

Caribbean Utilities Company, Ltd.
Certificate of Need
2 x 18 MW OF FIRM GENERATING CAPACITY IN 2016

These programs have been taken into account in CUC's forecast of load growth over the next five (5) years. Scheduled retirements through 2016 include: Unit 16 (rated at 7.590 MW) in April 2014, Unit 14 (rated at 10.300 MW) in April 2014, Unit 15 (rated at 10.300 MW) in April 2016, and Unit 19 (rated at 4.00 MW) in July 2016. CUC is not planning to extend the useful life of these generating units at this time. CUC has included the utilization of 7.5 MW of interim generating capacity in 2014 and 10.5 MW of interim generating capacity in 2015, to provide the required reserve capacity on a temporary basis in 2014 and 2015 as the required need for 18MW of generation capacity in 2014 was not met by the 2011 generation solicitation process. This was not the preferred solution as the temporary generation such as high-speed diesel powered mobile generating units have a significantly higher levelized total cost to consumers when compared to firm medium-speed diesel power generating units.

3. Recommended Action

Based on the projected need for additional generating capacity, as demonstrated herein, CUC requests the Authority to initiate a competitive solicitation process to secure such generating capacity according to the following technical criteria and process guidelines:

Technical Criteria:

- Total capacity needed: approximately 36 MW (Nominal gross)
 - Maximum individual generating unit size: 18 MW (Nominal gross)
 - Nominal shall be defined to allow an actual capacity to be within +/- 10% tolerance of the nominally listed value.
- Timing:
 - The first 18 MW of capacity to be operational no later than April 1, 2016
 - The second 18 MW of capacity to be operational no later than May 1, 2016
- Expected Operation:
 - Integrated dispatch
 - Nominal level of dispatch in regular operation: **80%** of rated capacity, subject to generation availability, , the economical dispatch of all available generation licenced by the ERA, the overall system demand and system operational constraints as defined in CUC's T&D Code.
 - Expected unit annual operating availability factor: **90%**. (based on IEEE EAF equivalent availability factor, Does not include major scheduled maintenance as per manufacturers specification)
 - Expected annual operating availability factor during the year of major maintenance: **80%**. (Based on major scheduled maintenance occurring approximately every 2 years)
 - Expected annual level of generation (projected gross kWh output): **85% x 8,760 x gross rating in kW x 80%**



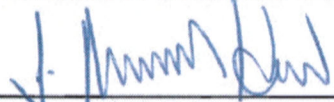
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- Fuel
 - Fuel storage capacity: **Minimum 10 days** at full load operation
 - Lubricating and waste oil storage capacity: **Minimum 30 days** at full load operation

4. Certification

The Recommended Action set forth above in this CON is based on our understanding of CUC's obligations under its T&D Licence. The calculations, projections, assumptions and technical requirements used in developing this recommendation have been developed or based on our good faith efforts and sound engineering principles. Therefore, CUC certifies that the next increment of capacity, as described in more detail along with related recommendations in the Recommended Action above, is necessary to meet the projected electric generation requirements as of the date recommended.

**ON BEHALF OF
CARIBBEAN UTILITIES COMPANY, LTD.**



President & C.E.O.

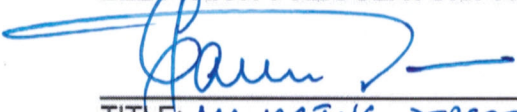
October 21, 2013

Date

5. Approval

This CON is in compliance with the requirements of CUC's T&D Licence and applicable law and represents a valid determination of needed generation capacity and related requirements as set forth in the Recommended Action herein and is hereby approved.

**ON BEHALF OF
ELECTRICITY REGULATORY AUTHORITY**



TITLE: **MANAGING DIRECTOR**

OCTOBER 23, 2013

Date

Exhibits Attached

- Exhibit 1 – List of Existing Resources
- Exhibit 2 - Summary of historical and projected annual generation and peak demands.
- Exhibit 3 - Calculation of the minimum and maximum capacity requirements - Current Resources and Proposed Resources.

