



# Castalia-CREF Renewable Energy Islands Index and Renewable Energy Marketplace

## 1 Purpose of the Index and Marketplace

The Index and Marketplace were created specifically for the energy community of the Caribbean, to track real progress and real prospects in renewable energy investment in the Caribbean. It is intended to help project developers and financiers see where the action is. Governments that want to attract renewable energy investment can use the index to see how their country is doing relative to others, and adjust their policies and plans if needed to get a higher ranking and attract more investment in renewable energy. This is the fourth edition of the Index (and the second of the Marketplace); the first Index was produced in 2012.

## 2 What the Index Measures

The Index measures the readiness of each jurisdiction to develop and implement renewable energy (‘RE’) projects that are economically viable. A renewable energy investment is considered viable if its cost is below or equal to the avoided cost of conventional electricity generation prevailing in the jurisdiction. ‘Renewable energy’ includes wind, solar, hydro, biomass and waste, geothermal, and ocean thermal energy conversion (OTEC).

The overall score for each jurisdiction is derived from scores on three components:

- 1. Enabling environment for renewable energy investments**—this indicator measures the ease and security with which an investor can successfully implement viable RE projects in the jurisdiction. For large-scale investments, this refers to the ability of a utility to recover costs and make a return on investment, or the ability of an Independent Power Producer (IPP) to get a bankable off-take agreement for RE investments. For small-scale investments, this refers to a customer’s ability to recover costs of a viable grid-tied distributed RE system.
- 2. Renewable energy projects already implemented**—this indicator measures the real progress that jurisdictions have made in renewable energy. It focuses on energy production (the percent share of power that comes from renewables), and the number of existing renewable energy projects. A strong track record in these areas may indicate future prospects.
- 3. Pipeline of potential renewable energy projects**—this indicator measures the potential for renewable energy in terms of production (planned electricity

production from RE sources) and the number of planned renewable energy projects.

### **3 How the Scores are Calculated**

To calculate the Index score for each jurisdiction, scores are first calculated for each of three components—enabling environment, RE projects already implemented, and pipeline of potential RE projects—as described below. Scores on each of these components are then weighted equally to give the overall score on the Index. All scores are given on a scale of one to five, where a one indicates poor performance, a three indicates marginal performance, and a five indicates world-class performance.

#### **3.1 Enabling Environment for Renewable Energy Investments**

The score on this component is derived from performance on three sub-components:

- Utilities—ability to earn a return on viable renewable energy investments
- Independent Power Producers—ability to get a bankable off-take agreement
- Distributed generation—owner’s ability to earn a return from selling power to the grid.

The scoring of each of these sub-components is described below.

##### **Utilities**

The score on this sub-component is based on how easily a utility can earn a return on viable renewable energy investments. We used expert judgment to give a score between 1 (no ability) and 5 (world class level of certainty), with 3 indicating marginal confidence in earning a return. In forming our judgment we considered the following factors:

- When planning generation expansion, does the utility consider RE options?
- Can the utility safely recover RE investments through tariffs like it can recover fossil fuel costs?
- Are there clear, specific planning and permitting processes and rules in place for renewable energy?
- Does it take a reasonable time for the power utility to get investments in RE projects approved by the regulatory authority (or the relevant entity) for recovery through tariffs?

We also used any other relevant information we had to form our judgment.

##### **Independent Power Producers**

The score on this sub-component reflects the ability of an IPP to get a bankable off-take agreement for renewable energy in the jurisdiction, and is based on expert judgment, using the same scoring system as for utilities. In forming our judgment we considered the following factors:

- Can the utility safely recover purchases of RE energy from third parties, just as it recovers fossil fuel costs?
- Does it take a reasonable time to get an off-take agreement?

- Are there workable precedents or rules for power purchase agreement (PPA) terms and grid operation rules?
- Are there clear and effective licensing processes and requirements in place for IPPs?
- Does the utility have an obligation to purchase from IPPs when it is cheaper than generating the power itself, and also safe?
- Is the off taker credit-worthy?

We also used any other relevant information of which we were aware to form our judgment.

