



GEORGIA POWER'S SMALL POWER PRODUCERS FUNDAMENTALS

What is a Qualifying Facility (QF)?

- Public Utility Regulatory Policies Act of 1978 (PURPA) defines a QF as:
 - Cogeneration facility
 - Small power production facility
- Purpose: Combat the “energy crisis”
 - Promote energy conservation through cogeneration
 - Encourage alternative sources of power generation

Requirements

- Fuel source for small power production facility
 - Renewable resources
 - Hydro, wind, solar, geothermal resource
 - Biomass: Organic material not derived from fossil fuel
 - Ex. Landfill methane
 - Ex. Wood chips
 - Waste:
 - Ex. Used rubber tires
 - Ex. Garbage incineration

For biomass or waste, 75% or more of the total energy input must be from one of these sources

Requirements

PURPA Requirements

- There is no minimum size restriction
- Maximum size restriction is 80 MW

State Requirements

- Under 30 MW the facility would receive avoided cost
- Under 30 MW the facility would need to notice into a current RFP in order to receive proxy pricing
- Over 30 MW the facility would need to bid into a current RFP

How does the process work?

Let's answer the basics

- Available capacity
 - Under 30 MW (standard or proxy contract)
 - Over 30 MW (bid into RFP)
- Interconnection options
 - Selling only to Georgia Power Company (GPC) as a QF
 - Potential to connect to distribution, depending on facility location
 - Selling wholesale or connecting to the integrated transmission system (ITS)
 - Utilize FERC interconnection process
- Facility location
 - Facilities located outside Southern Control area only paid for capacity and energy delivered to Georgia Power
 - QF responsible for transmission service to the Georgia integrated Transmission System (ITS) and for losses to get capacity and energy to the ITS

Getting Started

- FERC required certification as a QF
 - Negotiations with lender or utility purchaser may proceed more smoothly if facility has been certified as a QF by FERC.
 - Process and fees are located on the FERC website
 - FERC self certification
 - Complete form No. 556 from the FERC website
 - No fee
- Interconnection
 - Georgia Power interconnection agreement (Distribution) or FERC (Distribution or Transmission) interconnection agreement
 - Complete studies in order to sign the interconnection agreement

Contract Terms & Conditions

Compliance with Laws, Rules, & Regulation

- Standard contract subject to Georgia PSC approval
- Supplier responsible for acquiring all governmental permits, certificates, or authorizations required for operation of facility
- Supplier responsible for any costs and expenses associated with facility interconnection

Delivery of Capacity

Dispatchable:

- Facility is able to be called upon by Georgia Power to generate electric energy to serve load.
- Upon determination of the facility becoming Dispatchable, GPC will work with supplier to develop operating procedures

Non-Dispatchable

- If Non-Dispatchable, the QF shall provide an estimate of the hourly amounts of electricity to be delivered at the Point of Delivery for the succeeding day (delivered to the dispatch center).

Delivery of Capacity

- Each calendar year QF shall provide to Georgia Power estimated amounts of energy to be generated
- QF shall also deliver to Georgia Power a schedule of any planned outages or reduction in capacity

Contract Options

Available Options

1. Standard Contract at Avoided Cost
 - Non-Firm contract (energy only)
 - Firm contract (energy & capacity)
 - Option A (Fixed annual capacity payment)
 - Option B (Market based capacity payment)

2. Proxy price
 - Market based capacity payment with adjustments

Standard Contract

Standard Non-Firm contract

- Benefit
 - Simplified contract
 - GPC is obligated to purchase all energy
 - No contractual obligation to adhere to a capacity schedule
 - No obligation to be dispatchable
 - No performance security required
- Drawback
 - Potential decrease in energy prices
 - No capacity payment

Standard Firm contract

- Benefits
 - Simplified contract
 - Receive capacity payments
 - Fixed annual payments
 - Market based payments
 - No performance security required
- Drawback
 - Must adhere to contracted availability and capacity amount or the capacity payment could be decreased for that year

Standard Firm contract Energy & Capacity

- Option A: Fixed Annual Capacity Payments
 - Specified capacity payments for up to 10 years
 - Capacity payment based on economic carrying cost (ECC) of most expensive incremental capacity resource added in subject year (on basis of peaking resource)
 - Minimum 90% availability required for full capacity payment
 - Pro-rata capacity payment reduction between availability of 90% and 0%
 - Standard avoided hourly energy cost
 - Event of default results in termination of agreement and/or exercise all remedies available at law or in equity

