ALASKA’S OIL & GAS INDUSTRY
Overview & Activity Update
House Finance Committee

Presented by:
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Division of Oil and Gas
Alaska Department of Natural Resources
March 31, 2016
OVERVIEW

- **North Slope:**
  - Resources and Reserves
  - Current Activity & New Developments
  - Who’s Working the North Slope?
  - Leasing Activity

- **Cook Inlet:**
  - Resources and Reserves
  - Current Activity & New Developments
  - Who’s Working the Cook Inlet?
  - Leasing Activity

- **Frontier Basins:**
  - Resources and Reserves
  - Current Activity & New Development
  - Who’s Working the Frontier Basins?
  - Exploration Licensing & Lease Conversion
NORTH SLOPE RESOURCES OVERVIEW

- **Red Area** – Gas Accumulations
- **Dark Green Area** – Oil Accumulations
- **Black Dots** – Exploration Wells
- **Light Green Areas** – Permanently Protected Federal Lands.

**Locations:**
- NPRA
- ANWR 1002
- Beaufort Sea
- Chukchi Sea
- Gates of the Arctic
- Noatak
- ASRC
- ANWR
MEAN ESTIMATES* OF UNDISCOVERED, TECHNICALLY RECOVERABLE CONVENTIONAL RESOURCES IN ARCTIC ALASKA:

- ~ 40 billion barrels of oil
- ~ 207 trillion cubic feet of gas

<table>
<thead>
<tr>
<th>Arctic Alaska</th>
<th>Mean Oil Estimate (Millions of Barrels)</th>
<th>Mean Gas Estimate (Billion Cubic Feet)</th>
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<tbody>
<tr>
<td>Onshore</td>
<td>15,908</td>
<td>98,960</td>
</tr>
<tr>
<td>Offshore</td>
<td>23,750</td>
<td>108,180</td>
</tr>
<tr>
<td>TOTAL</td>
<td>~ 40 BBO</td>
<td>~ 207 TCF</td>
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</tbody>
</table>

* Multiple USGS and BOEM sources
Gas Reserves:
- ~ 30 trillion cubic feet of associated gas is estimated to be recoverable from producing or developing North Slope fields, mostly at Prudhoe Bay & Point Thomson. Without a pipeline, most of that gas is best described as contingent resource, not reserves.
- ~ 5.9 trillion cubic feet of proved associated gas reserves estimated in Alaska, virtually all on North Slope (Energy Information Administration (EIA), 2014)

Oil Reserves:
- ~ 2.8 BBO of proved oil reserves estimated on the North Slope (EIA, 2014)
NORTH SLOPE CURRENT ACTIVITY & NEW DEVELOPMENTS

- **Accumulate Energy**
  - Franklin Bluffs area shale play evaluation
    - Drilled Icewine #1 well in October-December 2015
    - Seismic survey of lease area this winter

- **AEX (ASRC)**
  - Placer Unit
    - Currently drilling Placer #3 well – spud in late January 2016

- **BP**
  - Prudhoe Bay Unit
    - Completed 8 new wells, 46 new sidetracks, ~420 well workovers in Initial Participating Area (IPA), 2015
    - Completed first wells in Lisburne PA in 9 years, 2015
    - Completed 3D seismic program in North Prudhoe, 2015
NORTH SLOPE CURRENT ACTIVITY & NEW DEVELOPMENTS

**Caelus Natural Resources**
- Oooguruk Unit
  - On-going development (4-5 wells/year; all long-reach & frac’d)
- Nuna
  - First production from Nuna Torok Phase 1 in late 2018(?)
  - No construction activity this winter
- Smith Bay Exploration (shallow water ice pad)
  - Second of two exploration wells nearly complete

**Conoco Phillips**
- Colville River Unit
  - Initiated first production at CD5 in 2015
  - Plan for a total of 8 new wells in 2016
- Greater Mooses Tooth Unit (Federal/NPRA)
  - Approved funding for $900MM GMT1 project
  - Plan to drill two Tinmiaq exploration wells in western part of unit
NORTH SLOPE CURRENT ACTIVITY & NEW DEVELOPMENTS

