

# Power Sales Agreements

## What are they and why they aren't simple



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Making Renewable Energy Projects Happen  
Small Hydro Workshop  
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# Introduction

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## – PacifiCorp

- ▶ Six western states
- ▶ 10,000 MW generation system
- ▶ Renewables
  - Committed to increasing our renewable resource portfolio by 1,400 MWs by 2015
  - Will have acquired 400 MWs by year-end 2007 including wind, biomass and geothermal
  - Over 500 MWs of small generation projects delivering energy to our system primarily qualifying facilities
    - » Hydro
    - » Biomass
    - » Biogas

# Topics Covered

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- ▶ Types of power sales agreements
- ▶ Power sales agreement challenges
- ▶ Interconnection of your project with the utility's electrical system

# Types of Power Sales Agreements

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- Offset own load
- Net metering
- **Qualifying facility**
- Bilateral

# Offset Customer Load

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- Generally applicable to biomass or thermal projects associated with a host facility, i.e. sawmill, wastewater treatment plant
- No sales to utility as customer generation is less than load
- No interconnection agreement is necessary because generation is not delivered to the company's system
- Tariff and standard service agreements in each state
  - ▶ Contract combines retail supply to the supply the customer's load above the generator and stand-by service to supply all the load when the generator is not operating
  - ▶ Example: Oregon Schedule 47
- Available on PacifiCorp's website.

# Net Metering

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- A net metered customer pays the “net” of utility-provided energy (kWhs) minus customer-generated energy.
- Projects are generally photovoltaics
- If the customer’s generator puts more energy into the utility than it uses from the utility (meter spins backward), the excess energy is credited to the customer’s account.
- Tariffs and standard agreements in each state.
  - ▶ Oregon’s net metering rules are currently under review for residential and commercial/industrial
  - ▶ Primarily affecting size of project that qualifies
- Provide the list of acceptable generators, their size limit, (typically up to 25 kW), equipment and code requirements, and excess generation treatment.
- Interconnection is simple and straightforward
- Available on PacifiCorp's website – Oregon Schedule 135

# Qualifying Facilities

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- Public Utility Regulatory Policies Act (“PURPA”).
  - ▶ Set of rules established by FERC in 1978 to promote cogeneration and small power plant development including renewable resources.
  - ▶ Each state with jurisdiction over implementing PURPA in their state.
  - ▶ Recently modified by the Energy Act of 2005
- Qualifying Facility or QF is a generating facility that meets the PURPA definitions.
  - ▶ Small Power Production Facility is a generating facility whose primary energy source is renewable, i.e. hydro, wind, solar, biomass, waste, or geothermal resources and limited in size to 80 MW.
- Utility obligations under PURPA
  - ▶ Must purchase QF output
  - ▶ Must make sales to a QF
  - ▶ Must interconnect with the QF

# Qualifying Facility by State

	Utah	Oregon	Idaho	Washington	Wyoming	California
<b>MW Eligibility</b>	3 MW nameplate	10 MW nameplate	10 MW avg output	1 MW nameplate	10 MW nameplate	0.1 MW nameplate
<b>Maximum Contract Term</b>	20 years	15 years with 5 year extension at Index	20 years	5 years or specified in RFP	20 years	Minimum of 10 years
<b>Price Basis</b>	Company's avoided cost as approved by each state's public utility commission					
<b>Obligation to purchase</b>	Projects directly connected to utility or the QF can be an off-system project that wheels its output to the utility through another transmission provider.					
<b>Damages for non performance</b>	Project billed for replacement power when project does not deliver minimum output, meet its scheduled commercial operations date, or defaults on agreement.					
<b>Security Requirements</b>	Most states have security requirements set by each state's public utility commission					
<b>Insurance</b>	Most states have insurance requirements set by each state's public utility commission					
<b>Interconnection Costs</b>	QF responsible for all interconnection costs					



