

2019

STATUS REPORT ON  
**DISTRIBUTED ENERGY RESOURCE AND  
NET ENERGY METERING IMPLEMENTATION**



# **Status Report on Distributed Energy Resource and Net Energy Metering Implementation**

Pursuant to Section 58-39-140, South Carolina Code of Laws

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This document is available upon request by contacting  
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## Introduction

On June 2, 2014, the Distributed Energy Resource (DER) Program Act (Act 236 or the Act) was signed into law by then Governor Nikki Haley. Act 236 was the result of consensus among a diverse group of stakeholders and created a pathway for growth in the renewable energy industry in South Carolina. The goal of Act 236 as stated in S.C. Code Ann. § 58-39-110 is to “promote the establishment of a reliable, efficient, and diversified portfolio of distributed energy resources” for South Carolina.

S.C. Code Ann. § 58-39-140(E) requires the South Carolina Office of Regulatory Staff (ORS) to prepare and submit a report on the status of implementation of the DER Program (Chapter 39) and Net Energy Metering (NEM or Net Metering) (Chapter 40). The purpose of this report is to meet the following requirement:

No later than July 31, 2016, the Office of Regulatory Staff shall prepare and submit to the General Assembly with copies to all members of the State Regulation of Public Utilities Review Committee a report on the implementation of this chapter and Chapter 40 of this title. The Office of Regulatory Staff shall update this report no later than July 31, 2017, and each two years thereafter. Upon receipt and review of these reports, and in consultation with the General Assembly, the Public Utilities Review Committee shall make recommendations to the Office of Regulatory Staff as to any changes in implementation that may be needed.

This update to the Status Report on Distributed Energy Resource and Net Energy Metering Implementation (DER Report) summarizes the status of implementation of the DER Programs and NEM for South Carolina’s three largest investor-owned utilities (Utilities or IOUs)—Dominion Energy South Carolina, Inc. f/k/a South Carolina Electric & Gas Company (DESC), Duke Energy Carolinas, LLC (DEC), and Duke Energy Progress, LLC (DEP).

# Renewable Policy Progression

## Act 236: Version 2.0 Stakeholder Process

Continuing in the collaborative framework that produced Act 236, multiple stakeholders in the state's energy sector met regularly between June and December of 2018 to discuss the future of DER in South Carolina as part of an "Act 236: Version 2.0" process (Act 236 2.0).<sup>1</sup> The stakeholder group, convened by ORS and facilitated by the ORS Energy Office (Energy Office), retained Energy and Environmental Economics, Inc. (E3) as an independent consultant to participate in meetings, conduct analyses, and produce a report summarizing key issues to guide future decision-making regarding renewable policy (Act 236 2.0 Report).<sup>2</sup>

Stakeholders included representatives from private and public electric utilities and cooperatives, renewable energy developers and solar industry groups, environmental organizations, consumer advocates, large energy users, and researchers from the Savannah River National Laboratory.

Several of the topics discussed in the Act 236 2.0 Report include:

- Rate design;
- Customer-scale installations and the Value of DER;
- Update to the cost shift report;
- Low-to-moderate income customers;
- Commercial and industrial renewable energy programs; and
- PURPA, interconnection, and utility-scale resources

## Update to Cost Impact Evaluation

In the 2017 DER Report, ORS recommended the cost shift data be updated in conjunction with the Act 236: 2.0 process.<sup>3</sup> The Act 236 2.0 Report dated December of 2018, includes an update to the actual and forecasted cost and benefit data originally published in the 2015 South Carolina Act 236 Cost Shift and Cost of Service Analysis.<sup>4</sup> In this report, it is currently estimated that DER incremental program costs will continue to be paid monthly by customers until approximately the 2040 timeframe or beyond.

The following is an excerpt from the Act 236 2.0 Report regarding estimated cost shifts as a result of DER adoption due to Act 236.<sup>5</sup>

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<sup>1</sup> The Act 236: Version 2.0 stakeholder process is documented on the South Carolina Energy Office website, <http://energy.sc.gov/energyplan/act236>

<sup>2</sup> Act 236 2.0 Report; <http://energy.sc.gov/files/FINAL%20REPORT%20Act%20236%202.0%2012.20.2018.pdf>

<sup>3</sup> 2017 Report on Distributed Energy Resource and Net Energy Metering Implementation, Page 14