- **Conoco Phillips**
  - Kuparuk River Unit
    - First wells came online at Kuparuk DS-2S in 2015
    - Significant drilling planned in 2016 for Kuparuk PA, Tarn PA and West Sak PA during 2015-16

- **ExxonMobil**
  - Point Thomson Unit
    - Completion of Initial Production System in 2016
    - Completed 22 mile liquid hydrocarbon pipeline from Point Thomson to Badami Field, which connects to TAPS
    - Start-up expected by mid-May 2016 (10,000 bpd condensate)

- **Great Bear Petroleum**
  - Currently acquiring large 3D seismic dataset (~450 sq miles)
  - Planning for additional work at Alkaid #1 in 2017
Hilcorp
- Northstar Unit
  - Returned 2 wells to production
- Milne Point Unit
  - Drilled 3 new wells, started new G&I plant construction in 2015
  - Plan to drill 10 new wells and complete 16 workovers in 2016

Repsol/Armstrong
- Pikka Unit (Nanushuk Project Development)
  - Drilled 3 exploration wells & sidetracked 1 in 2015 (total of 12 wells & sidetracks since 2012)
  - Commenced the project EIS under NEPA in June 2015
  - Plan to drill 1 additional exploration well in 2017
NORTH SLOPE WELLS DRILLED & SEISMIC ACQUIRED

- **New Exploration & Development Wells Drilled 2004-2014**
  - 110 Exploratory Wells and Well Branches
  - 1,646 Development & Service Wells and Well Branches

- **2D & 3D Seismic Data Acquired (Tax Credit Data) 2004-2014**
  - Line Miles 2D (onshore/shorezone ice) ~ 870
  - Square Miles 3D (onshore/shorezone ice) ~ 9,945
WHO’S WORKING NORTH SLOPE?

- **Large Majors (>40B Market Cap):**
  - BP Exploration, Inc.
  - Chevron USA, Inc.
  - ConocoPhillips Alaska
  - Eni
  - Exxon Mobil Corporation
  - Shell Offshore, Inc.

- **Large Independents & Mid-Sized Companies:**
  - Armstrong Oil and Gas/70 & 148 LLC
  - Anadarko E&P Onshore LLC
  - BG Alaska E&P Inc.
  - Caelus Natural Resources Alaska LLC
  - Halliburton Energy Services
  - Hilcorp Alaska, LLC
  - Repsol
WHO’S WORKING NORTH SLOPE?

- **Small Independents:**
  - Accumulate Energy Alaska, Inc.
  - Alaska, LLC
  - Alaskan Crude Corp.
  - ASRC Exploration LLC
  - Aubris Resources, LP
  - AVCG, LLC
  - Brooks Range Development Corporation
  - Burgundy Xploration LLC
  - Caracol Petroleum LLC
  - Chap-KDL, Ltd.
  - Colt Alaska LLC
  - Dewline Petroleum LLC
  - Donkel Oil & Gas, LLC
  - Eastland Property and Minerals
  - GMT Exploration Company LLC
  - Great Bear Petroleum Ventures
  - MEP Alaska, LLC
  - Mustang Operations Center 1, LLC
  - Nordanq Energy Inc.
  - Pacific Lighting Gas Development
  - Petro-Hunt, LLC
  - Pinta Real Development, LLC
  - Petro-Hunt, LLC
  - Pinta Real Development, LLC
  - Ramshorn Investments, Inc.
  - Red Technology Alliance, LLC
  - Renaissance Umiat, LLC
  - Royale Energy, Inc.
  - Samson Offshore, LLC
  - Savant Alaska, LLC
  - Sunlite International Inc.
  - The Eastland Oil Company
  - TP North Slope Development, LLC
  - Transworld Oil & Gas Ltd.
  - Ultrastar Exploration LLC
  - URSA Major Holdings LLC
  - Woodbreeze Petroleum, Inc.
  - Woodstone Resources, LLC
NORTH SLOPE LEASING ACTIVITY TRENDS

