Road Belt Intertie (RBIT) Concept

John Duhamel

- Copper Valley Electric Association - CEO
- Alaska Power Association (APA) – Director
- APA Hydropower Chairman

I am here in support of HJR10

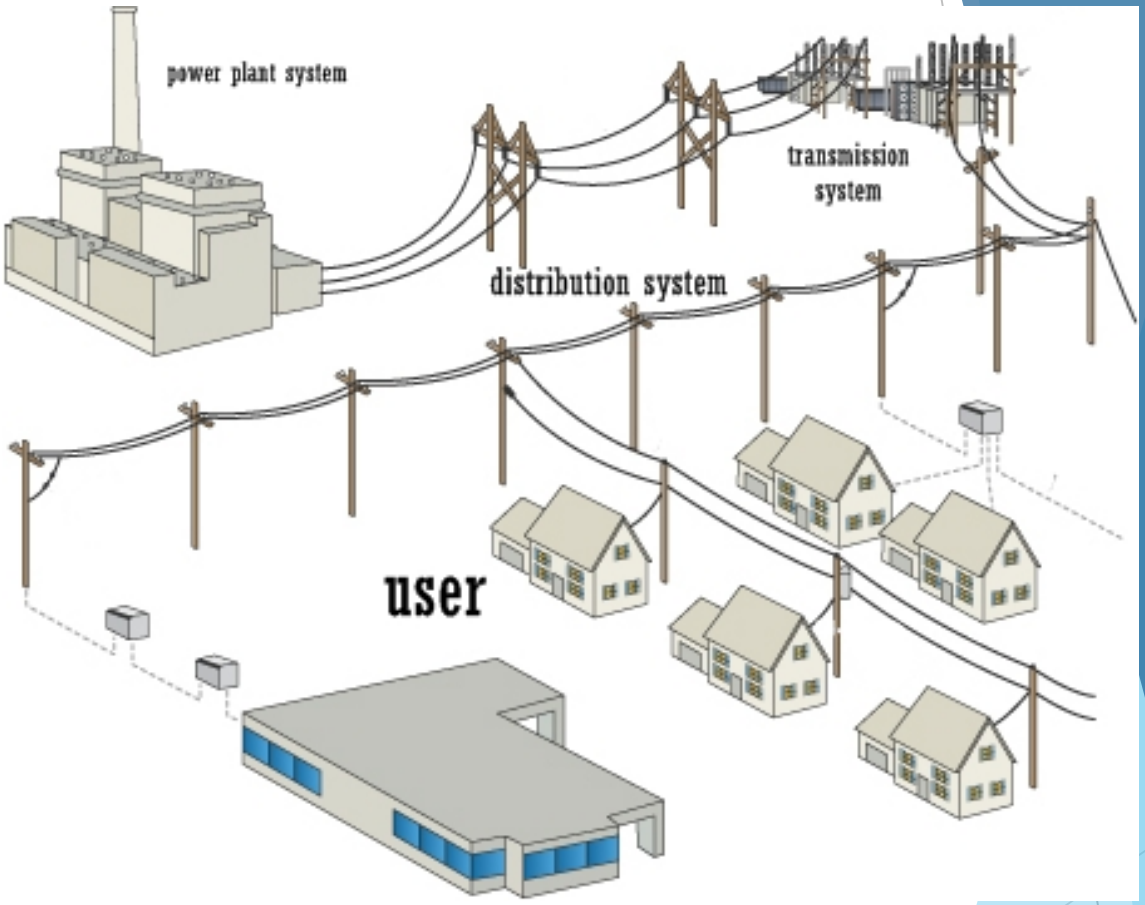
Transmission vs Distribution

- Distribution Power
  - Lower Voltages
  - Power moves to end user (residential/commercial/industrial)
  - Managed and maintained by the utility
- Transmission and Sub-transmission Power
  - High Voltages
  - Moves power between communities (substation to substation)
  - In Alaska – both utilities and the state manage Transmission
- Road Belt Intertie is Transmission/Sub-transmission Only
  - State managed

Like airports and roads, Transmission is <u>Infrastructure</u>

Electric Power System Overview

- Transmission
  - 230/138kV
  - High Voltage DC
- Sub Transmission
  - 69/45kV
- Distribution
  - 14.4/7.2kV



