



Electricity Sector Update

Renewable Industry Focus

Presented by: Regulatory Authority Staff

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Role of the Regulatory Authority

REGULATORY AUTHORITY ACT 2011 – Section 12

The principal functions of the Authority, in relation to any regulated industry sector are to:

- a) promote and preserve competition;
- b) promote the interests of the residents and consumers;
- c) promote the development of the economy, Bermudian employment and ownership;
- d) promote innovation; and to fulfil any additional functions specified by sectoral legislation.

Purpose of the Electricity Act 2016

- a) to ensure the **adequacy, safety, sustainability and reliability** of electricity supply in Bermuda so that Bermuda continues to be well positioned to compete in the international business and global tourism markets;
- b) to encourage electricity **conservation** and the **efficient use** of electricity;
- c) to promote the use of **cleaner energy** and technologies, including **alternative energy** sources and **renewable energy** sources;
- d) to provide sectoral participants and end-users with **non-discriminatory interconnection** to transmission and distribution systems;
- e) to protect the interests of end-users with respect to **prices** and **affordability**, and the **adequacy, reliability** and **quality** of electricity service;
- f) to **promote economic efficiency and sustainability** in the generation, transmission, distribution and sale of electricity.

The National Electricity Sector Policy

Aspirational Targets

- Through this Policy, the Government aspires to transform Bermuda's electricity matrix to provide energy that is:
 - least cost
 - high-quality
 - environmentally sustainable
 - secure
 - affordable
- The Government's vision for the sector is tied to indicative targets based on an aspirational matrix for 2020-2035

Table 4.1: Targets for Electricity Performance

Target	Unit	2020	2025	2035
Share of renewable generation	%	8%	35%	38%
	Natural gas %	92%	65%	62%
Share of generation by source	Waste to Energy %	3%	3%	3%
	Bulk Scale Solar PV %	2%	2%	2%
	Distributed Solar PV %	1%	2%	6%
	Solar water heaters %	2%	2%	2%
	Future Renewable Energy Base Load %	0%	26%	25%
	Natural gas %	91%	117%	122%
Share of peak demand by source †	Waste to Energy %	6%	6%	6%
	Bulk Scale Solar PV %	8%	7%	7%
	Distributed Solar PV %	6%	9%	24%
	Solar water heaters %	7%	8%	10%
	Future Renewable Energy Base Load %	0%	21%	20%
	Natural gas %	91%	117%	122%
Annual emissions	Tons CO _{2e}	401,468 (-33% vs BAU)	289,980 (-52% vs BAU)	294,663 (-55% vs BAU)
Energy efficiency / conservation	Average annual consumption per end user, in MWh (includes self-generation)	16.50 (5.2% below BAU)	16.97 (5.2% below BAU)	17.93 (5.2% below BAU)

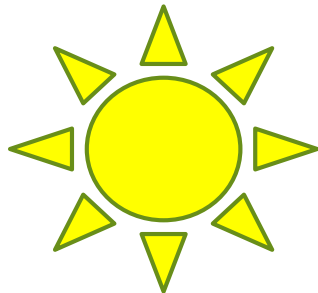
Note: † Share of peak demand by source adds up to more than 100% due to reserve margin (installed capacity > peak demand). BAU = business as usual. CO_{2e} = carbon dioxide equivalent.

Source: The National Electricity Sector Policy of Bermuda, May 26, 2015

Timeline of Key Activities

2010

> **August 15**
BELCO voluntarily introduces Net Metering Scheme



2016

> **August 15**
BELCO terminates their Net Metering Scheme for new entrants
> **August 26**
Minister initiates an inquiry
> **October 26**
Minister endorses Energy Commission's Net Metering Inquiry Report recommending avoided cost (17.36 cents/kWh)
> **October 28**
Electricity Act 2016 commences, the Authority begins regulation

2017

> **February 13**
BELCO issues a letter to Solar Industry confirming removal of support for new entrants
> **March 2**
The Authority enacts EGD on Net Metering based on Inquiry Report Recommendations
> **August 2**
Bulk Generation and TD&R Licences are enacted via GD
> **September 2**
EGD on Renewable Energy Metering program is extended for 6 months (2 March 18)
> **October 17**
TD&R Licences and Bulk Generation Licences are issued to BELCO and Tynes Bay and the Authority begins regulating Licences

