In Alaska, where does our electricity come from?

Psst.. “the wall outlet” is NOT the correct answer
ALASKA

Average Retail Price
9.9 cents/kWh
What is America’s largest source of energy for generation of electricity?
Coal

US Electricity Gen 06/04 - 05/05

- Coal: 51%
- Natural Gas: 18%
- Nuclear: 20%
- PetCoke: 0.5%
- Petroleum: 2%
- Hydro: 7%
- Other renewable: 2%
- Other: 0.1%
- Other Gases: 0.4%
What About Renewables?
Metals and Materials in a Wind Turbine

Estimates for Vestas V90 3.0 MW turbine are approximate.

- 335 tons of steel
- 4.7 tons of copper
- 13 tons of fiberglass
- 3 tons of aluminum
- 1,200 tons of reinforced concrete

Vestas V90, Courtesy of Vestas Wind Systems A/S
Pebble Project—Source of Copper for Wind Generators
1959 Alaska Becomes a State
Self-Sufficiency and our Resources Were Key!

• Oil and Gas
• Fish
• Minerals
• Timber
• Tourism
Land Ownership in Alaska

- 365 Million Acres
  - Federal 210 Million Acres
  - State 104.5 Million Acres
  - Native Corporations 44.5 Million Acres
  - Conventional Private 2.7 Million Acres

Federal Wilderness in Alaska

- 58 million acres (56% of national total of 105.7 million acres)
The 235 million acres of federal lands within Alaska, much of it closed to development, is considerably larger than the entire state of Texas, more than the total combined size of California, Oregon and Washington, and bigger than the combination of 15 eastern states as shown below: (States listed in millions of acres)
1971-ANCSA is Passed
Alaska Native Claims Settlement Act

- 44 million acres
  - 7(i) revenues share 70% of resource development with other 11 corporation
  - Split between regional and village corporations through 7(j) provision
- Guaranteed Access to lands (surface and subsurface (minerals))
1980-ANILCA is Passed
Alaska National Interest Lands Conservation Act

- 106 million acres of land set aside as CSUs (Conservation System Units)
  - Increased total land for conservation purposes in Alaska to 131 million acres
What is the Resource Development Council (RDC)?

• Membership is comprised of:
  • Oil/Gas
  • Fishing
  • Municipalities
  • Individuals
  • Mining
  • Tourism
  • Forestry
  • Native Corporations
  • Support Sectors

• 78 Member Board
What Work Do We Do?

• Education
  – Events
    • Breakfast Meetings (every other Thursday at Dena’ina)
    • Annual Conference (Nov. 17-18 at Dena’ina)
  – Newsletters
  – Regular Communication

• Participation in the Process
  – Project Neutral (Across Industry or State)
    • Endangered Species Act, Clean Air/Water Acts
    • Taxation
  – Project Specific
    • NEPA
      – Action Alerts
      – Public Comment
Issues We Work On

• Gas pipeline
• Mining Shutdown Initiatives
• State long-term fiscal plan
• State long-term energy plan
• Oil & gas leasing statewide, OCS, NPR-A, North Aleutian Basin
• Cruise ship initiative & legislative reform
• Obama Administration Transition/Federal Policy Positions
• Initiative reform legislation
• Yukon Flats land exchange
• State NPDES Primacy
• Oil production tax
• Endangered Species Act: Polar bear, Cook Inlet beluga, Lynn Canal and Southeast Alaska herring, Yellow-billed loon, Steller sea lion, SW Alaska sea otter, Steller & Spectacled eiders, North Pacific right whale
• Global climate change issues
• ANWR advocacy
• Red Dog Mine - Aqgaluk Project & tailings issues
• Pebble mine project
• Kensington project and litigation

• Sealaska Lands Bill
• Pt. Thomson Project
• Mat-Su and Spencer Glacier gravel mining ordinances
• Tulsequah Chief project
• Chuitna coal project
• Usibelli Coal Mine expansion
• Nenana Basin Exploration
• Knik Arm Bridge
• EPA NPDES vessel discharge & offshore seafood processors permits
• Tongass Land Management Plan
• State & federal timber sales
• South Denali Visitors Center
• Federal/State legislative & regulatory policy
• Proposed fish & game refuges in Southwest & Interior Alaska
• EPA Clean Water Act jurisdiction for Supreme Court Rapanos decision
• Bay Draft Management Plan & EIS
• State mixing zone regulations
• Alaska Railroad extension to Ft. Greely, Delta Junction and Port MacKenzie
Drilling in the Arctic OCS