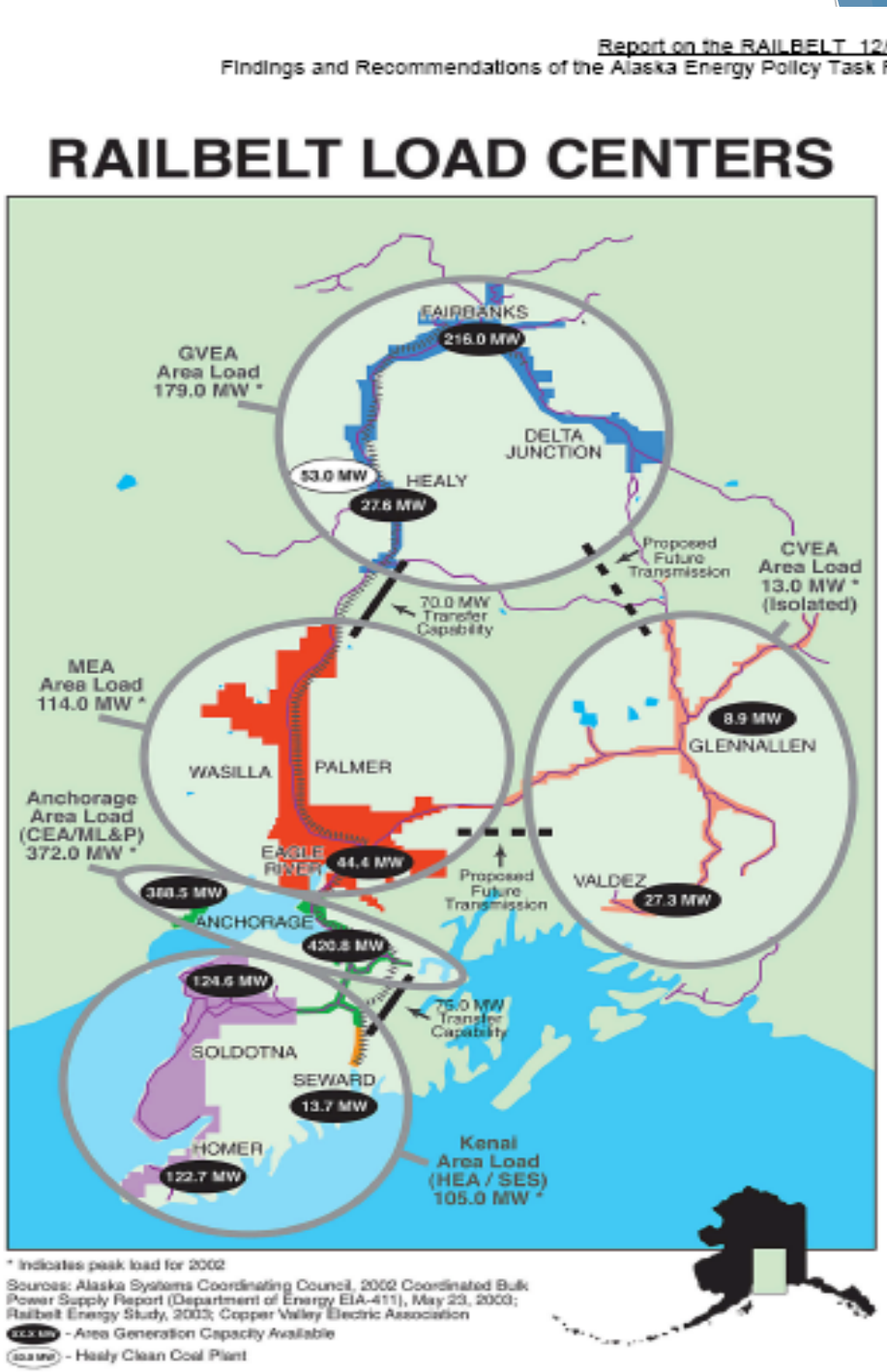
Power Principles

- A grid is a network of interconnected power lines
- The bigger the grid, the more resilient it becomes
  - Fluctuations are absorbed easier with a bigger grid
- Some renewable energy sources fluctuate significantly
  - A bigger grid allows more renewable energy sources
- Power can move in any direction
  - Depends on where generated and where used
- Quantity of Scales is key to cheaper power

