	
	Greenfield	Allegro	R.Power	200 GWh/y (e)	10 years	
Feb	*Not Disclosed*	Google	Golden Peaks Capital	137 GWh/y	10 years	
	Greenfield	Auchan	Golden Peaks Capital	115 GWh/y	12 years	
	Greenfield	Air Liquide	Statkraft	*Not Disclosed*	*Not Disclosed*	
	Greenfield	iliad Group	Statkraft	34 GWh/y	10 years	
Mar.	Greenfield	Leroy Merlin	Better Energy	14 GWh/y	10 years	
May	Greenfield	Reckitt	Golden Peaks Capital	20 GWh/y	10 years	

Poland is a young PPA market in Europe, which has sustained in H1 2024 the newfound dynamism of 2023, with a high and stable deal count compared to the two previous semesters. The supremacy of greenfield solar (both small- and large-scale) over brownfield wind is confirmed, and Virtual PPAs are observed along Physical deals as in previous periods. They are dedicated to consumers of the Tech/ Telco, chemicals and retail industries, with GoldenPeaks Capital at the forefront on the supply's side.

Poland is not a member of the Association Issuing Bodies emitting the guarantees of origin under the European Energy Certificate System. Therefore, international offtakers like Google, Auchan and the iliad Group sign PPAs based on Polish assets for their local needs, in parallel with other deals in the rest of the continent, instead of cross-border agreements.

Belgium

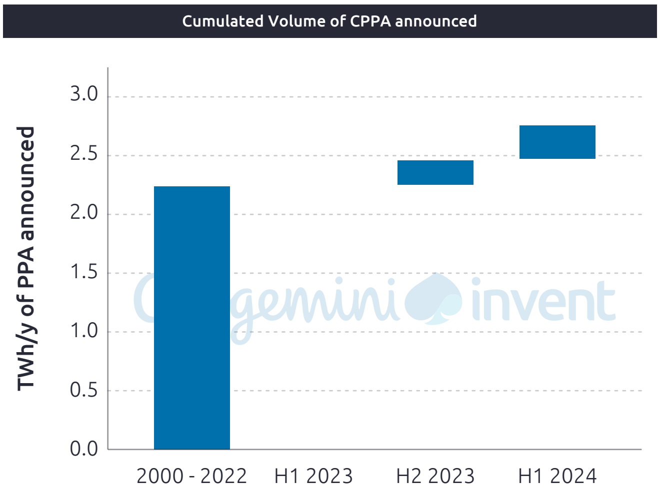
Corporate PPA activity of the semester: H1 2024

3 deals
announced during H1

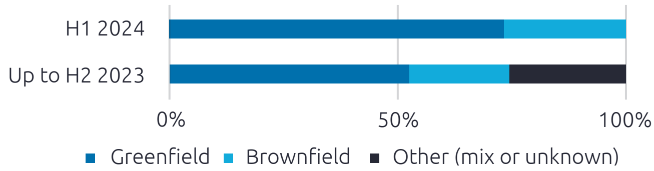
310 GWh/y
of cumulative volume (estimated) announced during H1

77%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Feb.	Brownfield	Borealis	Axpo	70 GWh/y	10 years	
	Greenfield	Google	Aspiravi	180 GWh/y(e)	*Not Disclosed*	
Jun.	Greenfield	Google	Aspiravi	60 GWh/y(e)	*Not Disclosed*	

After a streak of eight CPPAs in October 2023, the Belgian market resumed in H1 2024 its usual pace of two to three new, wind-based deals per semester involving experienced buyers, though with a higher volume per contract than before.

Interestingly, all new PPAs of the period were signed by offtakers announcing simultaneously other contracts elsewhere in Europe, instead of using multi-country virtual contracts: Google signed two CPPAs with Aspiravi with respective capacities of 59 MW and 19 MW from incoming Belgian windfarms, while also announcing delas in Netherlands, Italy and Poland ; meanwhile, Borealis and Axpo agreed on a PPA to power the offtaker’s chemical operations in the country while also collaborating in Sweden (their fourth and fifth PPAs together).

