

Bristol Bay Region

Rural & Alternative Energy Study

Energy for Rural Alaskans – Framing the Issues

Summer 2011

Bristol Bay Native Association





7,214 Population

31 Tribes

27 Communities

16 - Lake & Pen Borough

3 - Bristol Bay Borough

12 - Other

The Mission of BBNA is to maintain and promote a strong regional organization supported by the Tribes of Bristol Bay to serve as a unified voice to provide social, economic, cultural, educational opportunities and initiatives to benefit the Tribes and the Native people of the Bristol Bay.

Outline Today

- **Bristol Bay Alternative Energy Task Force**
- **Bristol Bay Partnership**
- **Bristol Bay Economic Action Summit**
- **Bristol Bay Energy Policy & Implementation Strategy**
- **Bristol Bay Native Association's Programs**
- **Bristol Bay Regional Vision Project**
- **Energy in Bristol Bay**

Bristol Bay Alternative Energy Task Force

- **Lead by Bristol Bay Native Association**
- **Met from 1996-2005 (2x a year)**
- **15 Members Strong**
- **Discussed Various Alternative Energy Sources**
- **Conclusion: *At that time, alternative energy sources not cost-effective relative to the price of fuel.***

Bristol Bay Partnership



Bristol Bay Economic Action Summit - 2006

- Energy, Transportation, Tourism & Jobs
- **ENERGY GROUP**
 - Diesel Independence
 - Reduce kWh Rates
 - PCE Endowment Fund
- Energy Assistance
- Bulk Fuel Storage/Fuel Cooperatives
- Regional Energy Plan



Bristol Bay Energy Policy

The intent of the Bristol Bay Energy Policy is to reach the goal of affordable, reliable, safe and long-term energy and to realize energy self-sufficiency and security that supports and sustains the well-being of the Bristol Bay people and communities and that promotes economic development opportunities.

Implementation Strategy

1. Energy Assistance Programs

- Electric & Heat Subsidy Programs
- PCE Endowment Fund
- Energy Development Fund

2. Transition Towards Diesel Independence

- Recognition Diesel Around for Some Time
- Fuel Monitoring Program
- Proper Training

Implementation Strategy

3. Energy Efficiency & Conservation

- Support & Encourage Incentives
- Education & Outreach

4. On-Shore Exploration

- Support & Encourage Private, State & Federal Lands Exploration of Traditional Energy Sources

Implementation Strategy

5. Electric Interties

- Sub-Regional & Regional Interties
- Railbelt Tie-Ins
- Statewide Energy Grid

6. Exploration of Alternative Energy Sources

7. Plan Collectively

- Encourage Partnerships
- Regional Energy Authority

Bristol Bay Native Association

- Tribal Energy Program

- Disseminate Information
- Facilitate Partnerships
- Advocate & Represent
- Manage Energy Projects

- Leading by Example

- Alaska Commercial Energy Audit Program

- Energy Assistance Programs

- LIHEAP/AKHAP/CITGO
- 48 Percent Increase
- Upgrades/Repairs

SWAMC, UAF-BBC, L&P BOROUGH, BBNC

SWAMC

- Energy Task Force
- Resolutions to Policymakers
- “Energy Savers Tips for Rural Alaska” (2nd Edition)

UAF-Bristol Bay Campus

- Sustainable Energy Initiative
- Energy Efficiency Building Technologies
- Occupational Endorsement in Sustainable Energy

- **Bristol Bay Native Corporation (wind resource assessments)**
- **The Lake and Peninsula Borough Regional Energy Plan**
- **Sustainable Energy Council of Alaska Peninsula (SECAP)**

