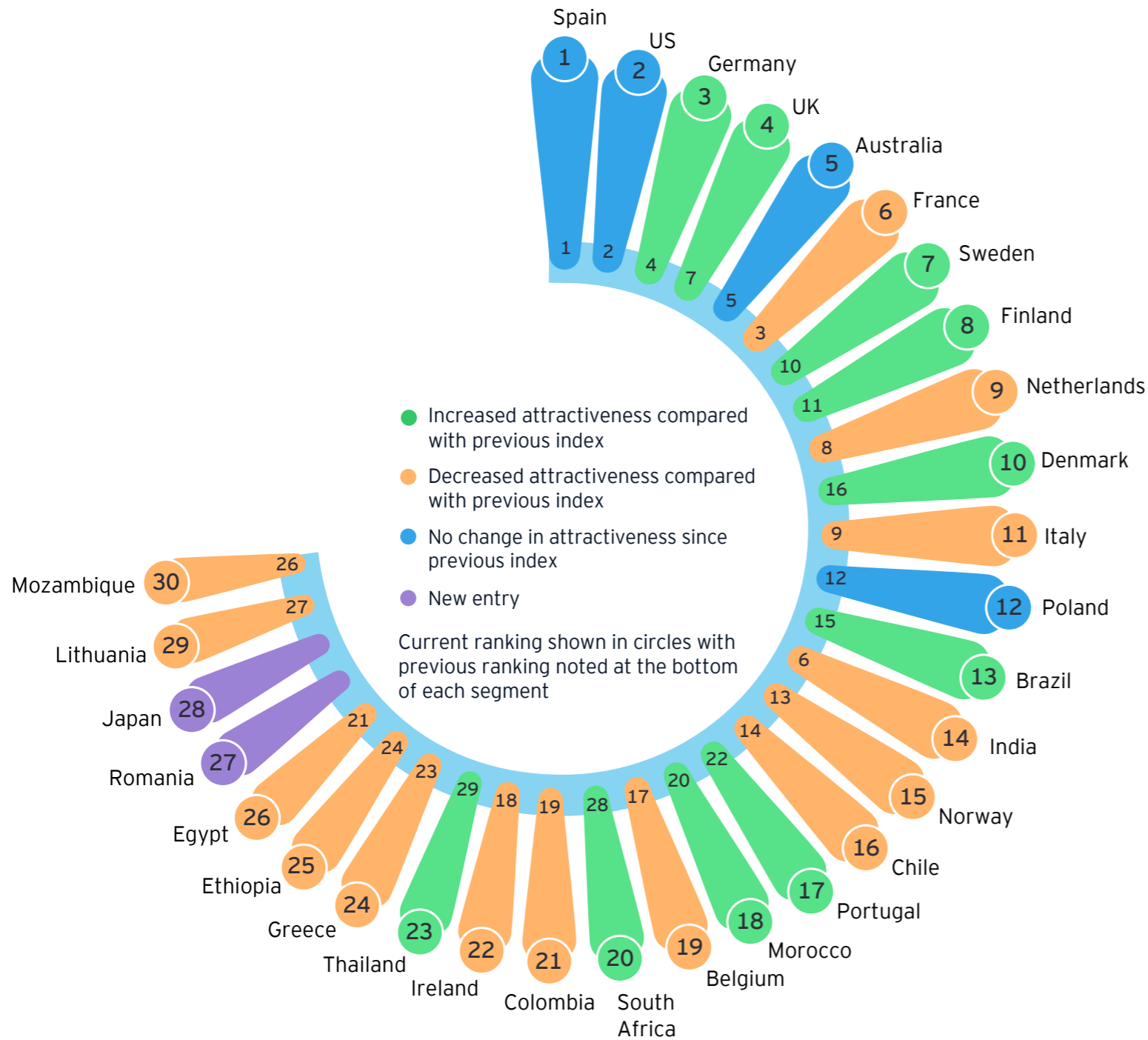


PPA Index

May 2022 | 59th edition



Spain and Portugal

The market is recovering well from a shock last September, after a decree – to curb presumed excess profits by suppliers during exceptional prices – was amended in November. Markets peaked in early March, but are still volatile, especially for solar, so PPAs may provide stability. Portugal is a much smaller PPA market, but growing, with the first deals made recently.

