

**LOCE PLLC**

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# **AVOIDED COST RATEMAKING METHODOLOGIES UNDER THE PUBLIC UTILITIES REGULATORY POLICIES ACT (PURPA)**

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Carolyn Elefant  
LAW OFFICES OF  
CAROLYN ELEFANT (LOCE) PLLC  
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theory  
Simple

practice  
Complicated!!

# What is PURPA?

(Public Utilities Regulatory Policies Act 1978)

## **DUAL GOALS**

- Encourage alternative energy development by providing qualified facility (QF) status to eligible cogeneration and small renewables with rights to sell to utilities.
- Maintain ratepayer neutrality

## PURPA REQUIREMENTS

- Utilities have mandatory obligation to purchase power from QFs
- Avoided cost based rates
- Just & reasonable, non-discrimination standard applies
- EAct 2005: Allows utilities to terminate mandatory purchase obligation if QFs have non-discriminatory access to competitive markets

## STATE & FEDERAL RESPONSIBILITIES

FEDERAL/FERC	STATES
<ul style="list-style-type: none"><li>• Rulemaking: Adopted rules to establish the framework for implementation of PURPA (18 CFR Part 292)</li><li>• Enforcement: Entertains petitions asserting PURPA violations by state commissions and/or non-jurisdictional utilities</li><li>• Grants/denies utility requests to terminate mandatory purchase obligations</li></ul>	<p>Implementation: Devise rules and policies to implement PURPA within parameters of PURPA and FERC Regulations</p> <p>States control interconnect (except where QFs sell to 3<sup>rd</sup> party other than host utility)</p> <p>Other Policies: Can resolve Qs about RECs, net metering and</p>

## **FERC RULES (18 CFR Part 292)**

- Define Avoided Cost
- Provide that QF may choose avoided cost “at the time of delivery” or at the time a “legally enforceable obligation” (LEO) is incurred
- Require a standard rate for facilities of 100 kw or less (and may establish standard rate for facilities > 100 kw)
- Require Interconnection of QFs on non-discriminatory basis
- Require companies to make avoided cost data publicly available (18 CFR 292.302)

## **FERC RULES: Definition of Avoided Cost**

“the incremental costs to an electric utility of electric energy or capacity or both which, but for the purchase from the qualifying facility or qualifying facilities, such utility would generate itself or purchase from another source.”

(18 CFR §292.101(b)(b))



## **FERC RULES: Factors That *May* Be Considered In Determining Avoided Cost:**

- Availability of capacity or energy from a qualifying facility during the system daily and seasonal peak periods
- Dispatchability and reliability
- The relationship of the availability of energy or capacity from the qualifying facility to the ability of the electric utility to avoid costs, including the deferral of capacity additions and the reduction of fossil fuel use; and
- The costs or savings resulting from variations in line losses from those that would have existed in the absence of purchases from a qualifying facility, if the purchasing electric utility generated an equivalent amount of energy itself or purchased an equivalent amount of electric energy or capacity.

(18 C.F.R. §292.304(d))

## FERC POLICIES: Other Requirements

- States permitted to set technology-specific avoided cost rates
- Avoided costs may reflect verifiable avoided environmental compliance costs
- Avoided costs do NOT include value of renewable energy credits (which are distinct from capacity and energy); absent contractual provision, states decide whether QFs or utilities own RECs.

Sources: *Southern California Edison v. FERC*, 133 FERC ¶ 61,059 (2010); *American Ref Fuel*, 105 FERC ¶ 61,004, (2003)

## **FERC POLICIES: Other Requirements**

### **Net Metering**

- When QF is involved in net metering, no sale deemed to take place when power is sent back and “netted” against final bill
- \*When power produced exceeds total bill, rates paid may not exceed avoided cost.

### **Full Requirements:**

- Full requirements customers must still purchase from QF; avoided cost is deemed to be avoided cost of supplier.