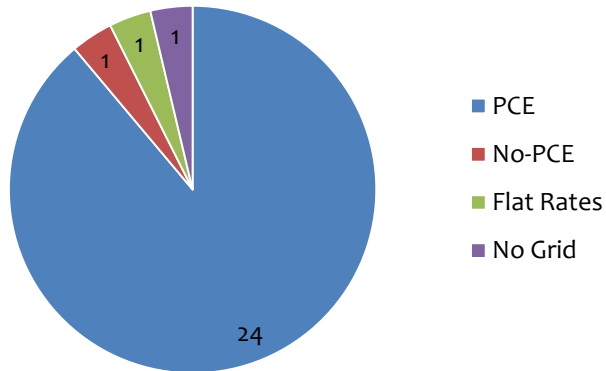
Bristol Bay Regional Vision Project



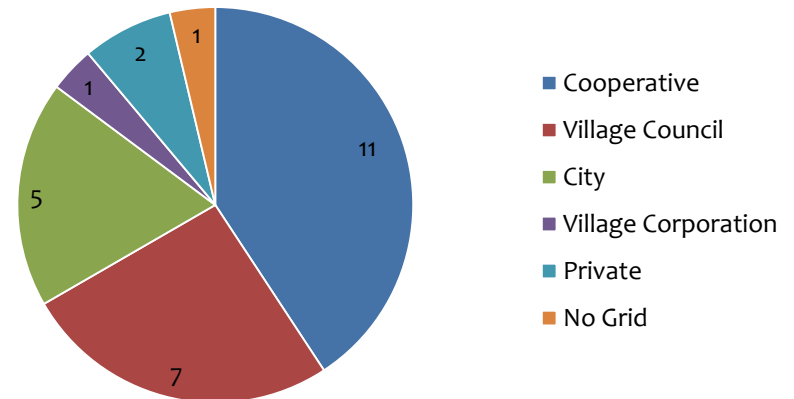
- Guided by Bristol Bay Partnership
- 8 commissioners appointed
- 27 communities in 9 months
- Each community addressed the same set of questions using electronic voting technology called Consensor™
- The values were recorded and form the basis of the Vision
- **78% support active investment in Renewable Energy & Conservation**

