

Effective Tribal Project Partnerships at Blue Lake Rancheria

Prepared for:

U.S. Department of Energy, Office of Indian Energy, and Western Area Power Administration

Webinar

Effective Tribal Project Partnerships

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www.bluelakerancheria-nsn.gov

Today

❖ Introductions

- Jana Ganion, Sustainability Director, Blue Lake Rancheria

❖ Microgrid Project

❖ Microgrid Partnerships

❖ Additional Strategic Partnerships

❖ Q&A

Mad River Residents



Photo courtesy of fishingwithjd.com

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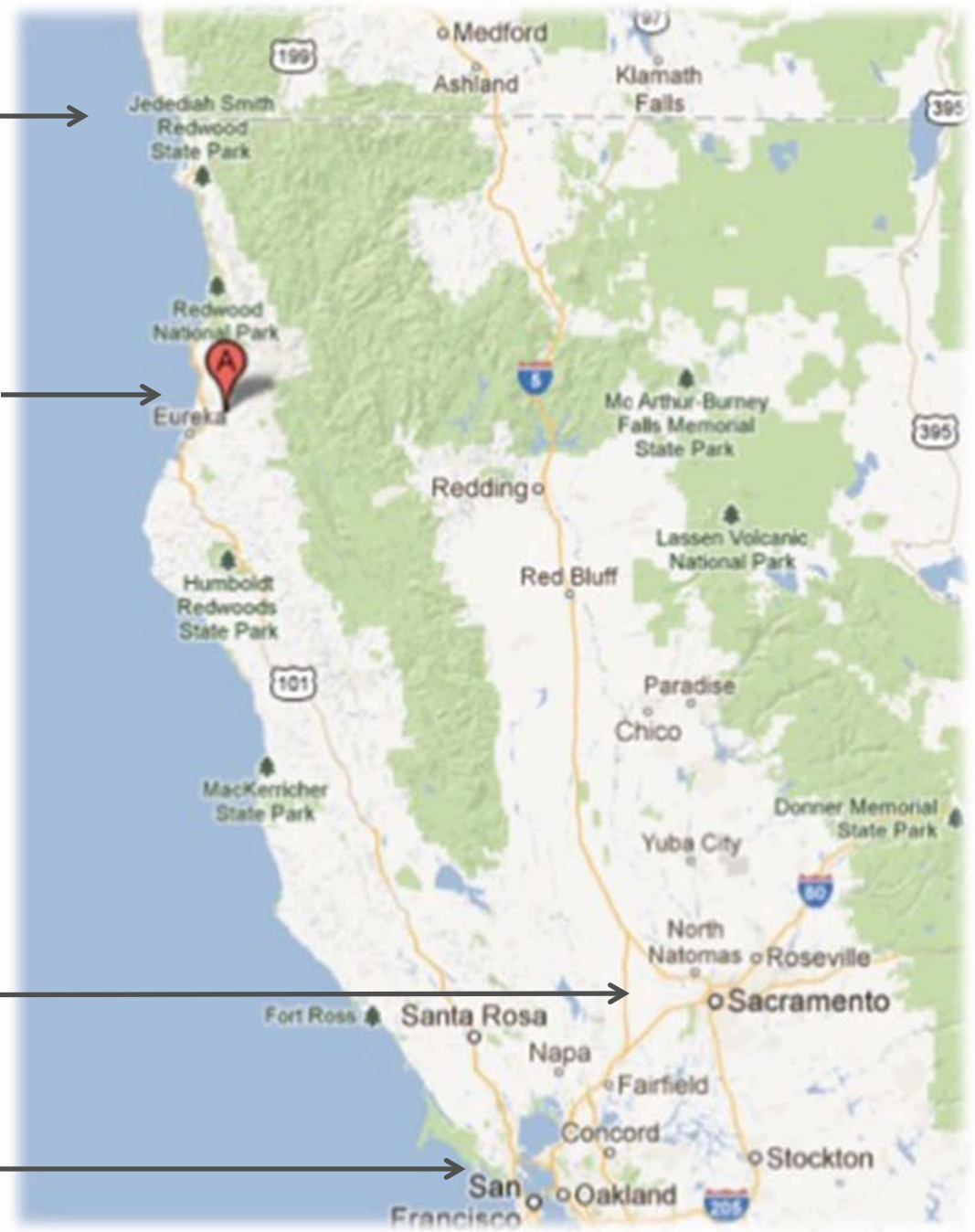