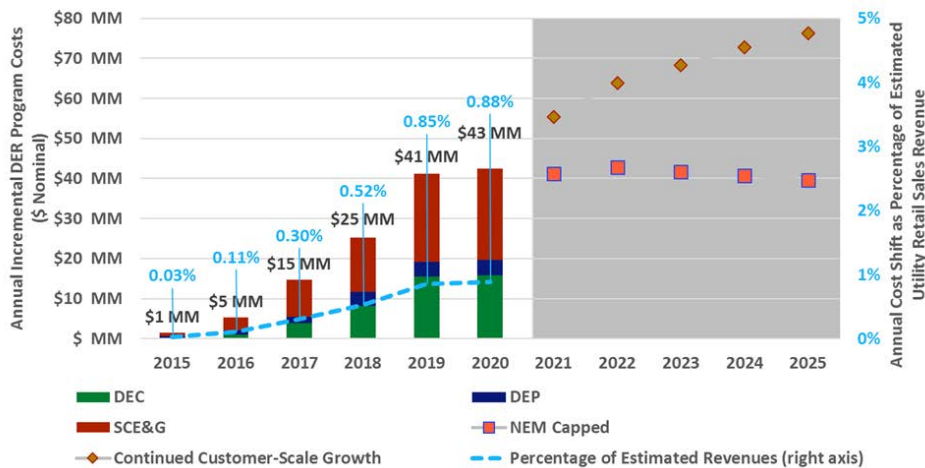
<sup>4</sup> Docket No. 2014-246-E

<sup>5</sup> Act 236 2.0 Report; Pages 36-37

Beyond the cost shift from NEM of DERs, there are additional DER program costs incurred by the utilities and passed along to ratepayers. These include, for example, rebate programs and performance-based incentives, community-scale solar, utility-scale solar, the costs of meters required for NEM, general and administrative expenses, and the carrying costs for deferred collections from previous years.<sup>6</sup> Deferred collections are created due to annual cost recovery caps established in Act 236.<sup>7</sup> Carrying costs are then added to these deferred collections, and the total is reallocated across all customer classes for recovery in subsequent years. As deferred collections recur over the years, additional carrying costs will continue to be incurred and will increase in a climate of inclining interest rates. It is currently estimated that DER incremental program costs will continue to be paid monthly by ratepayers until approximately the 2040 timeframe or beyond. To date, incremental DER program costs across the three IOUs have totaled approximately \$47 million.

Figure 8 depicts the total program cost for the full suite of DER programs, including NEM driven by Act 236, as well as two different estimates of potential future DER program costs. In addition to the nominal values in dollars, we provide an estimate of the cost as a percentage of utility electricity retail sales revenues.

**Figure8. Estimated Annual Total Incremental DER Program Cost by Utility (inclusive of NEM)<sup>8</sup>**



The columns in this figure report total incremental DER program costs for each utility for the years 2015-2018, as well as an estimate of the costs for the years 2019 and 2020. In addition, two different estimates are shown for the years 2021-2025. The pink squares indicate estimated total incremental DER program costs

<sup>6</sup> One example of a relatively large deferred collection is the rebate program offered by the Duke utilities. While customers receive the incentive funds upfront, the cost is amortized by the utilities and collected over a number of years, inclusive of carrying costs.

<sup>7</sup> The cost recovery caps for residential, commercial and industrial customers are \$12/year, \$120/year and \$1,200/year, respectively.

assuming that NEM does not continue beyond the limits approved in the 2015 Settlement Agreement.<sup>8</sup> The orange points estimate total incremental DER program costs for a scenario in which customer-scale DERs continue to be compensated at a rate above avoided costs.<sup>9</sup> As with the previous figures, the uncertainty beyond 2020 is denoted by the grey background for the years 2021-2025.

The analysis conducted by E3 regarding the estimated cost shift generally remains unchanged since the publication of its report in December of 2018. In the 2019 DEC and DEP rate case proceedings, savings from the 2017 Tax Cuts Jobs Act reduced the balance of cost recovery attributed to DER.<sup>10</sup> Any cost shifts that might occur as a result of the South Carolina Energy Freedom Act (Act 62) are not part of this report and would be entirely speculative.

## Results of Stakeholder Process: Act 62

On May 16, 2019, Act 62 was signed into law by Governor Henry McMaster. Many aspects of Act 62 are a direct result of collaborative discussions that were part of the Act 236 2.0 process.

In Act 62, the South Carolina General Assembly expressed its intentions related to distributed energy policy. The following statutory statements are examples of policy goals to be implemented through Act 62:

S.C. Code Ann. § 58-27-845(A) The General Assembly finds that there is a critical need to:

- (1) protect customers from rising utility costs;
- (2) provide opportunities for customer measures to reduce or manage electrical consumption from electrical utilities in a manner that contributes to reductions in utility peak electrical demand and other drivers of electrical utility costs; and
- (3) equip customers with the information and ability to manage their electric bills.