Italy

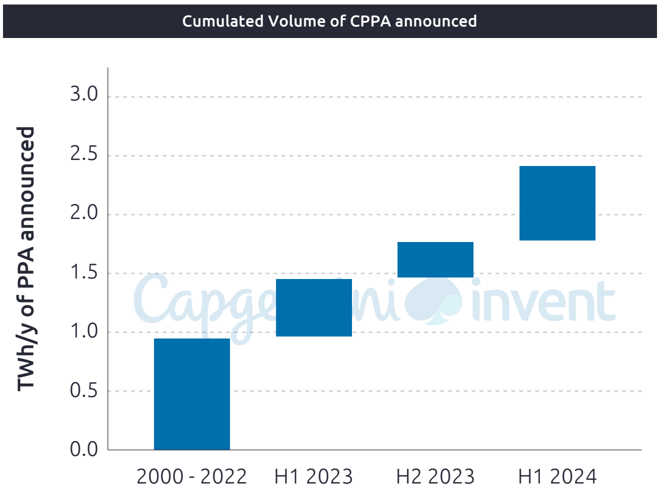
Corporate PPA activity of the semester: H1 2024

14 deals
announced during H1

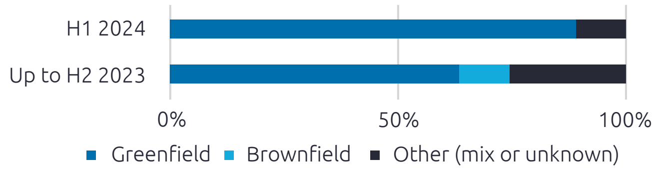
635 GWh/y
of cumulative volume (estimated) announced during H1

89%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Feb.	Greenfield	Google	ERG	89 GWh/y(e)	20 years	
	Greenfield	Saint-Gobain	Axpo	22 GWh/y	10 years	
	Greenfield	Tosano	Iberdrola	20 GWh/y	10 years	
	Greenfield	Groupe iliad	Statkraft	48 GWh/y	10 years	
Mar	Mix	Verallia	Edison Energia	35 GWh/y(e)	*Not Disclosed*	
	Greenfield	Bekaert	Edison Next	11 GWh/y	12 years	
	Greenfield	Heidelberg Materials	OX2	51 GWh/y	7 years	
Apr	Greenfield	ST Microelectronics	Centrica Energy	61 GWh/y	10 years	
	Greenfield	Cargill	Galileo	100 GWh/y	10 years	
May	Greenfield	Bayer	Iberdrola	3 GWh/y	11 years	
	Greenfield	SIAD Group	Edison Energia	14 GWh/y	10 years	
Jun	*Not Disclosed*	Salesforce	Qualitas Energy	35 GWh/y(e)	15 years	
	Greenfield	*US-based Tech group*	EDPR	90 GWh/y(e)	*Not Disclosed*	
	Greenfield	Sasol	GreenGo	45 GWh/y	10 years	

Even as 2023 saw an unparalleled peak in PPA activity across the continent, the Italian market stayed nascent, with low volumes and a steady 4-deals-per-semester pace. This finally changed in the first half of 2024 with a sudden and lasting upswing in deal quantity, size (from 3 to 100 GWh/y) and diversity (solar and wind, physical and virtual, durations from 7 to 20 years).

Though some experienced customers like Google and STMicroelectronics announced sizeable deals during H1 2024, new entrants (from the tech/telco, materials, chemicals and retail sectors) actually drove the majority of the volumes. A dozen different producers, most of them working at a European scale, provide greenfield projects to answer the demand: diversity and experience on the supply side help to build PPA momentum on the Boot.

However, while the appetite of corporate offtakers has significantly increased, the upcoming Fer X legislation may drain the supply of new projects for PPA, as this future subsidy scheme is to have extremely attractive starting auction prices.