US

PPAs grew in 2021 by 11GW, 3% higher than in 2020, from 108 deals, with half of the 50 energy customers being new to PPAs. However, costs have increased by 30% due to supply chain constraints, with solar impacted by a Department of Commerce investigation into imports from East Asia. With more corporates chasing fewer shovel-ready projects, PPA prices have been rising.

UK

There has been a complex PPA market in recent months, as corporate processes run in parallel with the UK government's Round 4 auction. Auction awards were delayed until July. Despite the auction "competition," the corporate market has been buoyant, with many new buyers. High wholesale prices and increased capex costs have resulted in PPA prices rising.

Nordics

Traditionally an early mover in the European PPA market, the region continues to attract corporate deals. Denmark, Finland and Sweden have all risen up the index this issue, but – as in other markets – the availability of ready-to-build projects is scarcer than before. COVID-19-related delays to planning processes and grid enhancements are proving challenging, requiring patience from sellers and buyers.

Japan

A new entrant to the PPA Index, it is still early days. An active feed-in tariff market and policy barriers meant that PPAs were not attractive or suitable for renewable sourcing. However, with many corporates wanting green power, and a new feed-in premium scheme from April 2022, more PPAs are expected, as corporate users without electricity retail licenses can now participate.

Methodology

See page 3 for PPA methodology.

PPA Index scores

Rank	Market	Previous rank	Movement on previous index	Normalized score (0-100)	PPA Index score	PPA market maturity	PPA future market score	PPA policy score	RECAI score
1	Spain	1	●	100.0	24,333,692	82.8	87.0	52.5	64.4
2	US	2	●	99.9	24,320,944	100.0	56.6	57.9	74.2
3	Germany	4	▲	95.2	23,173,497	72.2	85.7	53.9	69.6
4	UK	7	▲	83.1	20,222,447	68.1	78.0	54.3	70.2
5	Australia	5	●	73.5	17,890,097	82.9	53.7	58.1	69.1
6	France	3	▼	70.0	17,028,450	58.6	79.4	52.6	69.5
7	Sweden	10	▲	64.7	15,742,550	65.2	80.0	50.8	59.4
8	Finland	11	▲	57.2	13,930,131	67.5	66.9	53.0	58.2
9	Netherlands	8	▼	55.8	13,570,416	55.7	71.5	53.0	64.3
10	Denmark	16	▲	52.9	12,860,817	50.9	81.4	49.8	62.4
11	Italy	9	▼	48.7	11,853,238	44.6	81.0	53.1	61.9
12	Poland	12	●	45.3	11,027,156	56.7	57.0	57.6	59.3
13	Brazil	15	▲	44.0	10,699,624	72.8	54.6	43.2	62.2
14	India	6	▼	39.7	9,664,614	46.5	50.3	60.2	68.6
15	Norway	13	▼	36.4	8,852,661	58.3	56.5	49.3	54.6
16	Chile	14	▼	27.3	6,650,102	51.4	39.0	53.4	62.0
17	Portugal	22	▲	24.4	5,933,104	30.3	64.5	52.1	58.3
18	Morocco	20	▲	21.7	5,270,523	42.6	35.9	58.3	59.2
19	Belgium	17	▼	20.9	5,079,762	54.4	31.6	52.1	56.7
20	South Africa	28	▲	20.4	4,957,846	40.7	41.2	54.5	54.3
21	Colombia	19	▼	20.0	4,856,557	53.4	38.9	48.8	47.9
22	Ireland	18	▼	17.0	4,130,587	34.1	35.0	55.6	62.3
23	Thailand	29	▲	15.3	3,719,297	43.1	28.8	57.0	52.5
24	Greece	23	▼	12.0	2,910,371	28.3	34.5	50.5	58.9
25	Ethiopia	24	▼	10.6	2,578,693	38.3	33.7	48.8	41.0
26	Egypt	21	▼	9.8	2,394,253	20.5	38.4	52.8	57.5
27	Romania			9.2	2,232,690	29.0	30.4	52.7	48.0
28	Japan			8.9	2,176,651	12.7	47.8	53.9	66.3
29	Lithuania	27	▼	8.6	2,096,734	34.8	33.7	52.0	34.3
30	Mozambique	26	▼	6.3	1,539,919	36.7	31.5	56.8	23.4

PPA Index methodology

By analyzing the same 100 markets as in the full RECAI database, we have created a ranking that focuses on the attractiveness of renewable power procurement — via offsite corporate PPAs — rather than the attractiveness of renewable project investment.

