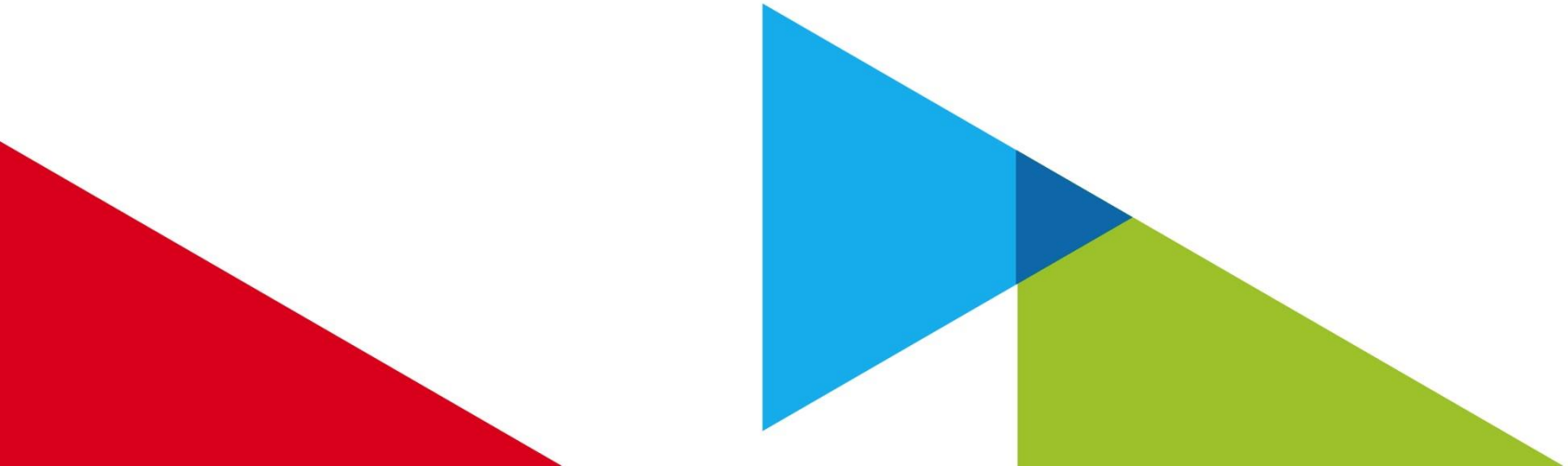
Georgia Power

Renewable Development Customer-Connected Solar Program

July 22, 2020



AGENDA

Welcome & Safety	Julie Paul, Customer-Connected Solar Supervisor
Opening Remarks	Jamie Barber, Georgia Public Service Commission
Renewable Development Overview	Wilson Mallard, Director of Renewable Development
Program History	Shannon Harris, Manager of Distributed Generation
Customer-Connected Solar Program	Julie Paul, Customer-Connected Solar Supervisor
PowerClerk Application Process	Ashley Chisholm, Customer-Connected Project Manager
Interconnection Overview	Vincent Stewart, DG Interconnection Engineer
Conclusion	Julie Paul, Customer-Connected Solar Supervisor

WELCOME & SAFETY

Welcome & Safety

- Safety
- All phone lines are muted
- Questions during this webinar must be submitted through the Chat Feature of the GoToWebinar platform
- This Program Conference will be posted on the Customer-Connected Solar Program webpage

