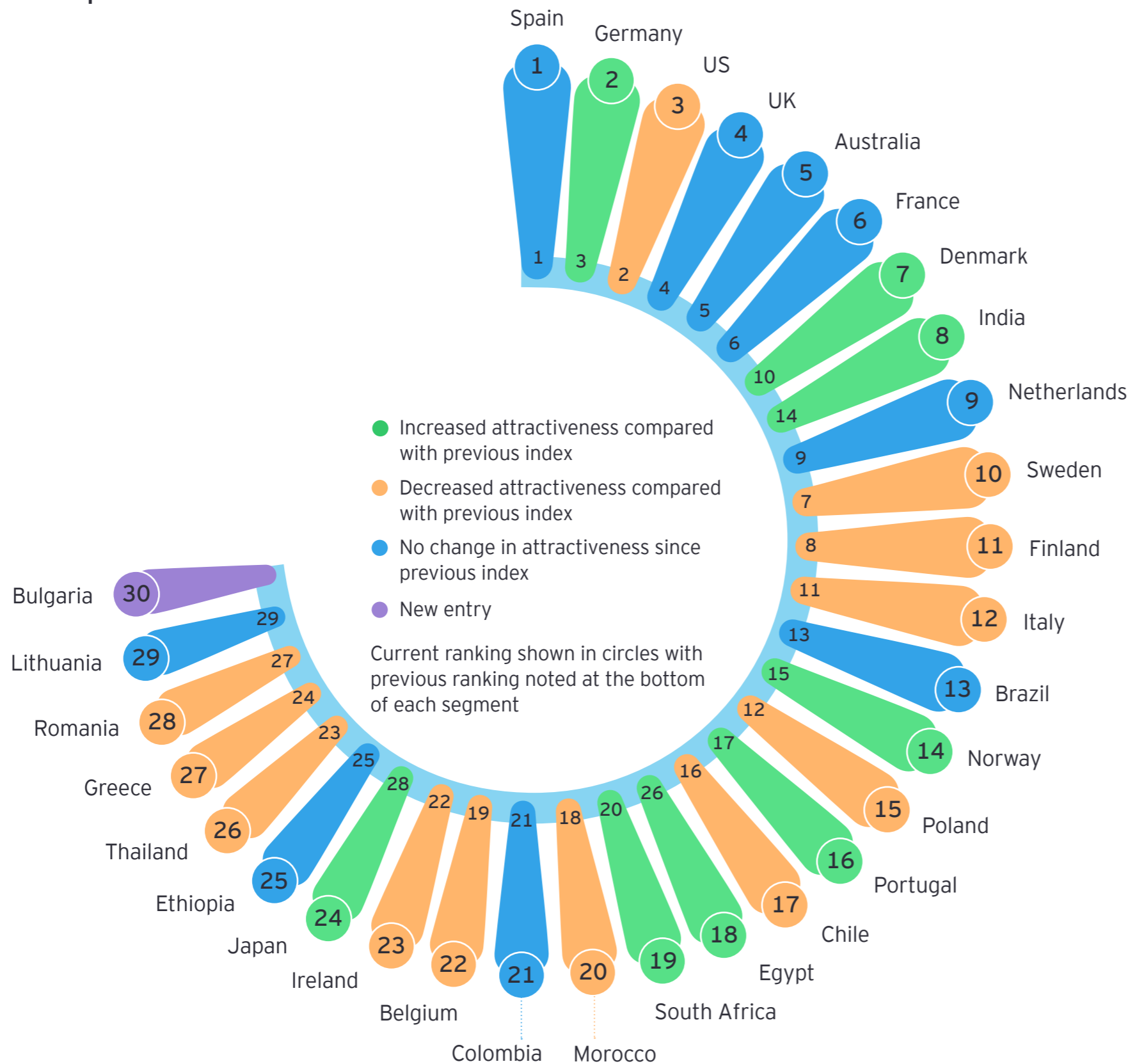


PPA Index

November 2022 | 60 edition



- Increased attractiveness compared with previous index
- Decreased attractiveness compared with previous index
- No change in attractiveness since previous index
- New entry

Current ranking shown in circles with previous ranking noted at the bottom of each segment

Germany
The market is seeing a distinct increase in PPAs for operational and repowered post-EEG subsidy assets. The current high price environment is allowing larger PPA revenues to compensate for maintenance or repowering costs accrued by the generator.

India
Previous struggles in the PPA market have taken a positive turn with the Green Access Rules, issued in July, aiming to provide long-term clarity with respect to open access costs and relaxing the eligibility limit to allow a greater range of offtakers to access the market. It also allows greater offtaker flexibility with respect to purchasing and consuming energy.

Japan
The market has phased out full feed-in tariffs in favor of a feed-in premium that is sensitive to market price fluctuations, creating a consumption gap to be filled by PPAs. Following the first Japanese corporate PPA between Amazon and Mitsubishi in 2021, there has been steady growth in the market, with a number of corporates – including Seven-Eleven and NTT – entering into an array of off-site and on-site offtake arrangements.