NORTH SLOPE AREAWIDE LEASE SALE RESULTS:
NUMBER OF TRACTS THAT RECEIVED BIDS

- # of tracts with single bids
- # of tracts with multiple bids

NUMBER OF TRACTS WITH BIDS

NORTH SLOPE AREAWIDE LEASE SALE

113
26 33 28 72 60 135 37 18 49 69 117 140 78 88 42 3

NORTH SLOPE LEASING ACTIVITY TRENDS

BEAUFORT SEA AREAWIDE LEASE SALE RESULTS:
NUMBER OF TRACTS THAT RECEIVED BIDS

- # of tracts with single bids
- # of tracts with multiple bids

BEAUFORT SEA AREAWIDE LEASE SALE

NUMBER OF TRACTS WITH BIDS

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<td>2015</td>
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NORTH SLOPE SLEASING ACTIVITY TRENDS

NORTH SLOPE FOOTHILLS AREAWIDE LEASE SALE:
NUMBER OF TRACTS THAT RECEIVED BIDS

- # of tracts with single bids
- # of tracts with multiple bids

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<tr>
<td>2015</td>
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NORTH SLOPE FOOTHILLS AREAWIDE LEASE SALE
COOK INLET RESOURCE & RESERVES
OVERVIEW

- Undiscovered, Technically Recoverable Oil & Gas (USGS, 2011):
  - mean conventional oil 599 MMBO
  - mean conventional gas 13.7 TCF
  - mean unconventional gas 5.3 TCF

- Natural Gas Reserves (ADNR, 2015)
  1.18 TCF (Proved + Probable)

- 1.2 TCF additional mean resource assessed in OCS waters (BOEM, 2011)
Apache Alaska Corporation:
• Ceasing all seismic acquisition and other exploration activity in Alaska
• Intend to hold leases until expiration

Conoco Phillips:
• Recent sale of interest in Beluga River Unit

Furie Operating Alaska
  o Kitchen Lights Unit:
    • Set monopod platform in 2015;
    • Completed onshore gas facilities & pipeline in 2015
    • Commenced production in December 2015
    • Randolf Yost, 2nd jack-up rig, arrived in Homer early March, plan to drill two development wells in 2016

BlueCrest Energy, Inc.
  o Cosmo Unit:
    • Planned arrival of new land-based drill rig for oil development in 2016
    • Plan 1st oil in mid-2016 (oil production will be from onshore)
    • Possible offshore drilling for gas (Spartan 151 jack-up rig) in 2016
COOK INLET CURRENT ACTIVITY & NEW DEVELOPMENTS

- **Hilcorp Alaska, LLC:**
  - Cannery Loop Unit:
    - Completed 2 new wells in 2015
    - Planned 2 workovers in 2016
  - Deep Creek Unit:
    - Drilled 1 new well in 2015 and 2nd is planned for 2016
  - Ninilchik Unit:
    - Completed 3 new gas wells in 2015 and 7 new gas wells in 2014
  - Trading Bay Unit:
    - 19 workover jobs in 2015 and 3 new wells in 2016
  - Purchased XTO Energy, Inc. assets in southern Cook Inlet
  - Projected ~$120 MM investment in Cook Inlet in 2016
COOK INLET WELLS DRILLED & SEISMIC ACQUIRED

- **New Exploration & Development Wells Drilled 2010-2014**
  - 24 Exploratory Wells and Well Branches
  - 65 Development & Service Wells and Well Branches

- **2D & 3D Seismic Data Acquired (Tax Credit Data) 2004-2014**
  - Line Miles 2D (onshore/offshore) ~ 725
  - Square Miles 3D (onshore/offshore) ~ 660
WHO’S WORKING COOK INLET?

- **Large Majors (>\$40B Market Cap):**
  - ConocoPhillips Alaska

- **Mid-Sized Independents:**
  - Hilcorp Alaska, LLC
  - Apache Alaska Corp.

- **Small Independents & LLCs:**
  - Alaska Energy Alliance Inc.
  - AIX Energy LLC
  - Alaska LLC
  - Aurora Gas LLC
  - Aurora Exploration LLC
  - BlueCrest Energy Inc.
  - CIRI Production Company
  - Cook Inlet Energy LLC
  - Cornucopia Oil & Gas Company LLC
  - Corsair Oil & Gas Company LLC
  - Furie Operating Alaska LLC
  - New Alaska Energy LLC
  - NordAq Energy LLC
  - Taylor Minerals LLC
  - Woodstone Resources LLC
COOK INLET AREAWIDE LEASE SALE RESULTS: 1999 - 2015

- # of tracts with single bids
- # of tracts with multiple bids

<table>
<thead>
<tr>
<th>Year</th>
<th>Single Bids</th>
<th>Multiple Bids</th>
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<tbody>
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<td>2005</td>
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<tr>
<td>2015</td>
<td>30</td>
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FRONTIER BASINS TAX CREDIT* AREAS

*43.55.025(a)(6-7) credits sunset June, 2016.