  www.georgiapower.com/customerconnectedsolar

GEORGIA PUBLIC SERVICE COMMISSION - OPENING REMARKS

RENEWABLE DEVELOPMENT OVERVIEW

Georgia Power at a Glance

Largest of three Southern Company electric utilities

2.5 million customers

6,950 employees

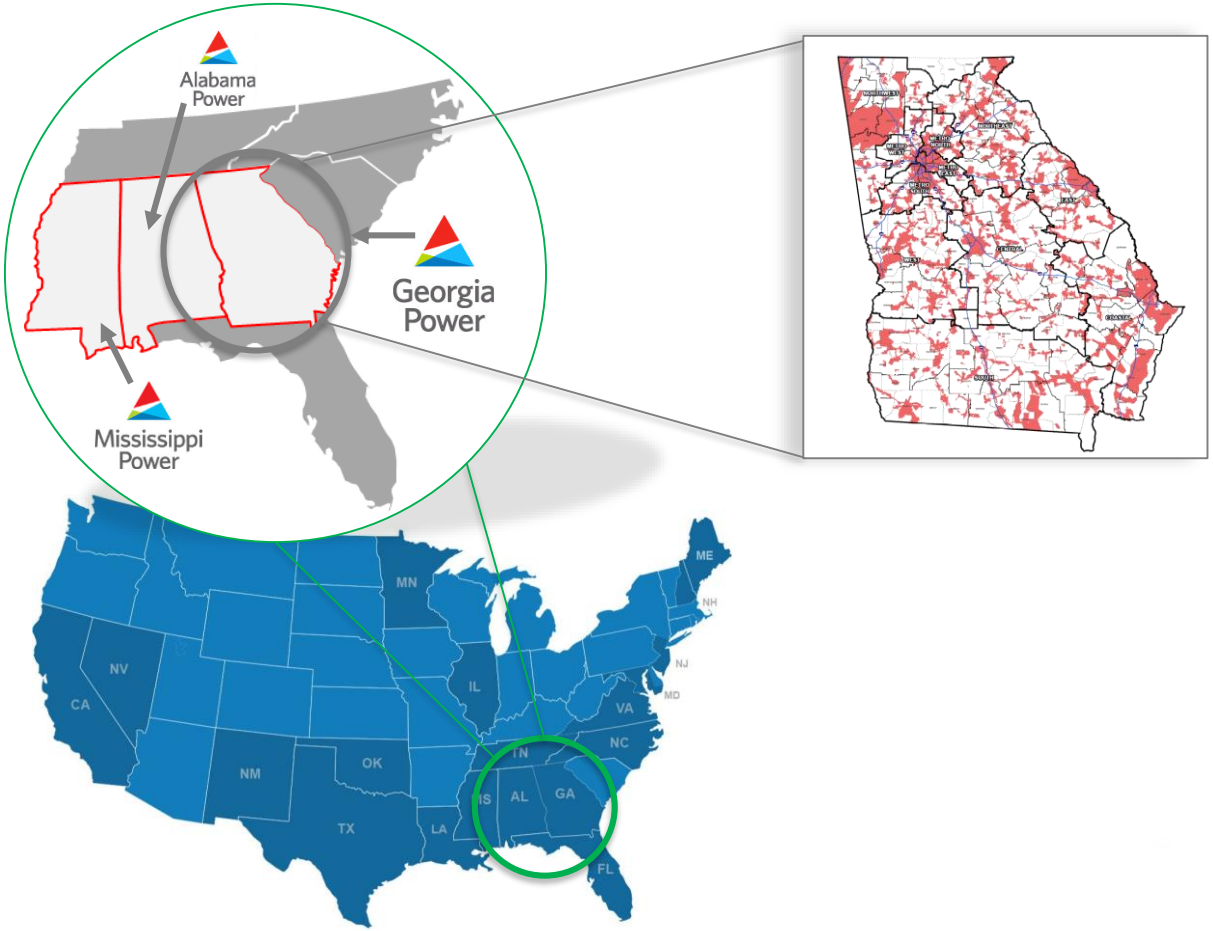
13k miles of transmission lines

High customer satisfaction

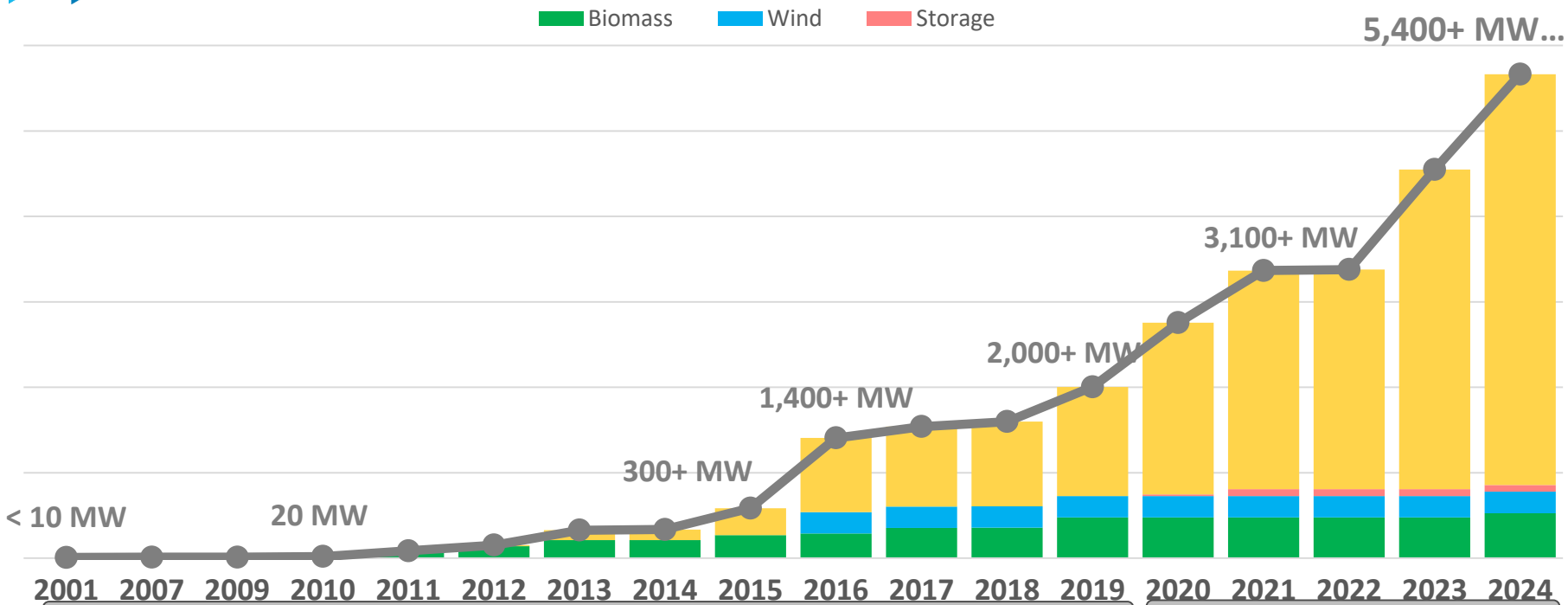
14% **Rates below the national average**

87k miles of power lines

45% of customers earning under $40k



Renewable Resource Growth



Online

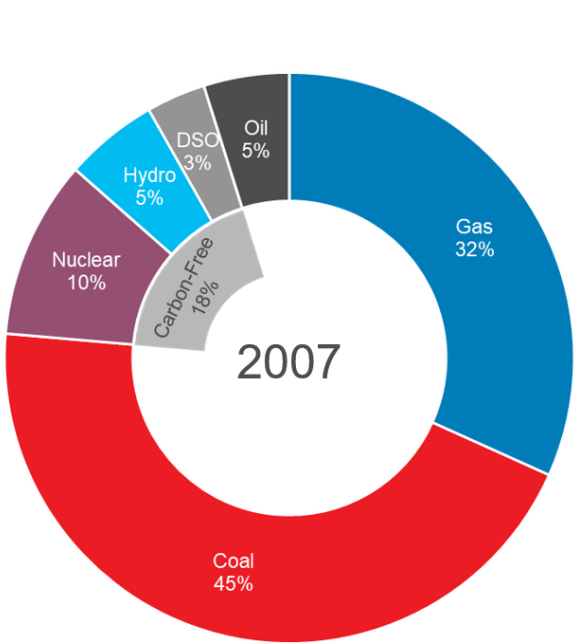
- Biomass QFs, Green Energy PPAs
- + LSS, ASI, ASI Prime, & QF PPAs
- + Self-build Projects & Demos
- + Blue Canyon PPAs

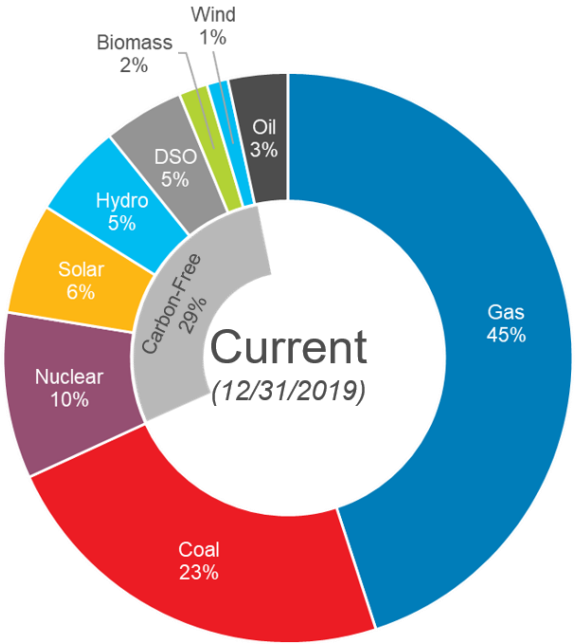
Projected

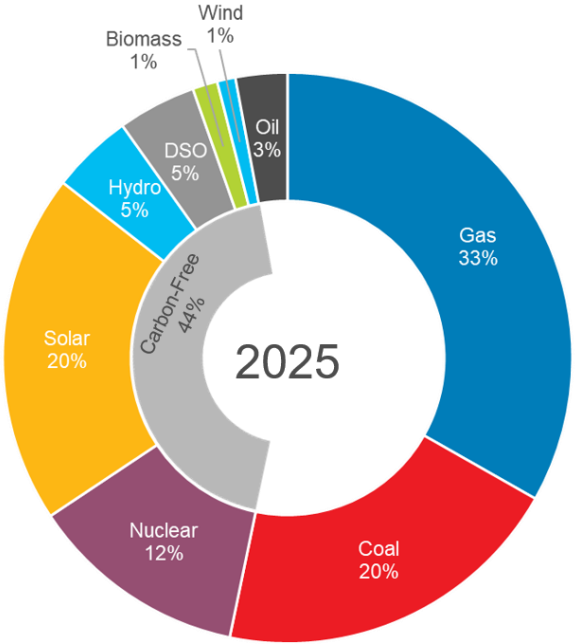
- + REDI Utility Scale, DG, and C&I PPAs
- + CRSP PPAs, DG PPAs & Biomass PPAs
- Self-build Projects & Demos
- Continuation of BTM Programs: QF, RNR

NOTE, REC Disclaimer: 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 and report them.

