

The Mount Spurr Geothermal Project

*Senate Resources Committee
Meeting
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Kenai, AK*



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We will not update these forward-looking statements, even though our situation will change in the future.



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Outline

- Introduction to:
 - Ormat Technology, Inc
 - Geothermal power
 - The Mt. Spurr geothermal project
- Project status and timeline
- Costs, matching funds and overall funding plan
- Local support
- Amount and cost of power supplied to Railbelt
- Economic and environmental impact



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Ormat Brings Credibility

- A leader in geothermal power
- Owns and operates 553* MW worldwide
- Supplied approximately 1,370 MW to 24 countries
- Vertically integrated:
 - Explores, develops, engineers, manufactures, constructs, operates
- Employs approx. 500 people in the U.S. ; >1,100 worldwide
- Publicly traded on the NYSE (“ORA”)

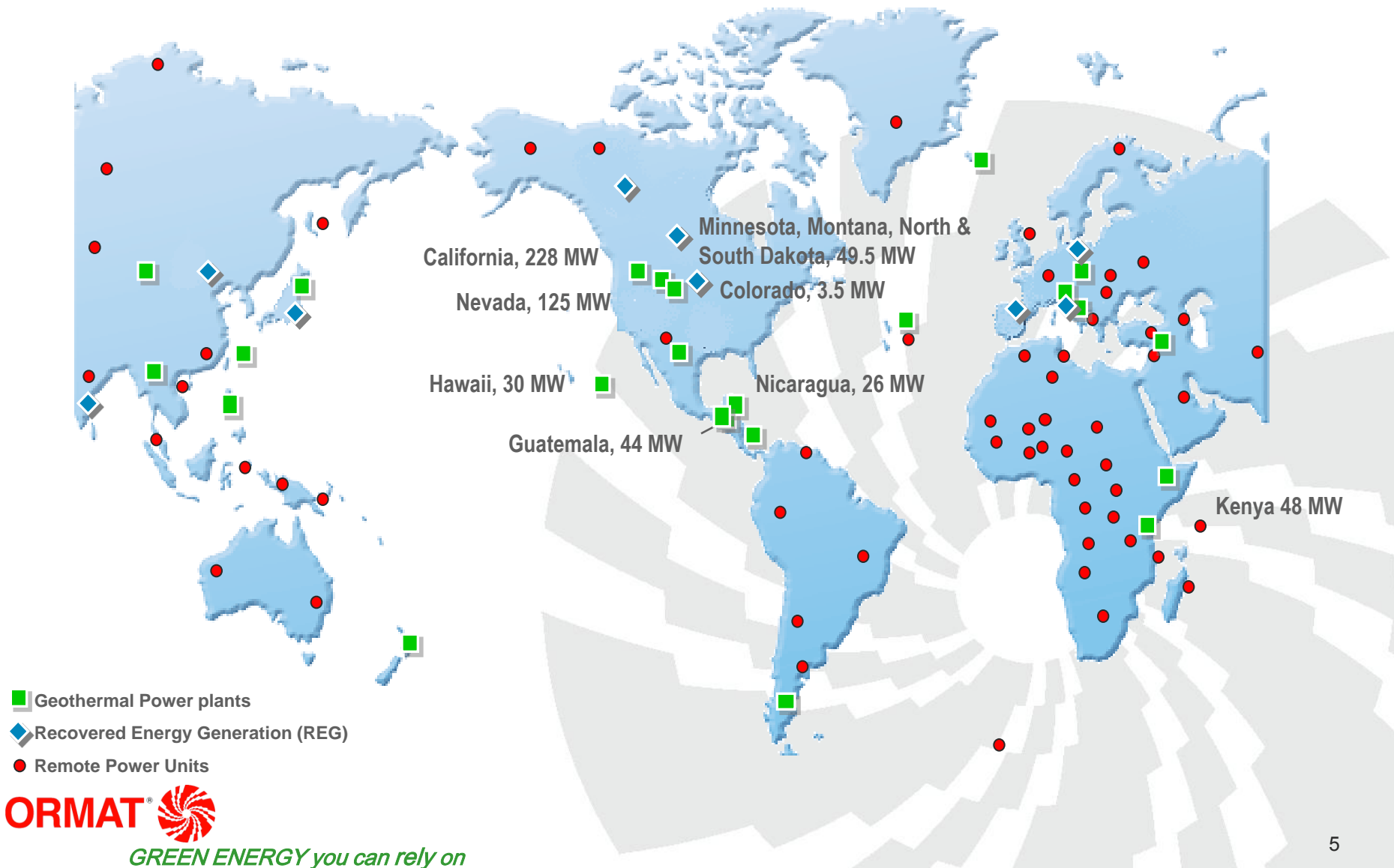
* Including the 50 MW of North Brawley in California, which operates at approx. 30 MW



