ST GEORGE'S CAY POWER COMPANY

RENEWABLE ENERGY PLAN (REP)

2 July 2025

UPDATED September 2025

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TABLE 2 upated 8 September 2025

TABLE 3 updated 24 September 2025

1.0 Definitions

1.1 Refer to the SGCPC Glossary and Definitions for further clarification of technical terminology.

2.0 Background

2.1 The Utilities Regulation and Competition Authority (URCA) is The Bahamas' independent regulatory authority with responsibility for and authority over all entities that generate, transmit, distribute, or supply electricity to, from, or within The Bahamas.

2.2 St George's Cay Power Company Limited (SGCPC) was formed in 1982 and has 150 local shareholders. URCA granted License APESL-18-0003 to SGCPC in 2018 to generate, distribute, and sell electricity in its service area, and as a licensee it is required to follow all applicable policies, legislation and regulations.

2.3 SGCPC serves Spanish Wells and Russell Island. SGCPC has approximately 1300 customers, consisting of residential homes, rental homes and apartments, businesses, docks, and private properties with no premises.

2.4 Growth of Customers and energy consumed has been in the range of 1% to 3% annually. The analysis of trends is hindered by the COVID pandemic. The pandemic affected the energy consumed, the growth of the Customer base, and other factors. Please refer to Table 1 and Figure 1 for details.

Table 1: SGCPC Energy and Customer Data & Future Estimates

	a	b	c	d	e	f	g
		Energy [MWh]					
	Year	Generated	Sold	Customers	Change from previous year		
1	2018	10,898	10,076	1,161			
2	2019	11,007	10,178	1,194	Total	Non-VAT	VAT-able
3	2020	11,116	10,281	1,204	NA	NA	NA
4	2021	12,046	11,154	1,214	8%	-17%	23%
5	2022	11,881	10,999	1,232	-1%	-33%	11%
6	2023	12,080	11,186	1,265	2%	68%	-14%
7	2024	12,155	11,256	1,294	1%	12%	-4%
8	2025	12,335	11,425	1,313			
9	2026	12,517	11,596	1,333			
10	2027	12,703	11,770	1,353			
11	2028	12,891	11,947	1,373			
12	2029	13,082	12,126	1,394			
13	2030	13,275	12,308	1,415			

NOTE: Data for 2025 through 2030 are estimates.

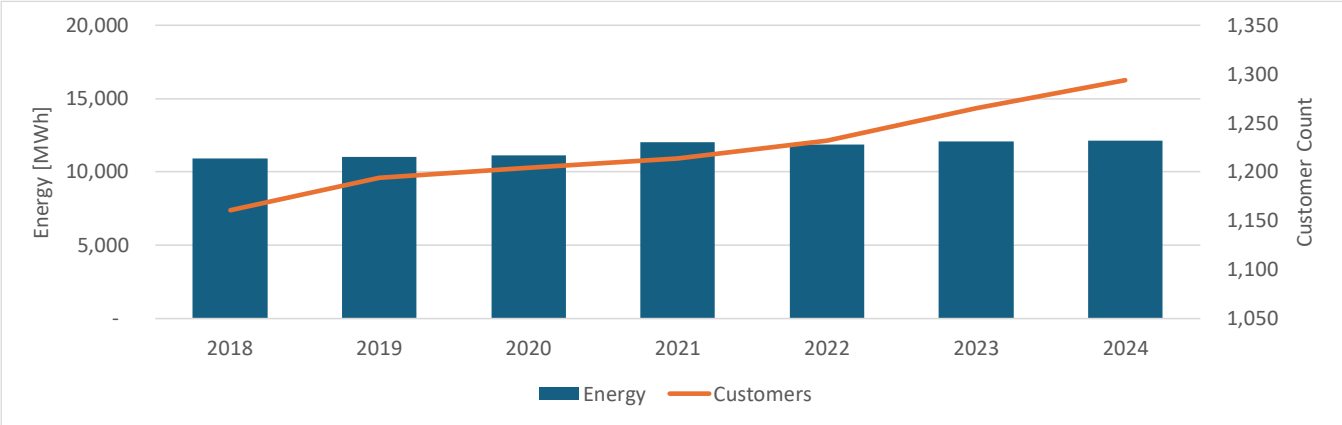

Figure 1: SGCPC Energy and Customer data

2.5 Year-over-year change in Non-VAT and VAT energy sold is noteworthy.

A. "Non-VAT" energy (column f) is where the monthly consumption by a Customer is less than $400, or approximately 1,000 kWh for the month. These Customers are exempt from paying VAT on their electricity purchases. This is intended to provide a community benefit to Customers that consume much less energy than typical premises.

B. Consumption of energy by Non-VAT Customers has increased significantly although inconsistently since 2020.

C. "VAT-able" Customers (column g) are those premises using more than $400 of electricity in any month. Consumption of energy by VAT-able Customers has dropped significantly in the last two years. Part or all of this may be the result of privately owned PV Systems.

D. SGCPC has only recently started installing bi-directional meters that record delivery and export of energy. This will make future analysis easier and clearer. Some of the bi-directional meters already installed as of this writing are indicating some Customers are exporting as much as 50% or more of their consumption. That indicates the PV System is significantly over-sized pursuant to proposed rulemaking and in comparison to BPL service areas. Refer to the SGCPC Grid Interconnection Requirements (GIR) on the SGCPC web site.

2.6 Until now, 100% of electricity has been from diesel-fueled gensets with no other generating sources. SGCPC is burning approximately 1,000,000 gallons of diesel a year and releasing 14,000 tons of CO2 into the atmosphere every year.

2.7 SGCPC enjoys exceptional reliability due to its construction, maintenance, and operational standards and controls. SGCPC typically averages less than one unplanned outage a year.

2.8 Outages in other geographical regions of the Bahamas are far more frequent averaging as high as one outage a week or sometimes as frequently as 1-2 times a day.

2.9 SGCPC customers expect that SGCPC will maintain our record for the best reliability in the Bahamas. This requires ongoing management and control of the electrical grid network.

