



Getting to Market through your local Electric Cooperative

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September 23, 2011



Why do Rural Electric Cooperatives exist?

“Federal support was needed to electrify rural America because most of the established utilities served high density areas and did not extend lines to farmers and other rural residents because such investment were not considered to be feasible.”

A Brief History of the Rural Electric and Telephone Programs, USDA 1982

<http://www.rurdev.usda.gov/rd/70th/rea-history.pdf>

How are Co-ops owned and governed?

- Cooperative utilities are owned by the members they serve

Ratepayer = Co-op Owner

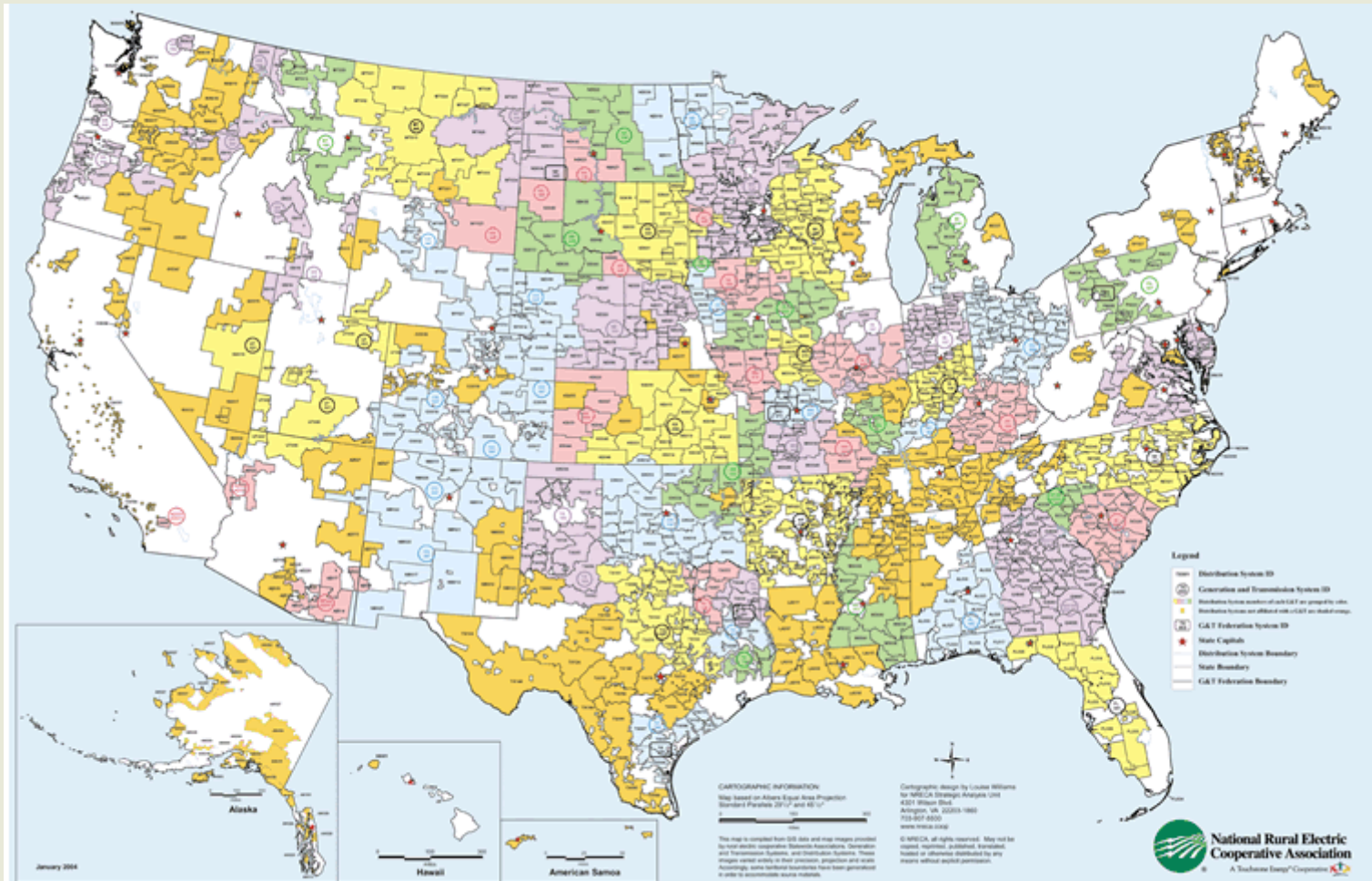
- Governed by Board of Directors elected by and from the membership
- No conflict between ratepayers and owners = no PUC rate regulation

Cooperative Formation

- Co-op service areas:
 - most sparsely populated
 - most rugged terrain
 - huge geographic areas
 - very low density in kWh and customers
 - and therefore were and are the most expensive to serve
- In the 1930's and '40's, farmers and ranchers formed electric co-operatives to provide themselves electric service
- Rural Electric Administration (REA*) lent money to these cooperatives to spur electrification of the rural parts of America

*REA is now Rural Utility Service (RUS). Not all Electric cooperatives are still RUS borrowers.