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Global Presence

Meeting the Needs of Customers in 71 Countries



Ormat's Commitment to Alaska

- >100 Remote Power Units
 - Serving remote gate valves
 - TransAlaska Pipeline
 - Since 1975
- First geothermal unit
 - Tested in 1979
 - University of Alaska Fairbanks
 - At Manley Hot Springs
- Approx. \$5 million of Ormat equity invested in Mt. Spurr to date



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ORMAT

30 Years of Ormat in Alaska

1970-2006

ORMAT® Energy Converters (OEC) powering 62 Remote Gate Valve stations along the TransAlaska Pipeline, since 1976

OEC Prototype for TAPS Tested at UAF, 1970

4 kW Geothermal OEC at UAF, 1977

**Time,
the Only True Test of
Reliability**

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Geothermal – Key Attributes

- Utilities' renewable energy of choice:
 - Base-load generation
 - Cost-competitive
 - Highly reliable; >95% availability
 - Proven technology: ~11,000 MW deployed worldwide
- No fuel cost risk; Fixed long-term pricing
- Sustainable & environmentally friendly
 - Closed loop system with near zero emissions
 - No water consumption [Mt. Spurr plant will be air-cooled]
 - Minimal surface and visual impact
- Creates long-term, high-quality jobs



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Geothermal – Development Inhibitors

- Resources are scarce
- High upfront CAPEX and risk required in order to discover and confirm the resource

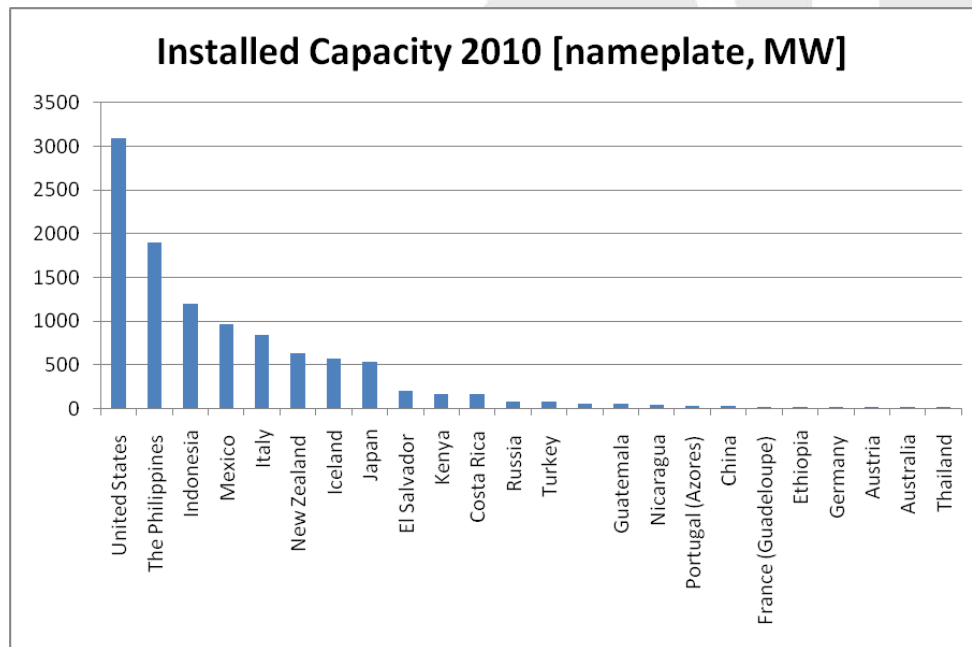


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Worldwide Geothermal Deployment

