



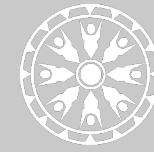
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Clean Energy Landscape in Rural Alaska: Past, Present, and Future



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Why Rural Energy?



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- **Energy equity**
 - Some of the highest energy costs in the U.S. (\$1/kWh, \$15/gallon)
 - Low GHG emissions
 - Climate change impacts
- **Affordability → Economic growth**



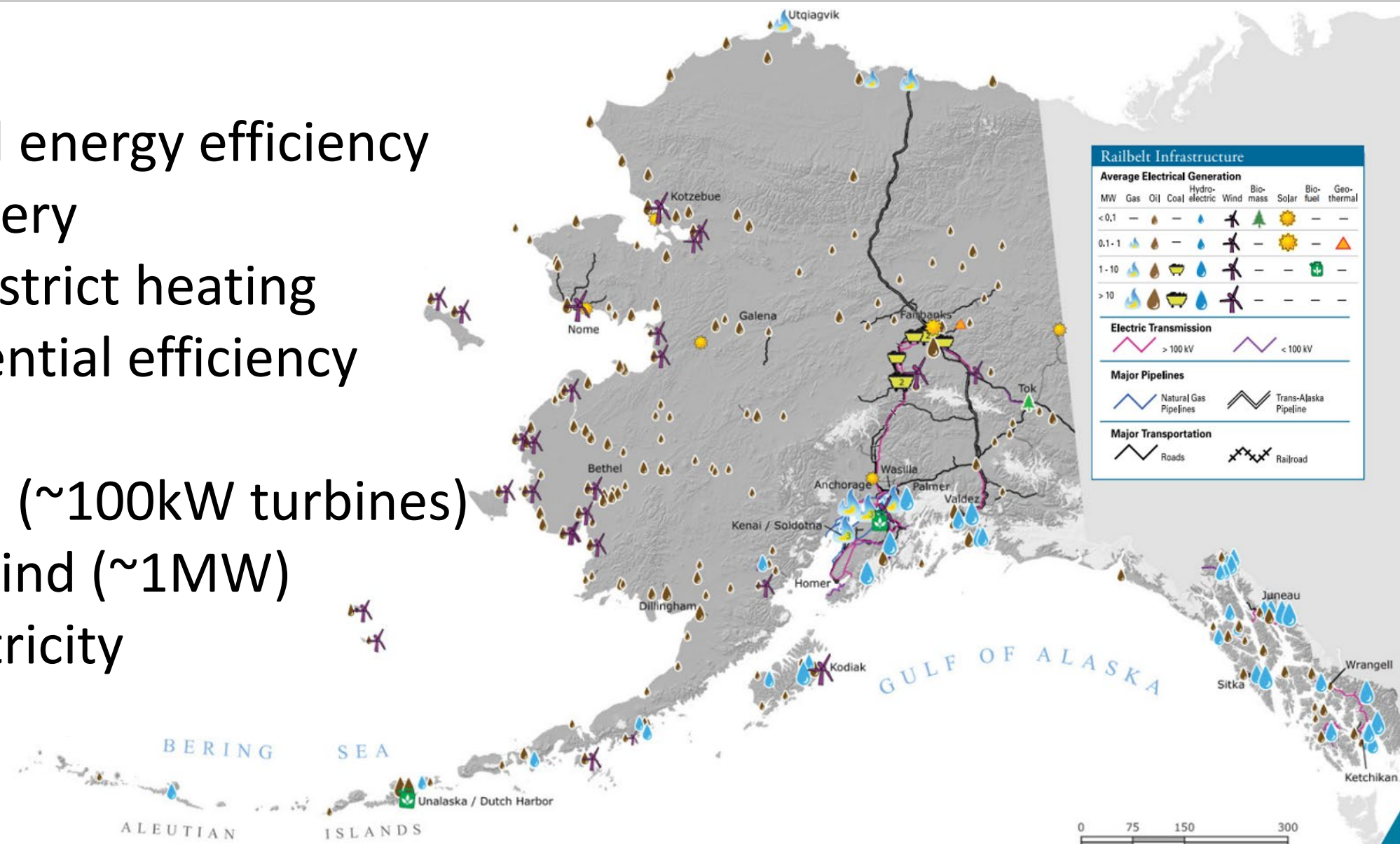
What has been successful historically?

- **Heat:**

- Residential energy efficiency
- Heat recovery
- Biomass district heating
- Non-residential efficiency

- **Electricity:**

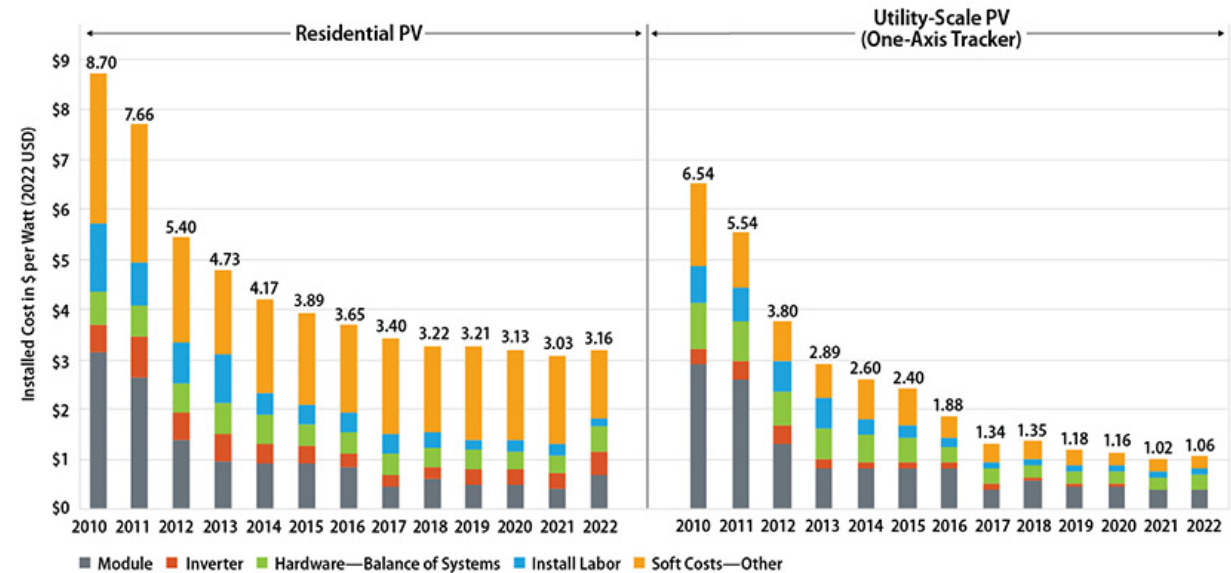
- Small wind (~100kW turbines)
- Medium wind (~1MW)
- Hydroelectricity



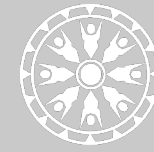
What is the current focus?



- **Federal infrastructure funding!**
- **Independent Power Producer (IPP) model for renewables**
 - Empower tribal entities
 - Overcome disincentives
- **Solar PV systems:**
 - Cost decreases: 98% in my life
 - Scalable, low maintenance, easier project dev
- **Battery energy storage**



What are the future challenges?



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- **Transitioning away from diesel**
 - Bulk fuel storage issues
 - Alternative technologies for baseload power
- **Using renewables for heating & transportation**
 - Excess renewables to heat
 - Controlled beneficial electrification
- **Supporting energy O&M**
 - Regional / statewide
 - Workforce development