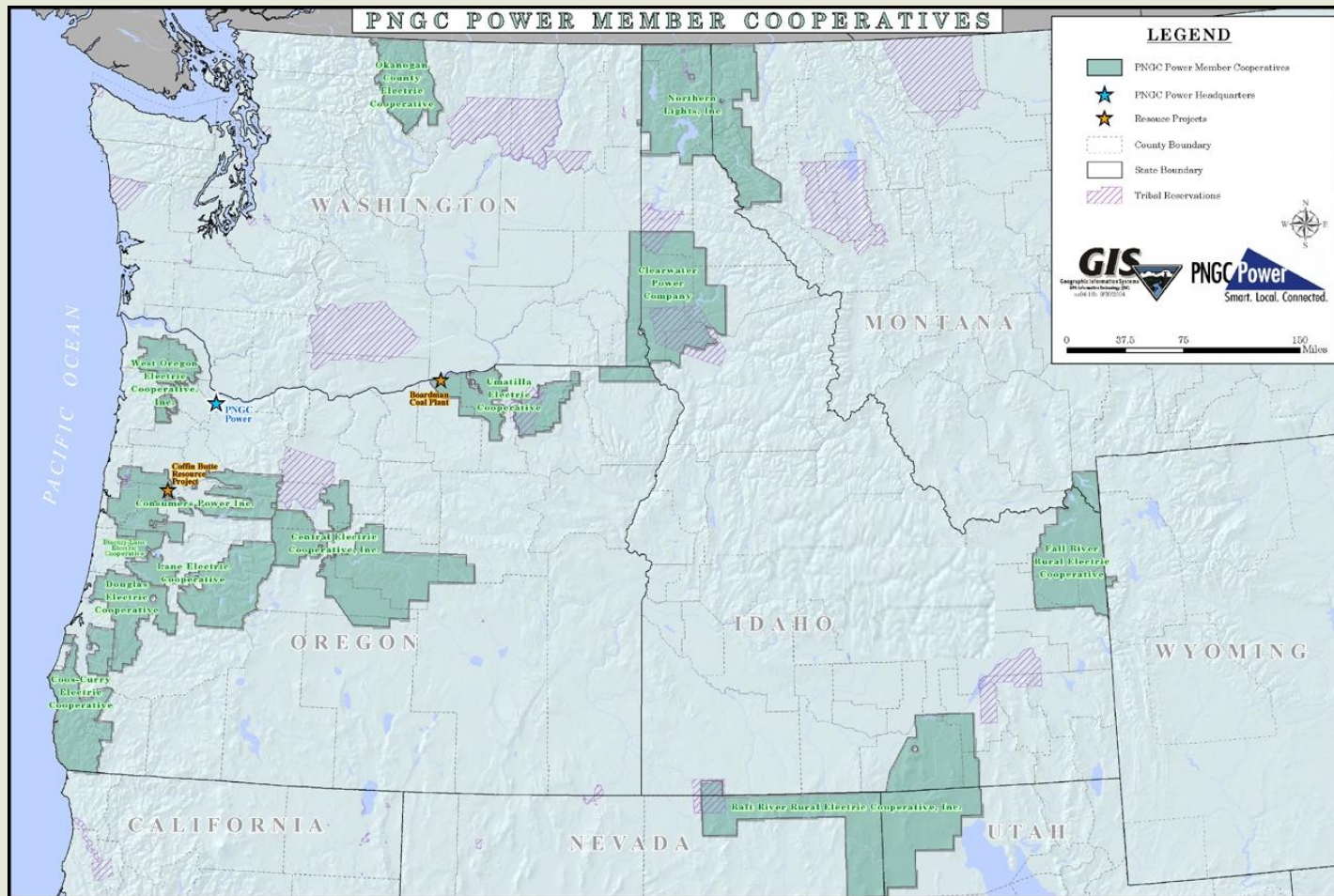
Cooperatives in America



What is PNGC Power?