- Approximately 11,000 MW deployed world-wide
- 24 nations have utility-scale geothermal generation
 - US is the world leader, with plants in CA, NV, HI, UT, ID
- Supportive policies have been key to success in all nations

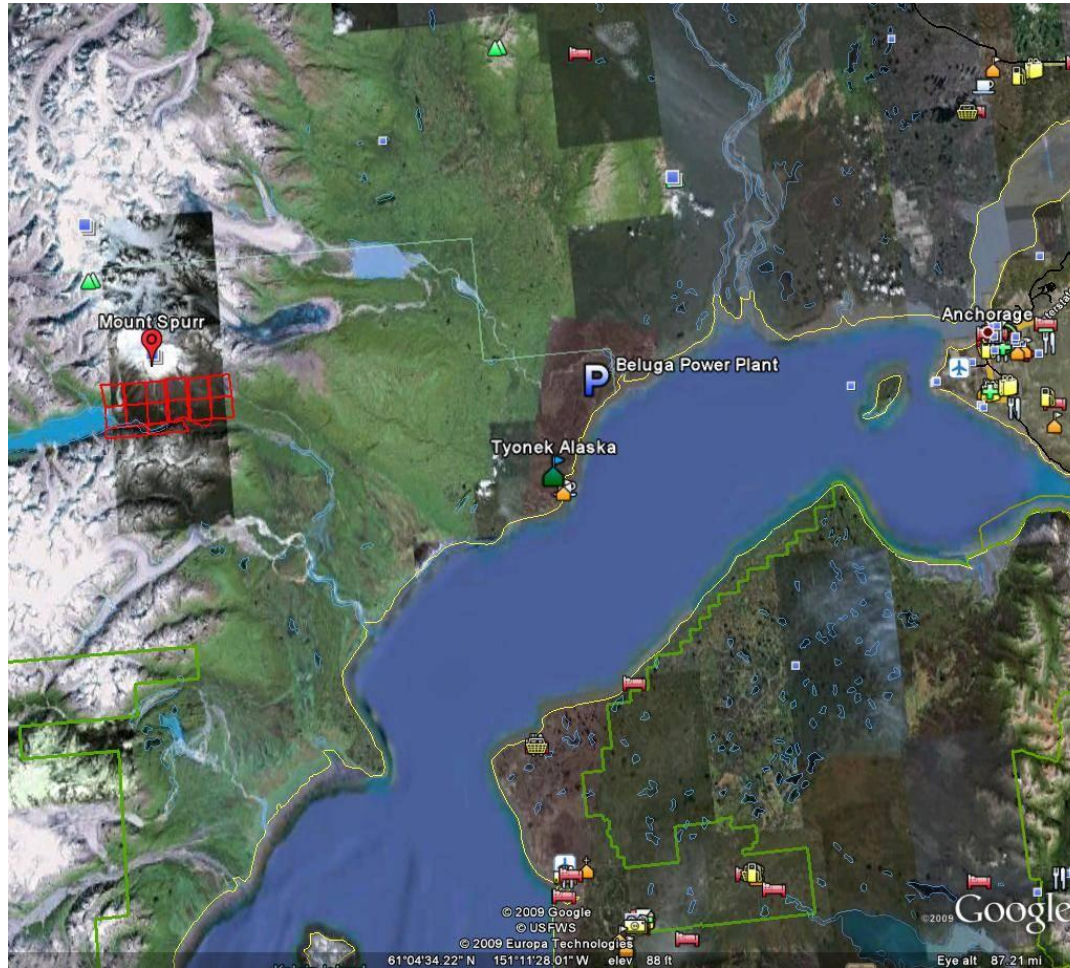


Source: International Geothermal Association