Learn more about the Italian PPA market through our interview of GreenGo in p.20

Portugal

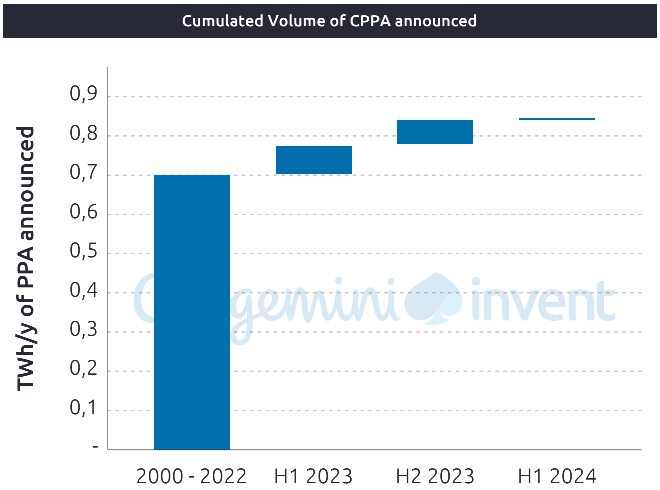
Corporate PPA activity of the semester: H1 2024

1 deals
announced during H1

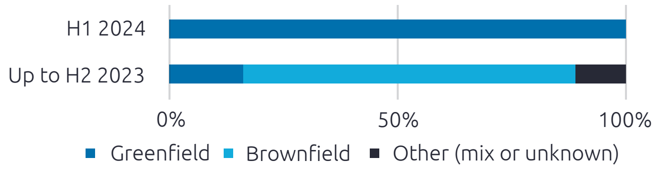
3 GWh/y
of cumulative volume (estimated) announced during H1

100%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Jun.	Greenfield	Finançor	Greenvolt	3 GWh/y	Not Disclosed	

As observed in previous editions, the Portuguese CPPA market saw little activity during the semester.

Greenvolt Next and Finançor announced a 2.1 MW agreement based on the production of solar projects to be deployed on the offtaker's facilities, in the Azores region.

In parallel, Vidrala signed a cross-border PPA with Acciona Energía to power its Portuguese plant, based on Spanish wind assets: since the PPA will also cover the offtaker's consumption in Spain, the deal is accounted for in the Multi-country category (see p.19).

Switzerland

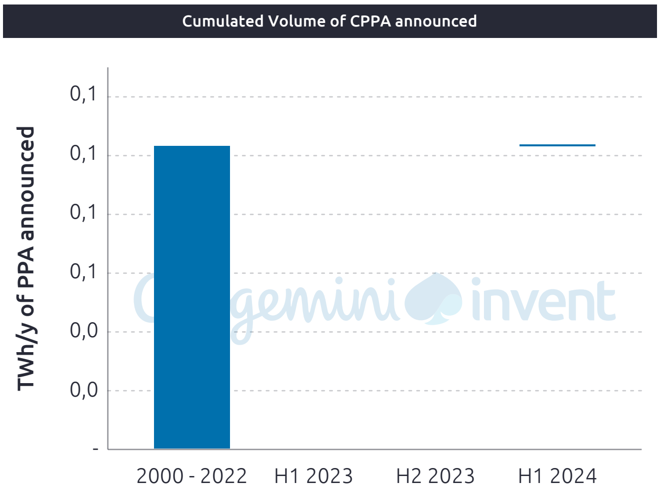
Corporate PPA activity of the semester: H1 2024

1 deals
announced during H1

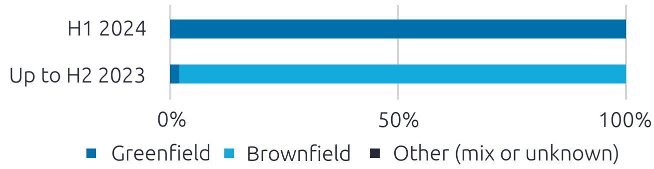
1 GWh/y
of cumulative volume (estimated) announced during H1

100%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy
Apr	Greenfield	Denner	Romande Energie	0.6 GWh/y(e)	*Not Disclosed*	

After 3 years without any announcement, a small-scale CPPA was observed in Switzerland in H1 2024. Signed between local supermarket chain Denner and Romande Energie, it is based on a greenfield agrivoltaics project.