2.10 Compared to New Providence, the SGCPC power grid is approximately 1/100 the size, with roughly 1% of the peak power capacity and annual energy production. As such, limits and sizing of renewable-energy capacities and total allowances are generally scaled to 1% of the relevant metrics applied on New Providence Island.

A. For example, a solar-energy system operating on Spanish Wells with a power capacity of 10 kW would be equivalent to a system on New Providence with a power capacity of 1,000 kW (1 MW) with respect to its impact to the grid and its electrical and financial stability.

2.11 All Licensees are required to follow the Electricity Act 2024. (EA 2024). EA 2024 mandates the following.

A. Encouragement of competition in the generation of renewable electricity.

B. Development of plans that favor and promote the use of renewable energy "in the absence of competing reliability or cost considerations."

2.12 Licensees therefore are obligated to incorporate renewable energy in their generation portfolio and allow others to install renewable-energy systems on their premises provided that those systems do not compromise the safety of the Licensee's personnel, the community, or reliability and safety of the grid.

2.13 This mandate and prudent business operating practices require Licensees to employ the least-cost options, or options that do not represent an additional financial burden on the Licensee.

2.14 Pursuant to EA 2024 Section 51(1) and 53(1), SGCPC will ongoing monitor its generating capacity and loads, determine the need for additional generating capacity and whether that should be accomplished using renewable sources.

A. Should SGCPC decide that there is a need for additional renewable-energy generating capacity, SGCPC will notify URCA and provide justification for its decisions.

B. Should SGCPC decide to solicit competitive bids for electricity from Independent Power Providers, SGCPC will follow the requirements of Section 53 of the EA 2024.

2.15 Until now, many SGCPC Customers have installed their own solar-energy systems. Using terminology in this REP and accompanying documents, these are believed to be all PV Systems, some with or without ESS. (Refer to "Glossary and Definitions" document.) Without installation information, SGCPC is presuming none of them are Off-Grid Systems.

A. Based on an aerial and ground survey, as of June 2025, there are 46 PV Systems installed on Spanish Wells and Russell Island. Based on typical PV module sizing, this is estimated to be 430 to 540 kW-DC power capacity. Table 2 line 20 for calendar year 2025 reflects this as a single number, 400 kW; this is converted from kW-DC to kW-AC as the AC basis is the standard for all utility calculations.

B. Using the scaling discussed above, this is generally equivalent to what would be an unauthorized 43 MW to 54 MW of PV installed on New Providence Island (please refer to section 2.10, above). That would be a massive, unlicensed PV powerplant on New Providence, occupying more than 100 acres of land. That is the magnitude of the challenge faced here by SGCPC and the community.

C. These installations produce roughly 5.5% to 7.5% of total SGCPC energy sales and fossil-fuel offset. From the energy perspective of meeting 2030 and future carbon goals alone, this is a good outcome.

D. However, none of these installations are properly permitted or approved to operate. None of these existing system owners requested approval from SGCPC. As far as SGCPC is aware, none of these systems were submitted to Town Council for review/approval or to Ministry of Works for a permit.

E. Evaluating some of them visually, SGCPC has reason to believe some of them are not installed to industry best practices or compliant with Code requirements. Many of them likely would be heavily damaged or destroyed by a hurricane of the magnitude required by Code. All of that flying debris would impact somewhere else – likely on a neighbor's property and hopefully not injuring others.

2.16 The power capacity of PV installed on any grid is typically limited to 50% of instantaneous demand if there is no ESS installed. Exceeding 50% PV penetration can cause grid instability and failures.

A. The estimated installed capacity of privately owned PV Systems is already exceeding 35% of the power demand on the grid (line 21 on Table 2).

B. Once SGCPC completes the Phase-1 PV Farm, the threat to grid stability will increase due to the higher PV Penetration fraction. This may require the automated curtailment of PV Systems or addition of ESS.

3.0 Energy Consumption and Expected Load Growth

3.1 The 2024 energy consumption for the SGCPC service area was approximately 12,000 MWh, or approximately 33 MWh a day average. Peak power demand is approximately 3.2 MW. These statistics correspond to less than 1% of the size of the New Providence service area.

3.2 Service-area consumption has been growing at 1% per year. This trend is expected to continue.

3.3 SGCPC in meeting its License conditions, Government policy, and URCA regulations, has decided to meet this demand at a minimum to the national target of 30% by 2030 using solar-energy systems.

3.4 In accordance with Section 53 of the EA this Renewable Generation can be met through a mix of larger MW-scale and smaller kW-scale installations. Please refer to this Plan and associated documentation for further details on justification pursuant to EA Section 53(2)(b). As noted elsewhere in this REP, larger installations of both PV and ESS will result in better economies of scale, lower capital investment by the community at large, and lower cost of energy.

3.5 SGCPC will also have to implement large-scale Energy Storage Systems (ESS) to support the growth of solar energy on the grid. The ESS is required to maintain grid stability with the addition of SGCPC-owned and Customer-owned solar assets.

3.6 SGCPC has an installed thermal capacity of 5 MW in existing diesel gensets. All assets are owned by SGCPC and there are no other providers under contract with SGCPC. Currently, SGCPC operates with low spinning reserves on the order of hundreds of kW of power capacity because of the consistent and predictable load profile. Given this balance of load and capacity, the Loss of Load Expectation (LOLE) is close to zero. This stability is evidenced by the outstanding reliability statistics for our Customers, although risk is added to this performance benefit due to unmanaged, unauthorized, and uncontrolled Customer-owned generating assets interconnected to the SGCPC grid.

4.0 Outlook

4.1 SGCPC expects Customers to continue to install privately owned PV Systems.

A. Going forward these will be restricted to the limitations posted in the GIR, and all installations no matter when installed will require approval from Town Council, permitting by the Ministry of Works, and inspection by and authorization to operate from SGCPC.

B. All installations will have a bi-directional meter installed to record separately the energy delivered and the energy exported back to the grid. SGCPC will pay Customers for the exported energy.

C. Ideally all Customers considering solar energy will carefully review the information on the SGCPC website and calculate their financial performance before investing. This is a major investment, and anyone buying a solar-energy system should scrutinize any proposal and shop just as carefully as if they were spending that sum on their home, like a kitchen remodel or new swimming pool.