Evolution of Georgia Power's Resource Mix







These capacity mixes reflect nameplate capacity for renewable resources, program capacities for demand-side options ("DSOs"), and designated/demonstrated capacity for the remaining fuel types. A portion of the renewable generation capacity included in this chart includes capacity where the renewable generator retains the related Renewable Energy Credits ("RECs").

INTEGRATED RESOURCE PLAN

LOAD PLANNING

Load Forecast
Reserve Margins Impact Risk
Capacity Worth Factors

DEMAND SIDE OPTIONS

Energy Efficiency
Demand Response
Backup Generation

POWER DELIVERY

Capital vs. O&M Spending
Age of Grid vs. Replacement Cycle
Generating Plant Retirements
Distributed Energy Resources

POWER GENERATION

Fuels & Carbon Forecast
Build, Contract, Buy, Retire
Coal, Nuclear, Gas, Hydro, Renewables

2019 IRP Renewables Results

PROCUREMENT & DEVELOPMENT

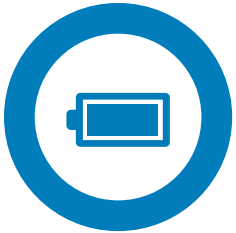
2,260 MW =

1,000 MW	1,000 MW	210 MW	50 MW
CRSP	**Utility Scale**	**DG**	**Biomass**
600 MW for existing 400 MW for new	For All Customers	160 MW RFP 50 MW Customer-Sited	

PROGRAMS

- Customer Renewable Supply Procurement (CRSP) New & Existing
- Simple Solar Large Volume Flexibility

R&D



- Storage Portfolio – 80 MW
- EV Battery Reuse Pilot - $250,000

Renewable Development

PROGRAM HISTORY

Our Programs

Program	MW Sought*	MW Procured	# Projects
ASI	90	89.7	272
ASI Prime	100	88.3	189
REDI Customer-Sited	50	47.5	33
REDI RFP	100	86.7	38
2019 IRP DG RFP	160		
Customer-Connected Solar	25		
REDI Customer-Sited II	25		

*Excludes rollover

Renewable Development

Results of Growing Solar Responsibly

2013
SEIA's #7 Top 10 Solar States for solar capacity installed in 2013
SEIA's "fastest growing solar market in the nation"

2014
SEPA's Investor-owned utility of the year

2015
SEIA's Top 10 utilities for adding the most solar power to system in 2015
SEPA's Top 10 utilities for 2015 installations

2016
SEPA's Top 10 utilities for 2016 installations

2017
SEIA's Top 10 Solar States for cumulative solar

2018
SEPA's Top 10 Solar Utilities for cumulative solar & Top 10 Solar States for cumulative solar

2019
SEIA's named Georgia as the #5 state in the U.S. for 2019 Solar PV installations

CUSTOMER-CONNECTED SOLAR PROGRAM (CCSP)

Program Schedule

CCSP Program Conference

July 22, 2020

July 30, 2020

Application Period Opens

Application Period Closes

January 2022*

or until the 25 MW AC portfolio is filled

Renewable Development

Program Website

Information found on the CCSP website:

- Overview of program
- Program schedule
- Program Documents
- Link to Interconnection Guidance
- Link to Apply (PowerClerk)
- FAQ's
- Ability to "Contact Us" for program questions

www.georgiapower.com/customerconnectedsolar

Program Benefits

- Monthly payments directly to Customer

- Renewable Energy Credits (RECs)
  - Georgia Power will retire the RECs associated with a participant's solar facility, allowing the customer to claim the renewable benefits of the local solar energy.

- Available Federal Tax Incentives
  - Federal tax incentive for 2020 = 26%
  - Federal tax incentive for 2021 = 22%
  - Federal tax incentive for 2022 = 10% (non-Residential)

Program Overview

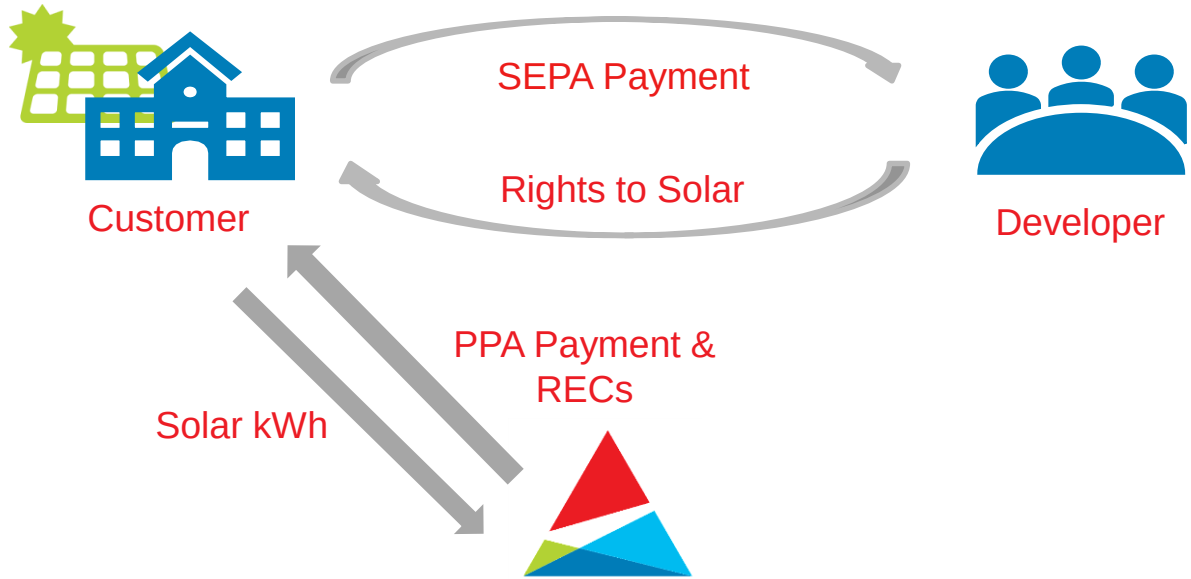
25 MW AC

Renewable Development

Program Eligibility

- One application per Customer Account
- Customer account must be active for at least 6 months prior to application
- Customer account must not be delinquent
- Participation in previous GPC DG programs

WHAT IS A SEPA?