Oregon / California
Border

Blue Lake Rancheria

Sacramento
Region

San Francisco
Bay Area



Blue Lake Rancheria, California

- ❖ Federally Recognized (1908) | 51 Members
- ❖ Tribal Government | 15 Divisions | 30 Programs
- ❖ ~100 Acres of Trust Land spanning the Mad River
- ❖ Economic Enterprises | ~400 EEs | ~2,000 Visitors Daily
- ❖ White House “Climate Action Champion” (for lower GHGs/resilience)
- ❖ PG&E “Integration Award” (for energy strategy)
- ❖ Appointed, U.S. Dept. of Energy, Office of Indian Energy, Indian Country Energy and Infrastructure Working Group
- ❖ Appointed, U.S. Bureau of Ocean Energy Management CA Task Force
- ❖ Appointed, CA Integrated Climate Adaptation and Resilience Program Technical Advisory Council



Photo courtesy of fishingwithjd.com



BLR Energy Vision

- ❖ Reduced, Levelized, Predictable Costs of Energy
- ❖ Support for Lifeline Sectors
 - Energy, water, food, communication, transportation
- ❖ Climate Action / GHG Reductions / Community Resilience
 - 40% GHG reductions by 2018 (2014 baseline); 100% zero-carbon energy by 2030
- ❖ Energy Security / Sovereignty
- ❖ Economic Development
 - Clean energy jobs | Basis for economic enterprise expansion



Microgrid
Groundbreaking
at BLR (2015)



BLR Energy Strategy



- ❖ Energy Efficiency
- ❖ Community-scale Clean Energy
 - Microgrid
- ❖ Biodiesel Manufacturing and Biodiesel-fueled Public Transit
- ❖ Electric Vehicle Fleet and Infrastructure (powered by solar/microgrid)
- ❖ Food-energy and water-energy nexus
 - Onsite food production
 - Smart community water system
- ❖ Upcoming
 - Fuel Station / Convenience Store “Solar+” Clean Energy/Transportation Package
 - Adding 1MWh of Battery Storage
 - Utility-scale Solar + Storage
 - Residential – Community ‘Solar Garden’ + Net Energy Metering Aggregation