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Project Location



West Cook Inlet
~75 miles west of
Anchorage

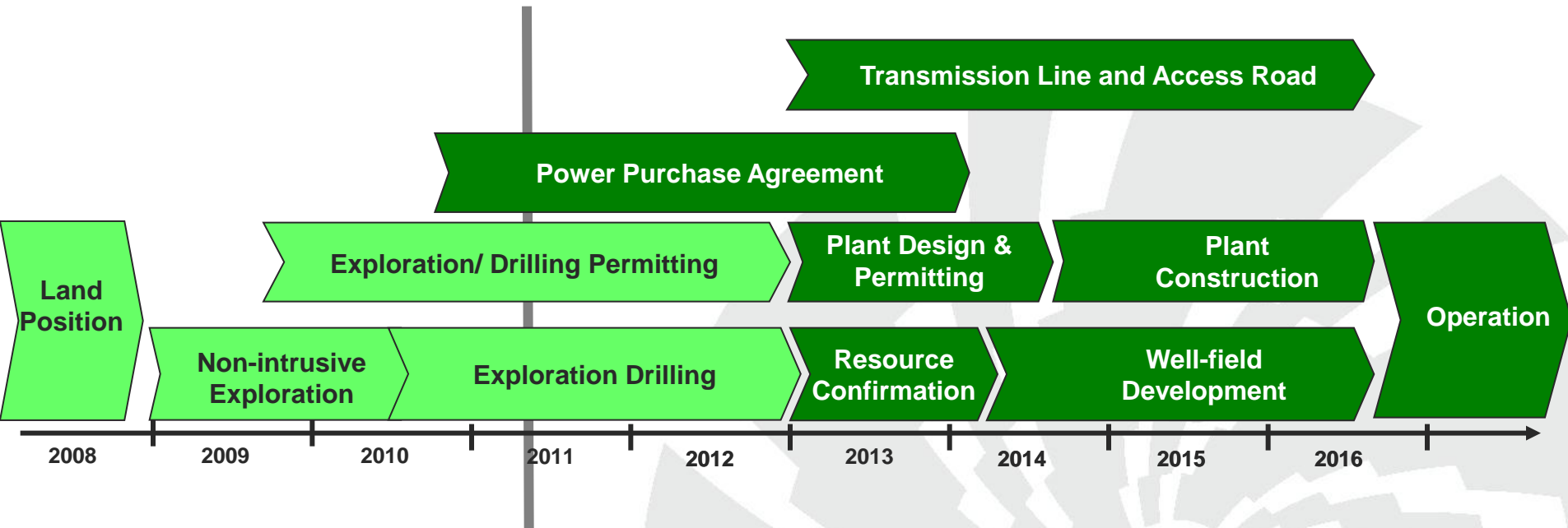
Source: GoogleEarth



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Mt. Spurr – Status & Estimated Timeline