Customer

- No upfront money required
- Makes ongoing SEPA payment to developer
- Receives ongoing PPA payment and RECs from GPC

Georgia Power

- Monthly payments directly to customer
- Retire REC's on behalf of customer

Developer

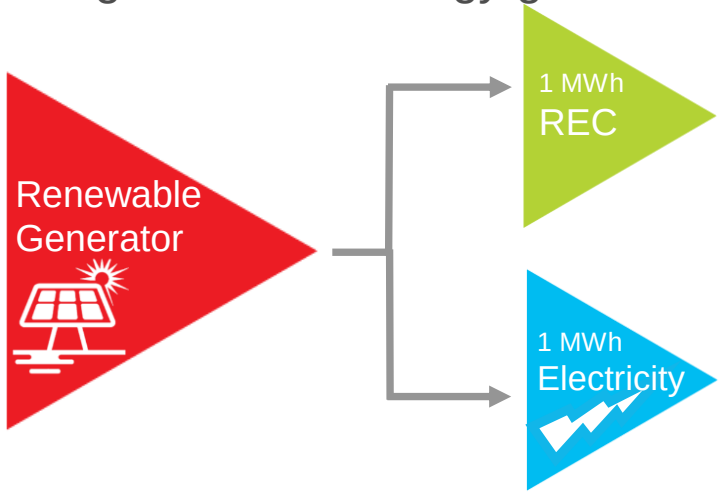
- Invests in project
- Earns return through ongoing SEPA payment from customer

Renewable Development

What is a REC?

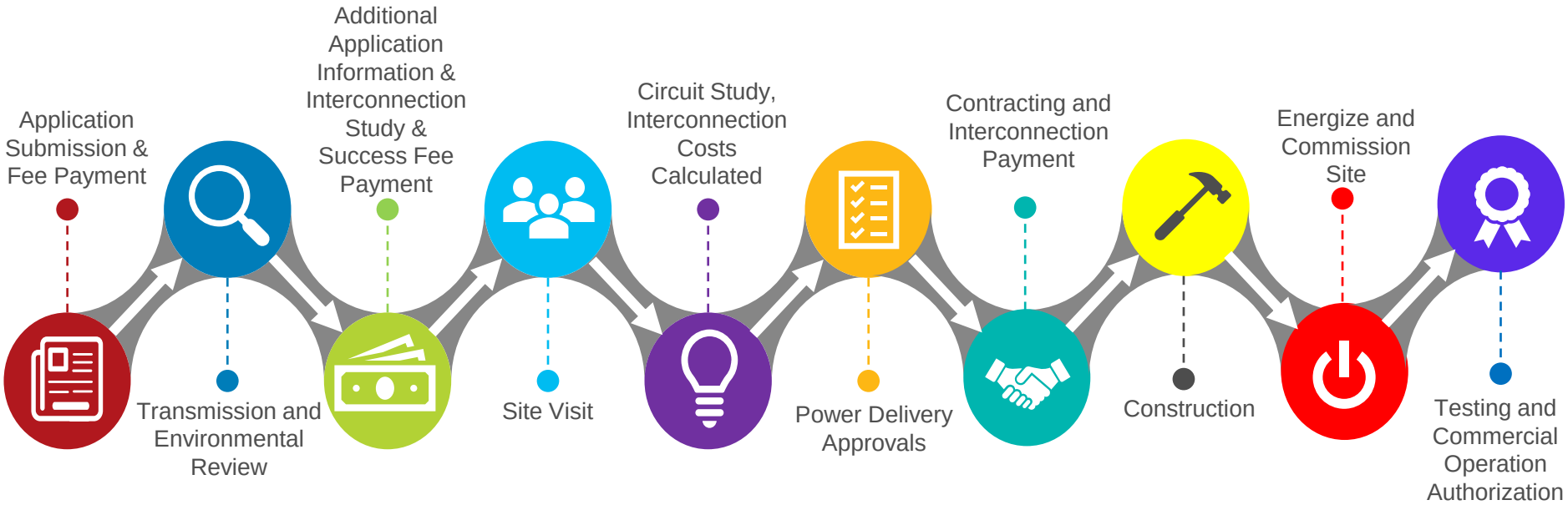
Renewable Energy Certificates/Credits (RECs) are the intangible certifiable environmental attributes created with each megawatt hour of energy generated by a renewable asset.

RECs are a way to capture/track and quantify environmental benefits of replacing or offsetting traditional energy generation with renewable resources.



"Renewable Energy"

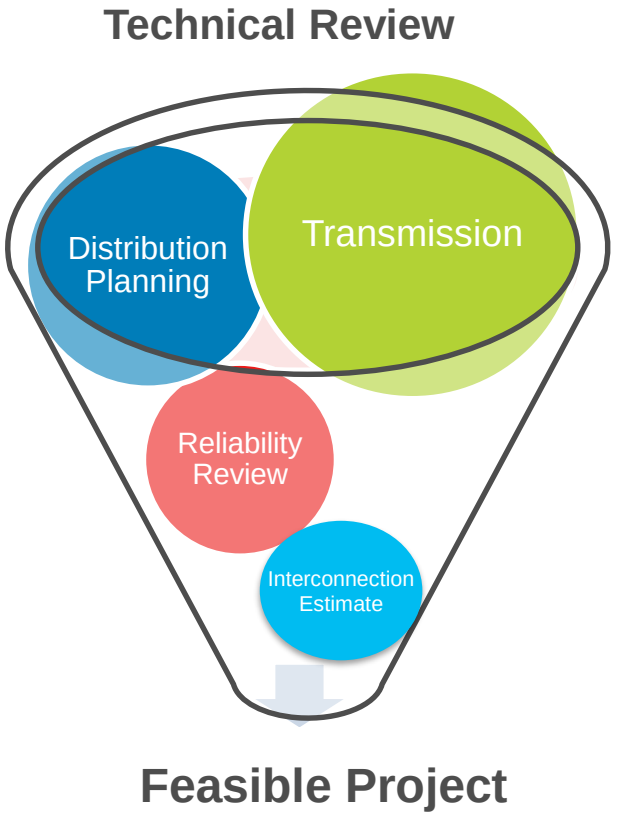
Program Process Overview



Renewable Development

Project Evaluation

- Failure to provide all information requested may invalidate the Application
- Projects will be reviewed for grid impact
- Project-specific interconnection studies will be conducted
- If there are multiple facilities in close proximity, project evaluation will be sequenced on the date/time of the Application, as applicable.



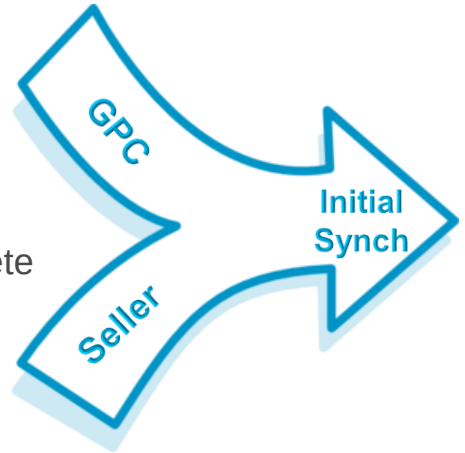
Required Mechanical Completion Date

- The RMCD is the date by which the Facility must achieve Mechanical Completion and the Customer must submit the Mechanical Completion Certificate to Georgia Power.
- The RMCD is selected by the Customer and included/identified in the Application.
- The RMCD cannot exceed 210 days and is calculated from the date Georgia Power executes the PPA.

