



# Georgia Power Renewable Update

October 31, 2016

Marc Vinson

# Georgia Power at a glance

**Largest of four Southern  
Company electric utilities**

**\$7.2 billion** in revenue

  
**2.5 million**  
customers

**7,600 employees**

**13k** miles of  
transmission lines

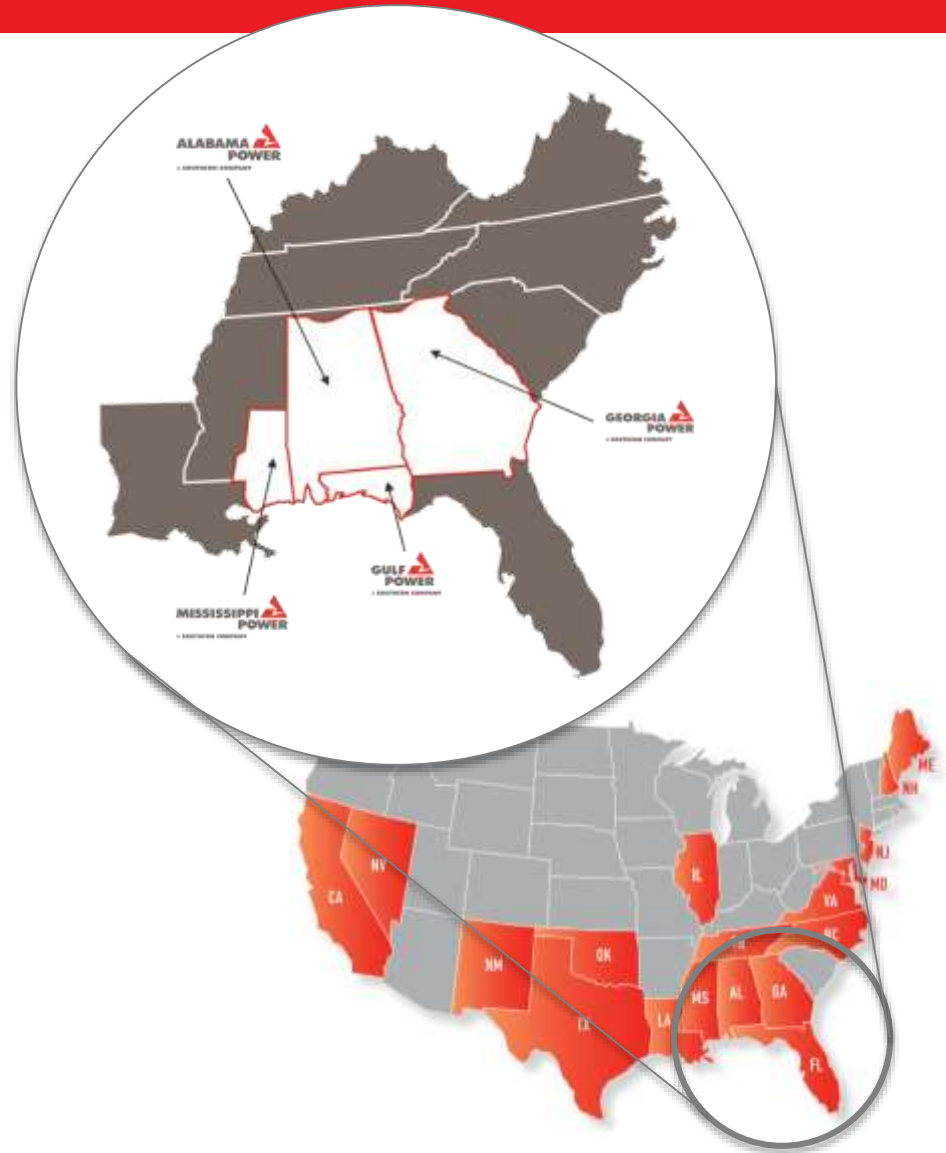


High customer satisfaction

**15%** Rates below the  
national average

**72k miles**  
of distribution lines

**45%** of customers  
earning under \$40k



# Georgia Public Service Commission



H. Doug Everett  
District 1



Tim Echols  
District 2