### **Distributed generation**

The score on this sub-component reflects the ability of owners of distributed generation to recover the costs of economically viable renewable energy investments. A score from 1 to 5 was given based on expert judgment. In forming our judgment we considered whether or not there is a standard interconnection arrangement in place for customers who generate electricity from their own RE systems, so that they may sell electricity to the utility. A world-class standard interconnection arrangement is one that is clear, has a reasonable contract duration (ten years or more), and allows the customer to sell to the utility at a reasonable price (at or above the avoided cost of generation for the utility).

### **Weighting of sub-components**

To score each jurisdiction on their enabling environment for renewable energy investments, we give two-thirds weighting to the higher of the two sub-scores on the utility and IPP sub-components. In this way, we remained neutral in scoring *how* large-scale investments can be recovered, since in small jurisdictions IPPs may not always be appropriate to the system needs. The score on customer-owned distributed generation is given the remaining one-third weighting to derive the score on this component.

## **3.2 Existing Renewable Generation**

This component scores each jurisdiction on existing renewable energy generation. The score is derived from three sub-components:

- Share of electricity produced from RE
- Number of utility-scale renewable energy projects, including those of IPPs
- Number of customer-owned renewable energy systems that are interconnected to the grid.

The calculation of the scores on each of these sub-components is described below.

### **Share of electricity produced from renewable energy in total production**

This sub-component assesses annual renewable energy production as a share of total production in each jurisdiction. This includes generation from all utilities, IPPs, and customer-owned systems that are grid-tied. We used the following formula to calculate the score:

$$\frac{\text{Annual MWh produced from RE}}{\text{Annual MWh produced}} \times 5$$

This takes the percent share of electricity production from renewable energy and scores it on a scale from one to five. If information was not available or there is no production from renewable energy, we assigned a score of zero.

### **Number of utility-scale projects**

This sub-component assesses the number of utility-scale RE projects, scaled to the number of projects that could be expected if 100 percent of electricity generation were to come from renewable energy. We used the following formula to calculate the score:

$$\frac{\text{Number of utility scale projects}}{\text{Annual MWh produced} / \text{MWh produced from a utility scale RE project}} \times 5$$

'MWh produced from a utility scale RE project' was calculated as total existing RE generation divided by the total number of existing utility-scale RE projects in each jurisdiction. The result is an indication of renewable energy penetration at the utility-scale, on a scale from one to five. If information was not available, or if there are no utility-scale projects, we assigned a score of zero.

### **Number of customer-owned systems**

This sub-component assesses the number of customer-owned RE systems, scaled to the number of systems that could be expected if 100 percent of on-grid electricity customers were to own an RE system. We used the following formula to calculate the score:

$$\frac{\text{Number of customer owned RE systems}}{\text{Number of electricity customers}} \times 5$$

We used utility annual reports to find the number of electricity customers for each jurisdiction. The result is an indication of penetration of renewable energy at the household level, on a scale from one to five. If information was not available or there are no existing systems, we assigned a score of zero.

### **Weighting of sub-components**

To score each jurisdiction on its existing renewable energy, we give an 80 percent weighting to the share of electricity produced from renewable energy, a 10 percent weighting to the number of utility-scale projects, and a 10 percent weighting to the number of customer-owned systems.

## **3.3 Planned Renewable Generation**

This component scores each jurisdiction on planned renewable energy generation. The score is derived from three sub-components:

- Share of planned electricity produced from renewable energy
- Number of planned utility-scale renewable energy projects, including those of IPPs
- Number of planned customer-owned renewable energy systems that are interconnected to the grid.

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<sup>1</sup> The value used for megawatt hours produced from a utility-scale RE project is an average across the electricity production of the utility-scale RE projects in all jurisdictions included in the Index.

The calculation of the scores on each of these sub-components is described below.

### **Share of planned electricity produced from renewable energy in total production**

This sub-component assesses additions to renewable energy generation as a share of total production in each jurisdiction. This includes generation from all utilities, IPPs, and customer-owned systems that are grid-tied. Any project with a 50 percent chance of coming online in 5 years is included. We used the following formula to calculate the score:

$$\frac{\text{Planned annual MWh produced from RE}}{\text{Annual MWh produced}} \times 5$$

This takes the percent share of planned electricity production from renewable energy in total production and scores it on a scale from one to five. If information was not available or there is no planned production from renewable energy, we assigned a score of zero.

