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Southeast Alaska Integrated Resource Plan (SEIRP)

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Agenda

- Integrated Resource Planning
- Project Objectives and Scope
- Project Team Overview
- Project Approach and Schedule
- Hydropower in SE Alaska
- Questions and Answers

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Integrated Resource Planning

- Plan that economically schedules what, when, and where to build, based on available energy supplies
- Long-term time horizon
- Competes generation, transmission, fuel supply and DSM/energy efficiency options
- Includes renewable energy projects (including Hydro)
- Arrives at a plan to build future infrastructure for minimum long-run cost to ratepayers
- Considers risks
- Consideration of financing options

Integrated Resource Planning

Objective Function:

2012 Cumulative Present Value Costs

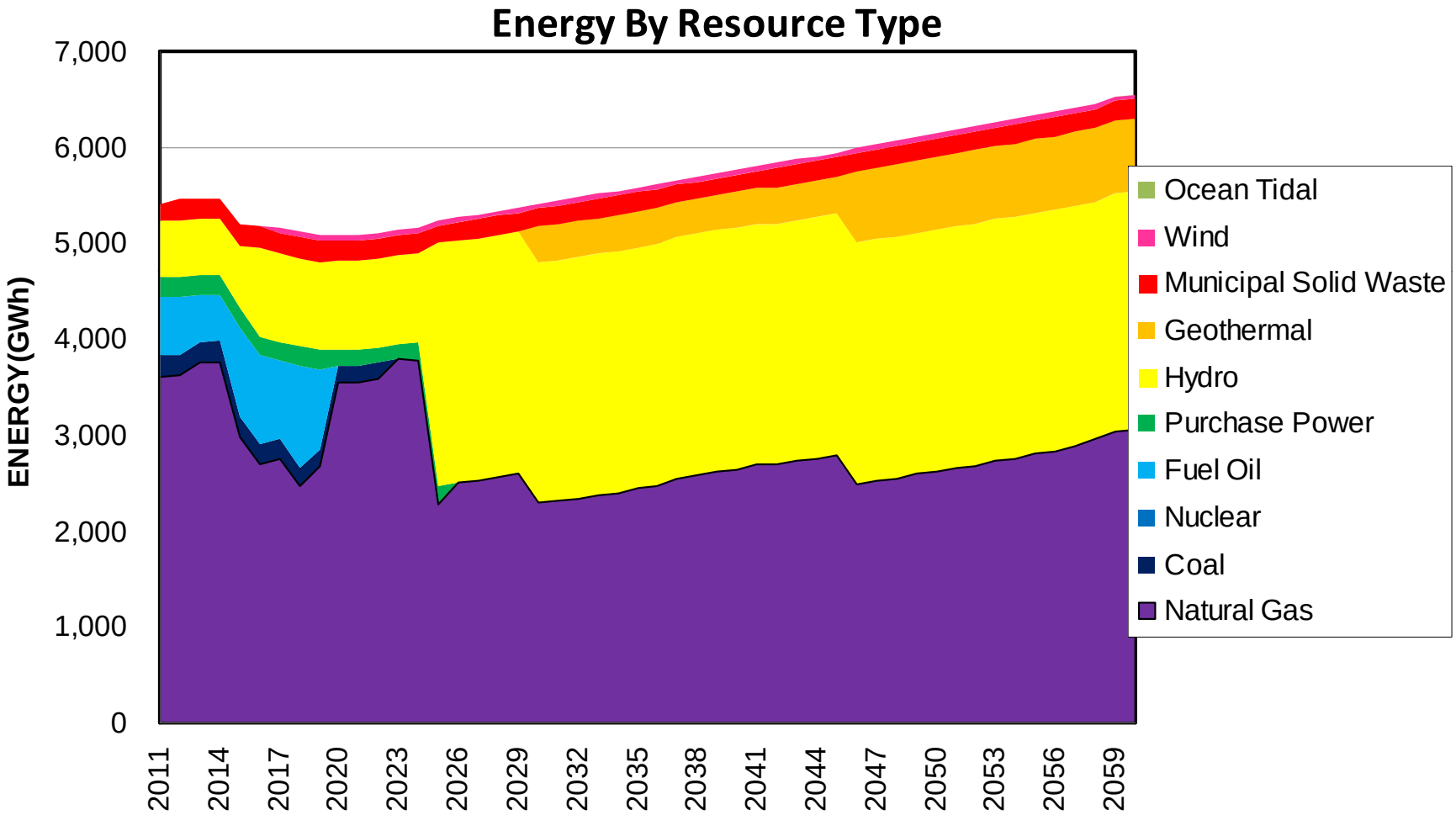
With consideration of:

- Regional issues and differences
- Energy security
- Risks

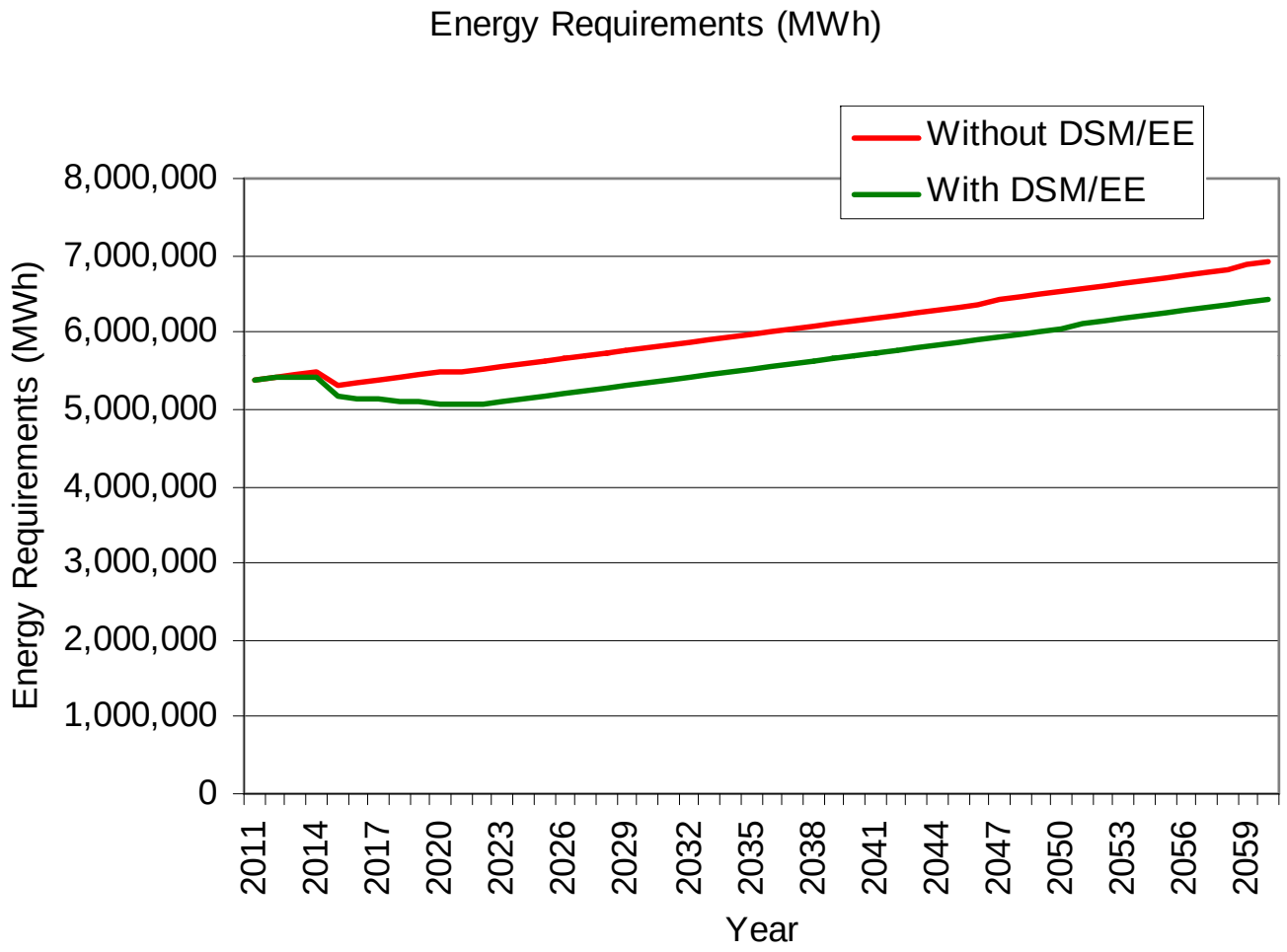
Integrated Resource Planning - Limitations