Alaskans express strong support

Anchorage, Alaska — In a move that has generated widespread support for offshore oil exploration and development in the OCS, Alaska residents are expected to unveil their support for OCS Development at a public hearing on April 14. The hearing is part of the permitting process for the proposed drilling project.

Alaska's oilfield is home to some of the most prolific and productive oilfields in the world, making it an ideal location for offshore exploration and development. The state's natural resources would provide a significant boost to the local economy and the national economy as a whole.

Alaskans have long supported offshore oil and gas development, and this support is reflected in their strong stance on the issue. The proposed drilling project is expected to bring new revenue streams and job opportunities to the region.

In This Issue

Offshore energy development is focus of key Alaska hearing April 14

In This Issue

Who Owns Alaska?
Alaska Forestry

• Not Much left to work on
  – 1990: 4,600 Jobs
  – 2007: Under 400 Jobs

• 2 largest National Forests
  • Tongass
  • Chugach

• Overseen by the Alaska Board of Forestry
Alaska Fisheries

- Polluck Fishery
  - Largest in the world, over 2 billion pounds annually
- Copper River Reds/Kings
- King Crab
- 2006-Export Value was $2 billion
- Overseen by North Pacific Fisheries Management Council
Alaska Tourism

- Access to Remote Parks (only 3 of 13 parks are accessible by road)
- Cruise ships: Limited Entry into Glacier Bay National Park
Alaska Oil and Gas Association
“AOGA”

Fostering the long-term viability of the oil and gas industry for the benefit of all Alaskans.

Looking Ahead
AOGA Members Today - 2010

- Petro Star Inc.
- Flint Hills Resources
- Alyeska Pipeline Service Company
- Anadarko Petroleum Corporation
- bp
- Chevron
- ExxonMobil
- TESORO
- Eni Petroleum
- Eni
- XTO Energy
- Statoil
- Marathon
- Pioneer Natural Resources

Looking Ahead
Oil & Gas Overview

- World energy demand is projected to increase by 50% over the next 20 years
- OPEC’s share of world supply to increase to almost 50% by 2030
- Alaska can play a pivotal role in meeting this energy challenge.
  - Currently, Alaska produces 10-12% of the domestic oil supply for the US
  - Over 16 billion barrels produced from Alaska since 1977
  - Domestic Production is better for jobs, better for the environment, better for the US!
Alaska OCS Resources

- Arctic Alaska: 30 Billion barrels of oil; 132 Trillion Cubic Feet of Natural Gas
- 1/3 of the nation’s OCS reserves
  - Compared to: 22 BBO proved US reserves
  - Compared to: 1.6 BBO annual US production
  - Compared to: ~16 BBO produced to date from the North Slope
How much land are you willing to use for equal amounts of energy?

- **Corn-Based Ethanol**: 80.5 million acres
- **Wind Power**: 3.7 million acres
- **Solar Power**: 448,000 acres

*Based on the amount of energy produced from 1 million barrels of oil per day*

- **Equivalent Acreage as proposed for the Coastal Plain**: 2,000 acres
- **Proposed Development Area on the Coastal Plain**: 2,000 acres
What has happened to caribou since oil and gas development began on the North Slope?
“This indicates that oil and other resource development can occur without major impacts on wildlife resources.”