### **Number of planned utility-scale projects**

This sub-component assesses the number of planned utility-scale RE projects, scaled to the number of projects that could be expected if 100 percent of electricity generation were to come from renewable energy. We used the following formula to calculate the score:

$$\frac{\text{Number of planned utility scale projects}}{\text{Annual MWh produced} / \text{MWh produced from a utility scale RE project}^2} \times 5$$

For each jurisdiction, we calculated the ‘MWh produced from a utility scale RE project’ as either: (i) total actual RE production divided by the number of existing utility scale projects in that jurisdiction; or if no utility scale RE projects were installed, (ii) an average of projected RE generation divided by the projected number of projects. The result is an indication of the penetration of planned renewable energy at the utility-scale, on a scale from one to five. If information was not available, or there are no utility-scale projects planned, we assigned a score of zero.

### **Number of planned customer-owned systems**

This sub-component assesses the number of planned customer-owned RE systems (based on number of distributed licenses planned), scaled to the number of systems that could be expected if 100 percent of grid connected electricity customers were to own an RE system. We used the following formula to calculate the score:

$$\frac{\text{Number of planned customer owned RE systems}}{\text{Number of electricity customers}} \times 5$$

We used utility annual reports to find the number of electricity customers for each jurisdiction. The result is an indication of penetration of planned renewable energy at the household level, on a scale from one to five. If information was not available or there are no systems planned, we assigned a score of zero.

### **Weighting of sub-components**

To score each jurisdiction on its planned renewable energy, we give an 80 percent weighting to the share of planned electricity produced from renewable energy, a 10 percent weighting

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<sup>2</sup> As in Indicator Two, the value used for megawatt hours produced from a utility-scale RE project is an average across the electricity production of the utility-scale RE projects in all jurisdictions included in the Index.

to the number of planned utility-scale projects, and a 10 percent weighting to the number of planned customer-owned systems.

## **4 What the Marketplace Tracks**

The Marketplace is a database of RE projects across the Caribbean region. It includes projects across all stages of development—from the conceptual stage, to projects under construction or in operation. It includes key information on projects such as:

- Location
- Size
- Technology
- Status
- Capacity factor
- Anticipated operation date.

The Marketplace is built on data collected over the course of compiling the Index. Data for both the Marketplace and Index are contained in the same Excel file; the information in the Marketplace contributes to the final scores in the Index.

## **5 Data Protocol and Sources**

The data gathering process followed a simple protocol that was applied uniformly across all jurisdictions:

- Utility Questionnaire—we developed a utility questionnaire to gather data on existing and planned renewable energy projects. We sent out the survey via email to any utilities in each jurisdiction. Please refer to Appendix B on page 13 for a copy of this questionnaire
- Government Questionnaire—we developed a separate policy and regulatory questionnaire for governments, and sent it out via email to the departments and agencies responsible for energy in each jurisdiction. This questionnaire was also made available to respondents via a web-based survey. Please refer to Appendix C on page 14 for a copy of this questionnaire
- We followed up via email and phone with the utilities and governments of each jurisdiction for which we did not receive survey responses, encouraging them to respond to our questionnaires. We re-sent the questionnaires when requested, and offered to take responses over the phone
- We extracted information from official utility and government websites and also used the World Bank’s World Development Indicator data and United Nations data for the most recent year available
- We used Castalia knowledge and databases for those jurisdictions in which we have worked in the power sector in recent years, to supplement the information gathered as described above and to inform our judgment.

In circumstances where we did not receive, or could not find through our research, sufficient and reliable data, we excluded the jurisdiction from the rankings.

## **6 Future Developments**

Provided Caribbean Governments and Renewable Energy developers and investors find the Index useful, we will continue to produce it in years to come. We urge Caribbean governments and utilities to be proactive in sending information to [CREF-CastaliaRenewableIslands@castalia-advisors.com](mailto:CREF-CastaliaRenewableIslands@castalia-advisors.com) to ensure that each year the most accurate and up-to-date information is available for calculation of the Index scores.