Timeline of Key Activities

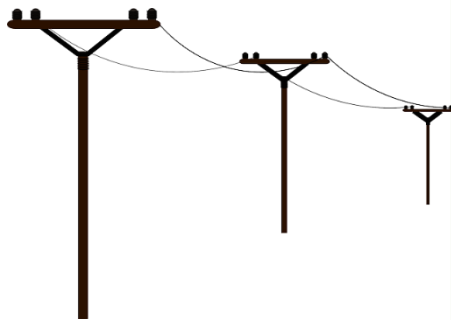
2017

>**November 17**

The Authority issues request for IRP Proposal from BELCO TD&R

>**December 22**

BELCO submits Replacement of Generation Proposal



2018

>**February 15**

BELCO submits IRP Proposal to the Authority

>**February 28**

The Authority issues Regulatory Accounting Instructions Consultation

>**March 2**

The Authority enacts GD on renewable energy metering program

>**March 6**

The Authority grants approval of Replacement of Generation Proposal

>**March 9**

The Authority issues Retail Tariff Design Public Consultation

>**March 9**

The Authority issues order setting the Standard Contract Template

>**April 27**

The Authority issues Feed in Tariff Public Consultation

>**May 2**

The Authority issues IRP Proposal Consultation

General Determination Process

Step 1 Public Consultation Round 1

- Seeks public feedback on subject of consultation
- May include draft GD

Step 2 Public Consultation Round 2

- Includes assessment of public consultation feedback
- Must include draft GD

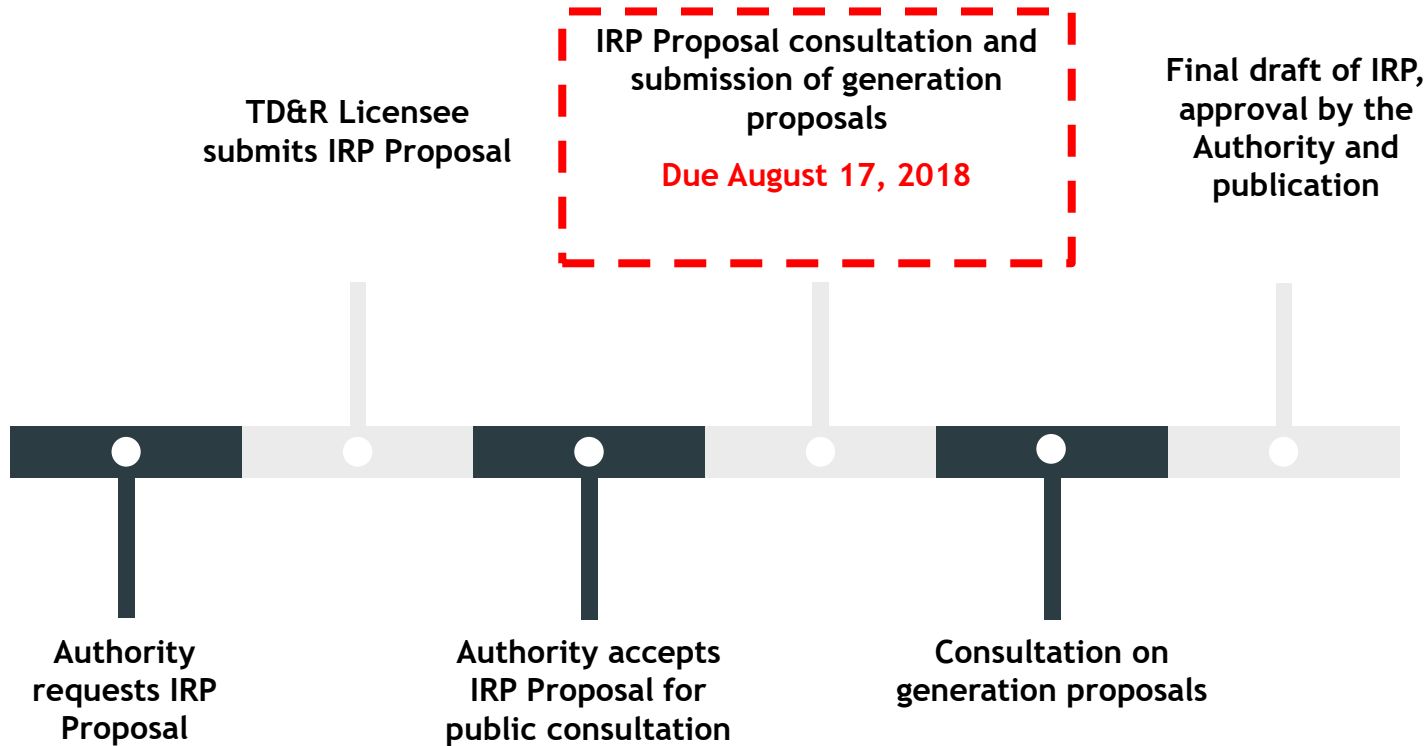
Step 3 Final General Determination

- Statutory Instrument
- Published on the Authority's website and Bermuda Laws Online