Chuck Eaton  
PSC Chair  
District 3

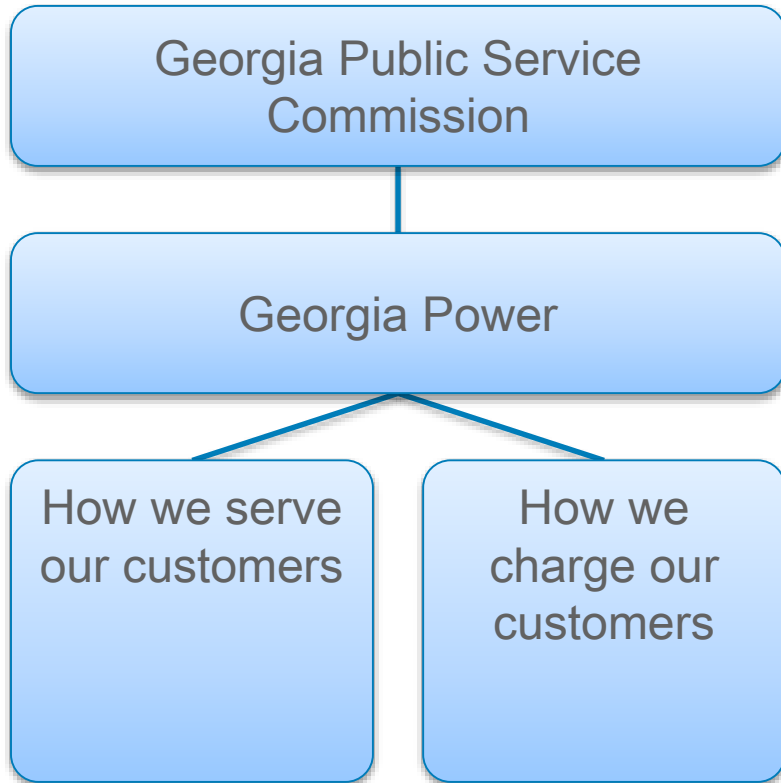


"Bubba" McDonald  
District 4

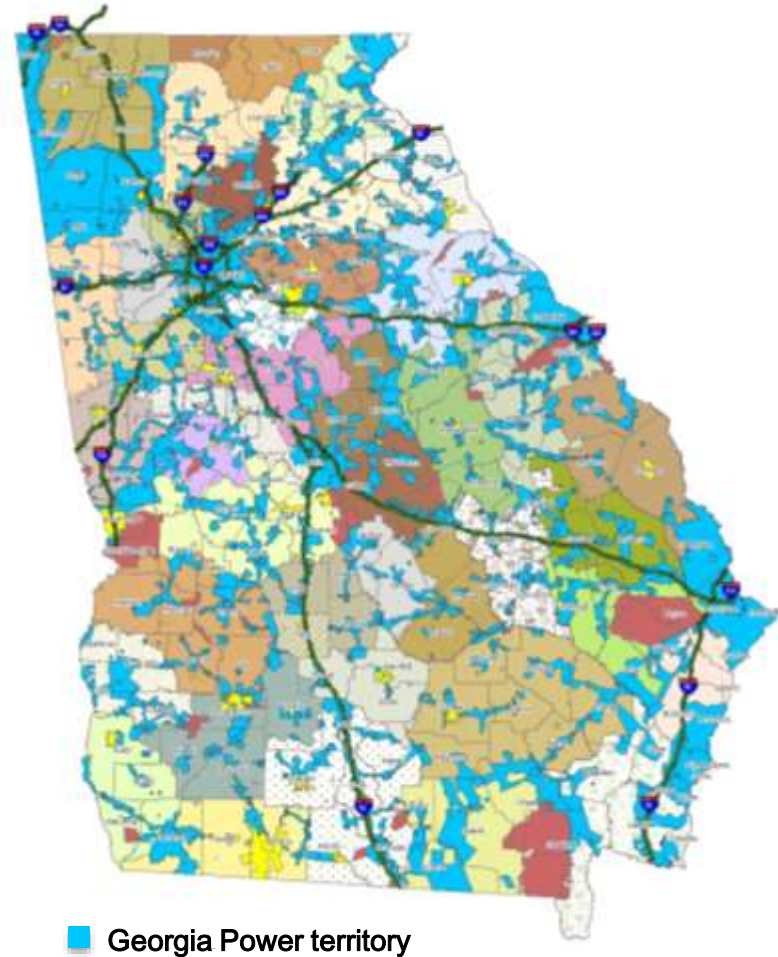


Stan Wise  
District 5

# Georgia Power's Regulatory Environment



Territorial Act of 1973



# Integrated Resource Plan



# Drivers of the Renewable Energy Market



## Tax credits

- SOLAR 30% federal tax credit through 2019
  - Reduces to 26%, 22%, and 10% in 2020, 2021, and 2022 respectively
- WIND federal production tax credit of 2.3¢/kWh
  - Reduces by 80%, 60%, and 40% in 2017, 2018, and 2019 respectively