# Oregon Qualifying Facility – Schedule 37

- Term up to 20 years
- Fixed prices for 1<sup>st</sup> 15 years and indexed to gas for last 5 years
- Standard power sales agreement
- Fill in the blanks and go
  - ▶ Price option
  - ▶ Security option
  - ▶ Project information
  - ▶ Energy production
- Separate interconnection agreement – start early

**Fixed Prices ¢/kWh**

Deliveries During Calendar Year	On-Peak Energy Price	Off-Peak Energy Price
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(a) (b)

2005	7.13	5.98
2006	6.36	5.27
2007	5.96	4.87
2008	5.58	4.63
2009	5.26	4.33
2010	6.21	4.30
2011	6.54	4.57
2012	7.13	5.11
2013	7.43	5.35
2014	7.52	5.37
2015	7.66	5.45
2016	7.86	5.59
2017	8.07	5.73
2018	8.27	5.86
2019	8.50	6.02
2020	8.72	6.17
2021	8.97	6.33
2022	9.23	6.49
2023	9.49	6.66
2024	9.75	6.82
2025	10.03	7.00
2026	10.31	7.18
2027	10.60	7.36
2028	10.90	7.55

# Bilateral Agreements

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- Generation project selling to the power market – “merchant plant”
- Negotiated wholesale power agreements based on utility industry and company standards
- No obligation by either party to enter negotiations
- Generally in response to a request for proposal
- High number of standardized terms and conditions to allow multiple transactions between utilities and/or power marketers
- Separate interconnection agreement necessary – start early

# Contract Challenges

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- Interconnection and power sales agreements are separate agreements
  - ▶ Managed by different parts of the utility
  - ▶ Not allowed to discuss the project with each other per FERC
  - ▶ Developer is the common link and must manage both processes
- Project schedules versus contract milestones
  - ▶ Interconnection agreement usually takes longer than power sales agreement
    - Start interconnection process early
    - Take into consideration interconnection equipment delivery schedule when finalizing milestones in power sales agreement.
- Project security
  - ▶ Protection for the utility and ratepayers in the event the project defaults on agreement
- Renewable Energy Credits or “Green Tags”
  - ▶ Ownership
  - ▶ Value and use

# Resource Type

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- Wind / Water
  - Turbine and equipment availability affects contract milestone dates
  - Wind profile and seasonal hydro flows affects ability to meet performance criteria
    - Wind – Using guarantee by project on turbine availability versus energy delivery
  - Forecast and schedule of generation deliveries
  - Rural location can make interconnection more difficult and costly
  - Integration of the resource to the company's electrical system
  
- Biomass / biogas
  - Operates on a must run or like base-load generation (i.e. coal plant)
  - Easier to forecast and schedule deliveries
  - Biomass fuel plan – firmness of fuel supply tied to lumber market
  - Generally the host site has adequate transmission nearby for interconnection
  
- Solar
  - Scale of technology currently fits net metering
  - Larger scale projects face the same rural disadvantage as wind

# Why Can't I Just Hang It on the Line?



# Interconnection

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- Interconnection requests are governed by different federal or state regulations depending on the size of the generator, the voltage of the distribution or transmission line the generator is requesting to connect to.
  
- Rules that govern interconnection:
  - ▶ FERC Order 888 (1996) opened transmission system for wholesale competition – anyone with the appropriate licenses can access the electrical grid if selling wholesale power
  - ▶ PURPA (1978) require utilities to connect and buy power from Qualified Facilities
  - ▶ Utility commissions are reviewing interconnection standards for QFs and small generation projects.
    - Oregon Commission conducting informal process on uniform interconnection technical standards, procedures and agreements

# Objectives of the FERC Rule

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- Safe and reliable hook-ups for new generating facilities.
- Eliminate differing standards and process.
- Provides for non-discrimination in the interconnection process.
- Rules
  - ▶ Details procedures for connecting small power plants to the distribution or transmission system.
  - ▶ Includes a standard agreement between the generator and the utility.
  - ▶ Sets policy for determining who pays for necessary infrastructure updates.