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<sup>8</sup> This estimate includes an adjustment for the recently-approved extension of NEM through March 15, 2019, in DEC territory.

<sup>9</sup> The Duke utilities note that in a scenario with full retail NEM continued through 2025, the total program cost could potentially be higher than the upper bound estimate in this figure, as their installation forecasts provided for the years 2021-2025 assume a compensation mechanism between avoided cost rates and full retail NEM (and with full retail NEM, installations would likely be higher). However, given this upper bound estimate is based on historic total DER program costs, which include the Duke utilities' rebate programs, it likely overstates total costs for 2019-2025 (which would not include new rebate programs). On net, Duke finds this figure to be an appropriate estimate of the range of potential DER program costs in the coming years.

<sup>10</sup> DEC Docket No. 2018-319-E; DEP Docket No. 2018-318-E

S.C. Code Ann. § 58-40-20(A)(1) It is the intent of the General Assembly to build upon the successful deployment of solar generating capacity through Act 236 of 2014 to continue enabling market-driven, private investment in distributed energy resources across the State by reducing regulatory and administrative burdens to customer installation and utilization of onsite distributed energy resources

S.C. Code Ann. § 58-41-40(A) It is the intent of the General Assembly to expand the opportunity to support solar energy and support access to solar energy options for all South Carolinians, including those who lack the income to afford the upfront investment in solar panels or those who do not own their homes or have suitable rooftops.

Act 62 also provides further renewable policy guidance on topics such as the availability of the current 1:1 Retail Rate NEM program, various renewable programs such as community solar and voluntary renewable energy programs, rights for electric utility customers and consumer protections for solar customers, avoided cost methodologies and related items, interconnection standards and integration studies, and the next generation of NEM in South Carolina dubbed “solar choice metering”.<sup>11</sup>

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<sup>11</sup> S.C. Code Ann. § 58-40-20 F(1)



## Act 236 Implementation

The purposes of Act 236 as summarized in the preamble, are to, among other things:

- Provide for a net energy metering program and its requirements, including costs and the responsibilities of the Public Service Commission of South Carolina (PSC or Commission) and the ORS; and
- Provide for a distributed energy resource program, set goals for the program, and provide for the process and implementation of the program, including the application and approval process for the program and cost recovery.

This Report provides a current status update of the following areas:

- Value of distributed energy resources;
- NEM capacity;
- DER programs; and
- DER program costs.

See Attachment A for a timeline of events.

## Value of Distributed Energy Resources

Pursuant to Act 236, the Commission established Docket No. 2014-246-E to conduct a generic proceeding for the purpose of establishing the methodology to set any necessary charges and credits to ensure that the electrical utility recovers its cost of providing electrical service to customer-generators and customers who are not customer-generators (Methodology).<sup>12</sup>

### Net Energy Metering Methodology

- +/- Avoided Energy
- +/- Energy Losses/Line Losses
- +/- Avoided Capacity
- +/- Ancillary Services
- +/- Transmission and Distribution (T&D) Capacity
- +/- Avoided Criteria Pollutants
- +/- Avoided CO<sub>2</sub> Emission Cost
- +/- Fuel Hedge
- +/- Utility Integration & Interconnection Costs
- +/- Utility Administration Costs
- +/- Environmental Costs

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### = Total Value of NEM Distributed Energy Resource Generation

On March 20, 2015, the Commission approved the Settlement Agreement in Order No. 2015-194, which included:

- The Methodology to be used to compute the value of DER generation;
- The 1:1 NEM Rate<sup>13</sup> shall be preserved until January 1, 2021; and
- The difference between the value of DER generation, as computed using the NEM Methodology, and the 1:1 NEM Rate shall be treated as a DER program expense and collected through the fuel clause. This difference shall not be recovered through base rates.

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<sup>12</sup> S.C. Code Ann. § 58-40-20(F)

<sup>13</sup> Commonly referred to as Net Metering 2.0

## Current Value of Distributed Energy Resource Generation

The Methodology values are updated annually during each Utility's annual fuel adjustment proceeding and are submitted for approval to the Commission.

See Figure 1 for the current Value of DER generation in cents per kilowatt hour (kWh) calculated by the IOUs as of June 30, 2019. See Figure 2 for the historic values of DER generation.