Exhibit 1 Generating Facilities

Sorted by retirement date

Unit Make and Model	Unit #	Unit size (MW)	Start-up date of the unit	Retirement date based on estimated economic life of the unit	Useful Life (yrs)
Mirrlees KV16 ²	16	7.590	5/1/1991	4/30/2014	23
Stork Werkspoor TM620	14	10.300	5/1/1987	4/30/2014	27
Stork Werkspoor TM620	15	10.300	5/1/1989	4/30/2016	27
Caterpillar 3616	19	4.000	5/1/1986	7/31/2016	30
Caterpillar 3616	20	4.000	5/1/1988	2/28/2019	31
Mak 8M601C	1	9.000	5/1/1997	4/30/2022	25
Mak 8M601C	2	9.000	5/1/1997	4/30/2022	25
Man B&W 12V 48/60	35	12.250	8/1/2000	7/31/2025	25
Man B&W 12V 48/60	36	12.250	8/1/2000	7/31/2025	25
Solar Centar 50 G Turbine	25	3.500	5/1/1996	4/30/2026	30
Caterpillar 3616	3	4.400	5/1/1998	2/28/2027	29
Caterpillar 3616	4	4.400	5/1/1998	2/28/2027	29
Caterpillar 3516B ³	41	1.450	7/1/2007	4/30/2027	20
Caterpillar 3516B ³	42	1.450	7/1/2007	4/30/2027	20
Man B&W 12V 48/60	34	12.250	8/1/2003	7/31/2028	25
Man B&W 14V 48/60 ¹	33	16.000	6/1/2007	9/30/2029	22
MAN Gas Turbine ¹	26	8.400	7/1/2006	9/30/2029	23
Man B&W 14V 48/60	32	16.000	10/1/2009	9/30/2029	20
Caterpillar 3516C	43	1.500	12/1/2011	11/30/2031	20
Caterpillar 3516C	44	1.500	12/1/2011	11/30/2031	20
Total		149.540 MW			

Notes

1. This date represents the expiry of the initial Generation License. No later than three years before this date, the Licensee will be expected to apply to the Authority for an extension of the life of units 26 and 33. The Licensee's annual depreciation schedules for accounting records will continue to be based upon the Licensee's best estimates of the units remaining useful life, namely June 30, 2036 for unit 26 and May 31, 2032 for unit 33.
2. Based on the submitted request for ERA approval of the proposed extension retirement date for unit 16 from 4/30/2013 to 4/30/2014.
3. Based on the submitted request for ERA approval of the proposed extension retirement date for units 41 and 42 from 6/30/2014 to 6/30/2027.

Exhibit 2

Revised October 21, 2013.

Calendar Year, CY	CY 2011	CY 2012	CY 2013	CY 2014	CY 2015	CY 2016	CY 2017	CY 2018
Projected Peak Load Growth	-3.12%	-3.03%	2.00%	2.00%	2.00%	4.00%	4.00%	3.00%
Peak Load Demand, MW	98.900	95.900	97.818	99.774	101.770	105.841	110.074	113.376
Net Generation, GWh	594.0	587.1	598.8	610.8	623.0	648.0	673.9	694.1

Notes

1. Projections made with current information. These projections are revised annually.



Exhibit 3

Generation Planning Model

Revised October 21, 2013.