Dr. Matthew Cronin
University of Alaska Fairbanks

Central Arctic Caribou Herd Population
Alaska’s Three-Legged Stool

What generates jobs for Alaska residents?¹
(Annual Average Number of Jobs for Residents, 2004-2006: 357,000)

- Petroleum sector: 31% of 110,000 jobs
- Federal government: 35% of 125,000 jobs
- All other basic sectors²: 34% of 122,000 jobs

¹ Excludes jobs held by non-residents. ² Seafood, tourism, mining, timber, international air cargo, and personal assets from outside Alaska (primarily federal retirement benefits).
Alaska Residents in the Oil & Gas Industry

- Oil and gas extraction – 75% AK residents
- Support activities – 67%
- Pipeline – 99%
- Refineries – 93%
- Total Employment – 72%
- Total Payroll – 74%
- Alaska private sector average – 77%
Fairbanks Jobs – 2007 AOOGA Study

- Creates 3,250 jobs – 5.5% of employment
  - Direct – 353 jobs
  - Indirect & Induced – 2,897
- Paid $176 million payroll – 5.9% of wages
  - Direct – $39.4 million
  - Indirect & Induced – $136.6 million
50 Years of Petroleum Revenue

TOTAL: $96 Billion (Restricted & Unrestricted)

Royalties: $42 billion (50%)
Production Tax: $34 billion (35%)
Other: $20 billion (15%)

Petroleum Revenue has constituted 83% of the state’s unrestricted revenue since statehood.
# State Oil & Gas Revenues

<table>
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<tr>
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<th>FY 09</th>
<th>Forecast FY 10</th>
<th>Forecast FY 11</th>
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<tbody>
<tr>
<td>Royalty</td>
<td>$2,339MM</td>
<td>$2,802MM</td>
<td>$2,277MM</td>
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<tr>
<td>Production Tax</td>
<td>3,112MM</td>
<td>2,943MM</td>
<td>2,492MM</td>
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<tr>
<td>Property Tax</td>
<td>441MM</td>
<td>436MM</td>
<td>434MM</td>
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<tr>
<td>Corporate Income Tax</td>
<td>492MM</td>
<td>390MM</td>
<td>500MM</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$6,384MM</strong></td>
<td><strong>$6,571MM</strong></td>
<td><strong>$5,703MM</strong></td>
</tr>
</tbody>
</table>

- % of Unrestricted Revenue: 89% (FY 09), 89% (FY 10), 88% (FY 11)
- Average Oil Price: $76.13/bbl (FY 09), $75.32/bbl (FY 10), $77.65/bbl (FY 11)

Information based on historical data and projections from the State Department of Revenue.
Royalty figures includes restricted royalty (Permanent Fund contribution, school fund, etc.)
Property tax figures include local government shares.
Figure 4-9. Alaska North Slope Production, FY 2000-2009 and Forecasted FY 2010-2019

- History
- Forecast
  - Under Evaluation
  - Under Development
- Currently Producing

mllions of barrels per day (mbpd)


Looking Ahead
North Slope Oil Production Without OCS
North Slope Oil Production With OCS
Current Activity

ION 2D Seismic in Beaufort Sea
Statoil 3D Seismic in Chukchi
Continuation of Scientific Studies
Comprehensive Alaska Studies Program

- >$350 million by BOEMRE since 1970’s
- >$100 million by other agencies
- Industry Studies:
  - Marine Mammals & habitats
  - Ice mapping & characterization
  - Water quality baseline
  - Acoustics surveys
  - Ocean bottom surveys
  - Wind, wave & oceanographic
What’s in the future?

Awaiting end of moratorium
Awaiting DOI finalization of operating framework
Lessees committed to continuing efforts
Studies & stakeholder engagement ongoing
Alaskan Oil and Gas Opportunities: Gas Pipeline

• 4 Billion Cubic Feet/Day
  – 6-8% of US Daily Consumption
• 3 Proposed Options:
  – AGIA—TransCanada/Exxon
  – Denali—The Alaska Gas Pipeline
    • ConocoPhillips and BP

• How big is it (the big pipeline)?
  – About 2,000 miles to Alberta
    (Possibly another 1,500 miles)
  – 5-6 million tons of steel
Likely Route of Gas Pipeline
2002 Denali Fault 7.9 Earthquake

Designed to 8.5 quake:
20 feet horizontal  5 feet vertical
Moved 7 feet horizontal 3 feet vertical
Opportunities & Challenges

+OCS
+Liberty
+Pt. Thomson
+New Fields

- High Operating Costs
- Moratorias; Directives from Washington DC
- Legal Challenges
- Permitting Delays
- ESA Listings
- Fiscal Regime