Energy in Bristol Bay - Electric

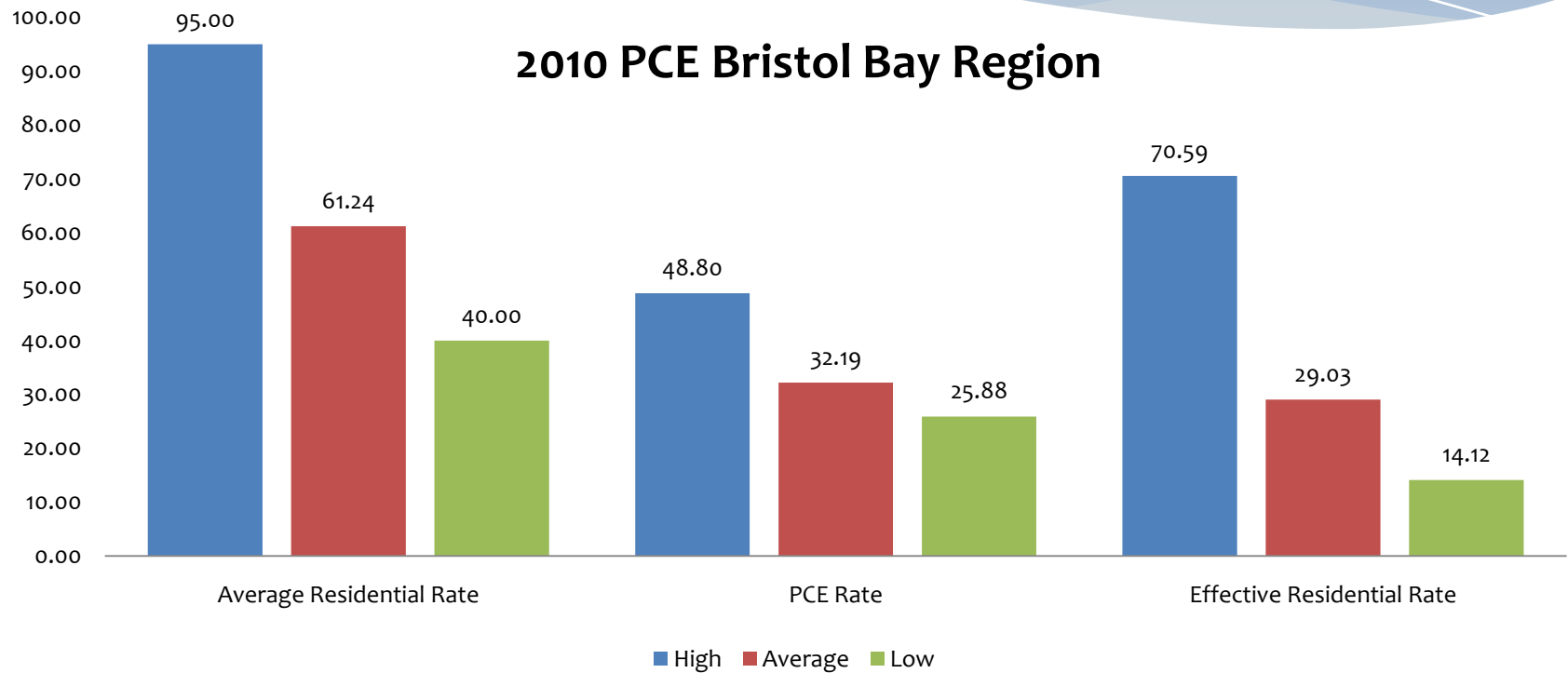
Power Cost Equalization



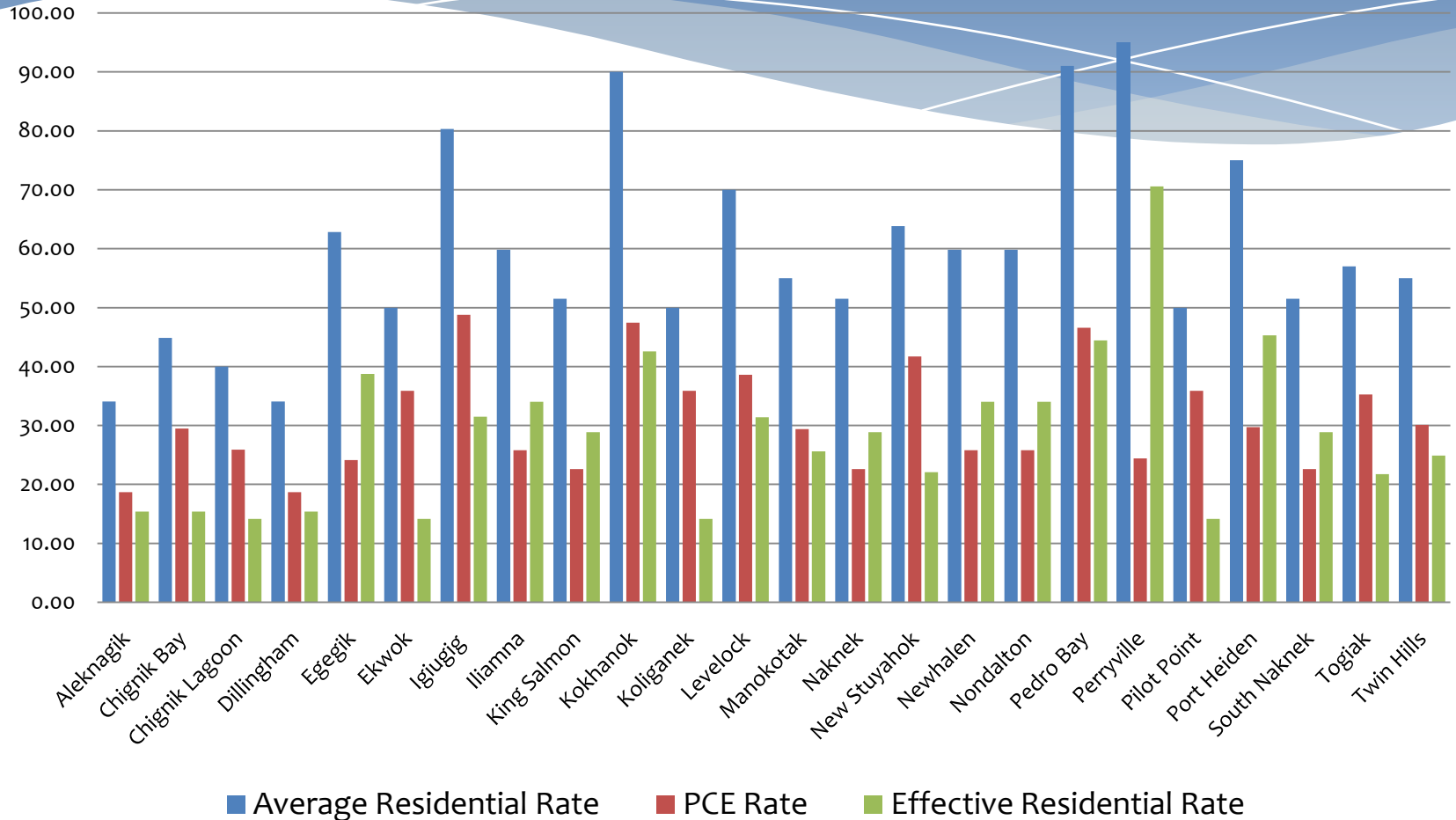
Utility Ownership



Energy in Bristol Bay - Electric

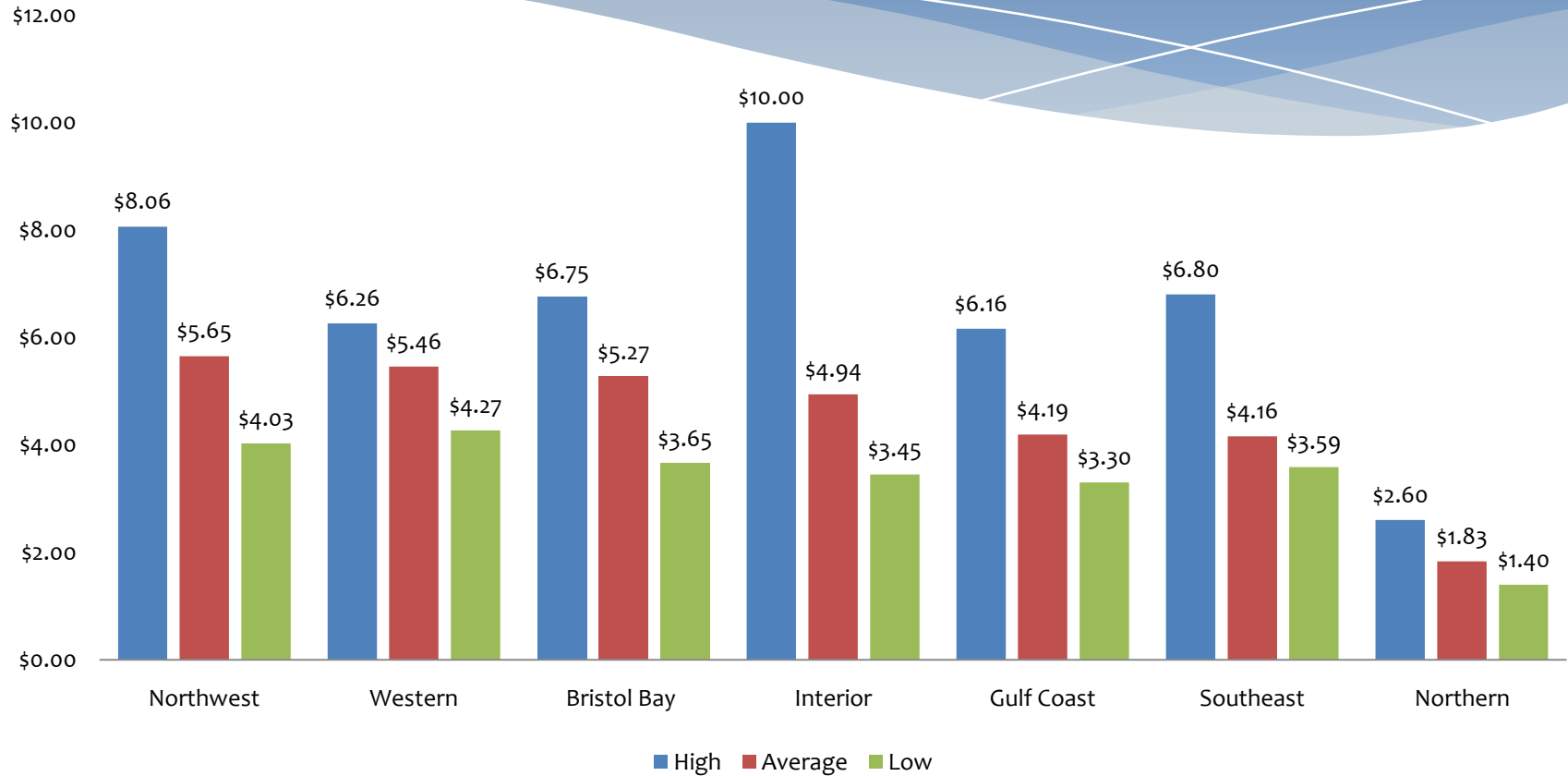


Energy in Bristol Bay - Electric



Energy in Bristol Bay – Space Heating

Heating Fuel #1 Prices



Source: Current Community Conditions: Fuel Prices Across Alaska, Department of Commerce, Community & Economic Development, Division of Community and Regional Affairs, Report to the Director