## Index Sponsors

This Index is created and sponsored by Castalia LLC and the Caribbean Renewable Energy Forum (CREF), because we care about the Caribbean, and about renewable energy.

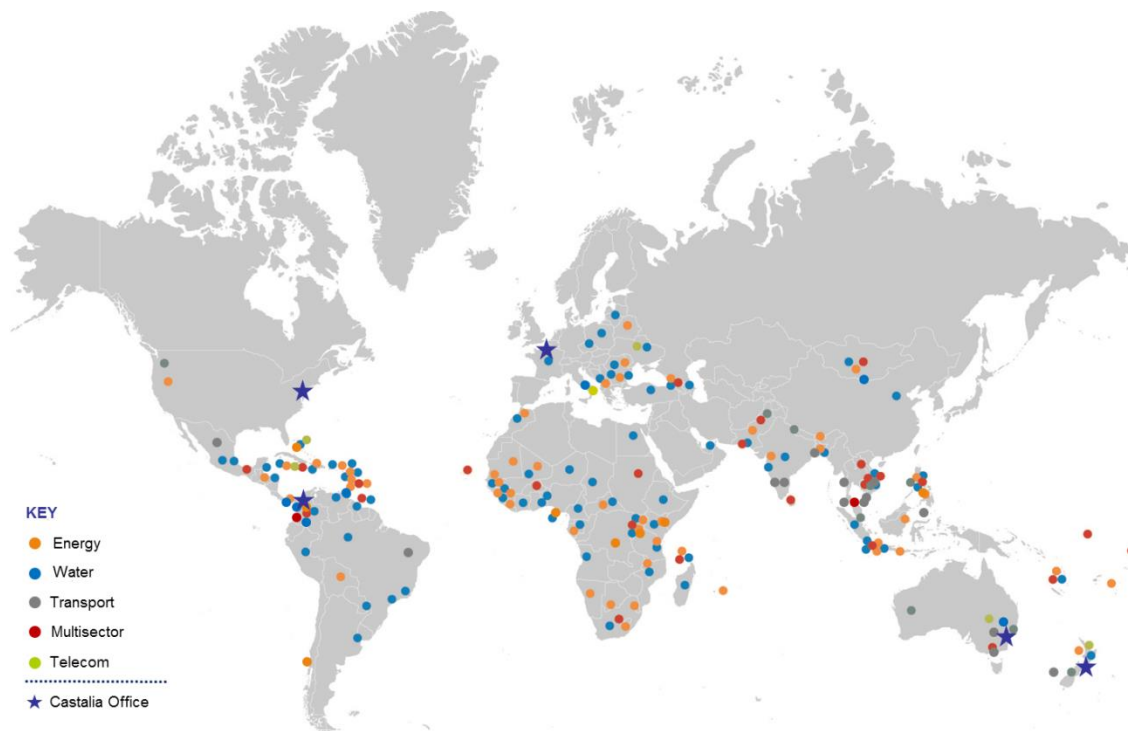
### Castalia

Established in Paris in 1980, Castalia is an international consultancy that advises on infrastructure transaction financing, design, implementation, and strategy. We have almost three decades of proven track record in providing specialist economic, financial, regulatory, and legal advice, and in advising small and large companies on their business strategy, particularly in the electricity and water sectors. Our clients span the range of multi-lateral lending agencies, governments, and private firms.

The figure below shows where we have worked worldwide in various infrastructure sectors.

### Castalia Experience and Offices Worldwide

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Castalia has extensive experience in advising lenders, private investors, and governments on the identification and assessment of investment opportunities in the Caribbean energy sector—including in clean energy (RE and EE) projects. In the Caribbean, we have worked in Anguilla, Antigua and Barbuda, The Bahamas, Barbados, Belize, the Cayman Islands, Dominica, Grenada, Guyana, Haiti, Jamaica, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Trinidad and Tobago, and the Turks and Caicos Islands. We have recently worked closely with the Eleuthera Wind Power Ltd, Jamaica Public Service



Company, GRENLEC, Barbados Light & Power Company, DOMLEC, ANGLEC, WRB, and ENEE.