4.2 SGCPS is mandated by EA-2024 and the terms of its License to maximize the amount of renewable generating sources used to supply electricity to its service area in alignment with national goals included in the Bahamas National Energy Policy.

4.3 SGCPC faces the same challenge as utility companies and communities around the world: provide reliable supply of power and energy, manage costs, remain financially sustainable, reduce use of fossil fuels to make electricity, reduce environmental risk and impacts.

4.4 SGCPC and all utility companies need to achieve these goals while adapting to technology that allows Customers to generate solar electricity themselves.

4.5 This Renewable Energy Plan (REP) and associated documents is the SGCPC plan for managing the grid and moving into the future as a Community. SGCPC will update this REP annually and submit the updated REP to URCA on an advisory basis.

4.6 Every three years, SGCPC shall submit to URCA for review as required in the EA 2024 Section 51.3. This submittal by SGCPC shall address sub-sections (a) through (g) of Section 51.3.

4.7 Every year, SGCPC will submit an annual report compliant with Section 51.3(f) describing progress regarding this REP plan.

5.0 Renewable Technology Options and Selection

5.1 Preamble. The Definitions section of EA 2024 defines "Renewable Electricity Resources" as resources that derive electricity from sources that are naturally replenished. This includes but is not limited to solar energy, wind, hydropower, geothermal, biomass, wave power, ocean thermal power and waste-to-energy technologies.

5.2 Of these technologies the most appropriate for an electricity utility of the size and character of SGCPC are solar ("PV") and wind.

5.3 Photovoltaic (PV)

A. PV is the only technology considered to be viable and practical at the scale needed by SGCPC and the community.

B. PV can be engineered and constructed to survive 180 mph winds with excellent corrosion resistance for a 30-year warranty service life.

C. There is no resource study required to deploy PV, since the solar resource is uniform across the Service Area and indeed the entire Bahamas.

D. There is no noise or other disturbance associated with a PV system.

5.4 Small wind turbines

A. SGCPC does not consider wind energy as a viable resource for our Service Area.

B. There are no large-scale turbines on the market that have sufficient wind rating for this locale.

C. Turbines would have to be the type that can be lowered, secured, and protected during a hurricane, typically smaller than 30 kW.

D. Lowering a turbine requires additional ground space for the turbine in its horizontal orientation.

E. Wind turbines do produce a sound pattern and shadow pattern that are undesirable to some people.

F. The wind resource is not continuous across the Service Area, and a wind-resource study would be required before deciding to deploy wind turbines. This would further delay use of wind turbines for meeting the 2030 goals.

5.5 Marine-based energy production

A. SGCPC considers these systems to not be commercially viable for the Bahamas. This includes tidal, wave, or thermal-energy conversion cycle systems.

B. SGCPC does not consider marine-based energy as a resource for our Service Area.

6.0 Structure and Analysis of the SGCPC Renewable Energy Plan (REP)

6.1 Preamble: SGCPC considers that there are several implementation pathways to achieve the 30% National Integration Target mandated by the National Energy Policy of the Bahamas. These include the following options. The pros and cons of each are discussed in the following paragraphs.

A. Large-scale PV on land owned or leased by SGCPC and constructed, installed, and operated by SGCPC.

B. Medium-scale PV on Customer premises constructed, installed, and operated by SGCPC.

C. Small-scale PV Systems or Off-Grid systems installed by individual Customers.

D. A combination of the above options.

6.2 In addition to offsetting 30% of diesel generation by 2030, the goals of this REP are to reduce energy costs to the community, improve grid reliability, reduce carbon emissions, reduce environmental risk, reduce air and noise pollution, provide frequency stability, and provide black-start capability.

6.3 Table 2 represents the SGCPC plan for PV and ESS deployment.

6.4 Initially, SGCPC intended to deploy as much PV as possible without the added investment of ESS. This limit is approximately 15% of annual energy production or 50% of instantaneous power demand. Given the growth of Customer-owned PV Systems that could export power to the grid, SGCPC has recognized that an ESS will be required as part of the Phase-1 PV Farm Further growth of PV will require additional ESS installations. This is posted on lines 19 and 20 of Table 2.

6.5 Phase-1 PV Farm

A. SGCPC has aggregated and purchased sufficient land adjacent to the Powerplant for the Phase-1 PV Farm.

B. This will offset approximately 13-15% of the annual energy consumption and about 1/3 of the demand power capacity.

C. The diesel powerplant will continue to run continuously with the Phase-1 PV Farm operating.

6.6 Phase 2 of the REP; SGCPC-owned Distributed Energy Resources (DER) on customer-owned premises.

A. Land is limited for generating resource siting, and land costs are high on Spanish Wells and Russell Island.

B. Because of this land shortfall, SGCPC intends to install and operate PV systems on the roofs of commercial (and possibly also residential) buildings.

C. SGCPC will pay an annual lease payment to the building owner.

D. SGCPC will pay all capital investment and operational expenses for the PV system(s) including liability insurance.

E. The lease rate will be based on the power capacity of the PV system and the expected financial performance of the installation. Financial performance will be evaluated on the ability to maintain or reduce SGCPC operating expenses and ultimately continue to be able to reduce customer rates.

6.7 Phase-3 PV Farm.

A. SGCPC has identified other suitable land for the expansion of the SGCPC-owned, ground-based PV array approach. This REP anticipates that the phase could have a Commercial Operations Date (COD) in 2027.

6.8 The annual energy consumption, fossil-fuel and expected PV energy production are depicted in Figure 2. This graph also includes the ESS power required as noted elsewhere herein.