**FIGURE 1: VALUE OF DER GENERATION AS OF JUNE 30, 2019 (¢/KWH)**

Components	DESC <sup>14</sup>	DEC <sup>15</sup>		DEP <sup>16,17</sup>		
	All	Small PV	Large PV	Res PV	SGS PV	Large PV
Avoided Energy	3.010	3.6689	3.6670	3.6187	3.6176	3.6184
Energy Losses/ Line Losses	.246	.2296	.2289	.0712	.0715	.0711
Avoided Capacity	0	1.4212	1.4106	1.3408	1.3407	1.3322
Ancillary Services	0	0	0	0	0	0
T&D Capacity	0	0	0	0	0	0
Avoided Criteria Pollutants	.008	.0034	.0033	.0024	.0026	.0024
Avoided CO <sub>2</sub> Emission Cost	0	0	0	0	0	0
Fuel Hedge	0	0	0	0	0	0
Utility Integration & Interconnection Costs	0	0	0	0	0	0
Utility Administration Costs	0	0	0	0	0	0
Environmental Costs	0	0	0	0	0	0
<b>Total Value of DG</b>	<b>3.264</b>	<b>5.323</b>	<b>5.310</b>	<b>5.033</b>	<b>5.032</b>	<b>5.024</b>

<sup>14</sup> Docket No. 2019-2-E, Order No. 2019-43-H; Docket No. 2018-2-E, Order No. 2018-322(A)

<sup>15</sup> Docket No. 2018-3-E, Order No. 2018-652

<sup>16</sup> Docket No. 2019-1-E, Order No. 2019-405

<sup>17</sup> In Docket No. 2019-1-E, DEP separated the values for residential customers ("Residential PV") and small commercial/industrial customers ("SGS PV") as a result of available actual metered solar load profile data for the residential class.

**FIGURE 2: HISTORIC DER GENERATION VALUES (¢/KWH)**

Total Values by Year	DESC <sup>18</sup>	DEC <sup>19</sup>		DEP <sup>20</sup>		
	All	Small PV	Large PV	Small PV	Large PV	
<b>2015</b>	5.409	5.595	5.594	5.097	5.095	
<b>2016</b>	4.126	5.010	5.004	4.829	4.836	
<b>2017</b>	3.651	5.300	5.298	5.013	5.017	
<b>2018</b>	3.264	5.323	5.310	5.033	5.025	
				Res PV	SGS PV	Large PV
<b>2019<sup>21,22</sup></b>	3.264			5.033	5.032	5.024

<sup>18</sup> Docket Nos. 2015-205-E, 2016-2-E, 2017-2-E, 2018-2-E, 2019-2-E

<sup>19</sup> Docket Nos. 2015-203-E, 2016-3-E, 2017-3-E, 2018-3-E

<sup>20</sup> Docket Nos. 2015-204-E, 2016-1-E, 2017-1-E, 2018-1-E, 2019-1-E

<sup>21</sup> The DG values for DEC have not yet been updated for 2019

<sup>22</sup> In Docket No. 2019-1-E, DEP separated the values for residential customers ("Residential PV") and small commercial/industrial customers ("SGS PV") as a result of available actual metered solar load profile data for the residential class.

## Status of Net Energy Metering Capacity

Act 236 requires the IOUs to make NEM available to customer-generators on a first-come first-served basis until the total nameplate generating capacity of net energy metering systems equals two percent of the previous five-year average of the electrical utility's South Carolina retail peak demand.<sup>23</sup>

See Figure 3 for the NEM requirements and current capacity in megawatts (MW) by IOU as of May 31, 2019.

**FIGURE 3: NEM REQUIREMENTS AND CURRENT CAPACITY IN MW BY IOU AS OF MAY 31, 2019**

	DESC		DEC		DEP	
<b>Total Requirement</b>	84.5		80		26	
<b>Total Remaining</b>	0		0		7.9	
	Residential	Non-Residential	Residential	Non-Residential	Residential	Non-Residential
<b>Installed</b>	68.98	6.9	51.6	21.4	8.1	7.5
<b>Reserved</b>	3.8	3.35	4.2	5.1	1.1	1.4

Commission Order No. 2015-194 requires the IOUs to file reports with the Commission as NEM participation levels are reached to identify and illustrate the costs unrecovered, if any, arising from customer adoption of net metered DER generation through December 31, 2020. The reports are to be filed when NEM capacity reaches the following thresholds of the Utility's previous five-year average South Carolina retail peak demand: (1) 0.5%; (2) 1.0%; (3) 1.5%; and (4) 2.0%.

See Figure 4 for the NEM Threshold Reports filed by IOU as of May 31, 2019. The information presented includes the date the report was filed, the percentage of peak demand reached, and total generating capacity in kilowatts (kW).