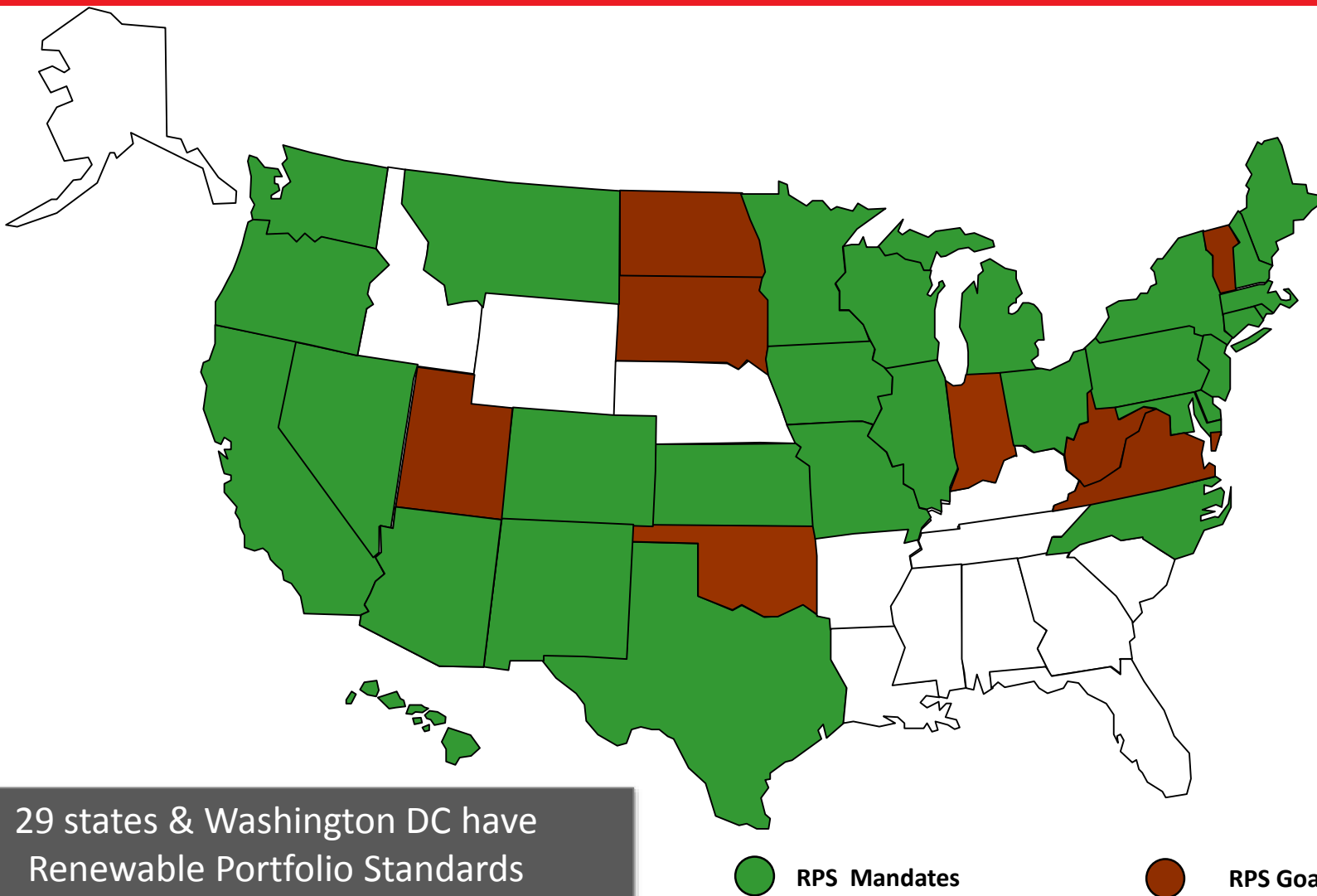
## Technology & Efficiency Trends

- Installed cost of solar dramatic decrease
- Larger wind turbine design

## National Policies

- 37 states with renewable portfolio standards or goals
- EPA's Clean Power Plan (111(d)) Proposal