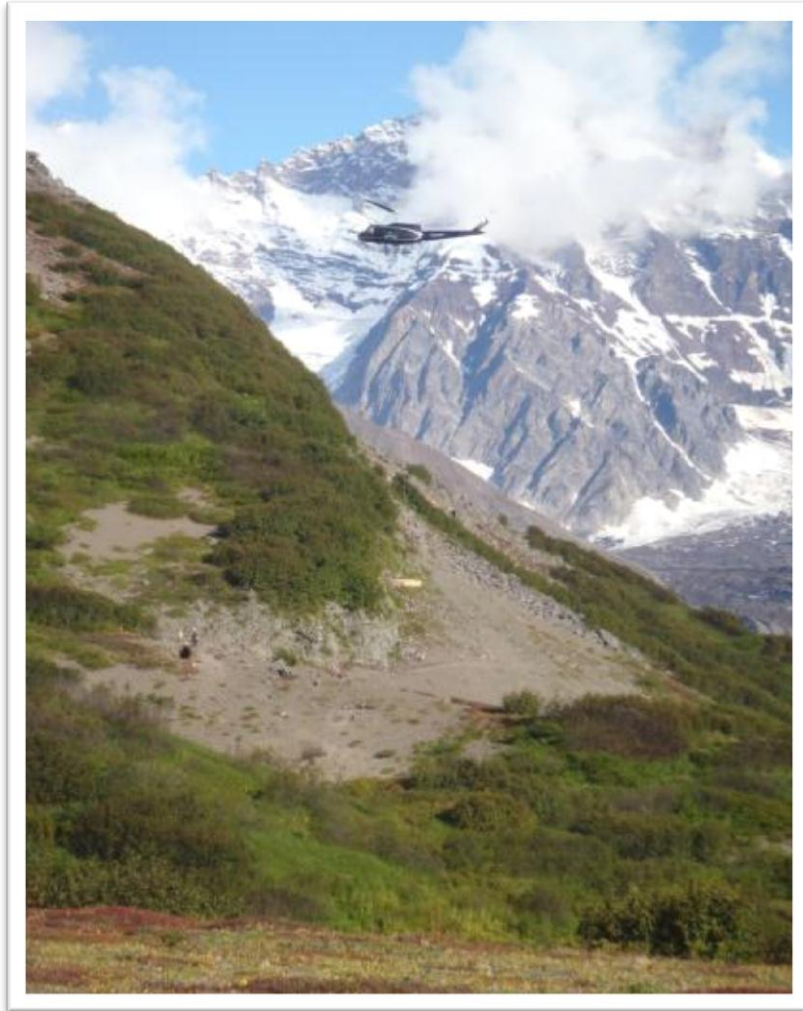


- 36,000 acres of state lands leased from DNR in October 2008
- Non-intrusive exploration conducted summer of 2009 and of 2010
- Two exploration core holes (~1,000 ft) drilled in September 2010
- One deep exploration core hole (~4,000 ft) drilled during summer of 2011



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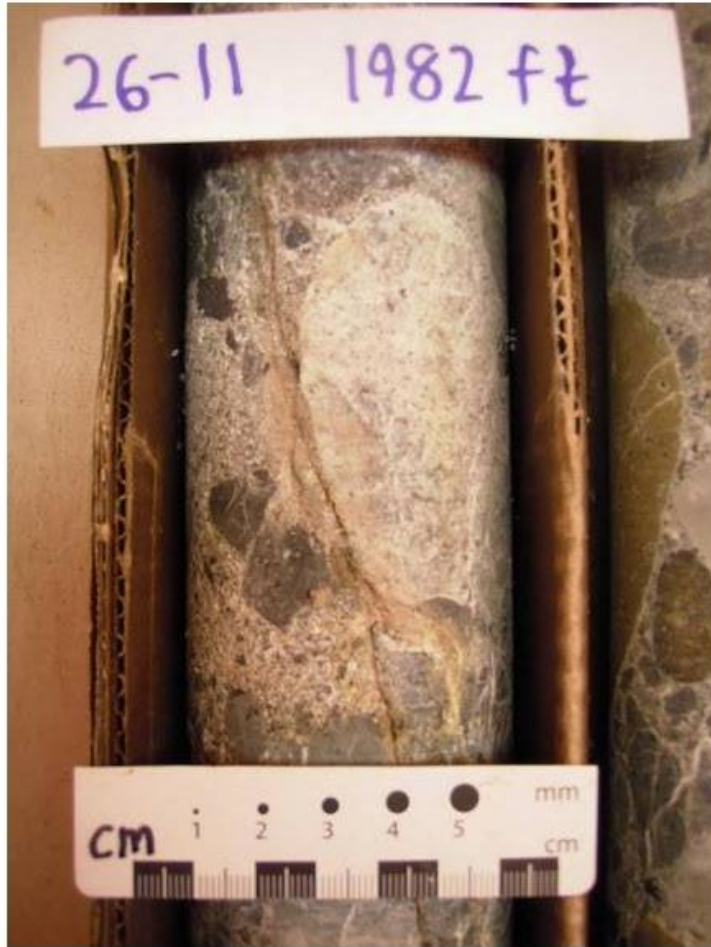
Core Drilling in 2010 and 2011