## Common Avoided Cost Methodologies

- **Proxy Unit Methodology:** Assumes that the utility is avoiding building a proxy generating unit itself by utilizing the QF's power. The fixed costs of this hypothetical proxy unit set the avoided capacity cost and the variable costs set the energy payment.
- **Peaker Unit Methodology** which assumes that a OF allows the utility to avoid paying for a marginal generating unit on its system, usually a combustion turbine. The capacity payment is based on the fixed costs of the utility's least cost peaker unit and the energy payments are forecast payments for a peaker unit over the lifetime of the contract.
- **Differential Revenue Requirement** Calculates the difference in cost for a utility with and without the QF contribution to generating capacity.
- **IRP Based Avoided Cost Methodology** Relies on state integrated resource planning to predict future needs and costs that will be avoided by QF generation; based on IRP, may then apply proxy, DRR or other methodologies.
- **Market Based Pricing:** QFs with access to competitive markets receive energy and capacity payments at market rates.
- **Competitive Bidding** Allows states to utilize open, bidding processes. The winning bids are regarded as equivalent to the utility's avoided cost.

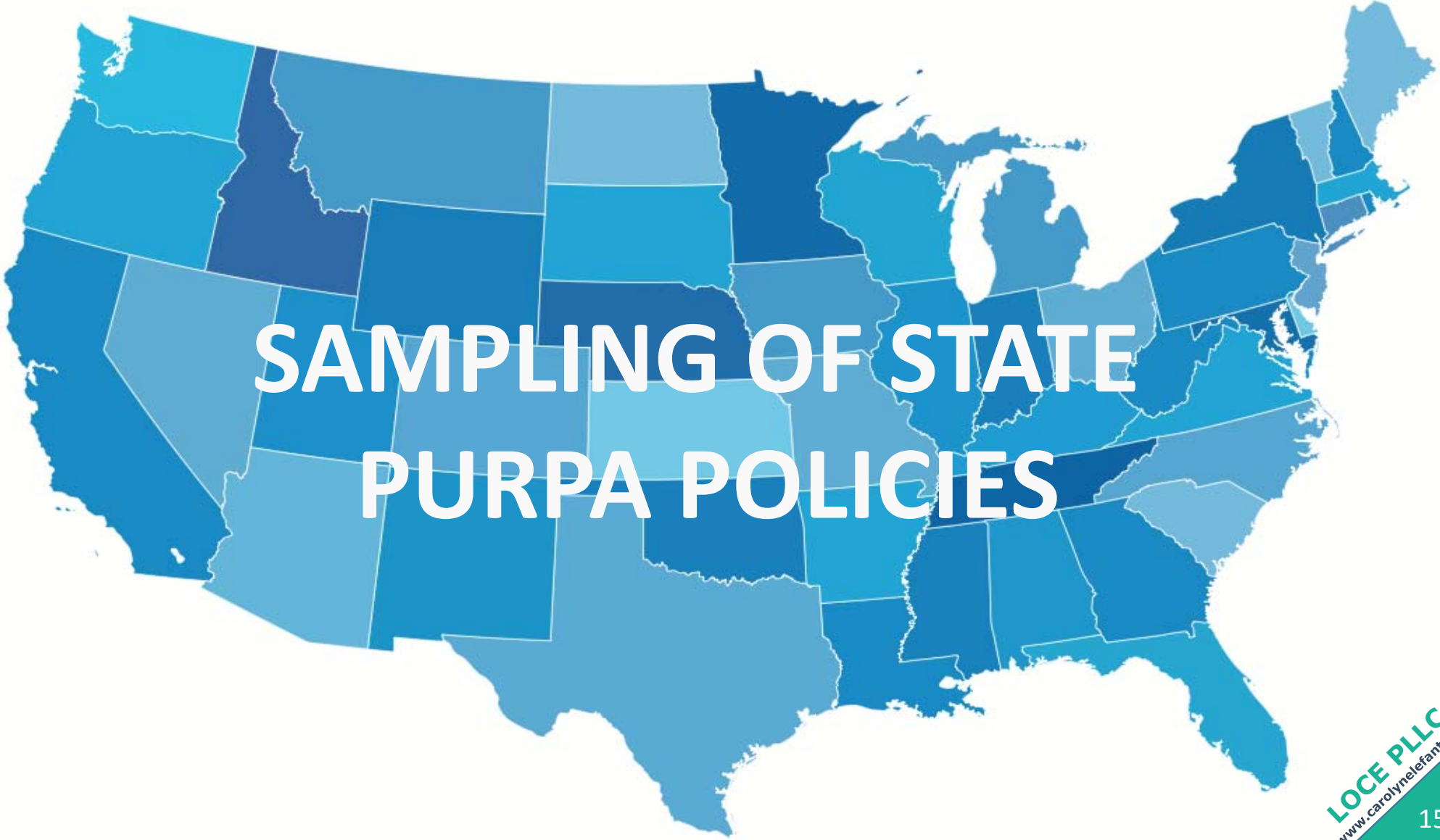
## Table Comparison

**Table 01: Challenges of Different Costing Methodologies**

<b>Method</b>	<b>Challenges</b>
Proxy Unit Methodology	May overstate costs Heavily depends on which proxy selected
Peaker Unit Methodology	Not always sufficient to finance QFs
Differential Revenue Requirement calculation	Not transparent; complex Short term – always assumes QF is marginal resource
Market Based Pricing	Not always high enough to incentivize QF development
Competitive Bidding	Complicated for QFs and rates not high enough to incentivize QF development

## Other Issues Impacting QFs

- Termination of mandatory purchase obligation – most have been terminated in organized markets for QFs > 20 MW, but FERC has rejected efforts to terminate for < 20 MW