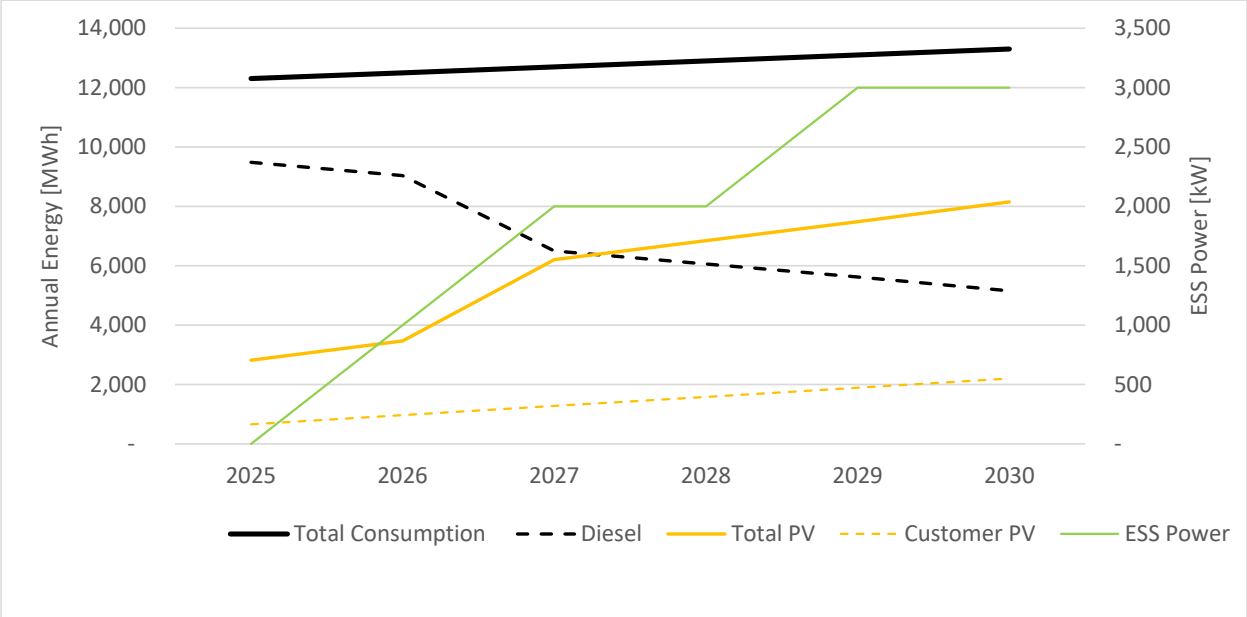

Figure 2: SGCPC Energy Consumption, Sources and ESS Deployment

6.9 The LCOE from diesel fuel alone is approximately $0.33/kWh ($330/MWh) in 2025 dollars. This is driven primarily by the cost of diesel fuel, and also includes motor oil, service, preventative maintenance, and repairs. Refer to Glossary and Definitions for explanation of LCOE.

6.10 Adding PV to the grid will lower the energy generating cost because the LCOE for PV alone is much lower than the LCOE for diesel-fueled electricity. For example, the net change in LCOE resulting from the Phase-1 solar farm will be approximately a 10% reduction.

6.11 Once the PV power production compared to demand approaches 50%, reports from similar small utilities indicate that grid instability may result.

6.12 Adding ESS to the SGCPC grid will Improve stability, enable adding more PV capacity. When reaching higher PV penetration fractions it would be possible to shut down the diesel powerplant for part of the day depending on load and weather conditions.

6.13 The LCOE is reduced as PV and ESS are added to the grid, until reaching a Lowest LCOE (LLCOE). This is based on the capital investment (CapEx) and operating expenses (OpEx) for the powerplant. Based on the cost of diesel fuel in 2025, the LLCOE is realized when PV is making about 90% of the energy. Figure 3 depicts a typical comparison of PV penetration scenarios of this nature. This is calculated using the HOMER Energy ® analytical platform.

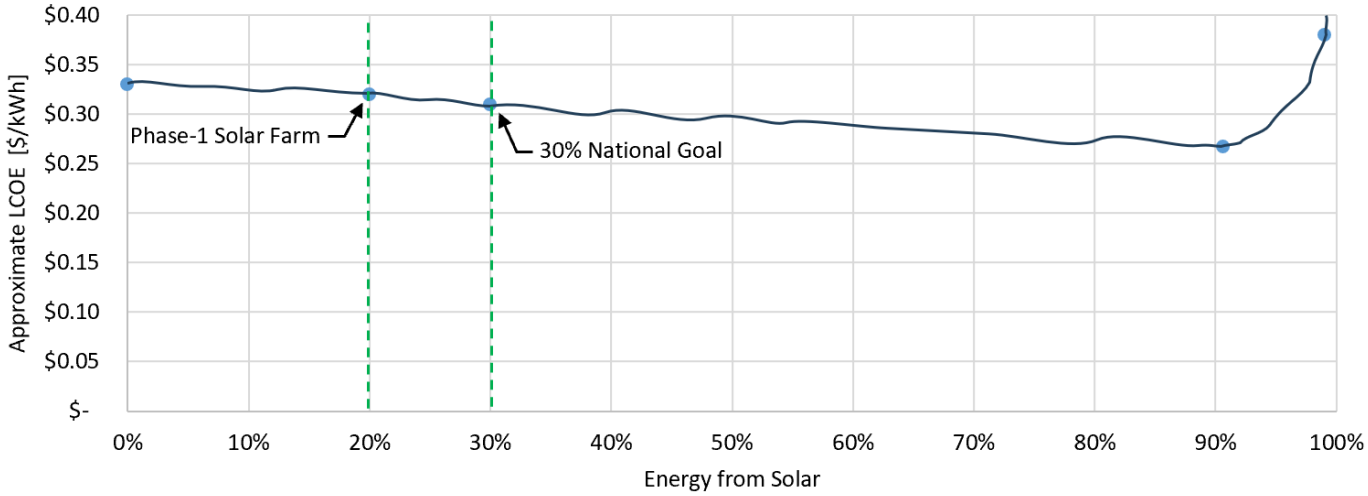

Figure 3: Approximate LCOE Scenario Comparison

6.14 The lowest-cost option for production of electricity is through SGCPC-owned PV and ESS (refer to Table 3). Because of this mandate in EA 2024, SGCPC favors electricity produced by SGCPC-owned solar-energy assets.