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Core Collected – Donated to DNR/DGGS



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Results to Date

- Results from the 2009-2010 exploration and drilling work were encouraging as to the potential existence of a geothermal resource at commercial depths
- Results from the 2011 deep core hole were less encouraging, as the rock type encountered was not a good reservoir rock and the temperatures measured were colder than expected



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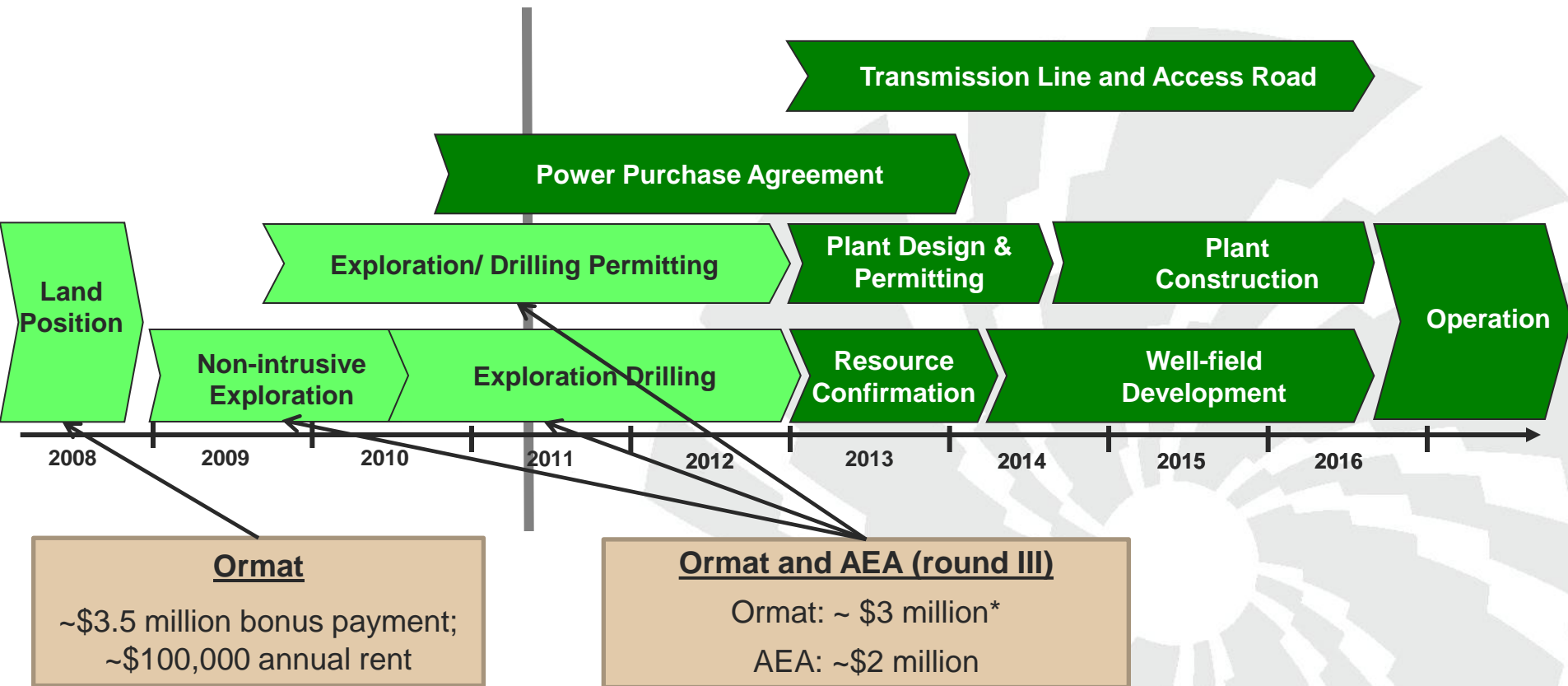
Status and Next Steps