2009 Avoided Costs Projections

| Year | Avoided Capacity Cost \$/KW-yr | Avoided Energy Cost | | |
|------|-----------------------------------|--------------------------------------|--|-------------------------------|
| | | Peak Season: Peak Hours \$/MWh | Peak Season: Off-Peak Hours \$/MWh | Annual All Hours \$/MWh |
| 2009 | 0.00 | 78.37 | 55.44 | 55.68 |
| 2010 | 0.00 | 90.30 | 58.81 | 61.03 |
| 2011 | 0.00 | 92.05 | 60.08 | 61.85 |
| 2012 | 0.00 | 123.26 | 75.12 | 74.16 |
| 2013 | 0.00 | 139.98 | 81.23 | 80.12 |
| 2014 | 0.00 | 146.76 | 84.49 | 83.33 |
| 2015 | 92.31 | 146.25 | 85.82 | 84.94 |
| 2016 | 95.30 | 151.27 | 88.56 | 87.87 |
| 2017 | 98.38 | 151.64 | 87.58 | 88.88 |
| 2018 | 101.57 | 156.67 | 90.61 | 91.56 |

Note: *Avoided cost projections filed annually with the PSC

****Peak Hours (non-hydro): June 1 - Sept. 30 (Weekdays from 2 PM - 7 PM EST)**

*****Peak Hours (hydro): June 15 - Aug. 31 (Weekday from 2 PM – 6 PM EST)**

Avoided Cost Components

| YEAR: 2009 \$/MWh | System Territorial Spot Fuel Lambda | Marginal Cost Multiplier | Fuel Cost Multiplier | Variable O & M Component Adder | Emissions Component Adder (SO ₂ , Nox & HG) | Start-up & Commitment Component Adder | Total \$/MWh For QF Block |
|----------------------|--|--------------------------------|----------------------------|---|---|--|------------------------------------|
| Peak Period | 58.07 | 1.0 | 1.0644 | 3.27 | 5.61 | 7.68 | 78.37 |
| Off-Peak Period | 41.53 | 1.0 | 1.0644 | 2.76 | 6.62 | 1.86 | 55.44 |
| All Hours | 40.22 | 1.0 | 1.0644 | 2.79 | 6.47 | 3.61 | 55.68 |

| YEAR: 2010 \$/MWh | System Territorial Spot Fuel Lambda | Marginal Cost Multiplier | Fuel Cost Multiplier | Variable O & M Component Adder | Emissions Component Adder (SO ₂ , Nox & HG) | Start-up & Commitment Component Adder | Total \$/MWh For QF Block |
|----------------------|--|--------------------------------|----------------------------|---|---|--|------------------------------------|
| Peak Period | 66.72 | 1.0 | 1.0976 | 3.0600 | 3.74 | 10.27 | 90.30 |
| Off-Peak Period | 43.30 | 1.0 | 1.0976 | 2.8600 | 5.88 | 2.55 | 58.81 |
| All Hours | 43.10 | 1.0 | 1.0976 | 2.9400 | 5.60 | 5.19 | 61.03 |

Standard Firm contract Energy & Capacity

Option B: Market Based Capacity Payments

- The capacity payment for the first annual period is specified in the contract
 - Capacity payment based on ECC of most expensive incremental capacity resource added in subject year (on basis of peaking resource)
 - Capacity payment for each subsequent annual period determined at time need is filled for subject year. Otherwise, same basis as first annual period.
- Minimum 90% availability required for full capacity payment
 - Pro-rata capacity payment reduction between availability of 90% and 0%
- Standard avoided hourly energy cost
- Event of default results in termination of agreement and/or exercise all remedies available at law or in equity

Proxy Contract

Notice of Intent

Proxy pricing

In years where GPC has capacity need suppliers 30 MW or less must provide Notice of Intent (NOI) to receive proxy pricing

Required (NOI) information

- Location of facility
- Expected output
- Fuel & Technology type
- Designation as co-generation or a renewable
- Operational characteristics (dispatch ability, capacity factor)
- Energy Price
- Documentation showing that the supplier adheres to FASB rule 46 as it relates to Variable Interest Entities
- Documentation necessary for company to make capital lease determination

Benefits & Risks

Proxy pricing

- Benefits
 - Higher capacity payments (based on most expensive incremental capacity resource added in subject year)
- Drawbacks
 - Security requirement
 - Increased events of default
 - Contract could be subject to termination if deemed as a Variable Interest Entity
 - Actual damages in the event of default
 - Seasonal availability performance dropping below 96%
 - Energy payment typically less than GPC's standard avoided hourly energy cost
 - QF choice
 - Prescribed \$/MWh energy price
 - Standard avoided hourly energy cost less QF prescribed \$/MWh