Once the PPA is fully executed, Seller may not request an amendment to the RMCD.

MECHANICAL COMPLETION

- Instituted to provide milestones to each Customer based on the specific project construction schedule
- Mutually agreed-upon between Georgia Power and the Customer's construction obligations
- Requires Customer to submit Mechanical Completion Certificate and demonstrate that the Facility is Mechanically Complete by the RMCD
  - Customer provided Georgia Power the final Facility documents
  - Customer completed the assembly, construction and installation of the Facility and the Facility is mechanically, electrically and functionally complete and sound
  - Facility passed an electrical inspection (as evidenced by an inspection certificate) by either the appropriate city or county inspection authority
  - Customer obtained any and all other governmental approvals
  - Facility is ready for Initial Synchronization; and
  - Customer submitted the Mechanical Completion Certificate to Georgia Power



Full definition included in the PPA

Initial Synchronization & Witness Testing

1. Seller must request and be prepared for Initial Synchronization within 60 Days following Mechanical Completion

2. Customer must give at least 7 Business Days advanced written notice of the date requested for Initial Synchronization.

3. After (i) Georgia Power's receives the Initial Synchronization Request, (ii) Seller has met all pre-Initial Synchronization requirements in the IA, including payment of Interconnection Costs, and (iii) Georgia Power's interconnection facilities are ready for Initial Synchronization, the Parties will jointly select a date and time for the Facility's Initial Synchronization.

4. If the period of Initial Synchronization exceeds 7 consecutive Days, Georgia Power reserves the right to temporarily disconnect the Facility and to re-energize its interconnection facilities at a later date.

5. The Facility must successfully pass all testing in accordance with the Georgia Power Distribution Test Policy ("Witness Testing") by no later than 120 Days after the date of Initial Synchronization.

6. Georgia Power will grant Commercial Operation Authorization to Seller within seven Business Days after the successful completion of Witness Testing.

POWERCLERK APPLICATION PROCESS

ONLINE APPLICATION

Georgia Power

PowerClerk®

PowerClerk

Georgia Power Company

Customer-Connected Solar Program

Welcome to Georgia Power's Customer-Connected Solar Program Portal

Program Summary

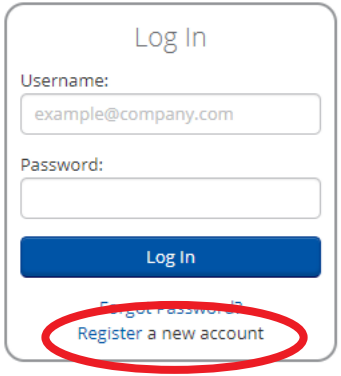
The Customer-Connected Solar Program (CCSP) is a 25-megawatt (MW) Distributed Generation customer-sited program that allows Georgia Power customers to partner with any solar developer to build a solar facility on or adjacent to a customer's property. Through this portal, applications will be accepted on first-come, first-served basis until the 25 MW AC portfolio if filled, or until January 2022, whichever comes first. For full program details please visit the program website or read the Program Guidelines.

Questions

Do you have questions? See our Frequently Asked Questions or submit a question by using this online form.

First time here? Click "Register a new account" to the right to create an account.

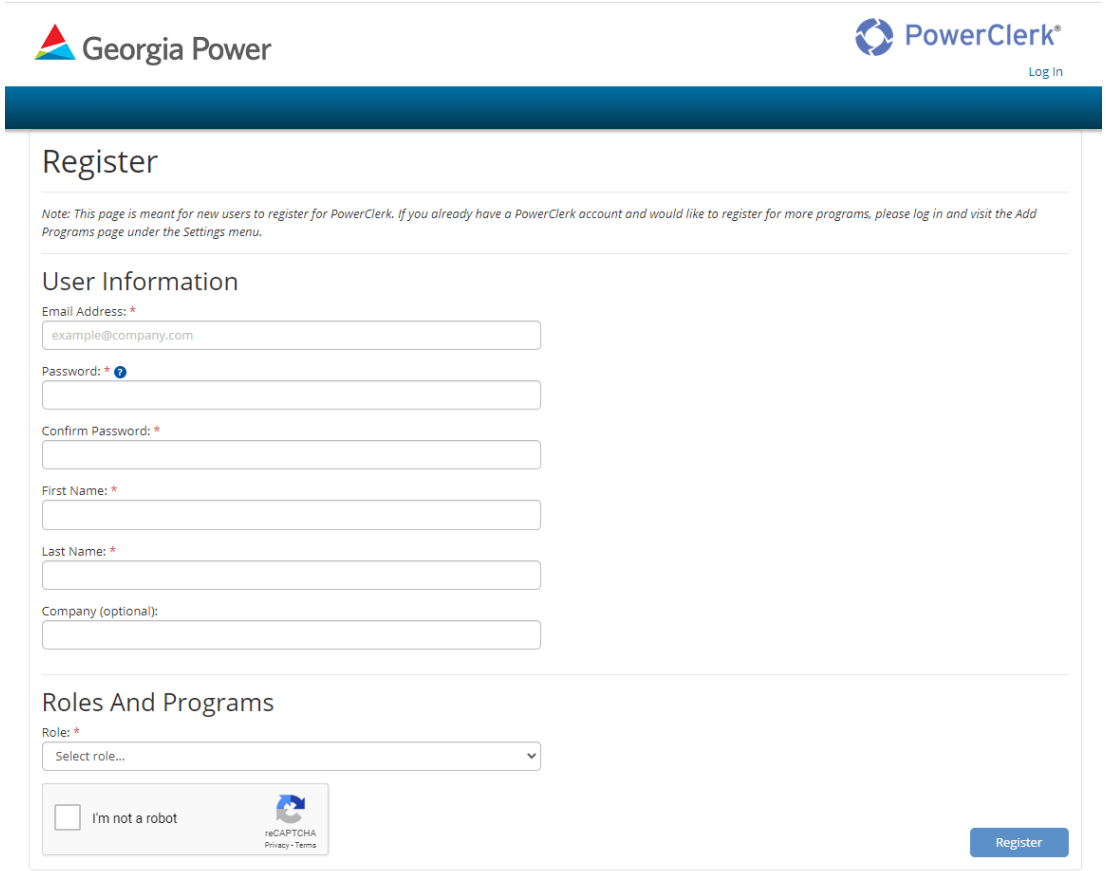
A 'NEW USER VIDEO' is now available - This video guides the viewer through the PowerClerk basics including: registering for an account, resetting passwords, adding additional programs, filling out and submitting forms, viewing project details and status, granting project access, and where to find additional support



Register a new account, or log-in with existing PowerClerk credentials.