### **New Energy Events and CREF**

New Energy Events LLC organizes high-level renewable energy conferences in developing markets. Our events address the key financing, regulatory, and technological issues that policy-makers and senior utility executives face as they frame a future of long-term energy security for these vital and rapidly evolving markets.

Although a private company, we function in many ways like a streamlined development organization. We are motivated by the issues surrounding the implementation of renewables, and sustained by our ability to bring world-class technology, capital, and solutions into the markets in which we are active.

Our flagship conference is the Caribbean Renewable Energy Forum (CREF). Launched in 2009, CREF has become the largest annual gathering of regional and international stakeholders working towards renewable energy solutions for the Caribbean.

## Appendix A: Jurisdictions Included in the Index

The Index aims to cover all the members of CARICOM, as well as all island jurisdictions in the Caribbean, and other jurisdictions that are traditionally affiliated to the Caribbean. The table below shows the jurisdictions that are eligible for inclusion in the list, their legal and geographical status, and the reason for their eligibility. Not all jurisdictions provided enough information to allow an Index score to be calculated. These are indicated by the notation 'No' in the data column. Our hope is that the governments and utilities in these jurisdictions will, in future years, provide enough information to allow their inclusion.

| Name                   | Legal Status   | Geographic Status                                  | Reason for Eligibility                     | Sufficient Data to Calculate the Index Score? |
|------------------------|--|--|--|---|
| Anguilla               | British territory  | Island in Caribbean Sea                            | Caribbean island                           | Yes   |
| Antigua & Barbuda      | Sovereign state  | Archipelago in the Caribbean Sea                   | CARICOM member                             | Yes   |
| Aruba                  | Autonomous member of the Kingdom of the Netherlands        | Island in Caribbean Sea                            | Caribbean island                           | Yes   |
| Bahamas <sup>3</sup>   | Sovereign state  | Archipelago in the Atlantic North of Caribbean Sea | CARICOM member                             | Yes   |
| Barbados               | Sovereign state  | Island in Caribbean Sea                            | CARICOM member                             | Yes   |
| Belize                 | Sovereign state  | Country in Central America                         | CARICOM member                             | Yes   |
| Bermuda                | British territory  | Archipelago in the North Atlantic                  | Traditional affiliation with the Caribbean | Yes   |
| Bonaire                | Special municipality within the country of the Netherlands | Island in Caribbean Sea                            | Caribbean island                           | Yes   |
| British Virgin Islands | British territory  | Island in Caribbean Sea                            | Caribbean island                           | Yes   |

<sup>3</sup> Bahamas excludes Grand Bahama, which is serviced by Grand Bahamas Power Company.

| Name                        | Legal Status  | Geographic Status                | Reason for Eligibility | Sufficient Data to Calculate the Index Score? |
|-----------------------------|---|----------------------------------|------------------------|---|
| Cayman Islands <sup>4</sup> | British territory                                     | Archipelago in Caribbean Sea     | Caribbean island       | Yes   |
| Cuba                        | Sovereign state                                       | Island in Caribbean Sea          | Caribbean island       | No  |
| Curaçao                     | Constituent country of the Kingdom of the Netherlands | Island in Caribbean Sea          | Caribbean island       | Yes   |
| Dominica                    | Sovereign state                                       | Island in Caribbean Sea          | CARICOM member         | Yes   |
| Dominican Republic          | Sovereign state                                       | Island in Caribbean Sea          | Caribbean island       | Yes   |
| Grenada                     | Sovereign state                                       | Island in Caribbean Sea          | CARICOM member         | Yes   |
| Guadeloupe                  | French territory                                      | Island in Caribbean Sea          | Caribbean island       | Yes   |
| Guyana                      | Sovereign state                                       | Country in South America         | CARICOM member         | Yes   |
| Haiti                       | Sovereign state                                       | Island in Caribbean Sea          | CARICOM member         | Yes   |
| Jamaica                     | Sovereign state                                       | Archipelago in the Caribbean Sea | CARICOM member         | Yes   |
| Martinique                  | French territory                                      | Island in Caribbean Sea          | Caribbean island       | Yes   |
| Montserrat                  | British territory                                     | Island in Caribbean Sea          | CARICOM member         | Yes   |
| Nevis                       | Island forming a sovereign state with St. Kitts       | Island in Caribbean Sea          | CARICOM member         | Yes   |
| Puerto Rico                 | Commonwealth in free association with the U.S.        | Island in Caribbean Sea          | Caribbean island       | Yes   |