<sup>23</sup> S.C. Code Ann. § 58-40-20(B)

**FIGURE 4: NEM THRESHOLD REPORTS BY IOU IN MW AS OF MAY 31, 2019**

	<b>DESC</b>	<b>DEC</b>	<b>DEP</b>
<b>0.5%</b>	12/31/2016 0.57% 24.181 MW	4/30/2017 0.71% 28.444 MW	12/31/2017 0.50% 6.650 MW
<b>1.0%</b>	9/30/2017 1.01% 42.593 MW	10/31/2017 1.00% 40.096 MW	12/31/2018 1.00% 13.467 MW
<b>1.5%</b>	10/31/2018 1.55% 65.349 MW	No Report Filed	
<b>2.0%</b>	5/6/2019 2.05% 86.851 MW	5/31/2018 2.00% 60.267 MW	

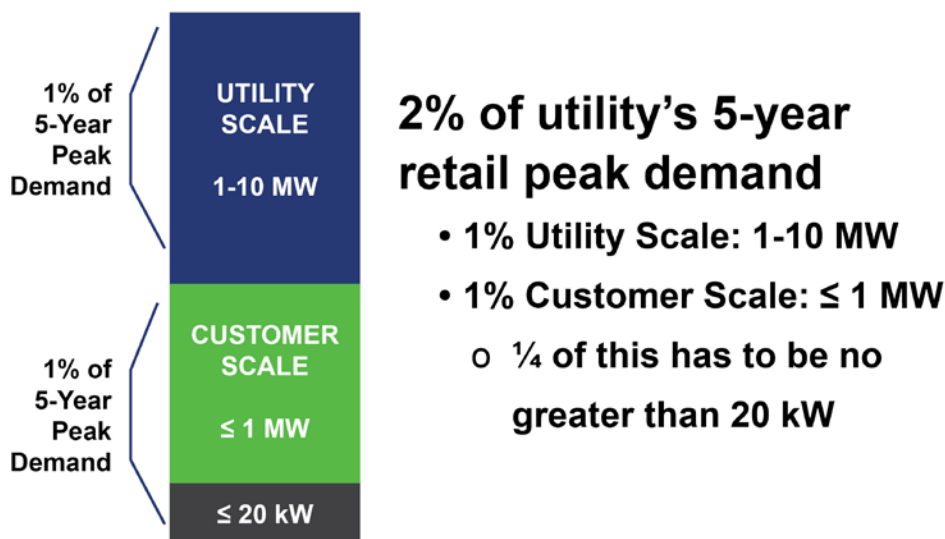
## Status of DER Programs

The Act requires that any DER Program shall, at a minimum, result in the development by January 1, 2021, of renewable energy facilities located in South Carolina with a cumulative installed nameplate capacity equal to at least 2% of the previous five-year average of the utility’s South Carolina retail peak demand.<sup>24</sup> One half of the 2% shall be met by facilities sized between 1 and 10 MW (Utility Scale). The remaining half of the 2% shall be met by facilities sized less than 1 MW (Customer Scale) with a quarter of this 1% nameplate capacity being from facilities sized no greater than 20 kW (Small Scale).

See Figure 5 for an illustration of DER Program goals as outlined in Act 236.

**FIGURE 5: ILLUSTRATION OF DER PROGRAM GOALS**

### DER PROGRAM GOAL ILLUSTRATED



The Act also provides an option to the utility after the 2% goal is met, to allow utility investment in facilities greater than 1 MW and less than or equal to 10 MW with a cumulative installed nameplate capacity equal to at least 1% of the previous five-year average of the electrical utility’s South Carolina peak demand.

Each of the IOUs’ DER applications included detailed plans to develop renewable energy facilities, incent participation in the purchase or lease of renewable energy facilities, and allow the IOUs to recover DER Program costs. All three DER Program applications recommended solar generation as the best method to reach Act 236 DER goals.

<sup>24</sup> S.C. Code Ann. § 58-39-130

### **Dominion Energy of South Carolina, Inc.**

DESC received Commission approval on July 15, 2015, in Order No. 2015-512 to implement its DER Programs. The programs offered by DESC to meet its DER goals include the following: (1) Contracts with solar developers for Utility-scale solar farms on company property under power purchase agreements (PPAs); (2) Contracts with solar developers for the installation of at least 30 MW of solar farms on property not owned by the utility under 15 or 20-year PPAs and where the solar power can be integrated into DESC's electrical grid; (3) a Performance Based Incentive (PBI) bill credit for residential customers fixed for a 10-year term; (4) Bill Credit Agreements (BCA) for non-residential customers fixed for 10-year terms; (5) a Community Solar program; and (6) the formation of a DER Program Advisory Group.