Renewable Development

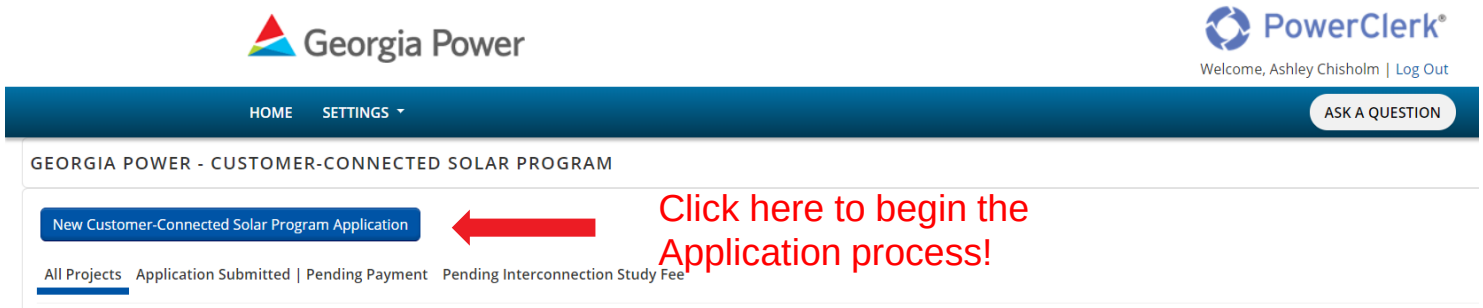
Creating A Profile

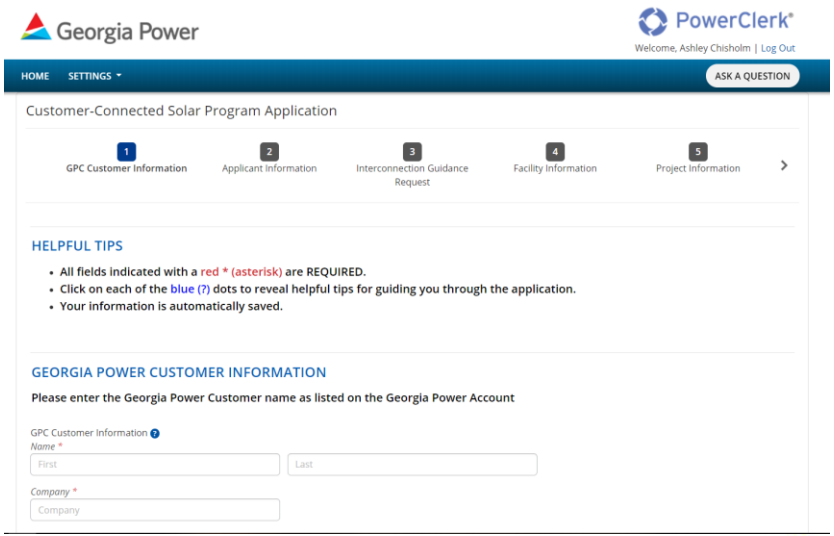


- Once an account has been created, you will receive an e-mail with a unique, time-sensitive link to complete account set-up.
- From there, you will activate your account and have access to the Customer-Connected Solar Program Application portal.

Renewable Development

Application Process





Renewable Development

Sample Application Information

- Customer information
- Applicant information
- Counterparty (Seller) name
- Basic facility information
  - Address
  - Latitude/Longitude
  - Facility size (kW)
  - Parcel number
  - Project contingencies, if any

- Required documents:
  - Site Control Affidavit and Landowner Confirmation
  - Customer Contractor Designation Form
  - Preliminary Site Plan
  - Facility Construction Timeline
  - PV & Inverter Specification Sheet
  - Facility One-Line Diagram
  - GPC Customer Bill

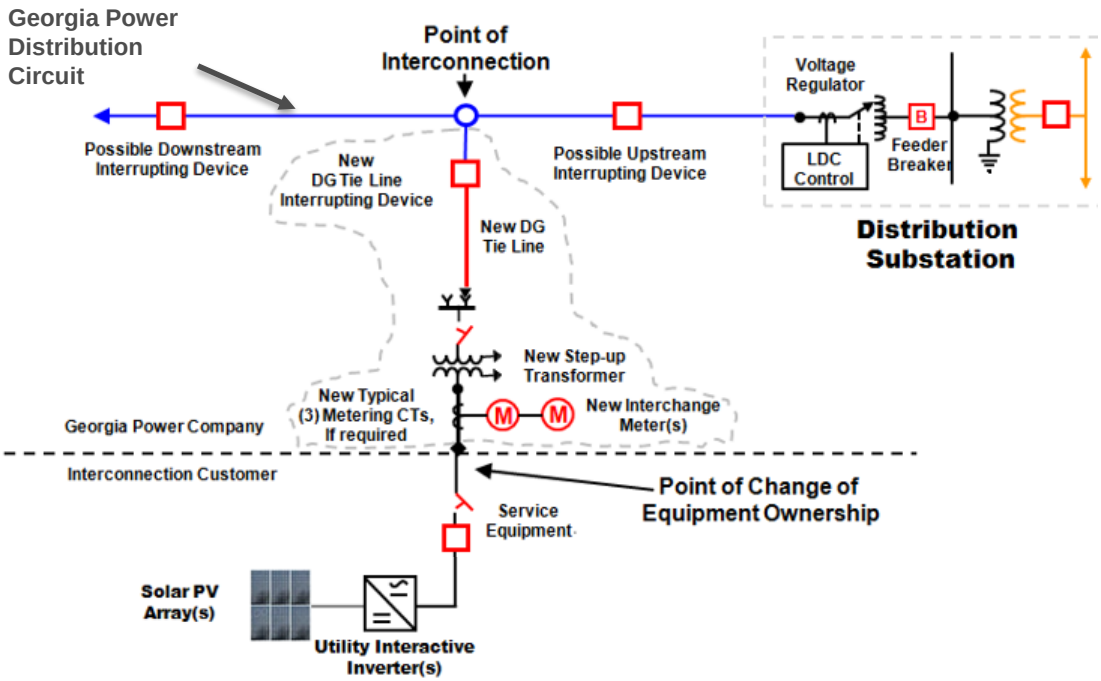
All application information must be submitted, documents uploaded, and fees paid before application is complete.

DG INTERCONNECTION OVERVIEW

- Technical Interconnection Overview

DEFINITIONS

- Georgia Power Distribution Circuit: The Georgia Power owned circuit operating at greater than 1kV but less than 34.5 kV, excluding facilities, equipment or other devices inside a substation.
- Point of Interconnection (POI): The unique point at which the facility is interconnected to the Georgia Power Distribution Circuit, in accordance with the Interconnection Agreement, where the customer delivers energy and Georgia Power purchases energy generated from the facility.
- Point of Change of Ownership: The point at which customer's facilities stop and Georgia Power's interconnection facilities start.
- Interconnection Limit: The maximum power output (kW AC) at which the facility will not export power above



The POI does not necessarily coincide with the point of change of ownership of equipment.