- Generation and Transmission (G&T) Cooperative owned by 14 rural electric co-ops in 7 states
- PNGC provides wholesale power to its co-op members and arranges transmission of that power to members' load
- PNGC staff acts as the co-op's wholesale transmission and generation staff including help with interconnection and wheeling contracts

PNGC Member Cooperatives



Lincoln Electric Coop in Eureka, MT not shown

Small Hydro generation is a Delivered Product

- If you are
 1. selling the output of your project to an Investor-Owned Utility (IOU)
 2. under a PURPA contract and
 3. the project is not in the IOU's service territory
- You need to **DELIVER*** your project output to the IOU

*PURPA contracts require demonstration of firm delivery contract and provision of ancillary services for the length of PURPA sale.

Products must be Delivered

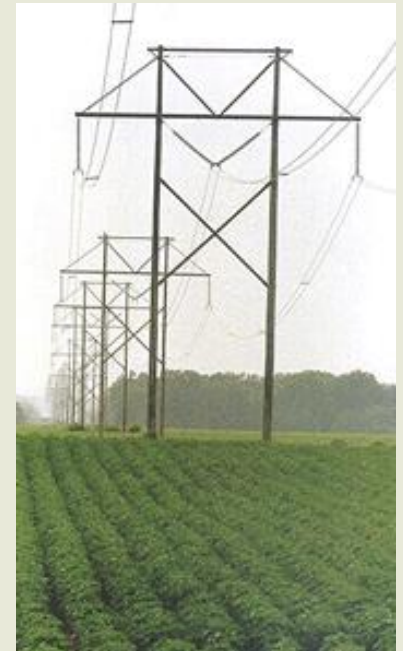
- How are other products delivered?



Interconnection and Transmission is your delivery mechanism

- Interconnection is the on-ramp
- Transmission is the freeway
- You need both to get your product to market
- In the utility business,

All roads are toll-roads!



How many tolls do you need to pay to deliver your product?

- Like real-estate,
 - its location, Location, LOCATION
- If you can connect directly to your purchasing entity, Congratulations!
- Otherwise, you need to contract with and pay
 1. your local utility
and possibly
 2. a major transmission provider like BPA

Put on your development checklist
*at the top**

Delivery availability, costs, and timelines

- Is there available transmission capacity (ATC)?
- Check costs, rates, terms, conditions
- Check timelines – can be lengthy if new construction is needed

*Financing hard to come by without a firm delivery path.

Make sure your delivery mechanism isn't overloaded!



Interconnection

- Need to contract with local utility if connecting to its lines
- Within the BPA Balancing Authority; interconnection request required for all generation over **200 kW**.
- http://transmission.bpa.gov/business/generation_interconnection/
- Studies, interconnection equipment, other upgrades are at developer's expense

Local Utility Interconnection

- Processes are not uniform among cooperatives or other consumer-owned utilities
- Check utility's website or with their engineering staff
- Interconnection typically involves
 - Study agreements and deposits
 - System impact
 - Facilities study
 - Interconnection and Wheeling Agreement
 - Less formal than BPA Interconnection process but tightly coordinated with it

Local Wheeling Rates

- **Wheeling** is the transmission of power from one point to another.
 - From the generation site to either a major transmission provider or the ultimate purchaser
 - May involve distribution and transmission charges
 - Don't forget losses!
- Many co-ops don't have posted rates until they are asked to develop one
- Rates are usually charged on a **nameplate** capacity reservation basis
 - you pay for capacity that is **reserved** for your project (KW), not energy amount (not kWh)

Wheeling Rates

- What goes into an embedded cost wheeling rate:
Expenses, amortization of capital, and required margins or debt service coverage of
 - Transmission lines
 - Transmission substations and related equipmentAnd if used
 - Distribution lines
 - Distribution substations and related equipmentPlus
 - Pro-rata share of O&M, A&G, taxes
- Divided by total system capacity use (kW)
- Wheeling Rates are usually expressed in \$/kW/month
- Note: Low-density nature of cooperatives means the wheeling rates can be high.

Don't forget Ancillary Services

- Spinning and Supplemental Reserves
 - Scheduling, System Control and Dispatch
 - Reactive Supply and Voltage Control from Generation Sources
 - Regulation and Frequency Response
 - Generation Imbalance
-
- Provided by Host Balancing Authority, not local cooperative

Other Considerations

- Communications Equipment, if required
- Scheduling and Tagging, if required
- If selling to a BPA Load Following Customer, many notice deadlines, Resource Shaping Charges, other transmission considerations

Questions