A. The Levelized Cost of Energy (LCOE) is defined in the Glossary and Definitions document. The inputs to the LCOE calculation are capital investment and the annual expense for operation and maintenance.

B. The larger the quantity of equipment being purchased (in any industry) the lower the cost. When SGCPC is buying materials at MW-scale pricing, the capital cost for equipment will be lower than the cost of equipment by homeowners at the residential scale. The cost of equipment typically may be as much as 50% less at the MW scale.

C. The cost of labor is similarly lower for MW-scale projects compared to residential-scale projects.

D. These equipment and labor effects result in a significantly lower capital investment for the MW-scale project.

E. The cost for operation and maintenance is similarly optimized for MW-scale projects compared to residential-scale projects.

F. The other factor in the LCOE calculation is energy production. The energy produced by MW-scale PV arrays will be optimized for direction and tilt (including consideration of wind forces) to produce the most electricity and highest yield and capacity factor compared to the residential projects that are limited to the direction and tilt of the building roof.

G. These two factors combined result in the LCOE for MW-scale projects that is significantly lower than residential-scale projects. Refer to Table 3.

6.15 There are options for combining PV and ESS to achieve different operational profiles and performance metrics. Below are three points of consideration for this REP.

6.16 Achieving the 30% National target (consumption adjusted for annual load growth) with minimum ESS for grid stability.

A. This will require approximately 1.8 to 2 MW-AC of PV capacity and a small ESS to maintain grid stability.

B. In this scenario, the diesel generators would still run continuously, or 8,760 hours a year.

C. This 30% configuration would reduce the LCOE by approximately 10% to 15% compared to diesel generation alone and based on the expected consumption growth.

6.17 Achieving the Lowest LCOE, or "LLCOE" (consumption adjusted for annual load growth), exceeding the 30% National target.

A. There is not enough land or roof area on Spanish Wells or Russell Island to support this option. This would be a practical goal only if the PV System was located on North Eleuthera with a submarine cable interconnection. This has been done elsewhere in the Bahamas between islands as far apart as several miles.

B. This will require approximately 7 to 8 MW-AC of PV capacity and 25 to 35 MWh of ESS energy storage.

C. The LLCOE for this optimal configuration is approximately 20% less than the cost of traditional diesel generation based on current diesel-fuel pricing.

D. This LLCOE system would displace approximately 90% of the diesel fuel with solar electricity and would enable turning off the diesel powerplant for approximately 80% of the year, reducing powerplant generator runtime from 8,760 hours to approximately 1,400 hours a year.

E. This would allow a reduction in the cost of grid electricity for all SGCPC Customers.

6.18 Ground-based PV Systems typically require 2.5 to 3 acres per MW-AC of power capacity. The land for the 2030 target options would be 5 to 6 acres. The land area required to build the LLCOE system referenced above would be approximately 20 acres.

6.19 SGCPC will install a fiber-optic network with a control platform for monitoring grid loads and PV production from SGCPC- and privately-owned PV Systems. This system will allow SGCPC to turn down or off various PV Systems as needed to maintain grid stability.

7.0 Perspective on Privately Owned Renewable Energy Systems

7.1 SGCPC supports the ownership of private PV Systems on Customer premises. Pursuant to Sections 54 and 55 of the EA 2024, Persons are allowed to install solar-energy systems on their own property. But it is essential that this be done in compliance with the building and electrical codes, that the Town Council approves the project (they need to approve anything as minor as a yard fence), the Ministry of Works issues a permit (required for all electrical projects), and SGCPC reviews, inspects, and approves the installation.

7.2 SGCPC recognizes there is a strong financial incentive for Customers to invest in their own renewable energy systems if they have the financial resources to do so. The LCOE from a privately owned PV System is approximately $0.12/kWh (refer to Table 3) compared to the utility's regular retail rate. Note, however, that the LCOE from a PV System with ESS is significantly higher than this amount because the ESS adds significant cost but does not itself produce any more energy.

7.3 Privately owned renewable-energy systems may result in the cost of grid electricity increasing for SGCPC Customers.

A. That is because privately owned solar-energy systems result in less energy produced and sold by SGCPC, and that forces SGCPC to spread the fixed expenses across less energy sold.

B. Additionally, Customer-owned PV Systems will cause SGCPC to buy ESS capacity sooner than would otherwise be required. That becomes another fixed expense to apply across all energy sold.

7.4 As of the date of this REP, there are 46 unpermitted PV installations in the Service Area.

A. SGCPC has no information regarding the code compliance of these installations or knowledge of whether they are installed pursuant to the manufacturer's installation requirements or industry standards and best practices. SGCPC is aware of one system that is installed incorrectly that resulted in

an electrical shock to SGCPC personnel when working on what should have been a de-energized meter installation. Luckily that technician was not permanently harmed.

B. A general survey of these systems leads to the conclusion that the installed capacity is somewhere between 360 kW-AC and 450 kW-AC.

C. It is unknown whether these installations are grid-tied or not. For safety reasons, SGCPC considers all these unpermitted PV Systems to be grid tied.

D. In accordance with EA 2024, Section 54(8) non-compliant systems may be disconnected from the grid. Once the REP is approved by URCA, SGCPC will institute a program to get all existing PV Systems processed for inspection.

7.5 SGCPC will recognize and accommodate two types of renewable-energy systems. These are (A) PV System; and (B) Off-Grid. These methods are further described in the current SGCPC Grid Interconnection Requirements (GIR). All equipment shall be UL listed for the intended purpose and installed pursuant to all manufacturer instructions. SGCPC will inspect all installations to ensure compliance and promote safety for SGCPC technicians and the general public. Refer to the GIR for further guidance and requirements.

A. PV System. Customers may buy and install a PV System and own and operate it themselves. A "PV System" may or may not include an ESS at the Customer's preference.

1. A Customer-owned PV System uses the SGCPC grid for power and energy when the PV System is not producing sufficient power and energy for the premise loads.

2. A PV System may be interconnected to the SGCPC grid and may export excess electricity to the grid for reimbursement by SGCPC at the prevailing tariff rate. The SGCPC grid in this case provides the voltage source that enables the PV System to operate. This is a critical "network service" provided by SGCPC to the Customer at no cost.

