

Alaska Railbelt Electric Grid Authority (REGA) Study

Revised Discussion Paper - Paths and Scenarios

Organizational Paths to be Evaluated

Path 1. Status Quo

This Path assumes that the six Railbelt utilities continue to conduct business essentially in the same manner as now (i.e., six separate utilities with limited coordination and bilateral contracts between them), and it does not include the potential impact of the proposed ML&P/Chugach merger. This is, in essence, the “Base Case” and the other Paths will be compared to this Path for each of the scenarios considered.

Path 2. Form an Entity That Would be Responsible for Independent Operation of the Grid

Under this Path, a new entity would be formed to independently operate the Railbelt transmission grid. Currently, the Railbelt utilities have three control centers (GVEA, Chugach and ML&P). The operations of these centers are coordinated (but generation is not economically dispatched on a regional basis) through the Intertie Operating Committee. This new entity would not perform regional economic dispatch; therefore, this Path could be viewed as “Path 1 Heavy” or “Path 3 Lite”. This Path was added because it most closely captures the thinking of former State Rep. Rokeberg who was the author of the enabling legislation for the REGA Study. This entity could be a JAA, G&T cooperative, or State agency/corporation.

Path 3. Form an Entity That Would be Responsible for Independent Operation of the Grid and Regional Economic Dispatch

This Path would expand upon this coordination through the formation of an organization (e.g., a JAA, G&T or State agency/corporation) that would be responsible for the joint economic dispatching of all generation facilities in the Railbelt.

This Path will require some additional investment in transmission capacity and/or SCADA/telecommunications capabilities. This Path would also require the development of operating and cost sharing agreements to guide how economic dispatching would occur and how the related costs and benefits would be allocated among the six Railbelt utilities.

Path 4. Form an Entity That Would be Responsible for Independent Operation of the Grid, Regional Economic Dispatch, Regional Resource Planning and Joint Project Development

This Path is similar to Path 3 except the scope of responsibilities of the new regional entity would be expanded to include regional integrated resource planning and the joint project development of generation and transmission assets. This would involve the potential formation of a JAA, G&T cooperative or State agency/corporation.

Evaluation Scenarios (for each Organizational Path above)

Scenario 1. Large Hydro/Renewables/DSM/Energy Efficiency Scenario

This Scenario assumes that the majority of future regional generation resources that are added to the region include one or more large hydroelectric plants (Greater than 200 MW), other renewable resources, and DSM and energy efficiency programs. With regards to other renewables resources, we included wind power but not other renewable resources.

Scenario 2. Natural Gas Scenario

In this Scenario, we assumed that all of the future generation resources will be natural gas-fired facilities, continuing the region's dependence upon natural gas.

Scenario 3. Coal Scenario

The central resource option in this Scenario is the addition of coal plants to meet the future needs of the region.

Scenario 4. Major Growth in Load Due to Economic Development Activities Scenario

In this Scenario, we assumed that large industrial load was added to the region as a result of economic development activities. A variety of resources are used to meet this load and other regional demands.

Evaluation Criteria

We propose the following criteria for the evaluation of alternative REGA Paths under the selected Scenarios:

- **Economic Impacts**
 - Generation and transmission costs (both initial and annual)
 - Organizational costs (both start-up and annual)
 - Utility-specific impacts
- **Reliability Impacts**
- **Ease of Implementation** - considering legal, regulatory, market, governance, and other issues
- **Impact on Flexibility** – to migrate to a new or different model, if appropriate, over time as market, supply and load conditions change
- **Impact on Emissions**
- **Ability to Manage and Spread Risks**