# Renewable Portfolio Standards



29 states & Washington DC have  
Renewable Portfolio Standards

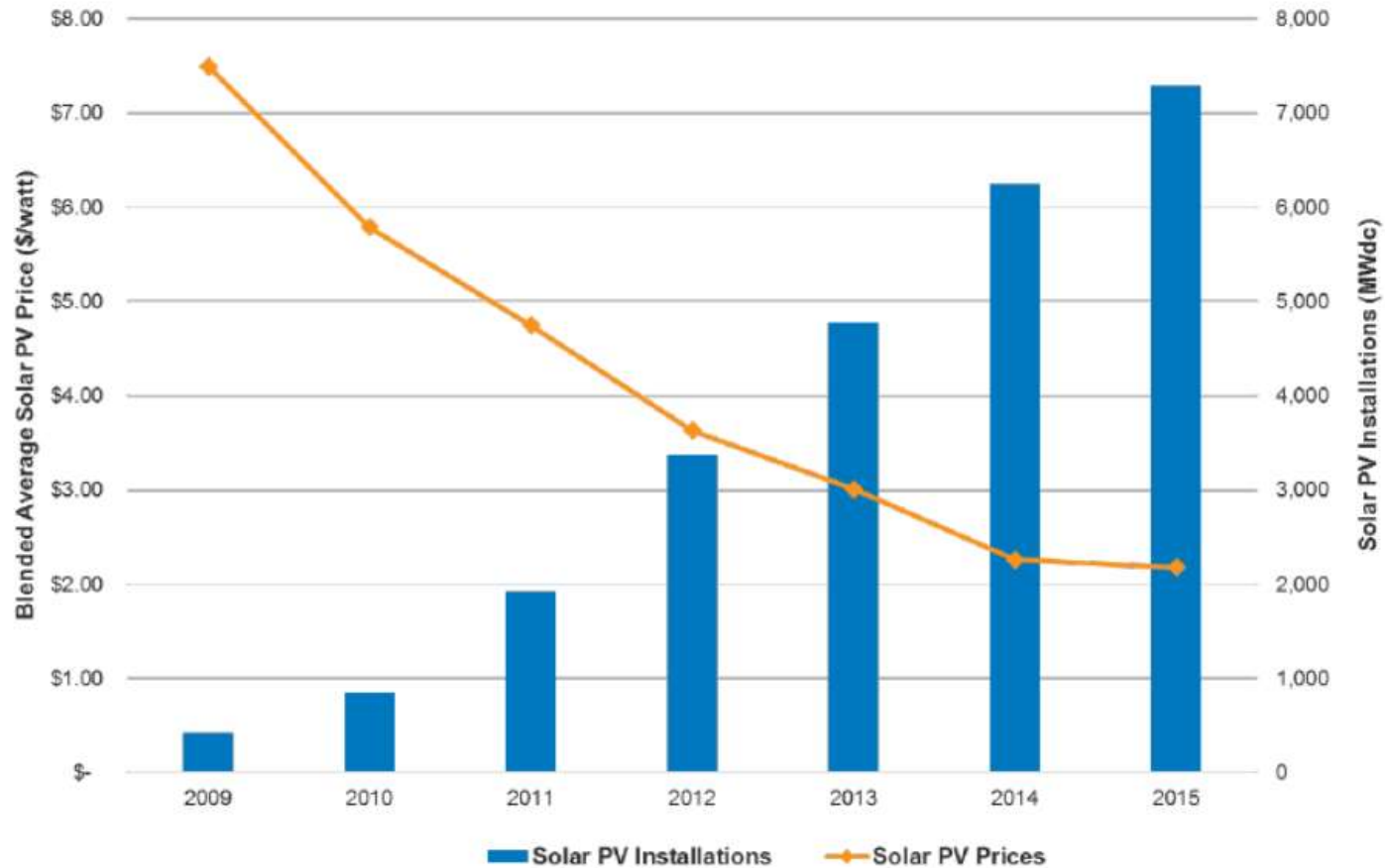
8 states have Renewable Portfolio Goals

Source: November 2011, Database of State Incentives for Renewable Energy (DSIRE)

*RPS standards vary by the requirement size, eligible resources, dates, technology tiers/multipliers, and other factors.*