3. Should a Customer apply to install an ESS, it is particularly urgent that all equipment shall be UL listed "for the intended purpose" and installed pursuant to all manufacturer instructions. There have been instances where SGCPC technicians have been electrically shocked by incorrectly installed renewable energy systems including ESS on Customer premises. SGCPC will inspect all installations to ensure compliance and safety for SGCPC technicians and the general public. Refer to the Grid Interconnection Requirements (GIR) for current requirements and guidance.

4. SGCPC will promptly disconnect and lock out any Customer equipment should any systems be found to be non-compliant with the GIR, not installed pursuant to manufacturer's instructions, not UL listed for intended purpose, or otherwise deemed unsafe by SGCPC.

B. Off-Grid. Customers may buy and install a PV System with ESS, and own and operate it themselves completely independently from the grid. This installation shall be physically isolated from the grid with no SGCPC meter or interconnection.

1. An Off-Grid installation should be engineered to support 100% of the energy consumption requirements of the premise, and the premise cannot use the SGCPC grid for power or energy when their ESS is depleted. Pursuant to EA 2024, a backup genset shall not be used for power generation beyond "emergency purposes" unless the installation has authorization from URCA to do so. Backup gensets operating during cloudy weather or other conditions because of inadequacy or dysfunction of the Off-Grid system is reportable to URCA for enforcement action.

7.6 Pursuant to EA 2024 Section 55, SGCPC will support the installation of solar-energy systems to supply energy for Government entities and for small-scale business or commercial enterprises, provided those systems comply with the SGCPC Interconnection Requirements.

7.7 By authorization to operate from SGCPC and their installation, Customers that own Renewable Energy Systems acknowledge and accept full responsibility for their installed system. Owners that want to remain

connected to the SGCPC grid shall maintain in effect a liability insurance policy with limits as posted in the Interconnection Requirements to manage the risk associated with potential losses, as is typical and ordinary utility policy.

7.8 Customers are forbidden to supply electricity to any equipment or electrical loads that are not on the premises where the system is installed. Supply connections shall not extend across or beyond parcel boundaries.

7.9 PV SYSTEMS. These systems are subject to the capacities and total allowable grid limitations of Customer-owned systems are as prescribed in the SGCPC Grid Interconnection Requirements.

A. The allowable capacities are based on four (4) criteria.

1. Maximum connected power capacity.
2. Power capacity based on annual energy consumption to ensure Net Consumer status (and not Net Producer status).
3. Power capacity based on average power demand to ensure distribution circuit safety and integrity.
4. Maximum allowable PV capacity for the entire grid for grid stability without SGCPC incurring additional investment requirements for more utility owned ESS.

7.10 Owners of PV Systems as defined in the Grid Interconnection Requirements, will be required to adhere to the Fee Addendum for the initial, non-recurring, and the annually recurring costs. These fees include items such as installation of the SGCPC-owned, bi-directional meter, interconnection and ampacity studies (if needed), installation of monitoring and control network subsystems, related safety components, and periodic inspections. These costs are defined in the Fee Addendum.

7.11 SGCPC will require all PV Systems to be interconnected to the SGCPC monitoring and control network when it is implemented. NOTE: This does not apply to Off-Grid installations since those installations are not interconnected to the grid.

A. To maintain grid stability and safety, SGCPC may turn off Customer-owned PV Systems at any time based on grid demand and production. This would be done for as short a time as possible, and the system would be turned back on automatically as dictated by load and production.

7.12 Should a Customer with an approved PV System produce more electricity than they are using on their premises, SGCPC will compensate Customers for energy exported to the SGCPC grid.

A. The rate SGCPC will pay for energy exported by a Customer to the SGCPC grid is a flat-rate, Feed-in-Tariff, and is presently $0.05 per kWh. That reflects the Levelized Cost of Energy (LCOE) for solar electricity produced by SGCPC (Refer to Table 3). This rate may change periodically and will be posted on the SGCPC website.

B. The energy exported to the grid by Customer will be tabulated monthly and reflected on the SGCPC invoice.

C. There is no carry-forward or carry-back considerations. That means if a Customer produces more than they consume there is no credit to carry forward to next month or apply retroactively to last month.

D. Customers that export energy to the grid will not be compensated for energy value that is in excess of their monthly energy (kWh) consumption. This is subject to a monthly true-up; meaning a Customer with grid-tied PV that is exporting energy to the grid will only be reimbursed for the kWh up to the amount of their grid usage during any month. This should never happen, however, if the system sizing limitations are followed.

E. Since Grid-connected PV systems are intermittent and not dispatchable, they cannot be relied upon to reduce distribution losses or provide benefit for load control or demand response. This, combined with

no control over production or performance, makes grid-tied PV unreliable with regard to generation assets or pricing structure.

F. The Customer-owned PV capacity shown on lines 19 and 20 of Table 2 represents the known and expected future growth of Customer-owned PV Systems. Some of these may be PV Systems or Off-Grid that are not grid tied (again noting SGCPC has no visibility in these installations). However, given the ESS has a service life and is costly to replace, the perspective for preservation of stability and safety is that these PV Systems with ESS may be reconfigured later into PV Systems without ESS. This capacity is used in the calculations in Table 2.

G. Should a Customer with a PV System not want to export power to the grid, the PV System should be sized during the engineering process to not produce more power than is demanded on the premises.

7.13 OFF-GRID PV & ESS. These installations do not have SGCPC-driven limitations on PV or ESS sizing. That is because these installations cannot be interconnected to the grid and do not affect the grid.

A. Approval is required for all renewable energy installations. For grid-tied PV systems, Customers shall apply to SGCPC for approval. For Off-Grid systems, persons shall apply to URCA for approval. EA 2024, Section 54(8) vests the responsibility and authority in SGCPC to turn off or disconnect any Customer system if SGCPC determines that installation may endanger the safety of persons or adversely impact the safety or stability of the grid; that applies to Off-Grid installations also.

7.14 In addition to SGCPC documents, Customers are required to comply with the Canadian Electrical Code (version as specified by Ministry of Works) and the ASCE 7-22 standard for wind forces on PV arrays (including the PV modules, racking system, attachments, foundations, and integrity of the structure).

