Public Service Commission of Utah Workshop 12/4/2007

Generation Interconnection
Utility perspective
Rocky Mountain Power
Les Bahls, director transmission service

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Distribution system generator interconnection Utility concern and duties

Engineering and operating issues

Cost and economic issues

Customer service issues

Sample process chart

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The utility's engineering and operating concerns about generator interconnection.

▸ Safety of public, neighbors on the circuit, utility employees, generator and customer employees.
  ▸▸ We do this by applying codes and good utility practices. The study considers the original condition of the interconnection, the generator must have duty to maintain their plant in condition to avoid safety risk.

▸ reliability other customers on shared lines
  ▸▸ We do this by study of the generator technical data and apply protection and control tools to protect the reliability of other customers when necessary to trip the generator.

▸ power quality of other customers on shared lines
  ▸▸ An example- customers are seldom happy when their lights flicker every time the neighbors generator starts up.

▸ grid stability and our NERC and WECC duties

▸ affected systems, other utilities can be affected beyond RMP.
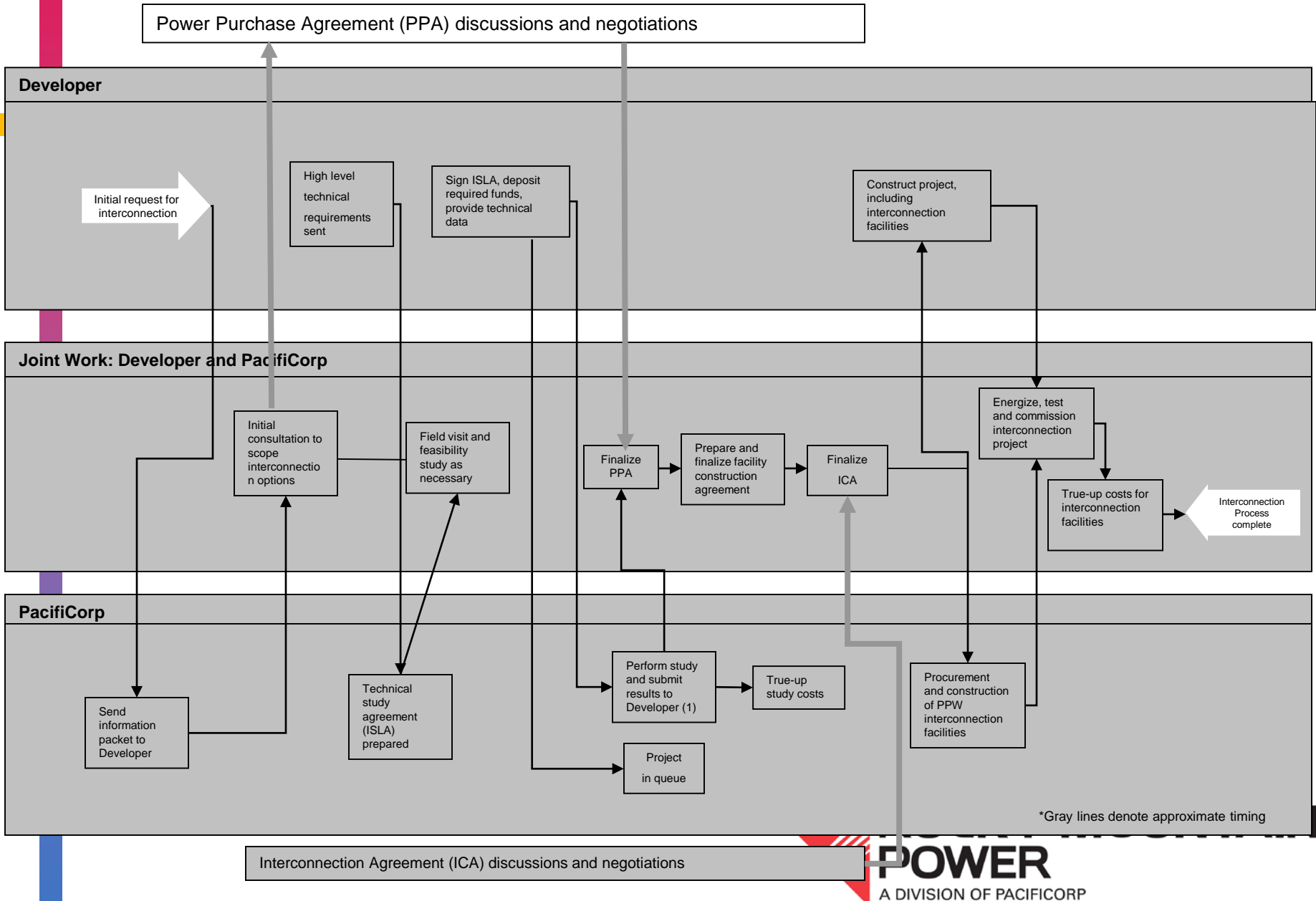
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The utility's cost and economic concerns about generator interconnections.

- PURPA requirement against cost shifting - Rate Payer Neutrality
  - Thus the study, construction, inspection, maintenance and administration costs should be borne by the customer generator
- Power purchase is from our merchant, must be sought separately.
  - Interconnection and power purchase agreement (PPA) must be sought separately, we recommend in parallel

- Generator's incentive to operate safely, reliability
  - On going maintenance, responsibility of the generator and utility side facilities.

- Utility's costs increased by inefficient staffing driven by surge in demand for studies
  - We rely on protection and control, metering, communication, planning engineers with one specialist for generator interconnects, a surge ion demand can overwhelm this resource.
- Customer generator's rights to existing capacity based on queue position and obligation if no capacity available.

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The utility's customer service concerns about generator interconnection

▶ Getting the applicant in the queue
  ▶▶ Triggered by application, deposit for study and full technical data
▶ Remaining flexible in approach yet providing timely responses.
  ▶▶ Customer has economic driver to get connected ASAP, balance with safety, reliability duty of utility.
▶ Explaining cost estimates.
  ▶▶ Utility grade materials as well as labor and overheads, these are unknown costs when the customer begins planning.
▶ Applying six sets of rules in six states

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Overview: Standard Distribution Interconnection Process

Power Purchase Agreement (PPA) discussions and negotiations

Developer

Initial request for interconnection

High level technical requirements sent

Sign ISLA, deposit required funds, provide technical data

Construct project, including interconnection facilities

Joint Work: Developer and PacifiCorp

Initial consultation to scope interconnection options

Field visit and feasibility study as necessary

Finalize PPA

Prepare and finalize facility construction agreement

Finalize ICA

Energize, test and commission interconnection project

True-up costs for interconnection facilities

Interconnection Process complete

PacifiCorp

Send information packet to Developer

Technical study agreement (ISLA) prepared

Perform study and submit results to Developer (1)

True-up study costs

Project in queue

Procurement and construction of PPW interconnection facilities

*Gray lines denote approximate timing

Interconnection Agreement (ICA) discussions and negotiations

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1) See the interconnection Study Process map for details related to the study process

Interconnection process is complete

▶ Interconnection agreement is signed

▶ Construction agreement is satisfied, commissioning and inspection are done.

▶ Power purchase agreement is signed and approved.