- LEO (legally enforceable obligation) – States define LEO but must be consistent with PURPA. FERC holds that an LEO does not require formation of a contract (contrast Idaho, rejecting QF contracts that had not been executed *Murphy Flat*)
- Texas PUC says QFs must be capable of providing firm power to enter into LEO – rejected by FERC, but upheld by 5<sup>th</sup> Circuit – [Exelon Power v. Texas PUC 766 F.3d 380 (5<sup>th</sup> Cir. 2014)]



# SAMPLING OF STATE PURPA POLICIES

## Market Rates

- Most utilities in competitive organized markets have successfully terminated mandatory purchase obligation over 20 MW.
- Most others based avoided costs on market prices (Massachusetts, by statute)

Other examples:

- Louisiana PSC approved Entergy proposal to based avoided costs on sales into MISO (2014 La PUC LEXIS 2)
- California (bases short run avoided cost in part on CAISO nodal prices, administratively determined heat rate and time of use factors). (2013 Cal LEXIS 477)



## North Carolina - Multiple Approaches

- Bi-ennial proceedings to set avoided cost
- Each utility proposes avoided cost
  - Adopted DRR methodology
  - Market rates based on rates for capacity/energy sales to PJM
  - peaker approach
- Utilities required to offer long-term levelized rates for certain renewable QFs selling 5 MW or less of capacity and all QFs 3 MW or less of capacity.

Source: *Biennial Rate Determination*, 2014 NC PUC LEXIS 118 (2014).

## Montana - Elimination of Technology Specific QF Rate

- Proxy-based QF rates based on market combined cycle gas plant (previously used coal plant)
- Originally Montana PSC had approved utility's wind-only avoided cost option when planning showed utility planned to add wind. With no evidence of intent to add wind, PSC says no need for wind-only option.

Source: *Northwest Application for Approval of Avoided Cost*, 293 PUC 368 (2011).

## Utah

- Uses DRR methodology for QFs and renewables for capacity by figuring out contribution of ash to capacity needs and establishing payments.
- 
- Partial displacement DRR used for variable energy
- Utah rejects costs for carbon compliance or “hedging value” of long term QF contracts since these costs were not identified in utility IRP.