- Does not set State energy policy
- Directional
- Identified/generic/actual projects
- Agnostic to owner/developer of projects

Integrated Resource Planning – Example Results



Integrated Resource Planning – Example Results

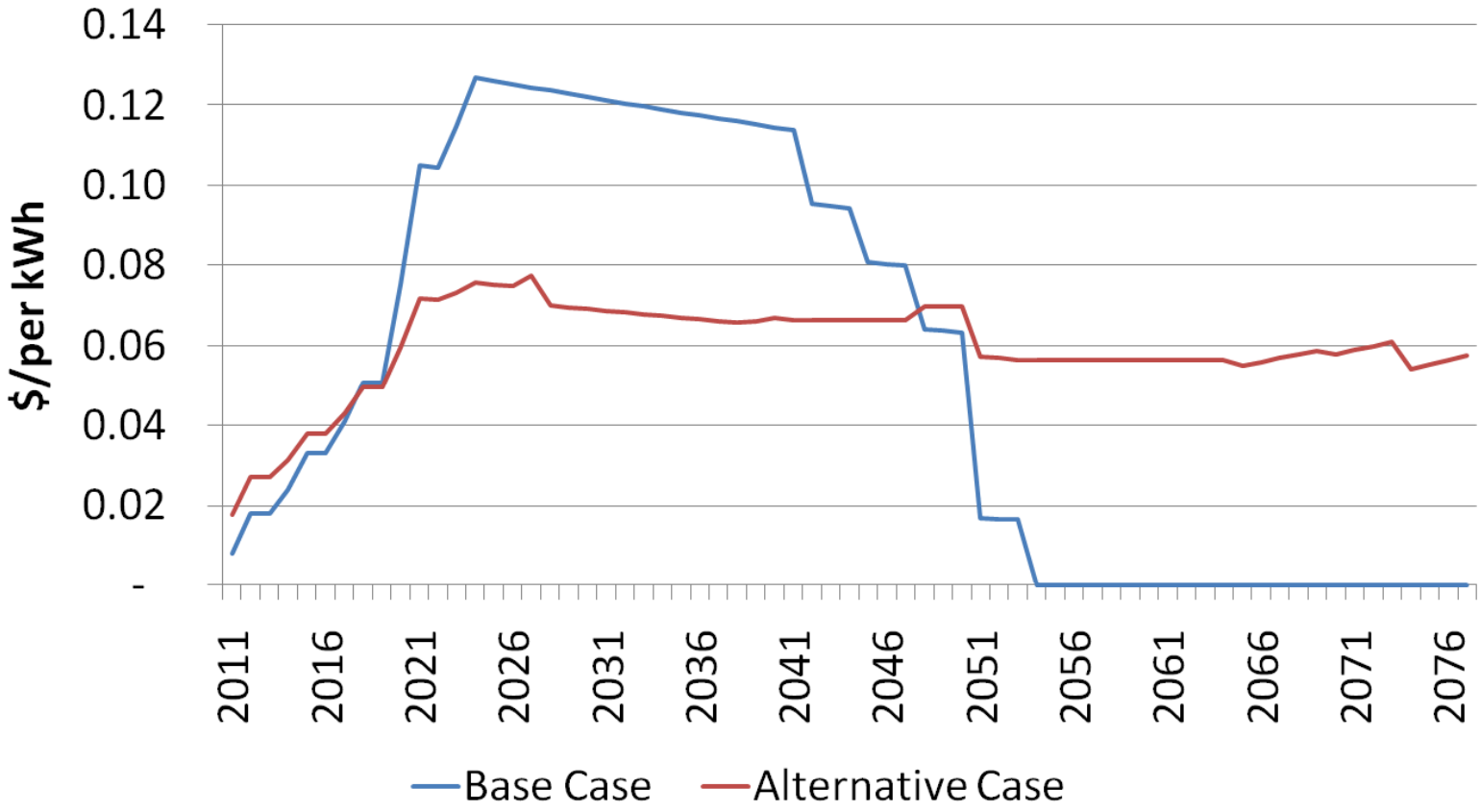


Integrated Resource Planning – Example Issues to be Addressed

- DSM/Energy Efficiency