- Ormat is currently analyzing the results and updating the 3-D geological model
- All data is being shared with the State (DNR/DGGS, AOGCC) and Ormat is in discussion with these agencies to get thoughts and ideas
- Next step is to update the exploration plan, and may include recommendation to rotary drill a deeper exploration well



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Sources of Funding So Far



* \$2.1 million as matching funds per the grant agreement and the rest outside it



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Energy to the Railbelt

- Capacity estimated at 50~100 MW net, average. Target is:
 - ~50 MW in 2016
 - Expand to ~100 MW in 2019
- Near-term solution, bridging the gap to longer-term mega-solutions, e.g. Suisitna/Watana hydro and/or gas pipeline
- At 95% availability: 416~832 GWh/year



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Cost of Power to Railbelt Utilities

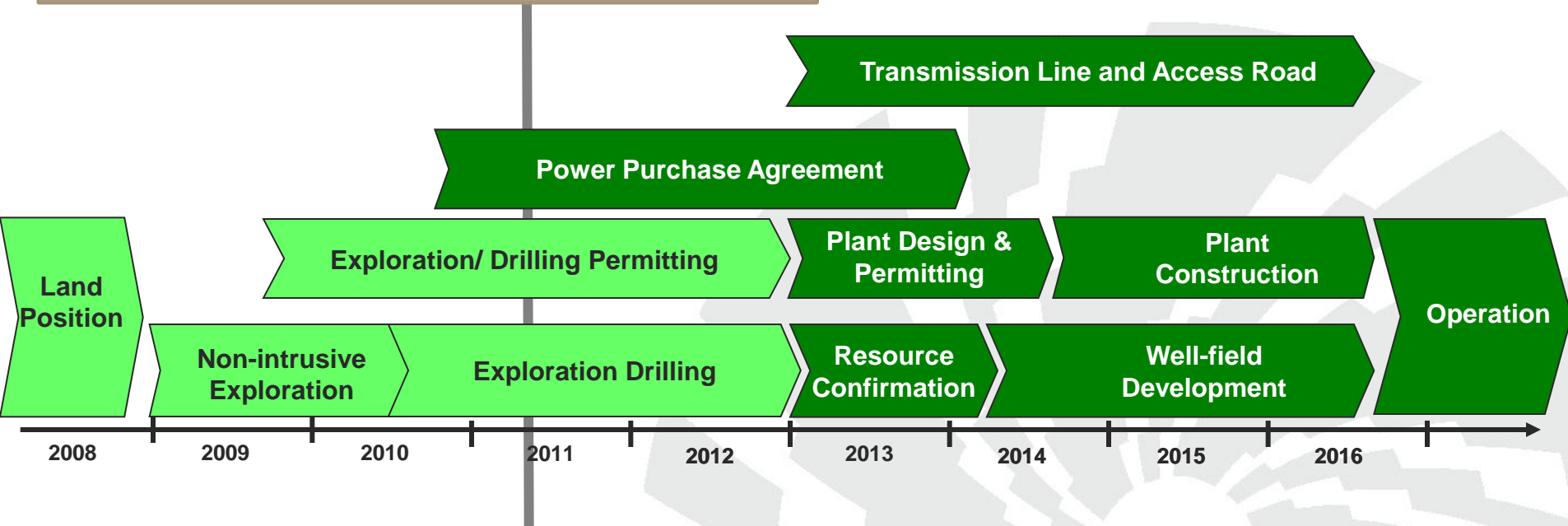
- Estimated at ~12 c/kWh
- Fixed price, not coupled with fossil fuels
- Geothermal is a baseload 24/7 resource, therefore utilities will not incur any integration costs
- Price is higher than current avoided costs (5-10 c/kWh), however:
 - Is comparable to other alternatives, e.g. Suisitna/Watana
 - Railbelt utilities' avoided costs are likely to go up with the continued depletion of Cook Inlet gas reserves