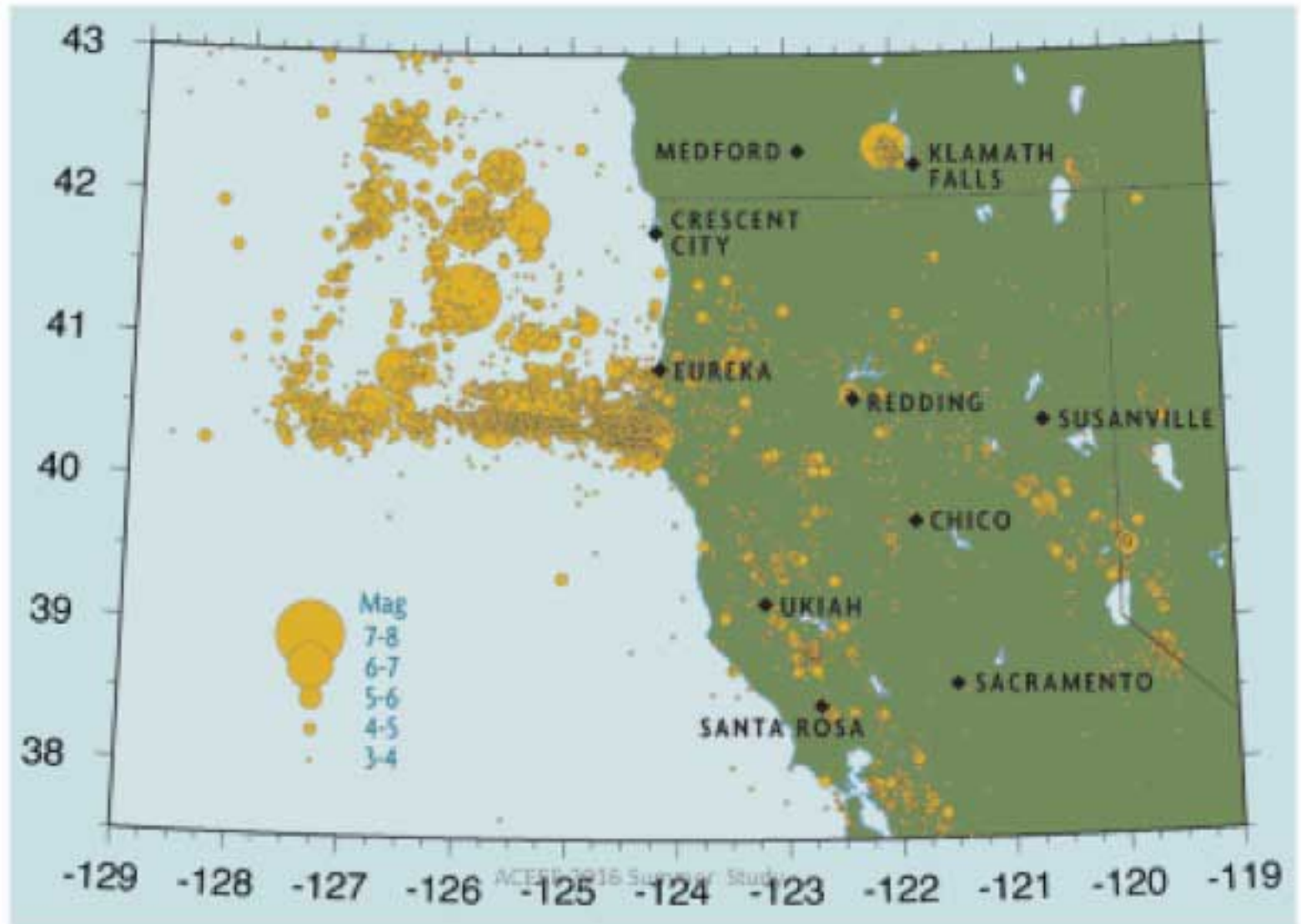


Why Clean Energy + Microgrid?

- ❖ Lower, leveled cost of energy
 - Rising energy prices (~7%+ per year)
 - Reduced energy costs (BLR is saving ~\$250,000 per year)
- ❖ Emergency preparedness
 - Tenuous supply (one ~70 MW transmission line and one 10" natural gas line)
 - Landslides often constrain shipments of liquid fuels and other supplies
- ❖ Job creation and economic opportunity
 - Increased employment by 10% as a direct result of clean energy strategy
- ❖ Climate action and environmental improvements
 - Region exceeds air quality standards (PM10)
 - Mad River is a listed impaired waterway
 - Economic and public interest to reverse causes of climate change
- ❖ Resilience
 - Rural, sparsely populated
 - Geographically isolated
 - Fukushima (2011) →
 - 1,000+ vehicles at BLR
 - Continuity of Operations
 - Stable economic infrastructure