Example Interconnection Options: Transformer Ownership

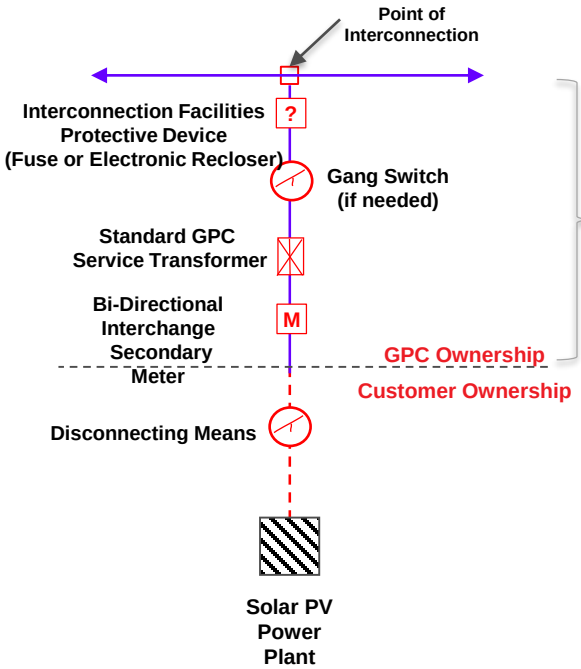
For CCSP, customers may choose to own the transformer or have Georgia Power own the transformer.

Georgia Power Owned Transformer Standard Service Voltages

Voltage (V)	Configuration	Size (kVA)
120/240V OH XFMR	Delta, 1 phase	<100
120/208V OH Bank	Wye-Wye, 3 phase	45 - 500
120/208V UD Pad	Wye-Wye, 3 phase	45 - 1000
277/480V UD Pad	Wye-Wye, 3 phase	75 - 3750

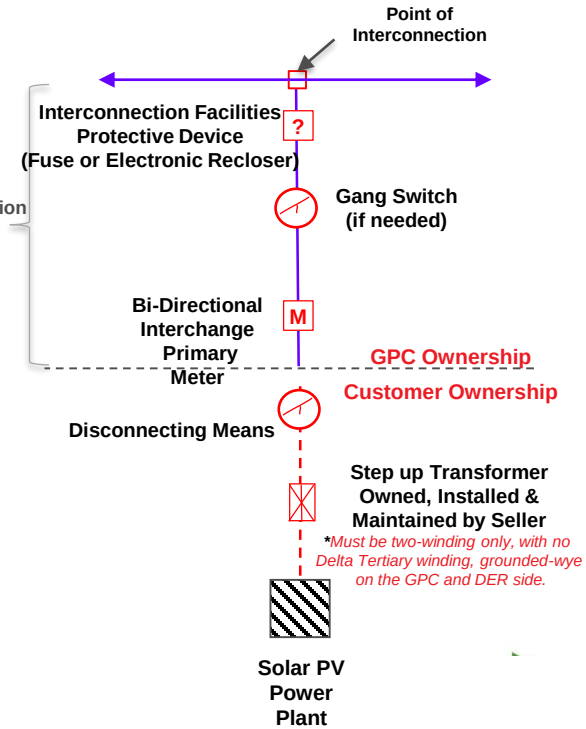
GPC reserves the right to approve transformer options.

Georgia Power Owned Transformer



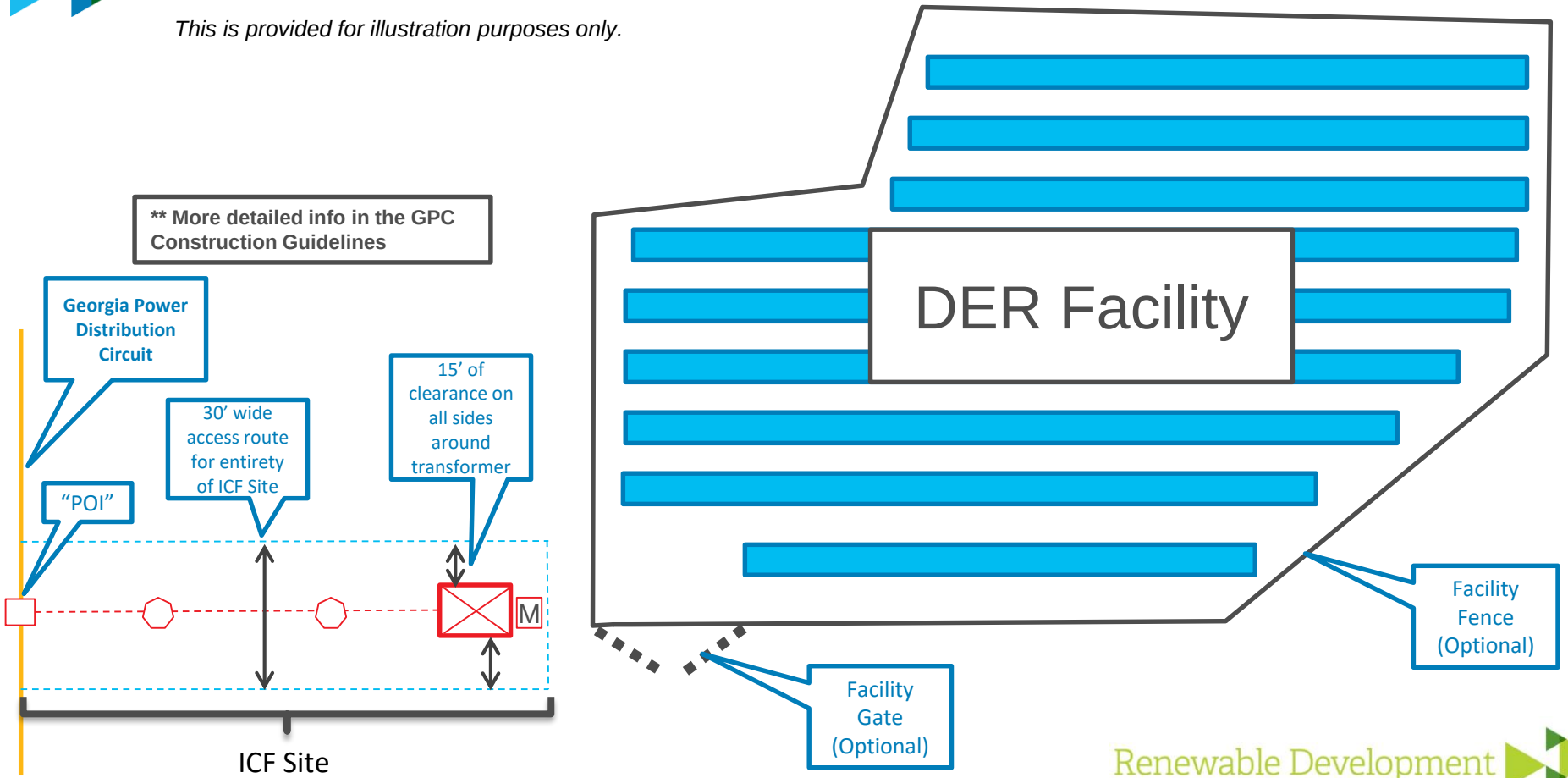
Interconnection Facilities

Customer Owned Transformer



Interconnection Facilities Location

This is provided for illustration purposes only.