Source: 2013 Utah PUC LEXIS 110

## Idaho

- Continues to use surrogate avoided resource (combined cycle combustion turbine) for standard offer rates of 100 kw
- Uses IRP methodology with simple cycle combustion turbine as basis for computing value
- Capacity and energy charges computed separately with no obligation to purchase if capacity is 0.
- Seeking to reduce standard contract terms from 20 years to 5 years

Source: 2012 Ida. PUC LEXIS 217 (Ida. PUC 2012)

## Vermont

In Vermont, this federal mandate is implemented by Board Rule 4.100. One unique feature of Vermont's implementation of PURPA is that each Vermont utility's obligation to purchase electricity generated by qualifying facilities is fulfilled by an entity known as the "Purchasing Agent," which purchases power on behalf of all Vermont utilities. The power is then allocated to each utility on a pro rata basis by the Purchasing Agent. Under Rule 4.100, the avoided costs of the Vermont composite system are determined administratively, with the Department filing proposed rate schedules that are reviewed and ultimately approved by the Board. The most recent proceeding to set rates under Rule 4.100 concluded with the Board approving rates in February of 2015.

2015 rates start from market based capacity and energy (NE ISO methodology) but allow QFs to keep RECs and account for line loss savings

## Oregon

Recently updated standard Ks for QFs 10 MW or less

Utilities determine their own avoided costs – tied to needs in IRP – use various mechanisms

Disputes over integration cost of wind (different from interconnection costs – relate to contingency reserves and back up power)

## Idaho - Integration Charges

	Idaho Power Company	Avista Corporation	PacifiCorp
<b>Total Average Load (MW)</b>	1,680	1,096	9,431 (peak load for 2011)
<b>Total Generation Capacity (MW)</b>	3,276	1,791	10,597
<b>Variable Generation Capacity (MW)</b>	<b>Wind</b>	35	2,135
	<b>Solar</b>	0	9 <sup>i</sup>
	<b>Total</b>	499	2,144
<b>Percent of Variable Generation Exported</b>	Unknown, but assumed to equal 0% <sup>ii</sup>	Unknown, but assumed to equal 0% <sup>iii</sup>	Unknown, but assumed to be small
<b>Amount of Variable Integration Charge</b>	8% of the published avoided-cost rate for wind qualifying facilities (QFs) under PURPA (capped at \$6.50/MWh).	7% of the published avoided-cost rate for wind qualifying facilities under PURPA (capped at \$6.50/MWh).	\$6.50/MWh
<b>Charge Assessed on</b>	QF Wind Generators	QF Wind Generators	QF Wind Generators
<b>Status of Charge</b>	In effect since February 2008. Original eligibility cap of 10 MW was reduced to 100 kW, effective December 14, 2010.	In effect since February 2008. Original eligibility cap of 10 MW was reduced to 100 kW, effective December 14, 2010.	In effect since February 2008. Original eligibility cap of 10 MW was reduced to 100 kW, effective December 14, 2010.

Source: NREL Integration Report (2013), online at <http://www.nrel.gov/docs/fy13osti/57583.pdf>

## Upcoming Issues

- Efforts to account for hedging value of long term Ks in QF rates
- Environmental compliance cost avoidance may increase with more stringent EPA regs
- RPS compliance obligations on the rise - RECs more valuable
- Difficult interconnection procedures - efforts to persuade states to adopt FERC small gen interconnect rules for QFs
- Disputes over integration charges as renewables gain traction

• Will or should complexity of PURPA be addressed?



## Where To Find Me

- Phone: 202-297-6100
- Email: [carolyn@carolynelefant.com](mailto:carolyn@carolynelefant.com)
- [www.nextgenerationenergylaw.com](http://www.nextgenerationenergylaw.com)
- [www.carolynelefant.com](http://www.carolynelefant.com)