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Additional Appropriated Funds

FY 2012 Direct Appropriation: \$12.5 million
AEA round IV grant: \$2 million



- We will be working with AEA and DNR on updating the scope of work once a new recommended plan of exploration is ready



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Local Support

■ From nearest communities:

- Tyonek:
 - Cooperative agreement with Tyonek Native Corporation (TNC) in place
 - TNC provided Ormat with letters of recommendation
- Kenai Peninsula Borough
 - Mayor provided Ormat with letters of recommendation
- Anchorage
 - Mayor provided Ormat with letters of recommendation

■ Environmental and renewable energy communities:

- Cook Inletkeeper
- Renewable Energy Alaska Project (REAP)



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Regional Priority and AEA Vetting

- Project supported by all 6 Railbelt utilities, separately and via ARCTEC, as a potentially viable near term solution
- Identified by the AEA-sponsored 2010 Railbelt Integrated Resource Plan as a beneficial component in the Railbelt's generation portfolio
- Selected by AEA for round III and IV of the Renewable Energy Fund Grant (REFG)



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Economic Impact

- Alaska's 100 MW of geothermal power could:
 - Provide 50 long term high paying jobs
 - Provide more than 100 construction jobs
 - Impact >200 local vendors
 - Fuel local economy with >\$850 million over 30 years



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Environmental Impact

■ Alaska's 100 MW of geothermal power could annually:

- Save ~6,000,000 MMBTU of depleting Cook Inlet natural gas
- That's roughly the equivalent of Anchorage's entire residential heating consumption
- Avoid emission of ~320,000 tons of CO₂*

*Calculated for natural gas, assuming 53 Kg of CO₂ per MMBtu (DOE/EIA <http://www.eia.doe.gov/oiaf/1605/coefficients.html>)



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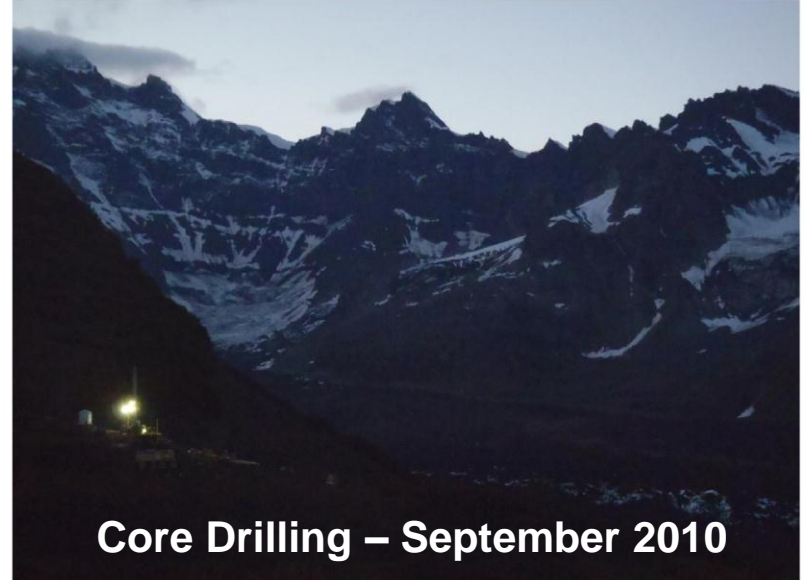
Summary – Mt Spurr Benefits

- Clean, reliable, field-proven, base-load power to the Railbelt
- Significant relief in Cook Inlet natural gas consumption
- Significant contributor towards 50% renewables by 2025
- Provides long-term price stability
- Near-term solution, bridging the gap to longer-term mega-solutions, e.g. Suisitna hydro and/or gas pipeline
- Provides high quality, long term green jobs



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Thank You!



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