7.15 SGCPC has great concern about the quality assurance and quality control of Customer-owned PV assets. Poorly engineered or installed private PV & ESS represent possible hazards and problems for the Community and the SGCPC grid.

A. Privately owned systems are more prone to be designed without proper regard and engineering oversight related to hurricane wind forces and effects. These pose a danger to neighbors during hurricanes resulting from failure of improperly engineered or installed racking and attachment systems and PV modules that are not designed for the possible wind forces in the region.

B. Improper installation or unlisted power electronics also can result in injury or death to SGCPC technicians that might be servicing or repairing grid components.

C. Poorly engineered private systems may damage the SGCPC generating plant and other customers' electronics resulting from signal distortion, uncontrolled variability, and exceeding power capacity stability limits.

D. SGCPC has already observed many PV systems installed on roofs and on the ground in our service area that are not in compliance with wind codes, standards, and best practices that represent a high likelihood of failure during a strong hurricane.

E. To protect the public welfare and minimize the chance that privately owned systems will result in injury to persons or damage to private property during a high-wind event, SGCPC will require that Ministry of Works assess the structural stability and compliance with ASCE 7-22 as part of the permitting process and before grid interconnection.

8.0 Procedure for Customer-Owned PV Systems

8.1 Customers wishing to build their own renewable-energy systems are encouraged to thoroughly assess the SGCPC website in advance of signing contracts or paying deposits. The relevant documents include the following.

A. Grid Interconnection Application (GIA) and GIA Terms and Conditions.

B. Grid Interconnection Requirements (GIR).

C. Fee Structure Addendum.

8.2 Customers are welcome to contact SGCPC in advance to discuss and explore the feasibility of their plans. SGCPC recommends that Customers also gain some education on solar energy prior to paying deposits or signing contracts for the installation of any renewable energy electricity generation system. Failure to conduct adequate due diligence is solely the onus of the buyer of the project.

8.3 Refer to the GIR for the approval process. Customer-owned PV Systems may operate in parallel with the grid once fully authorized and approved.

8.4 SGCPC shall timely review and process all applications for Customer-owned PV Systems pursuant to EA 2024 Section 54 and 55. Approval from Town Council and a permit from the Ministry of Works is required prior to SGCPC inspection.

8.5 Customers seeking this approval should refer to the URCA and Ministry of Works websites for documentation. The SGCPC Grid Interconnection Application (GIA) and Grid Interconnection Requirements (GIR) are made available on the SGCPC website.

8.6 Installing electrician.

A. Installation by a licensed three-phase electrician is required. A copy of the electrician's license shall be included in the application package.

8.7 Customer application requires agreement to allow SGCPC to conduct, and commitment by Customer pay for, annual safety inspection of wiring and compliance with manufacturer's criteria and UL listing performance measures.

8.8 Customer accepts the risk for installation, operation, performance.

8.9 Customers must have a liability insurance policy as described in the SGCPC Interconnection Requirements.

9.0 Procedure for Off-Grid Systems

9.1 Owners should refer to the SGCPC Grid Interconnection Requirements (GIR), EA 2024, and URCA documentation prior to paying deposits or signing contracts. Off-Grid systems require URCA approval in addition to other approvals detailed in the GIR. Compliance is required and non-compliant systems will not be allowed to operate without the proper approvals as required by the GIR.

9.2 Approval steps.

A. Please refer to the URCA and Ministry of Works websites for their specific documentation. Required SGCPC forms and information will be available on the SGCPC website.

B. This is a clear and straightforward process to ensure safety for grid technicians.

9.3 Installing electrician.

A. Installation by a licensed three-phase electrician is required. A copy of the electrician's license shall be included in the application package.

9.4 Customer application requires agreement to allow SGCPC to conduct, and commitment by Customer to pay for, annual safety inspection of wiring and compliance with manufacturer's criteria and UL listing performance measures.

9.5 Customer accepts the risk for installation, operation, performance.

9.6 Customers must have a liability insurance policy as defined in the Grid Interconnection Requirements.

10.0 Documentation requirements for All Renewable Energy Systems

10.1 These same requirements apply whether the system is owned by a Customer or SGCPC directly. Except SGCPC-owned systems will always be certified and sealed by an Engineer licensed in the Bahamas.

10.2 It is highly recommended, but not required, that drawings be sealed by a licensed Engineer.

10.3 Drawings shall include a site plan showing location and connection(s) among all components.

10.4 Data sheets for PV modules, PV inverters, racking systems, and other major equipment. Home-made racking systems will require an engineer-sealed analysis of the structure to ensure it is designed to withstand 180 mph hurricane winds. For ground arrays that includes the foundations. For roof arrays, that includes the roof attachments. This is to protect the homeowner and also their neighbors.

10.5 Racking plan showing all roof attachments and waterproof flashings for roof-mounted arrays, or foundation designs for ground-mounted arrays.

10.6 Single-line electrical diagram showing all components and electrical interconnection including grid isolation devices.

A. All systems shall have a separate, lockable, lever-operated disconnect safety switch that SGCPC can access and lock out if necessary for safety purposes.

10.7 Wind analysis for module frames, racking, roof attachment (for roof-mounted PV) or foundations (for ground-mounted PV) showing compliance with the ASCE 7–22 standard, 180 mph wind speed, and the applicable Wind Exposure Category. Pursuant to URCA, this analysis shall be submitted to the Ministry of Works.

10.8 Certificate of Insurance documenting a $100,000 liability insurance policy for the PV System.

10.9 Copy of the installing three-phase electrician's license or the electrician's number as required on the ICA.

11.0 System Capacity and Fee Structure for Customer-Owned Systems

11.1 Customers wishing to build their own renewable-energy systems are encouraged to thoroughly assess the URCA website and SGCPC website in advance of signing contracts or paying deposits. The URCA website is www.URCABahamas.bs, and the SGCPC website is StGeorgesCayPower.com.

11.2 PV System capacity (those systems intending to interconnect to the SGCPC grid) shall be limited as described in the SGCPC Interconnection Requirements.