<sup>4</sup> Cayman Islands includes data only from Grand Cayman.

| Name                           | Legal Status  | Geographic Status                 | Reason for Eligibility                     | Sufficient Data to Calculate the Index Score? |
|--------------------------------|---|-----------------------------------|--|---|
| St. Barthelemy                 | Overseas Collectivity of France                       | Island in Caribbean Sea           | Caribbean island                           | No  |
| St. Kitts                      | Island forming a sovereign state with Nevis           | Island in Caribbean Sea           | CARICOM member                             | Yes   |
| St. Lucia                      | Sovereign state                                       | Island in Caribbean Sea           | CARICOM member                             | Yes   |
| Saint-Martin                   | Overseas collectivity of France                       | Island in Caribbean Sea           | Caribbean island                           | No  |
| St. Vincent and the Grenadines | Sovereign state                                       | Archipelago in Caribbean Sea      | CARICOM member                             | Yes   |
| Sint Maarten                   | Constituent country of the Kingdom of the Netherlands | Island in Caribbean Sea           | Caribbean island                           | No  |
| Suriname                       | Sovereign state                                       | Country in South America          | CARICOM member                             | No  |
| Trinidad & Tobago              | Sovereign state                                       | Archipelago in Caribbean Sea      | CARICOM member                             | Yes   |
| Turks & Caicos Islands         | British territory                                     | Archipelago in the North Atlantic | Traditional affiliation with the Caribbean | Yes   |
| U.S. Virgin Islands            | Insular area of the U.S.                              | Archipelago in the Caribbean Sea  | Caribbean island                           | Yes   |

## Appendix B: Questionnaire for Power Utilities on Existing and Potential Renewable Energy Projects



The organizers of the Caribbean Renewable Energy Forum (CREF) and the consulting firm Castalia are currently preparing the fourth annual **Renewable Energy Island Ranking**, an index that ranks Caribbean jurisdictions in order of their investment and success in developing renewable energy. The Ranking was launched at CREF in 2012, and has become a key feature of this event. In 2014, we also launched the **Caribbean Renewable Energy Marketplace**, a comprehensive database of upcoming Caribbean renewable RFPs and projects aiming to increase transparency in renewable energy investments in the region, and match utilities with world-class project developers.

The updated Ranking and Marketplace will be presented at CREF 2015, which will take place at the Intercontinental Miami from October 19th to 21st.

Clearly it is important that your jurisdiction is represented accurately in both the Index and the Marketplace, both of which will attract significant interest in the regional and international media. To which end we invite you at this time to complete a short survey.

You can either participate online at <https://www.surveymonkey.com/r/9MXPYXY> or complete and return the attached Excel document to [RenewableIslands@castalia-advisors.com](mailto:RenewableIslands@castalia-advisors.com).

**Please complete the survey by Monday, August 31st, 2015.** If you have any questions about the survey, or its methodology, please don't hesitate to contact us. You can consult last year's Ranking and its methodology online.

If you would like us to send the survey to someone else on your staff, please reply to this email with that person's contact information.

Best regards,

**Matthew Perks**  
Executive Director  
Caribbean Renewable Energy Forum (CREF)

**Gianmarco Servetti**  
Practice Leader-Renewable Energy and Energy Efficiency  
Castalia

## Appendix C: Questionnaire on Policy & Regulatory Environment for Renewable Energy



The organizers of the Caribbean Renewable Energy Forum (CREF) and the consulting firm Castalia are currently preparing the fourth annual **Renewable Energy Island Ranking**, an index that ranks Caribbean jurisdictions in order of their investment and success in developing renewable energy. The Ranking was launched at CREF in 2012, and has become a key feature of this event. In 2014, we also launched the **Caribbean Renewable Energy Marketplace**, a comprehensive database of upcoming Caribbean renewable RFPs and projects aiming to increase transparency in renewable energy investments in the region, and match utilities with world-class project developers.