# Annual U.S. Solar Installations, 2000 - 2015



© 2016

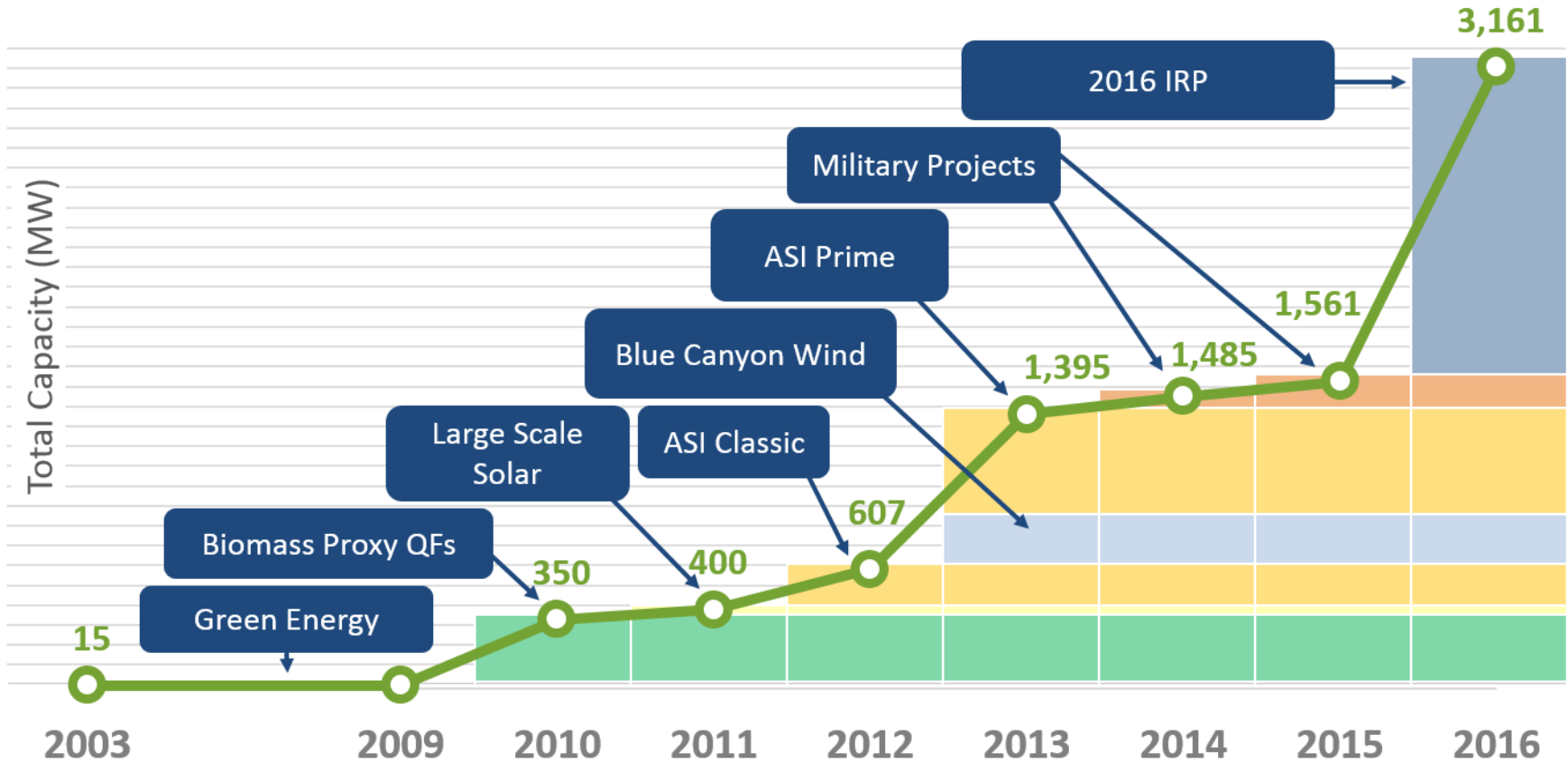
gtmresearch

SEIA  
Solar Energy  
Industry  
Association®

Source: US Solar Market Insight – 2015 YIR



# Renewable Energy Growth



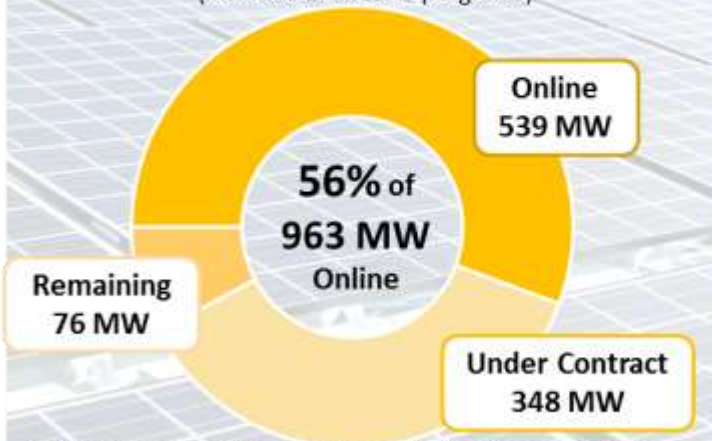
NOTE: A portion of the renewable generation capacity included in this chart includes capacity where the renewable generator retains the related Renewable Energy Credits and the right to use them.

# GEORGIA POWER - RENEWABLE DEVELOPMENT SUMMARY

October 2016

## TOTAL SOLAR REPORT

(inclusive of all solar programs)



**REC Disclaimer:** Georgia Power purchases only the net energy output from some renewable generating facilities that have contracted to sell that energy to Georgia Power. Ownership of the associated renewable energy credits ("RECs") is specified in each respective power purchase agreement. The party that owns the RECs retains the right to use them.