### **Duke Energy Carolinas, LLC and Duke Energy Progress, LLC**

DEC and DEP also received Commission approval on July 15, 2015, in Order Nos. 2015-515 and 2015-514 respectively, to structure the DER Programs for both IOUs in a similar fashion. Both DEC and DEP DER Programs include the following: (1) the use of requests for proposals for large-scale renewable generation facilities; (2) up-front solar rebates (Solar Rebate Program) for residential and non-residential customers; (3) the formation of a DER Program Collaborative Group; and (4) the offering of a Shared Solar Program. DEC and DEP will solicit offers for 15-year PPAs and turnkey proposals with engineering, procurement, and construction agreements to meet Utility Scale goals.



## DER Program Results by IOU

Figure 6 displays each IOU's capacity goals and actual results achieved for Utility Scale and Customer Scale DER Programs.

**FIGURE 6: STATUS OF DER PROGRAM GOALS IN MW BY IOU AS OF MAY 31, 2019**

	DESC <sup>25</sup>		DEC <sup>26</sup>		DEP <sup>27</sup>	
<b>Total Goal</b>	84.5		80		26	
<b>Total Remaining</b>	0		10		0	
	Utility Scale	Customer Scale	Utility Scale	Customer Scale	Utility Scale	Customer Scale
<b>Goal</b>	42.25	42.25	40	40	13	13
<b>Remaining</b>	0	0	10	0	0	0
<b>Actual Installed</b>	48.16	93.48	3	73	5	15.6
<b>Reserved Capacity</b>	0	7.15	27	9.3	10	2.5

Figure 7 through Figure 10 provide updates on each of the IOUs DER Programs.

**FIGURE 7: UPDATE ON UTILITY SCALE DER PROGRAMS AS OF MAY 31, 2019**

	DESC	DEC	DEP
<b>Status of RFP</b>	81 responses	81 responses	62 responses
<b>Contracts</b>	9 PPAs Executed; 48.16 MW	12 PPAs Executed; 30 MW	2 PPAs Executed; 14 MW
<b>Capacity</b>	48.16 MW	2 MW Installed	5 MW Installed

<sup>25</sup> Docket No. 2015-54-E, Order No. 2015-512

<sup>26</sup> Docket No. 2015-55-E, Order No. 2015-515

<sup>27</sup> Docket No. 2015-53-E, Order No. 2015-514

**FIGURE 8: UPDATE ON SMALL SCALE CUSTOMER DER PROGRAMS AS OF MAY 31, 2019**

	DESC	DEC	DEP
<b>Small Scale Programs (&lt; 20 kW)</b>	PBI	Solar Rebate	Solar Rebate
<b>Systems Installed<sup>28</sup></b>	1,058	1,849	545
<b>Capacity</b>	7.93 MW	15.5 MW	3.3 MW
<b>Incentives Paid<sup>29</sup></b>	\$922,033	\$17,642,258	\$4,152,561
<b>Reservations</b>	None Remaining	None Remaining	None Remaining

**FIGURE 9: UPDATE ON LARGE SCALE CUSTOMER DER PROGRAMS AS OF MAY 31, 2019**

	DESC	DEC	DEP
<b>Large Scale Programs (&gt; 20 kW, &lt; 1MW)</b>	BCA	Solar Rebate	Solar Rebate
<b>Systems Installed</b>	109	92	23
<b>Capacity</b>	19.230 MW	21.6 MW	8.7 MW
<b>Incentives Paid<sup>15</sup></b>	\$7,773,249	\$28,515,319	\$10,348,330
<b>Reservations<sup>30</sup></b>	No systems reserved	5 Customers 4,000 kW DC	5 Customers 2,300 kW DC

<sup>28</sup> The number of systems installed and total capacity as reported by DESC is less than reported in the 2017 DER Report due to several factors including modification requests to systems which render them ineligible for the incentive, or the customer removing the system from service.

<sup>29</sup> The amount reported is cumulative paid from inception. DESC remits incentives based on actual generation on a monthly basis. DEC and DEP remit a lump sum at the time a system is energized.

<sup>30</sup> DEC and DEP calculate and remit the Solar Rebate incentive on the DC value of the system. The Capacity values are reported in AC.