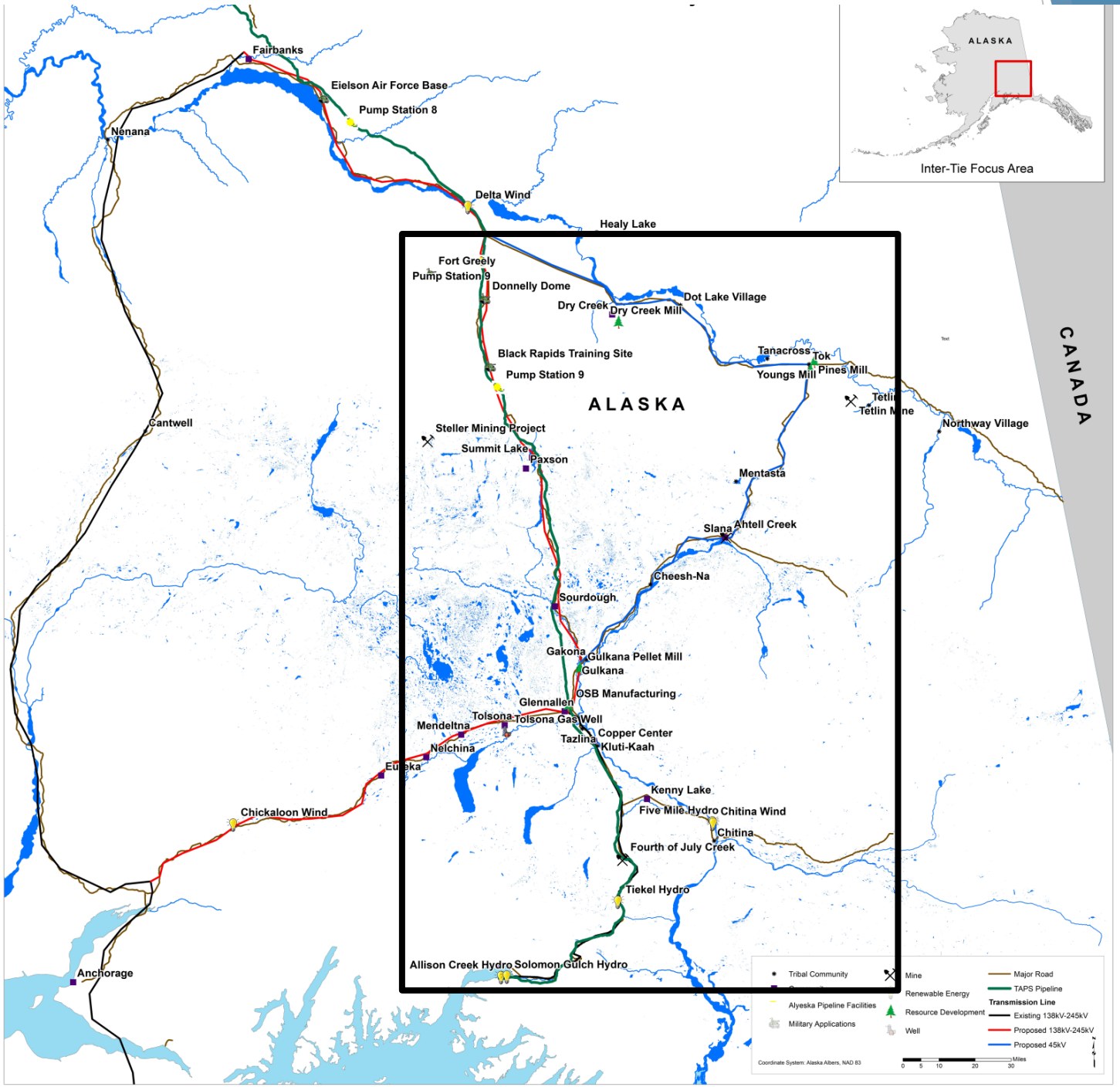
Concept

- Not a New Concept

- Alaska Energy Policy Task Force Finding in 2003



Window of Opportunity



Concept Benefits

- Grid Resilience
  - Larger the grid – better reaction to fluctuations
- Overage of Capacity – Shortage of Customers
- Bring together Isolated Grids for mutual benefit
- Provide a looping route for major Power Generators in the Railbelt
- Allows More Renewable Opportunities (wind, solar, hydro – Delta, Tiekel River)
- Brings the cost of power down for the entire grid
- Give choices to areas that otherwise have no choices for power use

Why Approve the Resolution?

- HJR10 gives Credibility to the Concept
- HJR10 tells our Congressional Delegation, federal departments and the White House we are united in ameliorating our high cost of energy
- HJR10 allows more Renewable Opportunities (wind, solar, hydro) to meet renewable goals
- HJR10 supports our requests for Federal Funds (to expand our grid) with more credibility
- HJR10 revitalizes a Concept we have already validated in the past
- HJR10 helps Alaska get Federal infrastructure funds

<u>The utility sector and many communities with isolated grids highly support this Resolution.</u>