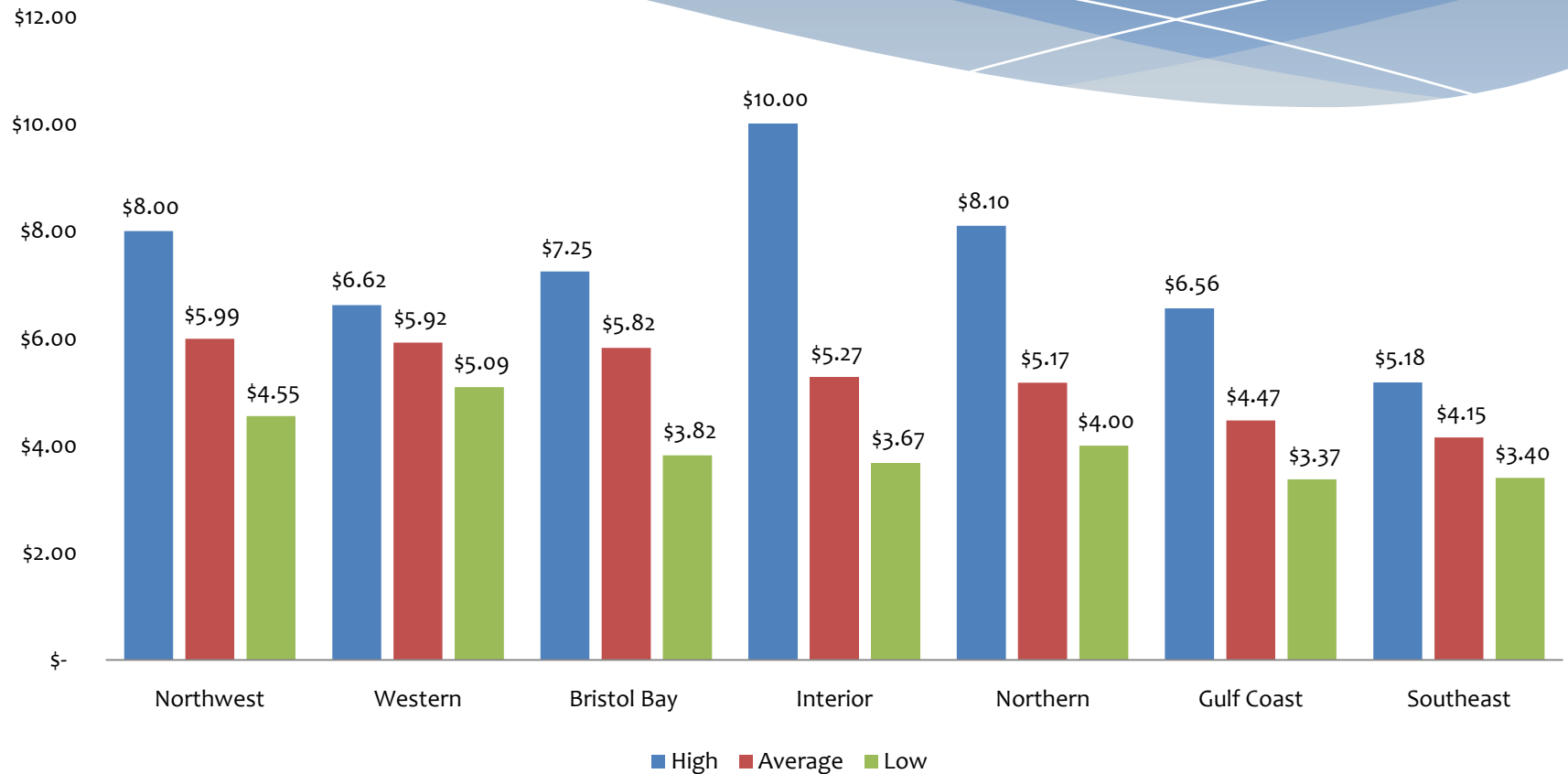
Energy in Bristol Bay – Space Heating

Heating Fuel #1 Prices (01/2011)