**FIGURE 10: UPDATE ON COMMUNITY/SHARED SOLAR DER PROGRAMS AS OF MAY 31, 2019**

	<b>DESC</b>	<b>DEC</b>	<b>DEP</b>
<b>Community/Shared Solar Programs</b>	Purchase and Subscription Models Low Income Subscription Model	Subscription Model Low Income Subscription Model	Subscription Model Low Income Subscription Model
<b>Development</b>	3 Sites, 16 MW Total	2 Sites, 3 MW Total	1 Site, 1 MW
<b>Launch Date</b>	Purchase and Subscription Models launched in May 2017 Low Income Subscription launched August 2017	January 2019	July 2018
<b># of Subscriptions</b>	1,105	Not provided by Utility	Not provided by Utility
<b># of Customers</b>	1,051	281	78
<b>Capacity Subscribed</b>	15.98 MW	2.604 MW	.403 MW
<b>Total Generation</b>	22,416.34 MWh	2,478.3 MWh	1,864.8 MWh
<b>Generation credits to Subscribers<sup>31</sup></b>	22,397.39 MWh	751 MWh	110 MWh
<b>Reservations</b>	Program Full Waiting list as subscriptions become available	No reservations	No reservations

<sup>31</sup> The difference between Total Generation and Generation credits to Subscribers is due to several factors including the lag in time between customer enrollment and actual billing of credits.

## Update on DER Program Costs

Act 236 allows IOUs to recover costs related to their DER Programs to the extent that costs are reasonably and prudently incurred to implement approved programs. DER Program costs are recovered during each Utility's annual fuel proceeding. Each of the costs, including NEM incentives, are separately identified by the IOU, reviewed by the ORS, and submitted for approval to the Commission. The value of each cost component can vary due to several factors: fuel costs, capacity costs, generation mix, location of DER generation, billing procedures, and current retail rates.

## DER Program Cost Categories

The DER Program costs are categorized as either incremental or avoided costs and are allocated and recovered from customers under separate distributed energy components of the overall fuel factor, based on the same method used for variable environmental costs.<sup>32</sup> Avoided costs, which are payments for purchases of electricity, are calculated using the lesser of rates negotiated pursuant to the Public Utility Regulatory Policies Act of 1978 (PURPA) or an electrical utility's most recently approved or established avoided costs rates in South Carolina.<sup>33</sup> Avoided costs include amounts paid for purchases of power from participants in solar rebate programs, shared/community solar programs, net metering, and bill credit agreements at the utility's avoided cost rates. Utilities may also incur avoided costs stemming from their own generation constructed to implement a DER Program and/or from new programs introduced in the future to implement a DER Program.

Incremental costs are costs incurred by the electrical utility to implement a DER Program. Incremental costs include, but are not limited to, costs in excess of the avoided costs or negotiated rates pursuant to PURPA, the full cost of a utility's investment in non-generating DER, the utility's weighted average cost of capital as applied to the electrical utility's investment in DER, generally accepted expenses associated with a project, and incremental labor associated with implementing a DER program.<sup>34</sup>

See Figure 11 for a total of avoided and incremental DER Program costs by IOU as of May 31, 2019.

**FIGURE 11: TOTAL DER PROGRAM COSTS AS OF MAY 31, 2019**

Utility	Incremental Costs	Avoided Costs
DESC	\$32,058,209	\$10,932,399
DEC	\$21,890,533	\$201,438
DEP	\$6,786,456	\$791,492

<sup>32</sup> S.C. Code Ann. § 58-27-865 (A)(1)

<sup>33</sup> S.C. Code Ann. § 58-39-120 (B)

<sup>34</sup> S.C. Code Ann. § 58-39-140

## Cost Recovery Mechanisms

Avoided costs are recovered by customer class in the same manner as fuel, variable environmental, and avoided capacity costs. A per kWh charge is calculated using the over/under recovered avoided costs for a utility's actual review period, estimated period, and forecasted period divided by the projected kWh sales for the next twelve-month billing period.

Incremental costs are recovered by customer class in a different manner than avoided costs. Incremental costs are collected as a separate fixed dollar amount per account whereas avoided costs are billed per kWh in the customer's usage charge. S.C. Code Ann. § 58-39-150 requires the incremental costs to be capped for the protection of consumers and to ensure that the cost of DER Programs do not exceed a reasonable threshold. The following incremental cost caps apply to an IOU's DER Program:

- Residential customers           \$12 per year
- Commercial customers       \$120 per year
- Industrial customers         \$1,200 per year

See Figure 12 for the current annual DER Program incremental per-account charges by IOU as of June 30, 2019.