The final score for the top 30 markets is calculated from a weighted combination of 12 key parameters, which act as a proxy for corporate PPA potential. The PPA Index focuses on four pillars (three PPA-specific pillars together with a RECAI score pillar):

- ▶ **PPA market maturity** – this focuses on activities carried out within each market in the past decade. The assessment concentrates on market maturity, looking at past PPA deal frequency and volume, as well as a quantitative analysis of more recent PPA deal growth.
- ▶ **PPA future market** – this forward-looking score assesses the forecast activity of each market. Forecast power capacity is a key driver of the magnitude of a market, so this has a significant weighting on the score as well as the wholesale power price relative to the levelized cost of energy (LCOE) or PPA price in each location. Forecast capacity installations and a weighted project pipeline score from the RECAI are used. The index has focused on wind and solar PPAs (together weighted at 93%) as these represent the vast majority of offsite corporate PPAs.

- ▶ **PPA policy score** – this focuses on the ease of operation in a given market. If a market is to have potential for corporate PPA growth, supporting government policy must be in place for efficient and large-scale expansion. This is considered in the core RECAI, but is also examined here, with a more nuanced focus on PPA supportive policy.

- ▶ **RECAI score** – the overall score yielded by the RECAI is also factored in as one of the fundamental pillars, because this provides a strong overview of the existing and potential strength of a market's renewable energy landscape.

The PPA Index utilizes a multiplicative formula in order to prioritize well-rounded markets with strengths in all aspects of corporate PPA development and integration. For example, this will mean that markets with zero PPA deals to date will score zero overall and will not yet be included.

However, with strong weighting on forward-looking parameters, even markets with just a few deals to date could score highly if significant growth is expected in the corporate

PPA market within the next five years – the horizon of the RECAI.

The PPA Index score (which can be very large) has been normalized into a score from 0 to 100, in order to create a more manageable reference value. The leading market will score 100 – but this does not mean that the market is perfect for corporate PPAs. It means that, relatively speaking, it is the most attractive market for corporate PPAs across the coming five years.

Data sets are based on publicly available or purchased data, EY analysis or adjustments to third-party data. We are unable to publicly disclose the exact data sets or weightings used to produce the indices.

For a more extensive discussion of the drivers and the barriers in the corporate PPA market or for more information on the services that EY teams provide corporates around renewable energy strategies and PPAs, please refer to our website: www.ey.com/uk/ppa or contact the report's senior advisor Phil Dominy (pdominy@uk.ey.com).

PPA market maturity

(Sources: Pexapark, DLA Piper and EY analysis)

1. Number of PPAs signed in the past five years
2. Total PPA volume in the past five years
3. Number of PPAs signed in the past year
4. Total PPA volume in the past year

PPA future market

(Sources: Wood Mackenzie, GlobalData, IRENA, IEA, Pexapark and EY analysis)

1. Pipeline of projects:
 - a. Forecast power capacity
 - b. Forecast installation growth
 - c. Project pipeline
2. Wholesale power pricing:
 - a. Wholesale power price relative to the historic LCOE
 - b. Wholesale power price relative to the PPA price

PPA policy score

(Source: World Bank, GlobalData, IEA and EY analysis)

1. Ease of doing business index (World Bank)
2. Renewable energy imperative:
 - ▶ Renewable energy percentage of total generation
 - ▶ Percentage of population with access to electricity
 - ▶ Forecast energy consumption growth
 - ▶ CO₂ emissions

RECAI score

(Source: EY analysis)

1. Macro fundamentals
2. Energy imperative
3. Policy
4. Project delivery
5. Technology

Special thanks to Pexapark for providing access to their data.



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EYG no. 004430-22Gbl

BMC Agency
GA 22833439

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