- Kotzebue/Selawik Basin
- Yukon Flats & Nenana Basins
- Yukon River Delta
- Copper River Basin
- Alaska Peninsula
<table>
<thead>
<tr>
<th>Region</th>
<th>Mean Oil Estimate (Million Barrels)</th>
<th>Mean Gas Estimate (Billion Cubic Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onshore Arctic</td>
<td>15,908</td>
<td>98,960</td>
</tr>
<tr>
<td>Offshore Arctic</td>
<td>23,750</td>
<td>108,180</td>
</tr>
<tr>
<td>Interior Basins (only partially assessed)</td>
<td>234</td>
<td>5,641</td>
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<tr>
<td>Upper Cook Inlet</td>
<td>599</td>
<td>19,037</td>
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<tr>
<td>Other Southern Alaska</td>
<td>2,859</td>
<td>23,458</td>
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<tr>
<td>TOTAL</td>
<td>43 BBO</td>
<td>255 TCF</td>
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Includes Yukon Flats and Kandik basins (Nenana, Kotzebue, Copper River, Holitna, & Susitna basins not assessed)

Mainly federal OCS waters, minor AK Peninsula onshore
EXPLORATION LICENSE PROGRAM

- The program supplements the state's oil and gas leasing efforts & encourages exploration outside of known oil & gas provinces
- Every April, DNR accepts proposals to conduct exploratory activity outside existing leasing areas
- The DNR Commissioner may issue a notice requesting proposals to explore a designated area (encourages competition)
- The applicant has up to 90 days to submit their proposal
- Three exploration licenses have been converted to lease: Susitna II, Copper River, & Nenana
WHO’S WORKING THE FRONTIER BASINS?

- **Ahtna**
  - Copper River Basin, Tolsona Exploration License:
    - Reprocessed 2D seismic data & acquired new Tolsona 2D seismic in spring 2014
    - Plan to drill Tolsona #1 gas exploration well in early 2016; follow up to the Ahtna #1-19 well drilled in 2007-2009 (Rutter & Wilbanks)

- **Doyon**
  - Nenana Basin:
    - Drilled Nunivak #1 and #2 exploratory wells, 2009-2013
    - Acquired 2D and 3D seismic, gravity, magnetics, and lakebed geochemical surveys, 2005 - 2014
    - Converted exploration license to leases between 2013 & 2014
    - Additional 2D seismic in progress
    - Plan to spud Toghotthele #1 this June
WHO’S WORKING THE FRONTIER BASINS?

- **Doyon**
  - Yukon Flats Basin:
    - Acquired 2D seismic, gravity, magnetics, and lakebed geochemical surveys

- **NANA**
  - Kotzebue Basin:
    - Evaluating and marketing prospects based on legacy industry seismic

- **Usibelli Coal Mine Inc.**
  - Healy Basin Gas-Only Exploration License:
    - Drilled one shallow exploration well in 2014
FRONTIER BASINS WELLS DRILLED & SEISMIC ACQUIRED

- New Exploration Wells Drilled 2004-2014
  - 7 Exploratory Wells and Well Branches

- 2D & 3D Seismic Data Acquired (Tax Credit Data) 2004-2014
  - Line Miles 2D (onshore) ~ 1,220
  - Square Miles 3D (onshore) ~ 340
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<tr>
<th>LOCATION</th>
<th>ADL FILE NUMBER</th>
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<td>$500,000</td>
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<td>Nenana Basin</td>
<td>390079</td>
<td>498,813</td>
<td>--</td>
<td>--</td>
<td>10 years</td>
<td>Converted to Leases</td>
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<td>5 years</td>
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THANK YOU!

550 W. 7TH AVE, STE. 1100, ANCHORAGE, AK 99501
www.dog.dnr.alaska.gov