**FIGURE 12: ANNUAL DER PROGRAM INCREMENTAL CHARGES BY IOU AS OF JUNE 30, 2019**

Utility	Residential	Commercial	Industrial
DESC	\$12.00	\$62.26	\$1,200.00
DEC	\$10.78	\$51.59	\$1,200.00
DEP	\$12.00	\$24.33	\$1,200.00

## Conclusion

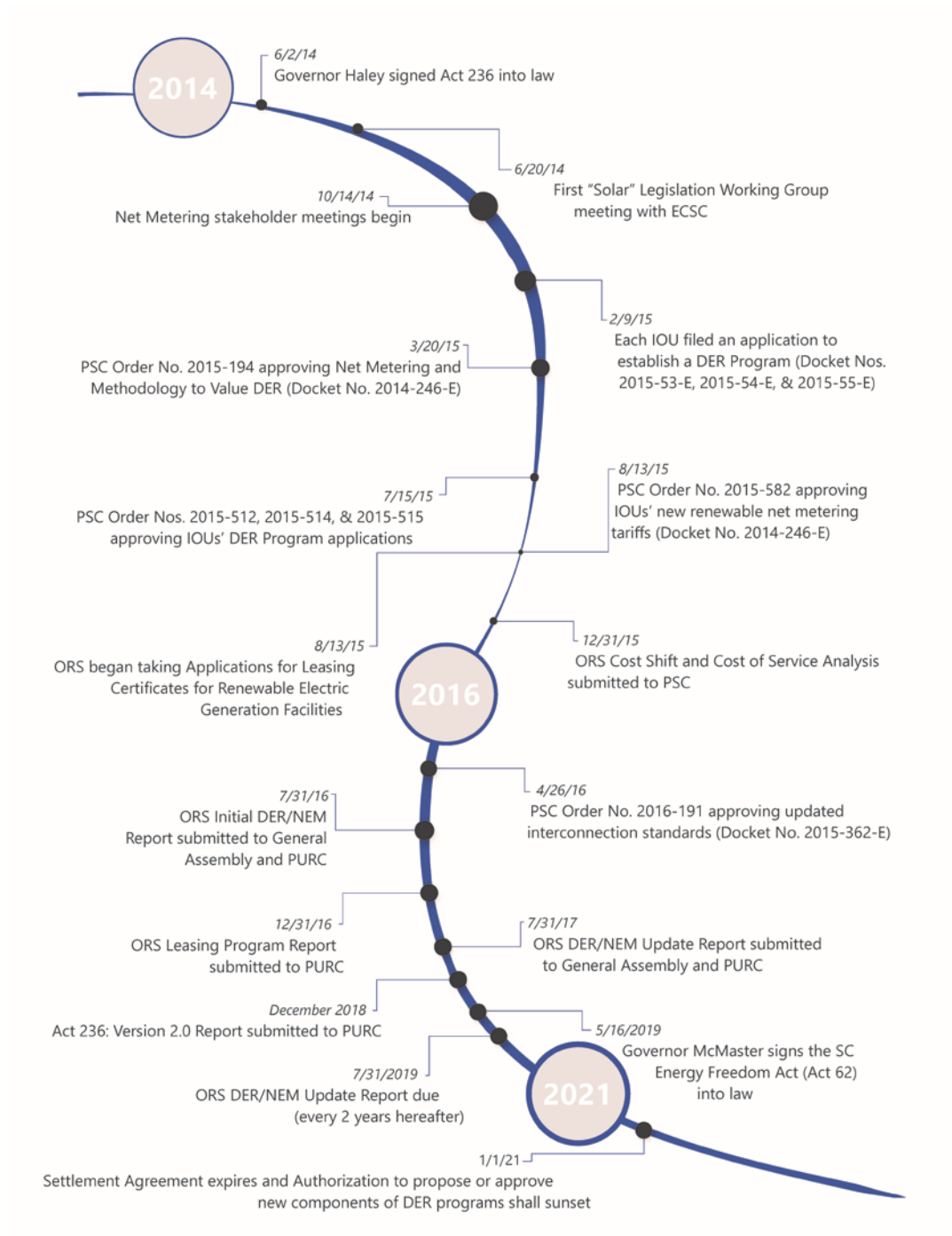
Since Act 236 was signed into law, significant progress has been made towards reaching DER Program goals, achieving NEM capacity requirements, and promoting DER in South Carolina. As of this report, the IOUs have collectively interconnected 238.24 MW of distributed generation, which exceeds the 190.5 MW goal established by Act 236. In addition, more than 55 MW of capacity is currently reserved for development.

The spirit of collaboration fostered by Act 236 continues. Stakeholders participate in the IOUs' collaborative groups and regularly provide feedback on challenges and successes. The collaborative efforts of the stakeholders in the Act 236 2.0 process resulted in the passage of Act 62 to ensure continued adoption of renewable resources in South Carolina after the sunset of Act 236 on December 31, 2020.

The next Status Report on Distributed Energy Resource and Net Energy Metering Implementation is due on July 31, 2021.

# Attachment

## Attachment A: Timeline for SC Distributed Energy Resource and Net Energy Metering Development



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