Multicountry

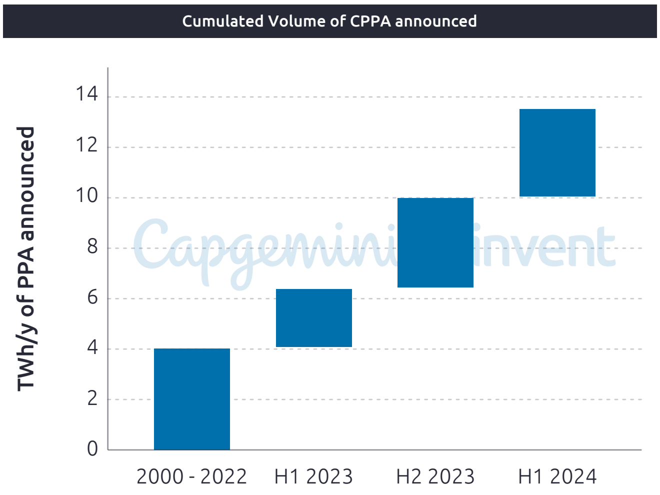
Corporate PPA activity of the semester: H1 2024

11 deals
announced during H1

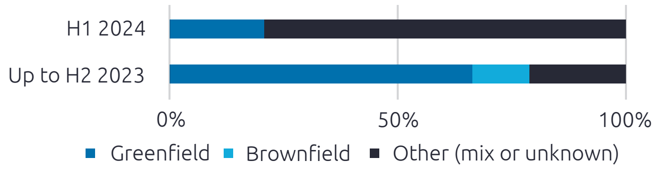
3,529 GWh/y
of cumulative volume (estimated) announced during H1

68%
greenfield CPPA volume announced during H1

Ramp-up of CPPA announced



Split of volumes by PPA type



Deals announced during the semester

	Type	Offtaker	Producer	Volume	Duration	Energy	Country of production
Jan.	Greenfield	Ardagh Glass Packaging	Renewable Power Capital	375 GWh/y	10 years		
Feb.	Greenfield	Cisco	Ignis	60 GWh/y	15 years		
	Greenfield	Lyondellbasel	Renewable Power Capital	720 GWh/y	10 years		
	Greenfield	GSK	Ignis	200 GWh/y	12 years		
	Greenfield	Crown	Enel Green Power	200 GWh/y	15 years		
Apr.	Greenfield	Roca Group	Bruc	96 GWh/y	10 years		
	Not Disclosed	Deutsche Bahn	Uniper	88 GWh/y	5 years		
	Greenfield	Procter and Gamble	Renewable Power Capital	400 GWh/y	10 years		
May	*Not Disclosed*	Amazon	*Not Disclosed*	1,030 GWh/y(e)	*Not Disclosed*		
Jun.	Greenfield	Microsoft	European Energy	360 GWh/y(e)	*Not Disclosed*		
	Not Disclosed	Vidrala	Acciona Energia	*Unknown*	10 years		

The "multi-country" category covers the cross-border PPAs which are explicitly stated to cover the offtaker's consumption in multiple European countries (virtual PPAs, with no physical delivery). These are usually large-scale, pan-European deals based on Spanish greenfield solar PV projects, allowing international offtakers to secure at a low price enough volume to cover multiple locations in a single contract.

Though already observed in the previous years, this trend was particularly noticeable in H2 2023: a third of the volume from the semester was driven by these pan-European deals.

The situation is different in H1 2024: though numerous and massive in scale, multi-country contracts account for 20% of the volume announced in H1, in majority based on Swedish wind and hydro assets this time. Indeed, as explained in previous pages, several offtakers with consumption in multiple European locations have chosen to negotiate intra-country PPAs instead of a single virtual cross-border contract.