11.3 Additional fees apply to Customers for customer-owned Renewable-Energy systems. Refer to the current SGCPC Fee Addendum posted to the SGCP website for fees and other related details.

A. Customers applying for approval of renewable-energy systems will be required to pay additional fees on both a one-time, non-recurring basis and on a recurring annual basis.

1. The one-time, non-recurring fees are to pay for installation of a new, bi-directional meter, review of application documents, inspections, and administrative processing.

2. The annual recurring fees are to pay for annual inspections to ensure ongoing grid safety and compliance with the terms of interconnection.

B. The various fees do not result in any added distributions or profits to SGCPC or its shareholders. Customers should refer to the Renewable-Energy Fee Structure Addendum for more details. Please note that fees are subject to change.

12.0 Disposition of Unpermitted Customer-Owned Systems

12.1 The safety of SGCPC personnel and the general public and the stability of the SGCPC grid may be adversely impacted by Customer owned systems. As of the date of publication of this Plan, none of these installations have been inspected or approved by URCA, SGCPC, Ministry of Works, or Town Council.

12.2 Upon URCA approval of this first Plan, the Customers and Owners of any privately owned renewable energy or energy storage system shall submit the appropriate permit and approval documents to SGCPC and/or URCA. The required documents are listed in the GIR and the SGCPC and URCA websites. SGCPC will arrange a schedule to process these applications within 60 days of submission by the Customer or Owner. SGCPC will then follow the published procedure for Customer or Owner submitted applications.

12.3 SGCPC will periodically survey the service area to identify unpermitted or unauthorized PV installations. SGCPC will issue a request to the property owner in writing to allow an inspection of the installation.

12.4 Unauthorized or unpermitted installations will result in a written warning by SGCPC and may be followed by the premises being disconnection from the grid by SGCPC until (1) authorization is secured as described herein; or (2) Customer authorizes SGCPC to positively and securely lock out the renewable-energy system to preclude it from operating in parallel with the grid, the cost to do so borne by the Customer.

12.5 Unauthorized or unpermitted installations that remain unauthorized after warning shall be subject to enforcement action by SGCPC and/or URCA.

TABLE 2

SGCPC Grid Growth, PV, and ESS Estimates

	GRID PARAMETERS	2025	2026	2027	2028	2029	2030
1	Annual sales [MWh]	12,300	12,500	12,700	12,900	13,100	13,300
6	**SOLAR ENERGY CAPACITY**						
7	**Phase-1 PV Farm**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
8	Power Capacity, incl. degradation [kW-AC]	1,040	1,030	1,020	1,010	1,000	1,000
9	Annual Energy [kWh]	2,163,000	2,142,000	2,122,000	2,101,000	2,080,000	2,080,000
10	**Phase-2 Roof PV Systems**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
11	Annual Installed Capacity [kW-AC]	-	300	300	200	200	200
12	Cumulative Power Capacity [kW-AC]	-	300	600	800	1,000	1,200
13	Annual Energy [kWh]	-	546,000	1,092,000	1,456,000	1,820,000	2,184,000
14	**Phase-3 Ground PV Systems**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
15	Annual Installed Capacity [kW-AC]	-	TBD	TBD	TBD	TBD	TBD
16	Cumulative Capacity, incl degradation [kW-AC]	-	-	-	-	-	-
17	Annual Energy [kWh]	-	-	-	-	-	-
18	**Customer-Owned PV Systems**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
19	Annual Installed Capacity [kW-AC] (see Note line 33	-	-	-	-	-	-
20	Cumulative Capacity, incl degradation [kW-AC]	450	450	450	450	450	450
21	Fraction of Min Noon Demand from Customer PV	38%	38%	35%	35%	35%	35%
22	Annual Energy [kWh]	697,500	697,500	697,500	697,500	697,500	697,500
23	Total Operating PV Capacity [kW-AC]	1,490	1,780	2,070	2,260	2,450	2,650
24	Total PV Electricity to the Grid [kWh]	2,860,500	3,385,500	3,911,500	4,254,500	4,597,500	4,961,500
25	**PV Energy Offset (incl Customer Owned)**	23%	27%	31%	33%	35%	37%

	PHASE-1A ESS DEPLOYMENT	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
26	PV as %-age of MIN noon demand, before ESS	124%	148%	159%	174%	188%	204%
27	PV as %-age of MAX noon demand before ESS	51%	59%	69%	73%	79%	83%
28	Minimum ESS Deployment, Annual [kW]	-	1,000	-	-	-	-
29	ESS Deployment, Cumulative [kW]	-	1,000	1,000	1,000	1,000	1,000
30	PV as %-age of MIN noon demand, after ESS	124%	65%	82%	97%	112%	127%
31	PV as %-age of MAX noon demand, after ESS	51%	26%	36%	41%	47%	52%

32 The daily power peak typically occurs between 5 pm and 7 pm. By that time, PV Systems are no longer producing electricity.

33 Customer-owned PV is currently on hold. Total deployment in 2025 exceeds allowed maximum capacity.

34 ESS capacities are estimates and To Be Determined (TBD).

35

TABLE 3

LCOE CALCULATIONS FOR SYSTEM OPTIONS

	Calculation or Notes	Option 1	Option 2	Option 3
a System capacity [kW-AC]		1,000	150	10
b Unit cost installed [$/kW-AC]		$ 4,000	$ 2,800	$ 5,000
c Total capital investment	a x b	$ 4,000,000	$ 420,000	$ 50,000
d Yield [kWh/kWAC]		2,145	2,130	2,000
e Energy, Yr-1	a x d	2,145,000	317,000	20,000
f Total lifecycle energy [kWh]		60,146,000	8,970,000	561,000
g LCOE [$/kWh]		$ 0.05	$ 0.06	$ 0.12

NOTES

Option 1 is MW-scale PV owned by SGCPC and financed at prevailing conditions

Option 2 is kW-scale PV owned by SGCPC and financed at prevailing conditions

Option 3 is kW-scale PV purchased by SGCPC Customers at small scale

Lifecycle is 30 years