Year	Year					CY Retired ²	Installed	CY Retired ²	Year					
	2012	2013	2014	2015	2016				2017	2018				
Calendar Year, CY														
Projected Peak sales Growth	-1.16%	2.00%	2.00%	2.00%	4.00%									
Projected Peak Load Growth	-3.03%	2.00%	2.00%	2.00%	4.00%									
Peak Load Demand, MW	95.9	97.8	99.8	101.8	105.8									
Net Generation, GWh	587.1	598.8	610.8	623.0	648.0									
#41	3/31/2007	1,450	1,450	1,450	1,450	4/30/2027								
#42	3/31/2007	1,450	1,450	1,450	1,450	4/30/2027								
#43	12/1/2011	1,500	1,500	1,500	1,500	11/30/2031								
#44	12/1/2011	1,500	1,500	1,500	1,500	11/30/2031								
#19	5/1/1986	4,000	4,000	4,000	4,000	7/31/2016								
#14	5/1/1987	10,300	10,300	10,300	10,300	4/30/2014								
#20	5/1/1988	4,000	4,000	4,000	4,000	2/28/2019								
#15	5/1/1989	10,300	10,300	10,300	10,300	4/30/2016								
#21	5/1/1990					4/30/2010								
#16	5/1/1991	7,590	7,590	7,590	7,590	4/30/2014								
#25	5/1/1996	3,500	3,500	3,500	3,500	4/30/2026								
#26	5/1/1997	8,400	8,400	8,400	8,400	9/30/2036								
#1	5/1/1997	9,000	9,000	9,000	9,000	4/30/2022								
#2	5/1/1998	9,000	9,000	9,000	9,000	5/1/2022								
#3	5/1/1998	4,400	4,400	4,400	4,400	2/28/2027								
#4	8/1/2000	4,400	4,400	4,400	4,400	3/1/2027								
#36	8/1/2000	12,250	12,250	12,250	12,250	7/31/2025								
#35	8/1/2003	12,250	12,250	12,250	12,250	8/1/2025								
#34	7/1/2006	12,250	12,250	12,250	12,250	7/31/2028								
#33	6/1/2007	16,000	16,000	16,000	16,000	9/30/2032								
#32	10/1/2009	16,000	16,000	16,000	16,000	9/30/2034								
#31	4/1/2016													
#30	5/1/2016													
#29	7/1/2014			7,500	7,500	3/31/2016								
Interim Generating Capacity I	5/1/2015			3,000	3,000	4/30/2016								
Interim Generating Capacity II														
No. of generating units		20	20	19	20	19								
Actual Capacity, MW ³ (with Proposed Resources)		149,540	149,540	139,160	142,150	157,350								
Current Capacity, MW (without Proposed Resources), MW ⁴		149,540	149,540	131,650	131,650	121,350								
Min Allowable Capacity (MW)		129,465	132,054	134,695	137,389	142,885								
Max. Allowable Capacity (MW)		148,645	151,618	154,850	157,743	164,053								
Reserve Cap., MW (with Current Resources)		53,640	51,722	31,876	29,880	15,509								
Reserve margin, % (with Current Resources)		55%	53%	32%	29%	15%								
Act. Cap. Above (+) or Below (-) Min. Resources)		20,075	17,486	-3,045	-5,739	-21,535								
Lic. Cap., MW (with Current Resources)														
Reserve Cap., MW (with Proposed Resources)		53,640	51,722	39,376	40,380	51,509								
Reserve margin, % (with Proposed Resources)		55%	53%	39%	40%	49%								
Act. Cap. Above (+) or Below (-) Min. Resources)		20,075	17,486	4,455	4,761	14,465								

Notes

- Projections made with information available at the time of Report. These projections are revised periodically.
- CY Retired indicates that the generating unit will not be available for service in the CY stated to contribute during the summer peaks.
- The Actual Capacity stated assumes the additional generation capacity proposed. This is used to illustrate what the reserve margin will be if that round of solicitation is approved and installed.
- The Current Capacity stated, assumes that the next proposed capacity is not installed. This is used to illustrate what the reserve margin will be if that round of solicitation is foregone. It is simply the previous year's capacity.
- Generating units 41 and 42 are included in the list of generating facilities as per the latest discussions with the ERA. Retirement date of generating unit 16 extended to April 2014 as per the latest discussions with the ERA.