# Standard Interconnection Procedures

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- Defines application and queuing
- Defines the scoping, timing, deposit amounts and deadlines for interconnection studies.
- Establishes levels of technical studies that determine impact to other customers
- Interconnection Agreements are separate from the power sales agreement but must be aligned on key components
  - ▶ Size of project
  - ▶ Term of the agreements



# Interconnection Guidelines

Size of Resource	Feasibility Study	System Impact Study	Facility Study
<p>Greater than 20 MW (LGIA)</p> <p><i>Note: The days shown are representative of PacifiCorp Transmission completing that individual study and are not cumulative. Schedule does not include any time for delays due to lack of information, scheduling conflicts, etc.</i></p>	<ul style="list-style-type: none"> <li>•\$10K deposit</li> <li>•45 calendar days to complete</li> <li>•Short Circuit (Engineering)</li> <li>•Load Flow, cost, and schedule estimate (Planning and Project Services)</li> <li>•Cost estimate is very high level</li> </ul>	<ul style="list-style-type: none"> <li>•\$50K deposit</li> <li>•90 calendar days to complete</li> <li>•Study includes Short Circuit Load Flow, Transient Stability, cost, and schedule estimate</li> </ul>	<ul style="list-style-type: none"> <li>•\$100K</li> <li>•90 calendar days to complete</li> <li>•Study includes:               <ol style="list-style-type: none"> <li>1. Design of TP’s Interconnection Facilities and Network Upgrades</li> <li>2. Cost estimate - Customer selects either a 10 or 20% cost estimate accuracy</li> <li>3. Schedule to complete construction</li> </ol> </li> </ul>
<p>20 MW or less (SGIA)</p> <p><i>Note: The days shown are representative of PacifiCorp Transmission completing that individual study and are not cumulative. Schedule does not include any time for delays due to lack of information, scheduling conflicts, etc.</i></p>	<ul style="list-style-type: none"> <li>•Lower deposit requirements than LGIA</li> <li>•Thirty (30) business days to complete</li> <li>•If no system impacts are found, the feasibility study is binding</li> <li>•If a system impact found during feasibility study, then the schedule default to two (2) thirty-day studies</li> </ul>	<ul style="list-style-type: none"> <li>•If Feasibility Study identifies system impacts, an impact study is allowed</li> <li>•Thirty (30) business days to complete</li> </ul>	<ul style="list-style-type: none"> <li>•Forty-five (45) days to complete if upgrades required, 30 days if no upgrades</li> </ul>
<p>2 MW or less</p> <ul style="list-style-type: none"> <li>•Generally, distribution voltage interconnection projects</li> <li>•Screen test within fifteen (15) business days of an application.               <ul style="list-style-type: none"> <li>○Project passes screen must be issued an IA within five (5) days.</li> </ul> </li> <li>•Fails screen test, reverts to standard procedure for SGIA</li> </ul>			

## Where Do I Start?

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- Starting point – [www.pacificorp.com](http://www.pacificorp.com)
  - ▶ Select the “About Us” pull-down menu
  - ▶ Go to “Power Generation” then “Customer Generation”
  - ▶ General information on products, procedures and links to other sites such as the state regulatory agencies, tariffs, etc.
  
- Power Sales Agreement
  - Manager, Origination
  - 825 NE Multnomah Street, Suite 600
  - Portland, OR 97232
  - (503) 813-5218 (Bruce Griswold – [bruce.griswold@pacificorp.com](mailto:bruce.griswold@pacificorp.com))
  - (503) 813-5960 (John Younie – [john.younie@pacificorp.com](mailto:john.younie@pacificorp.com))
  
- Interconnection
  - To begin the physical interconnection process to PacifiCorp transmission or distribution lines, please contact the Account Manager Transmission at 503-813-6102.