Auxiliary Service

- The customer must arrange and purchase Auxiliary Service for the DER facility under standard retail rates. This electric service must be purchased from the electric service provider and will be a separate metered service.
- The customer is not allowed to “self-serve”, to meet it’s electrical requirements:
  - Lighting
  - Security Systems and equipment
  - Electric Gate
  - Etc.
- If Georgia Power is the electric service provider for the territory, a separate estimate and design will be created to serve auxiliary equipment at the same time that the interconnection facilities are being estimated. The customer will be required to install applicable metering equipment for auxiliary service, per the GPC Blue Book for Electrical Service.
  - *GPC Metering Requirements (Blue Book) are available online

Facility Testing Requirements

Facility <250 kW

Cease-to-Energize Functionality Test

- Check the cease-to-energize functionality by operating a GPC interrupting device and verifying that Facility ceases to energize its output terminals and does not restart/reconnect for the required time delay
- Verify the voltage at the customer side of the meter to make sure it is de-energized

Facility 250 kW or Above

Transient Overvoltage Test

- 3 phase test
- Check to ensure inverter based DG device overvoltage condition does not compromise the GPC system
- Each individual inverter must achieve 85% of the maximum capable AC output for testing purposes
- Facility must shut down within 120 cycles after the three-phase disconnect has been completed

Single Phase Disconnect Test

- Facility must shut down within two seconds after single phasing has been initiated
- 5 minute delay verification

Inverter Control Mode Test

- Facility must control the power factor to the pre-determined set point agreed to by GPC
- Facility must not attempt to actively control the PCC voltage

DG INTERCONNECTION OVERVIEW

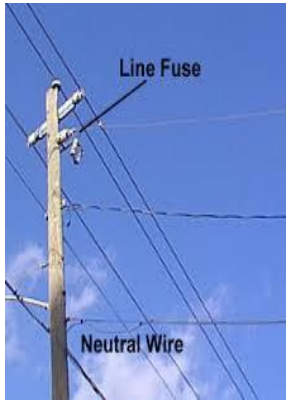
- Distribution Interconnection Information

GPC Distribution Lines & Equipment

Single Phase Lines & Equipment

- <100 kW facility typically is able to interconnect to single phase distribution line

Hydraulic recloser – single phase application



Single phase line served from a three phase line

Single phase line & transformer

Three Phase Lines & Equipment

- ≥ 100 kW facility required to interconnect to three phase lines
- ≥ 1 MW facility requires an electronic recloser & interval metering equipment

Three Phase Padmount Transformer

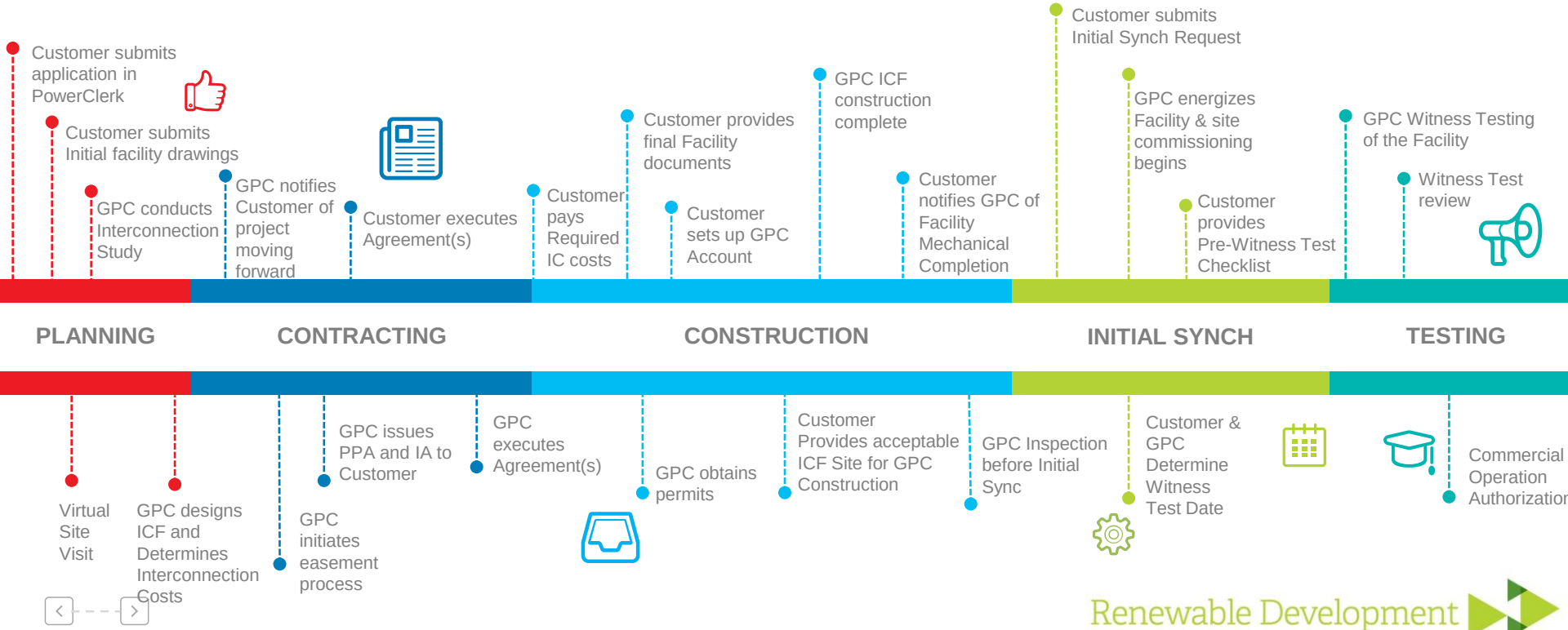
Gang Switch

Electronic Recloser

Renewable Development

CCSP Interconnection Process

Integrating Distributed Generation Solar Resources



For illustration purposes only.

Renewable Development

DG INTERCONNECTION OVERVIEW

- Optional Interconnection Guidance Program

DG Interconnection Guidance Program

To request Interconnection Guidance, please visit https://georgiapowericg.powerclerk.com

Tier 1: $800

- Substation system one-line diagram
- Substation name, ownership, & circuit
- POI information* including:
  - Primary operating voltage, number of phases, and conductor size
  - Distance to closest upstream three phase protective device
  - Distance to the substation
- Existing distributed generation on the circuit (total MW)
- Identification of whether transmission upgrades would be required

*Results will include the closest circuit to the POI indicated in the initial request

Tier 2: $2,700

- **All items in Tier 1 analysis**
- Load-rejection Temporary Over-Voltage Analysis (Identification of Direct Transfer Trip)
- Stiffness Analysis
- Recent annual peak load data for the circuit
- Ratio of proposed facility to peak load

- Reliability coordination study and identification of upstream device upgrades

Tier 3: $9,500

- **All items in Tier 1 and Tier 2 analyses**
- Detailed load flow study (Identification of Facility Power Factor Requirements)

Conclusion