  - Potential resource - need to gather baseline information
  - Funding alternatives – State, system benefit charge, participants, etc.
  - Delivery mechanisms – AHFC, AEA, regional entity, individual utilities

Integrated Resource Planning – Example Issues to be Addressed

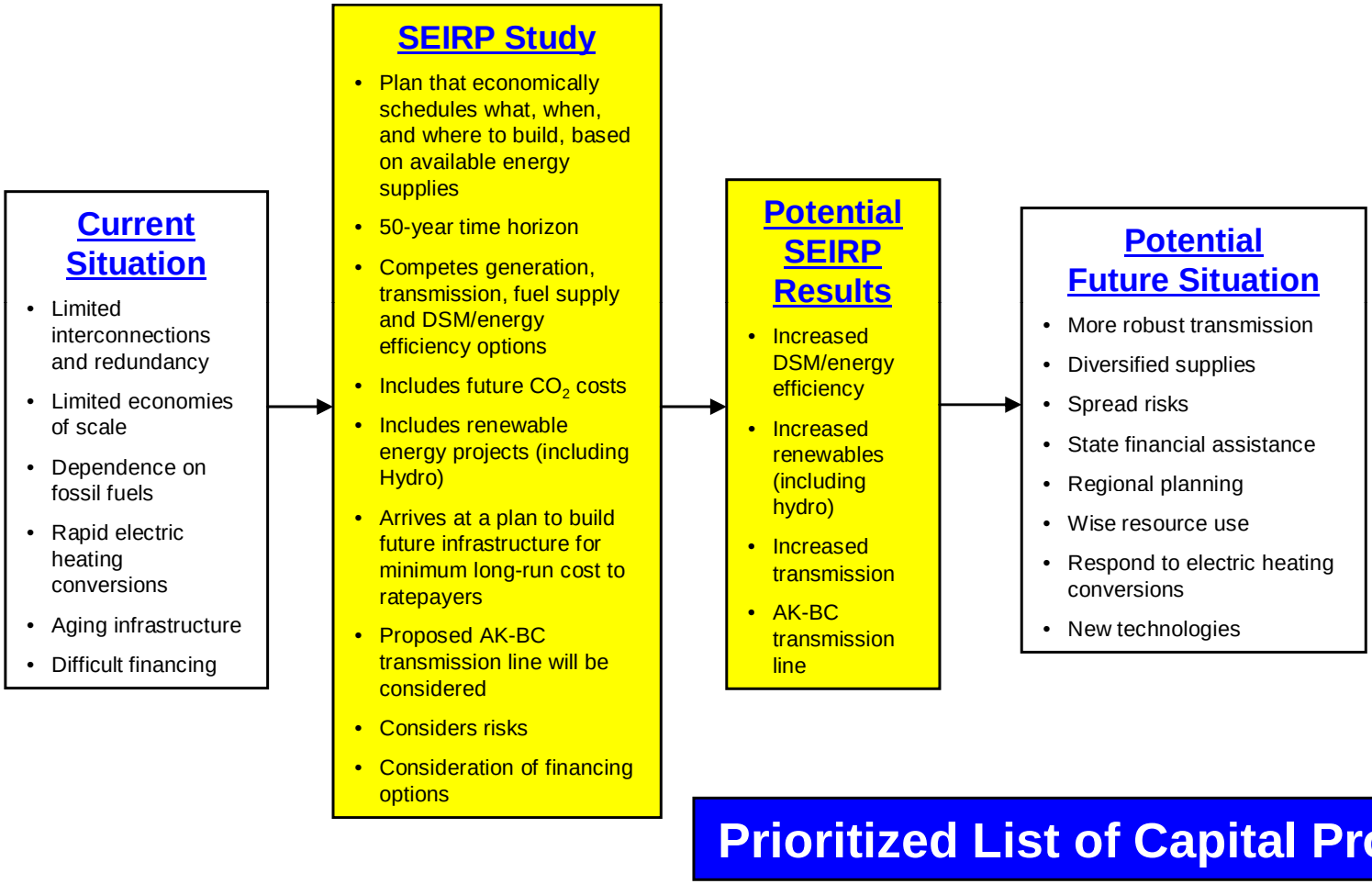
Comparison of Capital Rates for Base Case Scenario and Alternative* Scenario