Performance Security

- 90 days prior to the required commercial operation date the QF shall supply collateral to GPC
 - Eligible collateral shall be \$85/KW through the term of the agreement
- If the QF fails to deliver this collateral on time, the QF shall pay to GPC liquidated damages (\$60/KW monthly), until collateral is received

Events of Default

- Failure to achieve required commercial operation date
 - Forfeit monthly capacity payments
 - Required to pay pro-rated liquidated damages until commercial operation achieved or contract terminates

| Month | \$/KW month |
|---------------|-------------|
| June | 4 |
| July | 8 |
| August | 8 |
| September | 4 |
| October-April | 1 |
| May | 2 |

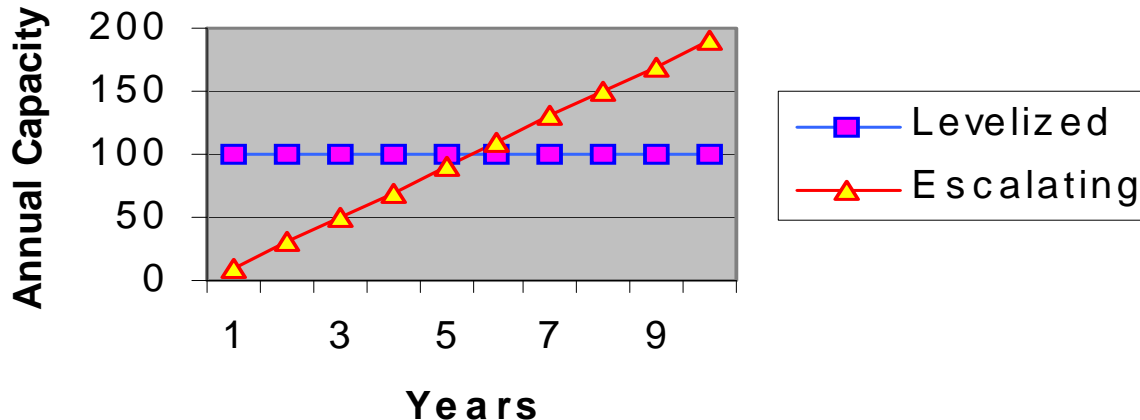
Events of Default

- Each party has right to annual re-demonstration of capacity
 - If re-demonstrated capacity below 70% of committed capacity and QF fails to submit cure plan reasonably acceptable to GPC
- QF fails to comply with performance security requirements
- QF abandons development or construction prior to commercial operation date

QF levelized capacity security

- QF has option of escalating or levelized capacity payments
- If levelized payments selected by QF
 - In event of early contract termination, QF obligated to return “front loaded” payments to GPC
 - Obligation to return “front-loaded” payments secured by Letter of Credit
 - Security amount changes by year and remains in force through term of contract

Escalating vs Levelized Payments



Monthly Energy Payments

Monthly Energy Payment :

=Monthly delivered energy * avoided energy rate

Avoided energy rate has the following options:

1. \$/MWH for a non-dispatchable facility
2. Avoided energy cost minus \$/MWH for a dispatchable facility escalating annually

Proxy Contract Availability

- Seasonal Availability Percentage (SAP): QF guarantees minimum SAP of 96%

Dispatchable facility

Scheduled greater than 50 hours

$$\text{SAP} = \frac{\text{MWh Delivered}}{\text{MWh Scheduled}}$$

Scheduled \leq 50 hours

$$\text{SAP} = \frac{((50 \text{ hours} * \text{Committed Capacity}) - \text{MWh scheduled}) + \text{MWh Delivered}}{50 \text{ hours} * \text{Committed Capacity}}$$

Proxy Contract Availability

Non-Dispatchable

$$\text{SAP} = \frac{\text{MWh Delivered}}{\text{Committed Capacity} * (\text{Hours Available})}$$

Proxy Contract Availability

- If SAP falls between 60%-96% then weighted capacity payment for season reduced 1.5% for each 1% drop below 96%
- If SAP falls below 60%, no capacity payment for season

Current Activity

- 2009 Capacity needs are met
- 2010 Capacity needs are met
- 2011 Capacity needs are met
- 2012 Capacity needs are met
- 2013 Capacity needs are met
- 2014 Capacity needs are met

Resources

- Georgia Power Company
 - <http://www.GeorgiaPower.com/SmallPowerProducers.asp>
- Georgia Public Service Commission
 - <http://www.psc.state.ga.us>
- FERC website for QF facts
 - <http://www.ferc.gov/industries/electric/gen-info/qual-fac.asp>

Georgia Power Contacts

William Houser
Generation Planning
404-506-3681

Jackie Chen
Generation Planning
404-506-3549

Summary

- Variety of contract options available
- Varying degrees of complexity and requirements
- Contact GPC regarding future questions