**ASI Utility Scale Disclaimer:** CODs for ASI are contract specific - some projects are currently reported online as they sell energy to GPC or SCS without ASI CODs at this time, but will be officially COD under their ASI contract by YE 2016

### 2016 INTEGRATED RESOURCE PLAN STIPULATION

FINAL Commission Vote from July 28<sup>th</sup>

#### Renewable Energy Development Initiative (REDI)

- 1,200 MW additional renewable capacity by 2021
  - 1,050 MW Utility Scale
  - 150 MW Distributed Generation

#### 200 MW Georgia Power Self-Build Projects

#### Up to 200 MW for C&I Customer Projects

#### Simple Solar Program

#### Demonstration Projects

Up to 1,600 MW additional renewable capacity approved

## MILITARY PROJECTS

166 MW

Expected COD

Project Name	MW	Expected COD
Fort Benning	30	Online
Fort Gordon	30	Q4 2016
Fort Stewart	30	Q4 2016
Kings Bay	30	Q4 2016
Marine Corps Logistics Base	31	Q1 2017
Remaining	15	TBD

## ROOFTOP SOLAR

Visits to ["Is Solar Right for you?"](#) web tool

13,637

Residential Customer consultations completed

953

## BIOMASS

528 MW Total

263 MW Online

265 MW more Under Contract

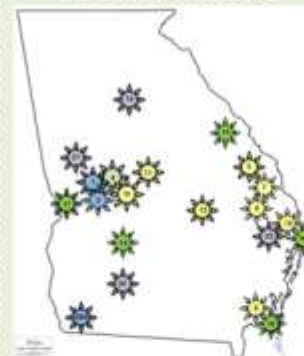


## BLUE CANYON 250 MW WIND

Delivery began 1/1/2016



## ALL UTILITY SCALE SOLAR PROJECTS



## ASI DISTRIBUTED GENERATION

100 MW

Currently Contracting  
- 50 MW competitive bidding  
- 50 MW fixed price (customer-sited)

90 MW

Contracted in 2013 / 2014  
All Online

## DEMONSTRATION PROJECTS



1 MW Solar



1 MW Solar



38 kW Solar + Battery



Wind

# 2016 IRP – Approved Renewables Additions

## Renewable Energy Development Initiative (REDI)

**1200 MW**

New Renewables

**1050 MW**

Utility Scale RFPs  
>3 MW



**100 MW**

Distributed Generation RFP  
≤3 MW



**50 MW**

DG Customer Sited  
≤3 MW

**Simple Solar**

Customer chooses

**50%**

Or

**100%**

of monthly usage to be solar generated.

Customer pays additional

**1¢ per kWh**

Each month

**Demonstration Projects**

**Closed Ash Pond Solar**

up to

**10 MW**

at company facilities

**High Wind Study**

**3 sites**

throughout Georgia testing wind at 200m.