South Africa
The first large-scale corporate virtual PPA in South Africa was signed recently between SOLA Group and mining and processing company Tronoz for a 200MW solar project. Other large industrial players in the market, including Sasol and Air Liquide, are in the process of procuring PPAs, reflecting the momentum building in the space.

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	25,119,946	83.2	87.8	52.3	65.8
2	Germany	3	▲	97.0	24,378,588	69.5	88.1	55.5	71.7
3	United States	2	▼	96.4	24,216,364	100.0	55.5	59.5	73.3
4	United Kingdom	4	●	79.9	20,058,321	67.5	78.4	54.1	70.0
5	Australia	5	●	68.6	17,237,139	78.5	54.4	58.6	69.0
6	France	6	●	62.0	15,578,263	56.5	77.9	51.3	69.1
7	Denmark	10	▲	61.8	15,519,832	57.1	81.8	52.0	64.0
8	India	14	▲	60.6	15,226,923	62.6	50.9	69.6	68.6
9	Netherlands	9	●	57.4	14,425,791	54.7	75.4	53.9	64.9
10	Sweden	7	▼	57.4	14,425,551	62.7	76.9	49.9	60.0
11	Finland	8	▼	56.5	14,183,087	66.0	68.1	53.1	59.4
12	Italy	11	▼	52.2	13,125,096	48.9	82.3	51.3	63.6
13	Brazil	13	●	43.0	10,810,439	72.3	54.5	44.1	62.2
14	Norway	15	▲	41.8	10,487,768	60.1	63.2	50.6	54.6
15	Poland	12	▼	35.2	8,852,111	54.5	46.6	57.1	61.1
16	Portugal	17	▲	28.4	7,131,284	35.8	64.9	52.0	59.0
17	Chile	16	▼	25.2	6,320,713	49.0	39.1	53.7	61.4
18	Egypt	26	▲	23.6	5,920,440	48.7	37.6	57.2	56.5
19	South Africa	20	▲	23.3	5,856,277	56.9	35.4	54.6	53.3
20	Morocco	18	▼	22.2	5,585,800	40.7	37.7	60.2	60.4
21	Colombia	21	●	21.2	5,312,874	54.4	40.0	50.5	48.3
22	Belgium	19	▼	20.6	5,183,799	52.7	32.0	52.0	59.1
23	Ireland	22	▼	17.0	4,282,555	33.1	36.0	56.7	63.4
24	Japan	28	▲	17.0	4,276,605	25.3	48.5	53.1	65.7
25	Ethiopia	25	●	13.4	3,360,595	37.1	35.2	61.5	41.8
26	Thailand	23	▼	13.2	3,315,303	43.8	23.2	63.0	51.9
27	Greece	24	▼	11.7	2,932,539	27.0	34.6	50.9	61.5
28	Romania	27	▼	10.3	2,593,960	27.7	34.1	53.9	51.1
29	Lithuania	29	●	8.1	2,034,230	33.4	33.5	51.6	35.3
30	Bulgaria			7.1	1,777,287	23.5	29.0	54.4	47.9

PPA Index methodology

By analyzing the same 100 markets as in the full RECAI database, the goal is to create a new 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. It 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 uses a multiplicative formula 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, 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 more information on the services that EY teams provide to corporates around renewable energy strategies and PPAs, please refer to our website: www.ey.com/uk/ppa.

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

(Sources: 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.

EY | Building a better working world

EY exists to build a better working world, helping to create long-term value for clients, people and society and build trust in the capital markets.

Enabled by data and technology, diverse EY teams in over 150 countries provide trust through assurance and help clients grow, transform and operate.

Working across assurance, consulting, law, strategy, tax and transactions, EY teams ask better questions to find new answers for the complex issues facing our world today.

EY refers to the global organization, and may refer to one or more, of the member firms of Ernst & Young Global Limited, each of which is a separate legal entity. Ernst & Young Global Limited, a UK company limited by guarantee, does not provide services to clients. Information about how EY collects and uses personal data and a description of the rights individuals have under data protection legislation are available via [ey.com/privacy](https://www.ey.com/privacy). EY member firms do not practice law where prohibited by local laws. For more information about our organization, please visit [ey.com](https://www.ey.com).

© 2022 EYGM Limited.

All Rights Reserved.

EYG no. 009888-22GbI

BMC Agency

GA 2007362

ED None



In line with EY's commitment to minimize its impact on the environment, this document has been printed on paper with a high recycled content.

This material has been prepared for general informational purposes only and is not intended to be relied upon as accounting, tax, legal or other professional advice. Please refer to your advisors for specific advice.

The views of third parties set out in this publication are not necessarily the views of the global EY organization or its member firms. Moreover, they should be seen in the context of the time they were made.

[ey.com](https://www.ey.com)