Interview: *Renewable* energy producer

H1 2024 saw a surge in activity in the Italian CPPA market. Among the new entrants, GreenGo has announced its first CPPA as part of its strategy to become an independent power producer (IPP). This pay-as-produced agreement commits GreenGo to supply electricity to chemicals group Sasol, from five photovoltaic plants under construction, with a cumulated capacity of 24.5 MW. In this interview, GreenGo shares its experience and its perception of the evolution of the Italian PPA market.

Lorenzo Nardon
Head of Finance and M&A at GreenGo

How would you describe your journey as a new IPP in Italy? What were your motives for exploring PPAs?

GreenGo recently entered the market, founded in 2018, specialising in developing utility-scale renewable energy plants. Starting in 2022, the private equity fund Eiffel Essentiel Fund partnered with us to accelerate our growth. Our pipeline is now reaching 85 renewable projects in 11 regions for a portfolio reaching 1.81 GW.

The signature of our first CPPA this semester is a significant step towards our goal of becoming an independent power producer (IPP). Securing our offtake with Sasol allows us to secure the financing for multiple future projects, validating our roadmap for the coming years, and certify our maturity on the market.

As of today, we keep out target to reach IPP status by the first quarter of 2025.

The Italian CPPA market has significantly energized this semester. What is your perspective on the market, following your experience on your first deal?

The Italian CPPA market has been very buoyant over the last six months, multiple companies were eager to hedge against fluctuations in the electricity market. We found with Sasol a genuine willingness to work together on these PPA contracts, allowing them to address their long-term needs and helping us securing the financing of our facilities. In the end, we succeeded in reaching an agreement, introducing a dynamic pricing system for the PPA electricity.

The dynamic value of the pricing system enables us to offer the CPPA extreme commercial robustness by targeting the economic sustainability of our first investment as an IPP. We wanted to achieve a high level of profitability and an adequate guarantee system for this transaction. This works with both a dynamic floor of remuneration and cap price to fix limits and dynamic discount and zonal price remuneration when the variation of the market allow it. This dynamic and innovative pricing system enables Sasol to hedge against market fluctuations and ensure the bankability of our project.

The experience was for us and for our offtaker a real step to be taken, our advice is to consider the maturity of the market players when starting to look for a buyer and for the preparation of such contracts.

Now, energy producers and buyers are waiting for the launch of FER X following publication of the decree of the same name by the Ministry of the Environment and Energy Security. The platform will be launched at the end of the year, and we're keeping a close eye on the market dynamics it will create.

Looking forward, will GreenGo make CPPAs a key part of its growth ambitions? Are you eager to explore other countries?

We do plan to sign more Corporate PPAs in the future: our portfolio is growing stronger, and we are waiting for the commissioning of current projects to implement new assets in Italy.

CPPA is one of the best tools we could have in our journey to become an IPP and it will be part of the way we finance and value our production in the coming years. We will take our evolution step by step to remain independent and close to our customers and partners.