**Commercial & Industrial**

Up to

**200 MW**

Utility Scale



**Self-Builds**

**196 MW**

Military-sited Solar

**3 MW**

Community Solar

**1 MW**

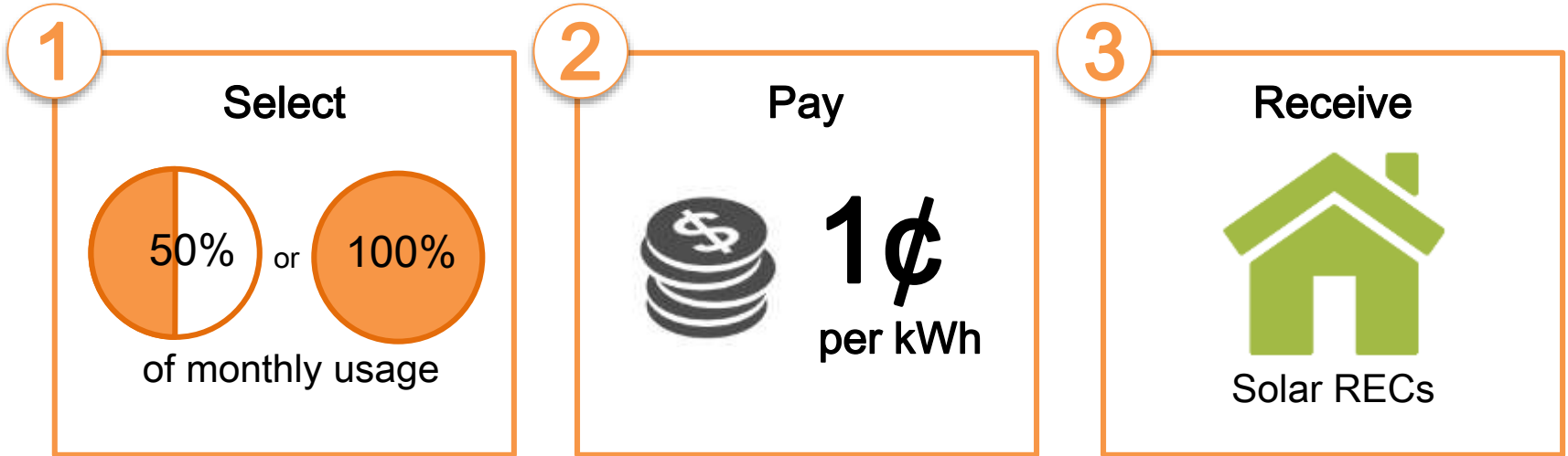
Highway Solar

# Georgia Power Current Programs

<b>Simple Solar</b>	Customer can purchase 50% or 100% of their energy for an additional 1¢ per kWh each month.
<b>Rooftop Solar</b>	Georgia Power can <b>evaluate your savings and install solar</b> at your home or business
<b>Renewable Non-Renewable (RNR)</b>	For commercial systems 100 kW or less, and residential systems 10 kW or less, the <b>customer offsets purchases and sells excess</b> to GPC avoided cost (2016: 4.0¢/kWh)
<b>Renewable Energy Development Initiative</b>	<ul style="list-style-type: none"><li>• <b>Customer sells 100%</b> energy to Georgia Power at a fixed ¢/kWh or lowest bid price</li><li>• Distributed Generation &lt; 3MW, Utility Scale &gt; 3MW</li><li>• Utility Scale 2014 average 8.5¢/kWh, 2015 average 6.5 ¢/kWh</li></ul>
<b>Qualifying Facility (QF)</b>	For systems greater than 100 kW, <b>customers with large generators sell</b> to GPC at real time avoided cost. Maximum system size of 80 MW.
<b>Energy Offset Only</b>	Customers that have solar installed and are <b>not participating on a program</b> , choosing only to offset purchases from Georgia Power
<b>C&amp;I Program</b>	Coming soon
<b>Community Solar</b>	Coming soon

# Simple Solar

Green energy solar program as simple as...



- Renewable Energy Credit (REC) purchase program
- Customer elects to purchase Solar RECs for 50% or 100% of monthly usage
- Customer pays additional 1¢ per kWh for RECs



# Rooftop Solar



“Is Solar Right for You?”  
Web Tool

Since July 1, 2015

- Over 13,800 visitors have completed the solar web tool
- Almost 1,000 completed residential customer analyses and consultations
- Over 70 commercial customer analyses and consultations