GD
Summary
Consumer
Focused
and
Friendly

GD
Legal/
Technical

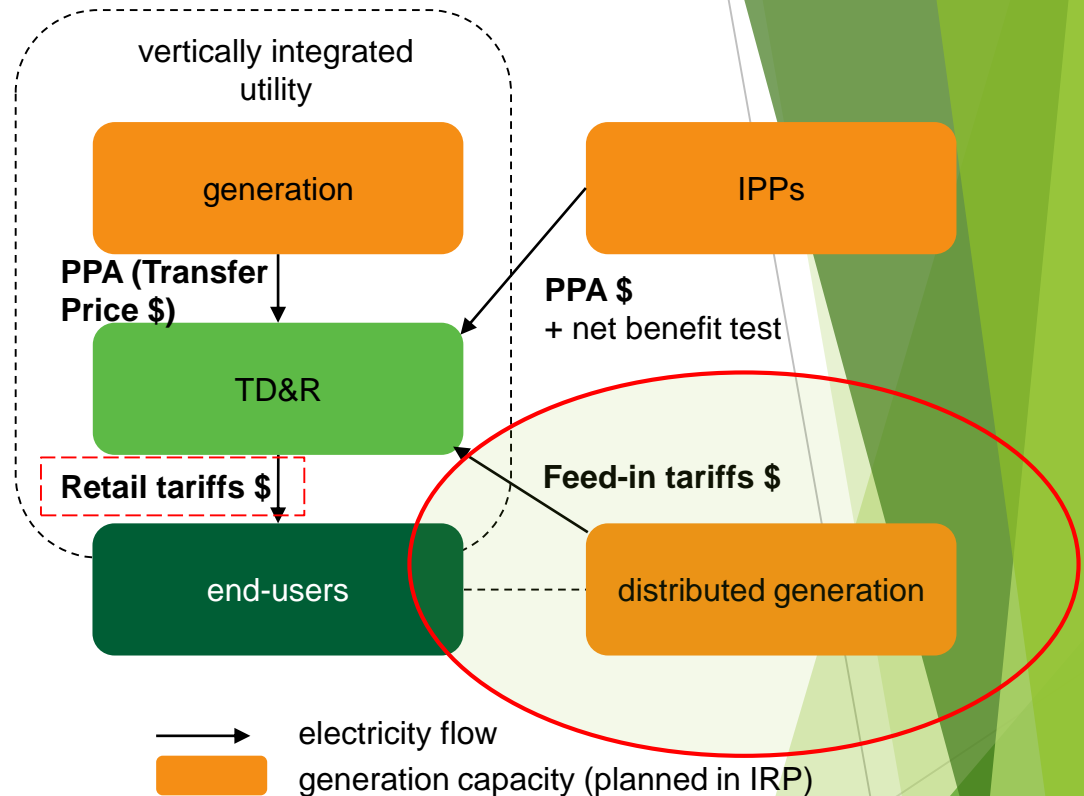
The Integrated Resource Plan (IRP) Process



Retail Tariff Methodology

Retail Tariff design

- 1 Determine requirements on PPA between generation and TD&R
- 2 Determine allowed revenues for TD&R
- 3 Convert the revenues allowed for generation and TD&R into tariffs



Note: IPP—-independent power producer; TD&R—Transmission, Distribution and Retail; IRP—integrated resource plan; PPA—power purchase agreement.

Feed-in Tariff Methodology

Feed-in Tariff Design

1

Determine **Avoided cost of generation**. This is the cost of generation that the TD&R Licensee avoids by purchasing power from distributed generation.

2

Determine **Economic benefits**. Any economic benefits associated with distributed generation.

Examples of Factors for Consultation:

- **Avoided Cost of Generation**
 - Reduction in fuel costs and other variable operating costs of generation
 - Reduction in the TD&R Licensee's network losses
- **Economic Benefits**
 - Reduction in costs associated with meeting environmental standards
 - Increased economic activity

1. Issue R1 Consultation GD
4/27/2018

2. Deadline for R1 Comment
6/4/18

3. Issue R2 Consultation GD 8/18


4. Commentary Period ...

5. Issue Final GD
10/28/18

6. Conduct FIT Review by end of 2018

Standard Contract

- The Contract between the TD&R Licensee and a distributed generator for the sale of renewable energy
 - Conforms to the Standard Contract template set by administrative determination
 - Authorises the purchase of power at the feed-in tariff approved by the Authority
 - Authorises generation below the licence threshold

- **Restriction:**
 - Entering into contract cannot put the TD&R Licensee beyond the **limit** for distributed generation capacity set in the IRP
- **Issue:**
 - No IRP in place - **no limit** - means no new distributed generators
- **Solution:** 
 - **Legislative amendment to the Electricity Act 2016, Section 49 tabled in the House July 6, 2018**