Energy in Bristol Bay - Transportation

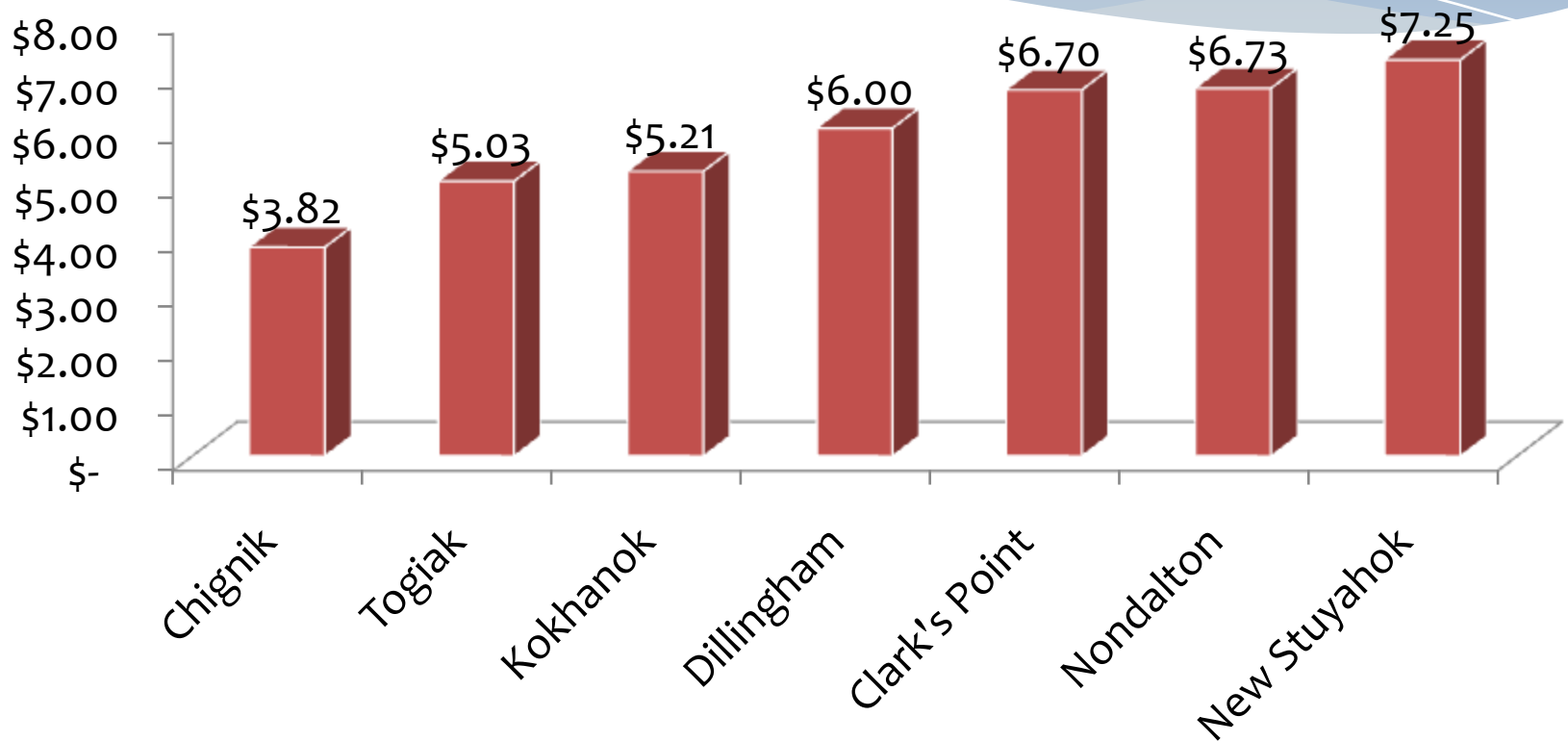
Gasoline Prices



Source: Current Community Conditions: Fuel Prices Across Alaska, Department of Commerce, Community & Economic Development, Division of Community and Regional Affairs, Report to the Director