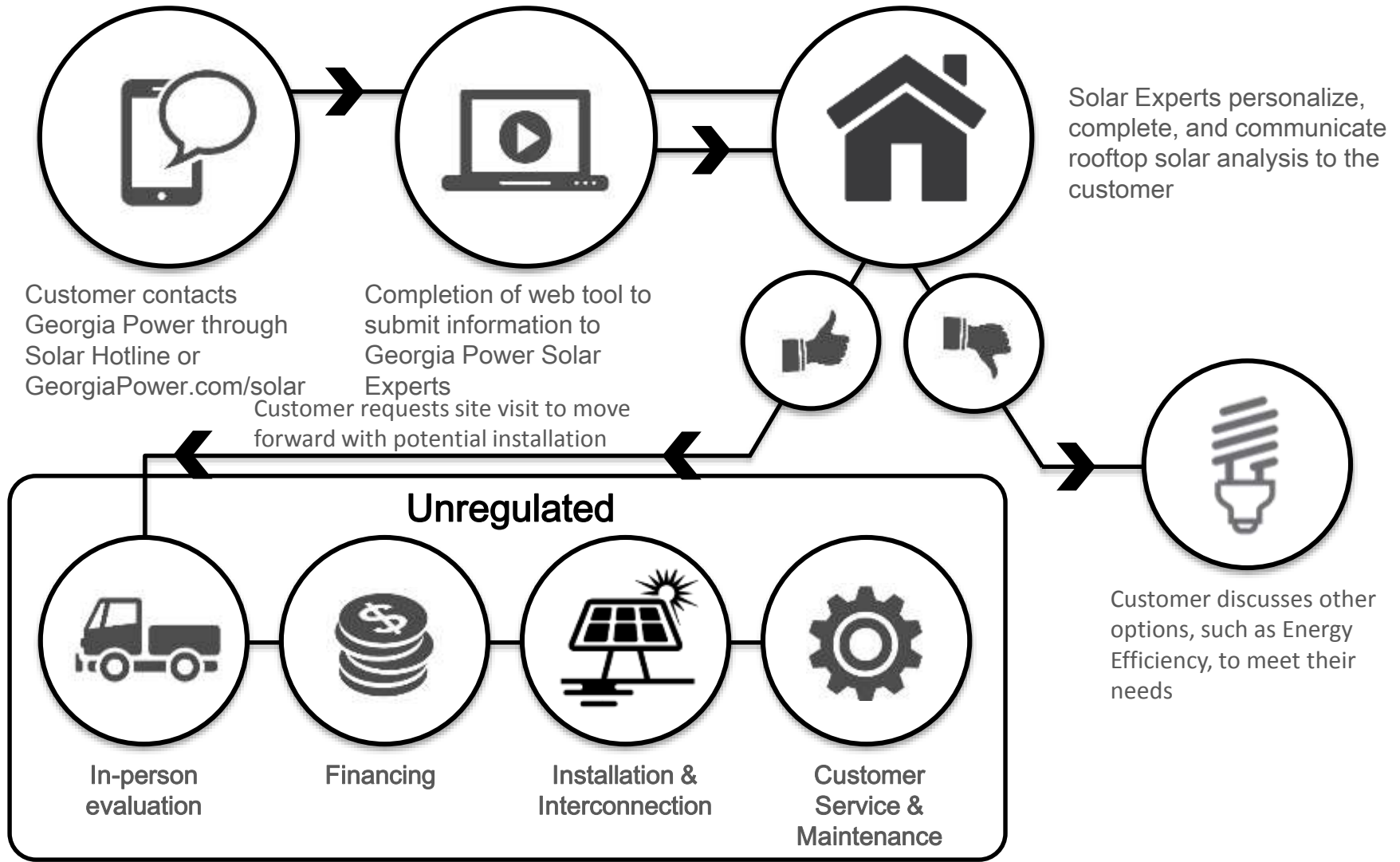


Solar Energy Expert



Full Rooftop Analysis

# Residential Rooftop Solar Education Program





# Rooftop Solar Sample Analysis

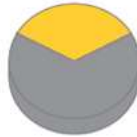
Your Solar System Analysis from Georgia Power  
 Sample Sample  
 Sample Street Address, City, GA Zip



## Cost of Your Solar System & How Much of Your Energy Usage Will Be Solar

Total System Cost	\$ 15,000
Less: Federal Tax Credit	\$ 4,500
<b>After Tax Credit Cost</b>	<b>\$ 10,500</b>
Price per Watt (PPW)	\$
<b>System Size</b>	<b>3.75 kW (15 panels)</b>

Production  
**34%**  
 From Solar  
**66%**  
 From Grid



Percentage Replaced by Solar

34%

Annual Solar Energy Generated (see notice and disclaimer)

4,686 kWh

Your System Size & Placement on Your Property



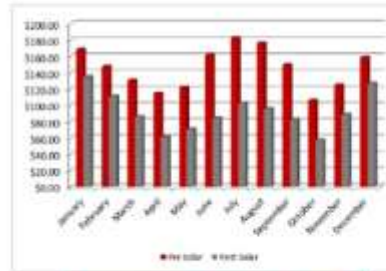
Your System Type  
 Your System Size

Roof Mounted  
 3.75 kW (15 Canadian Solar: CS6P-250M panels)

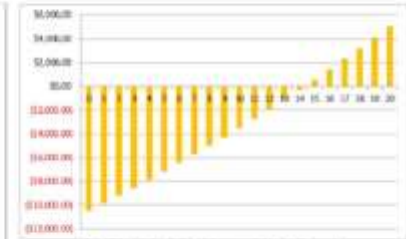
Your Solar System Analysis from Georgia Power  
 Sample Sample  
 Sample Street Address, City, GA Zip



## Bill Savings and Simple Payback Analysis



Annual Electric Bill Pre-Solar	\$ 1,741.40
Annual Electric Bill Post-Solar	\$ 1,168.90
<b>Total Savings Per Year</b>	<b>\$ 572.50</b>



Estimated Cost of Project Cost	\$ 10,500.00
Federal Investment Tax Credit (ITC)	\$ 4,500.00
Annual Savings	\$ 572.50
<b>Simple Payback Period (Including ITC)</b>	<b>15 Years</b>

## INSTALLATION SCHEDULE IN DAYS



# Solar Power Free-Market Financing Act

- Signed into effect July 1, 2015
- Allows solar roof top leases to be based on the performance of system output
- Allows \$0 upfront costs to customers
- Size limited to 125% of peak demand for Commercial and 10 kW for Residential
- All energy must be used on premise or sold to utility

# Fort Benning





# Fort Gordon



# Mercedes-Benz Falcons Stadium





# Blue Canyon



Questions