Integrated Resource Planning – Example Issues to be Addressed

- Strategies to Lower Capital Cost of SEIRP to Ratepayers
  - Ratepayer benefits charge
  - State financial assistance
    - Repayment flexibility
    - Credit support/risk mitigation
    - Potential interest cost benefit

Project Objectives and Scope



Prioritized List of Capital Projects

Energy challenges are significant; SEIRP will provide information required to make regional decisions.

Project Objectives and Scope

- 50-year horizon
- Assessment of regional loads
- Projections of fuel and electricity generation costs
- Analysis of potential generation resources
- Diversify energy supplies
- Comprehensive list of current and future generation, transmission and electric power infrastructure projects
- Long-term plan for capital project additions with emphasis on first three years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Project Team Overview

- **Alaska Energy Authority** – Sponsoring Agency
- **Black & Veatch** – Primary Contractor
- **HDR, Inc.** – Subcontractor
- **Southeast Conference**
- **Advisory Working Group**
- **Regional Utilities**
- **Regional Communities**

Extensive public participation is key element of project.

Project Approach

- **Task 1** – Understand the SE Energy Model: Past, Present and Future
- **Task 2** – Assess Existing and Future Energy Technologies
- **Task 3** – Develop Energy Conservation Program
- **Task 4** – Financing the SE Energy Future
- **Task 5** – Technical Conference and Preliminary Action Plan
- **Task 6** – Develop Region-wide Transmission Plan

Project Approach (continued)

- **Task 7** – Develop Preferred Resource Lists for Existing Interconnected Electrical Grids Excluding SEAPA
- **Task 8** – Develop IRP for SEAPA
- **Task 9** – Planning for Insular Communities
- **Task 10** – Provide Preliminary Capital Budgets for Region-wide IRP
- **Task 11** – Assemble Task Groups 1, 2, and 3 Components Into a Regional Plan
- **Task 12** – Present the Plan
- **Task 13** – Complete the Plan

Hydropower in SE Alaska

- **Existing Projects**
  - 26 projects
    - 13 run-of-river, <= 5 MW
    - 13 storage, 1-80 MW
  - 211 MW installed capacity
  - 950,000 MWh average annual generation

Hydropower in SE Alaska

- **Proposed Projects**
  - 20 projects
    - 5 run-of-river, <= 1 MW
    - 15 storage, 5-80 MW
  - 318 MW installed capacity
  - 1,200,000 MWh average annual generation

Hydropower in SE Alaska

- **Proposed Projects – General Characteristics**
  - **Most..**
    - **in early stages of development**
    - **require significant transmission lines**
    - **proposed as IPPs**
    - **lack established market for energy (existing diesel generation, export)**

Notable Exceptions:
Blue Lake Expansion
Lake Whitman
Reynolds Creek
Mahoney Lake

Notable Exceptions:
Small run-of-river projects in Angoon, Hoonah, Tenakee Springs

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Together

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