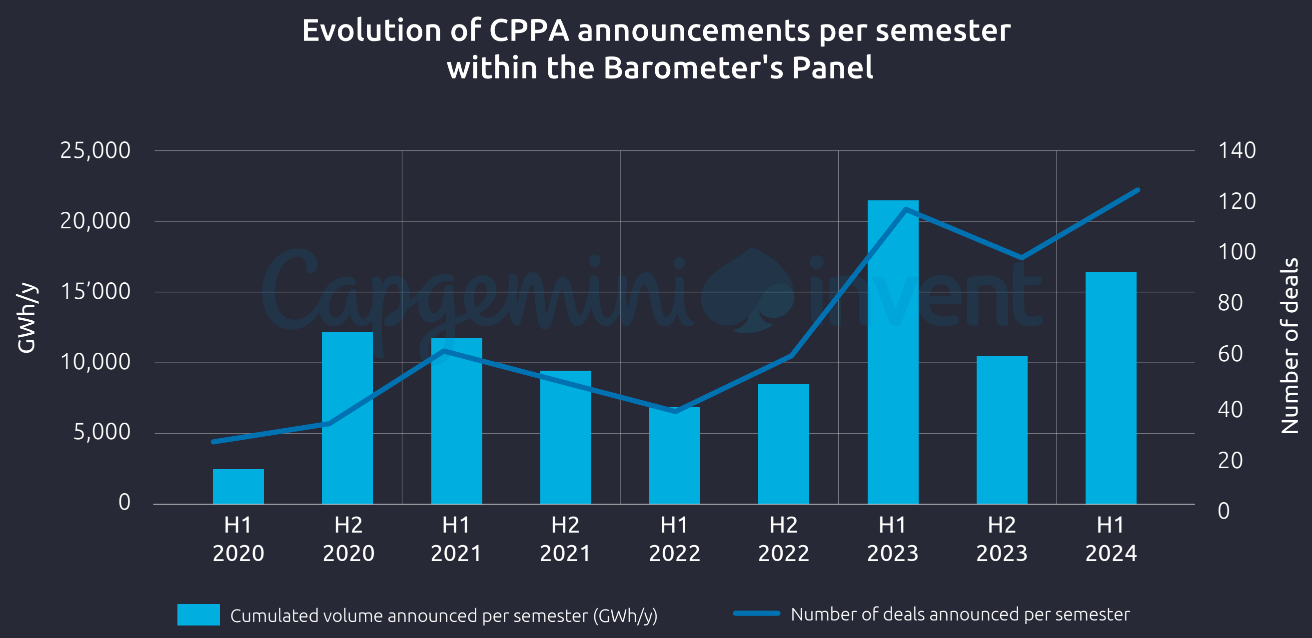
However, our production will not be entirely directed to the market or directly to buyers via CPPAs. We are seeking to strike a balance between these two options. At this stage, the commercial CPPA can still be competitive with this future platform.

As a concluding remark, do you have any recommendation for a corporate starting to explore PPA opportunities in Italy?

New corporate offtakers in Italy need to keep abreast of the latest market developments. At present, the sector is awaiting the arrival of the FER X decree, by the end of the year. Exploratory discussions between producers and consumers can still happen in the meantime but the CPPA market will need to adapt to these new auctions once they are launched: patience and flexibility will be essential.

Hence, it's all about finding the right partner with deals that cover fairly both the offtaker and the producer. We have gained a lot of experience with this contract, and we will keep pursuing our mission as a sustainable actor of renewable energy production at scale.

Concluding remarks



Though market prices have mostly recovered from the 2022 energy crisis in Europe, the search for green energy and for a hedge against future episodes of wholesale price volatility continues to drive the demand for CPPAs, the only long-term solution available for corporate consumers.

2023 had seen an unprecedented volume of new deals compared to previous years. H1 2024 may not have exceeded this record but the market dynamism has remained strong, with a slightly increasing deal count.

Previously observed trends continue to hold, as Greenfield deals remain in the majority, and new entrants increase the deal count while the usual Tech giants drive the volumes. In parallel, other aspects of the market are evolving: the pipe of Virtual PPAs from Spain slows down while Germany progressively takes the helm of the sector, and historically smaller markets like Italy finally bloom.

As new challenges arise (decreasing capture prices for renewables, increasingly frequent hours of negative wholesale price), the growing experience and maturity of both sellers and buyers allow more sophisticated practices to be tested. Though they remain in the minority for now, more and more non-Pay-as-Produced, multi-technology or "solar + storage" agreements are announced across Europe. The development of these new products aims at facilitating long-term commitment in a market facing a rising cannibalization effect.

Stay tuned for the next issues of Capgemini Invent's Barometer to monitor these evolutions and learn from interviews of market players sharing their experience.

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All graphs in this report are creations of Capgemini Invent, based on figures shared in the official press releases issued by the CPPA contractors.

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