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Best regards,

**Matthew Perks**  
Executive Director  
Caribbean Renewable Energy Forum (CREF)

**Gianmarco Servetti**  
Practice Leader-Renewable Energy and Energy Efficiency  
Castalia

## CREF-Castalia Renewable Energy Island Ranking - Survey on Policy & Regulatory Environment for Renewable Energy

Please provide the survey respondent's information below:

|              |                      |
|--------------|----------------------|
| Country:     |                      |
| Name:        | <i>[Last, First]</i> |
| Position:    |                      |
| Affiliation: |                      |
| Telephone:   |                      |
| E-mail:      |                      |

1) Can the power utility safely recover through tariffs its own investments in renewables, just as it recovers fossil fuel costs?

|   |  |
|---|--|
| Please answer <b>yes</b> or <b>no</b> , considering the regulatory and tariff-setting rules in your jurisdiction: | <i>[Tip: 'yes' would be appropriate if the base tariff could be adjusted upwards to allow recovering capital costs of a renewable project; 'no' would be appropriate if renewable generation would lead to reduced fuel costs charged to customers, but no off-setting tariff item to allow recovering capital costs of a renewable project]</i> |
| If 'yes', please explain how cost recovery would take place:  | <i>[Please provide links to documents containing the relevant rules, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>]</i>   |
| If 'no', please explain why not, and describe any initiative underway for this to change over the next year:      | <i>[Please provide links to documents containing the relevant rules, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>]</i>   |

2) Can the power utility safely recover through tariffs any purchases of renewable

**energy from third parties, just as it recovers fossil fuel costs?**

|   |  |
|---|--|
| Please answer <b>yes</b> or <b>no</b> , considering the regulatory and tariff-setting rules in your jurisdiction: | <i>[Tip: 'yes' would be appropriate if the utility can pass on power purchase costs as a pass-through item in the tariff; 'no' would be appropriate if renewable generation purchased would lead to reduced fuel costs charged to customers, but no off-setting tariff item to allow recovering costs of purchasing renewable power]</i> |
| If 'yes', please explain how cost recovery would take place:  | <i>[Please provide links to documents containing the relevant rules, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>]</i>   |
| If 'no', please explain why not, and describe any initiative underway for this to change over the next year:      | <i>[Please provide links to documents containing the relevant rules, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>]</i>   |

**3) Does the power utility have an obligation to purchase renewable energy from Independent Power Producers (IPPs) when this would be cheaper than generating power itself, and also safe?**

|  |   |
|--|---|
| Please answer <b>yes</b> or <b>no</b> :                  | <i>[Tip: 'yes' would be appropriate if, for example, the utility has to consider offers to sell renewable energy by IPPs, and accept offers if they are below the utility's own costs, and they are from credible companies with the technical and financial capacity to implement a project as promised]</i> |
| If 'yes', please explain how this obligation is imposed: | <i>[Please provide links to documents containing the relevant rules, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>]</i>  |

**4) Is there a standard arrangement in place for customers that have a renewable energy system installed to sell electricity to the utility at a reasonable price, for a reasonable timeframe, and with a clear interconnection agreement?**

|  |  |
|--|--|
| Please answer <b>yes</b> or <b>no</b> :  | <i>[Tip: 'yes' would be appropriate if there is any feed-in tariff or standard offer contract in place with the following features: an overall cap on total systems eligible; caps on the size of individual systems eligible; a duration that is similar to the lifetime of customer-owned renewable systems; a standard agreement that ensures safe interconnection; and a price for electricity that is based on the cost avoided by the utility by purchasing renewable energy from customers]</i> |
| If 'yes', please describe the arrangement's price, timeframe, and eligibility criteria | <i>[Please provide links to documents containing the relevant rules, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>]</i>   |



|   |   |
|---|---|
| If 'no', please explain why not, and describe any initiative underway for this to change over the next year:                          | <i>[Tip: there could be no arrangement in place at all; or, the legal and regulatory framework could make it outright impossible for customers to sell electricity from their renewable systems to the utility; or, there could be some arrangement in place, but with inappropriate attributes such as a very short timeframe, no caps on eligibility, or a price that is too high or too low]</i> |
| Please explain whether there is any obligation on the utility to set up such an arrangement, and if so how the obligation is imposed: | <i>[Tip: the obligation could be set by Government policy; or, it could be an obligation set by economic regulation, whereby the utility is required to purchase renewable electricity from customers that have systems installed when it would be cheaper than generating power itself, and also safe]</i>   |