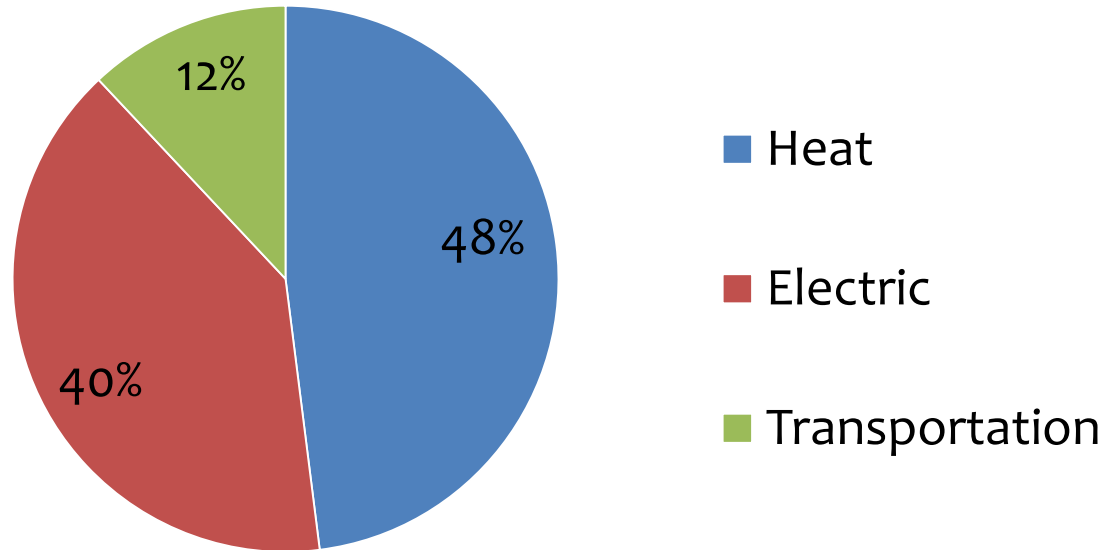
Energy in Bristol Bay - Transportation

Gasoline Prices (01/2011)



Energy in Bristol Bay – Total Energy

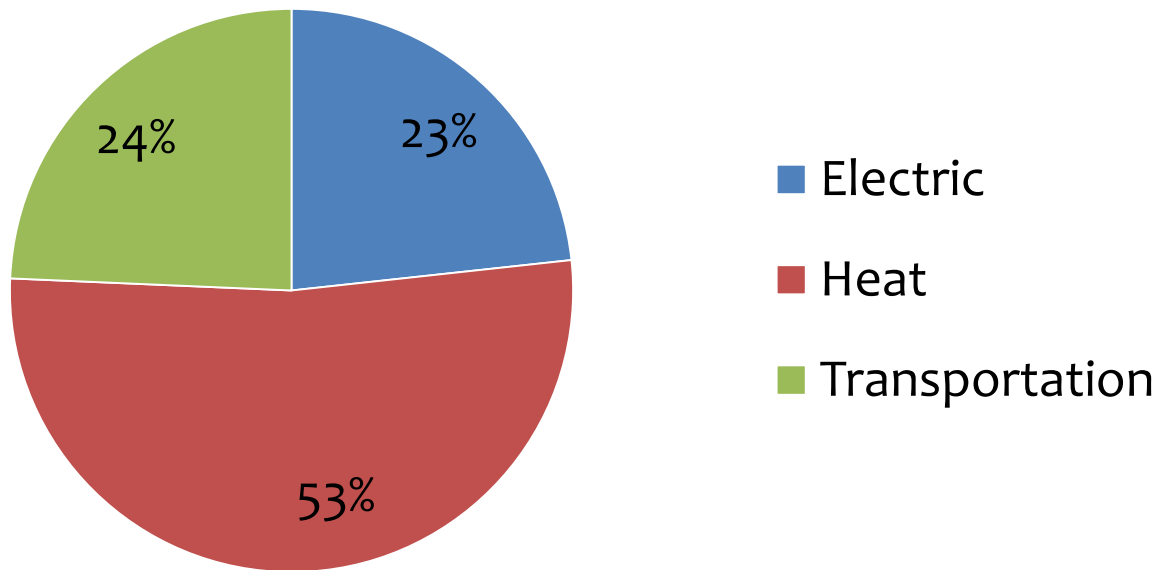
Total Energy Averages



Source: Alaska Energy, a first step toward energy independence, Alaska Energy Authority and Alaska Center for Energy and Power