**5) Are there specific planning and permitting processes and rules in place for renewable energy?**

|  |   |
|--|---|
| Please answer <b>yes</b> or <b>no</b> :  | <i>[Tip: 'yes' would be appropriate if policies and rules such as the following are in place: a one-stop shop for all planning and environmental permitting; clear requirements for environmental impact assessments; clear definition of planning and environmental parameters that need to be met to get approval (such as size, noise levels, distance from other buildings or areas)]</i> |
| If 'yes', please say for which technologies, and briefly explain how processes and rules work: | <i>[Please provide links to documents containing the relevant rules, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>]</i>  |
| If 'no', please briefly explain how permitting and planning of renewables takes place:         | <i>[Please provide links to documents containing the relevant rules, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>]</i>  |

**6) Does it take a reasonable time for the power utility to get investments in renewable energy projects approved by the regulatory authority (or the relevant entity) for recovery through tariffs (whether they are the utility's own investments, or those by IPPs from whom the utility would buy)?**

|  |  |
|--|--|
| Please answer <b>yes</b> or <b>no</b> :                      | <i>[Tip: 'yes' would be appropriate if (i) a timeframe for the response is set; (ii) the timeframe is no longer than needed to evaluate a project; and (iii) the timeframe is met in practice. Note: the timeframe could be for the normal rate-setting process; or for a case-by-case approval by the regulatory authority of individual renewable energy projects]</i> |
| Please explain your answer, providing any relevant examples: | <i>[Please provide links to documents containing the relevant rules, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>. Please provide the actual time taken to approve the last 3 cases of renewable energy projects approved, if applicable]</i>  |

**7) Are there clear and effective licensing processes and requirements in place for IPPs?**

|   |   |
|---|---|
| Please answer <b>yes</b> or <b>no</b> :               | <i>[Tip: 'yes' would be appropriate if (i) technical, operating, and financial requirements to apply for and obtain a license are set in advance; (ii) a timeframe is set for applications to be adjudicated, that timeframe is no longer than what needed, and is met in practice; and (iii) a notice is required for when applications of IPPs are refused]</i> |
| If 'yes', please briefly explain how licensing works: | <i>[Please provide links to documents containing the relevant rules, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>]</i>  |
| If 'no', please explain why not:                      |   |

**8) Does your country have a strategic plan for the development of renewable energy?**

|   |  |
|---|--|
| Please answer <b>yes</b> or <b>no</b> :                                 | <i>[Please provide a link to the strategy, if possible; or email them to <a href="mailto:RenewableIslands@castalia-advisors.com">RenewableIslands@castalia-advisors.com</a>]</i> |
| If 'yes', please provide some background information                    | <i>[Please provide details about who was the responsible authority behind the plan, the date of publication/approval and any other details you consider relevant]</i>            |
| If 'yes', does the plan contain a specific target for renewable energy? | <i>[Please provide details about the target, and an estimate of the additional capacity that is needed to meet the target (in 2, 5 and 10 years from now)]</i>                   |

**9) Are there any renewable energy projects currently under development?**

If yes, please list the projects in the table below

| Project Name | Project Owner (Utility/IPP) | Renewable Technology Type | Status as of July 2015 (pre-feasibility, feasibility, RFP issued, PPA signed, construction) | Expected Commercial Operation (Year) | Estimated Capacity Factor (%) | Installed Capacity (MW) |
|--------------|-----------------------------|---------------------------|---|--------------------------------------|-------------------------------|-------------------------|
|              |                             |                           |   |                                      |                               |                         |
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