Personal Example – Total Energy

Total Energy (Personal Use) - 2010



Current Renewable Energy Systems

| | | |
|--------------------------------|------------------------------|--|
| Kokhanok | Wind (2010) | (2) 90 kW Vestas V-17 High Penetration |
| Perryville | Wind (2009) | (10) 2.4 kW Skystream 13,361 kWh Non-Diesel 2010 PCE Data 4% Diesel Offset |
| Pilot Point | Wind (2004) | (2) 10 kW Bergey 5,690 kWh Non-Diesel 2010 PCE Data 1.4% Diesel Offset |
| Port Heiden | Wind (2004) | (1) 10 kW Bergey |
| Ugashik | Wind/Solar | (2) 2.5 kW Proven (1) 2.2 kW Solar PV |
| Iliamna-Newhalen- Nondalton | Hydro (Tazimina, 1998) | 824 kW (capable of 1.4 MW) 2,899,517 kWh Non-Diesel 2010 PCE Data – 121% Diesel Offset |

Renewable Energy Projects in Action

| <u>Project Name</u> | <u>Applicant</u> | <u>Project Type</u> | <u>Round</u> |
|--|--|---------------------|--------------|
| Lake & Pen Borough Wind Feasibility | Lake & Peninsula Borough | Wind | Round I |
| Chignik Lake Area Wind-Hydro Final Design | Lake & Peninsula Borough | Wind | Round I |
| Lake & Pen Wood Heating Final Design | Lake & Peninsula Borough | Biomass | Round I |
| Indian Creek Hydro Feasibility Study | City of Chignik | Hydro | Round I |
| Lake Elva Hydropower Construction | NETC | Hydro | Round I |
| Chignik Lagoon Hydroelectric Final Design | Chignik Lagoon Power Utility | Hydro | Round I |
| Kvichak River | Igiugig Electric Company | Ocean/River | Round II |
| Nushagak Area Hydropower Project | NETC | Hydro | Round III |
| New Stuyahok Wind-Feasibility Analysis | AVEC | Wind | Round III |
| Pilot Point Wind Power & Heat | City of Pilot Point | Wind | Round III |
| Port Heiden Wind Turbine Project | Lake & Peninsula Borough | Wind | Round IV |
| Lake & Peninsula Wood Boilers | Lake & Peninsula Borough | Biomass | Round IV |
| Koliganek Wind & Heat Recovery Feasibility Study | Koliganek Tribal Council | Wind | Round IV |
| Kokhanok Wind Diesel Project | Lake & Peninsula Borough/Village Council | Wind | n/a |
| Southwest Alaska Regional Geothermal Project | NEA | Geothermal | n/a |

Energy Efficiency in Bristol Bay

- Energy Efficiency & Conservation Block Grant (EECBG)
 - All 31 Tribes applied (using same service provider as State)
 - BBNA administering on behalf of 15 Tribes
- Village End-use Efficiency Measures Program (AEA)
 - Ekwok
 - Chignik Lake
 - Port Heiden
 - Pedro Bay
 - Levelock
 - New Stuyahok

Energy Efficiency in Bristol Bay

- Alaska Small Cities Energy Efficiency & Conservation Block Grant (AEA)

- BB Borough
- Chignik Bay
- Clarks Point
- Manokotak
- Nondalton

- L&P Borough
- Port Heiden
- Dillingham
- Newhalen

- Egegik
- Aleknagik
- Pilot Point
- Togiak

- Village Energy Efficiency Program (AEA)

- Chignik Bay
- Kokhanok
- Manokotak
- Togiak

Take Away Points

- * **Energy Assistance Programs**
 - * Immediate & Necessary Relief
- * **Energy Efficiency & Conservation Programs**
 - * Immediate Results & Cost-Effective
- * **Alternative Energy Programs**
 - * Take Time, Depend on Financing & Relative to Fuel Prices
- * **Regional Approach**
 - * Technical & Financial Assistance Needed
- * **Alaskan Solution to Project Financing**
 - * IPP & Other For-Profit Models
 - * Economies of Scale



Thank You!

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