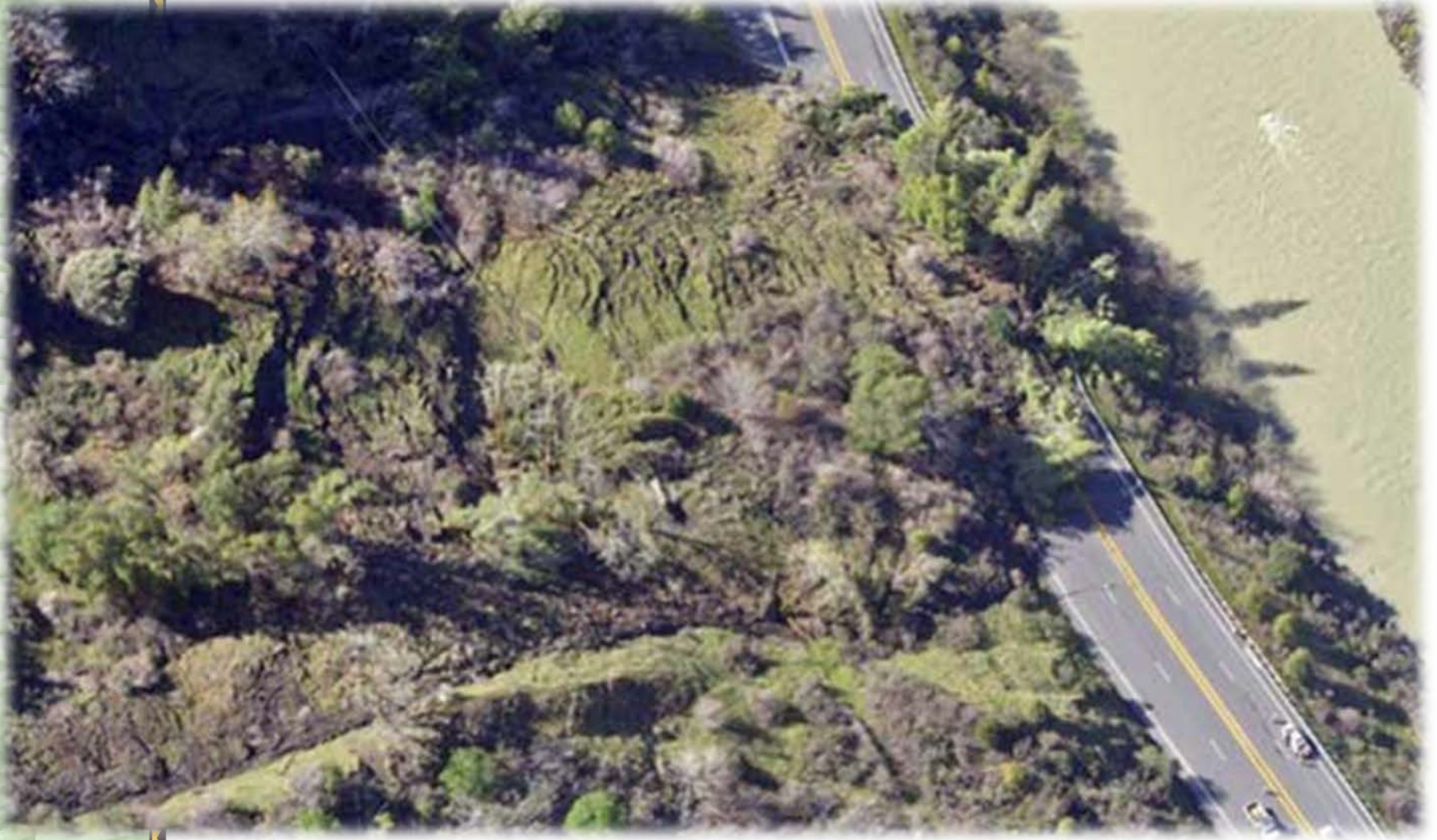


Earthquakes Since 1900



2011 Fukushima
tsunami at
Crescent City, CA





Microgrid Design

- ❖ Business-as-usual: energy arbitrage; lower costs; ease demands on larger grid
- ❖ Emergency situation
 - Islanded power for critical infrastructure
 - Power for a certified American Red Cross shelter-in-place
- ❖ Integrates renewables, storage, and controllable loads
 - 500kW Solar | 1MWh Battery storage
 - Powers government office, casino, hotel, event center, others
- ❖ Meets ~40% of annual energy production with zero-carbon energy
- ❖ Replicable model for community-scale built environments



Microgrid Partnerships

❖ Why Develop Partnerships?

- Capacity + funding competitiveness + project needs

❖ Project Leader

• Schatz Energy Research Center

- California Energy Commission EPIC grant lead
- Project management
- System integration engineering | Safety engineering
- Student involvement

• Humboldt State University (HSU)

- Engineering | Forestry | Communications
- Student-led feasibility projects | Internships
- Imbedded capacity building / knowledge transfer to the Tribe
- Cost-effective professional services (e.g., engineering)



Microgrid Partnerships (cont'd)

❖ Funding Partners

- California Energy Commission
 - Electric Program Investment Charge (EPIC) grant – \$5M
 - Project Oversight
 - Initial Environmental Review
 - Fosters Tribal/State Partnership
- Blue Lake Rancheria Investment
- Project Partner Matching Funds

❖ Key Technical Assistance and Testing Partners

- U.S. DOE Office of Indian Energy – Technical Assistance
- Idaho National Laboratory – Hardware-in-loop testing
- National Renewable Energy Laboratory – Cyber-security



Microgrid Partnerships (cont'd)

❖ Utility-related Partners

- Pacific Gas & Electric Company (PG&E) – key
- California Public Utilities Commission (CPUC)

❖ Technology Partners

- Siemens | Tesla | REC Solar

❖ Contractor Partners

- Colburn Electric | GHD Engineering | Kernen Construction



Additional Partnerships

❖ Tribal

- **BLR Tribal Government**
- **BLR Tribal Membership**
- Tribal Nations and Associations
 - North Coast Tribal Chairmen's Association
 - California Nations Indian Gaming Association
 - National Congress of American Indians
- BIA Northern California
- HSU Programs
 - ITEPP, INSREP

❖ Regional

- Redwood Coast Energy Authority (JPA)
- Humboldt County Office of Emergency Services
- Humboldt County Government
- American Red Cross
- Rotary, Chambers of Commerce, Visitors' Bureau
- Humboldt Bay Municipal Water District
- Humboldt Waste Management Authority
- City of Blue Lake



Additional Partnerships

❖ State

- California Energy Commission
- California Public Utilities Commission
- California Governor's Office of Planning and Research
- California Highway Patrol
- California Emergency Management Agency

❖ National

- U.S. Dept. of Energy
 - Office of Indian Energy | ICEIWG
 - National Laboratories
 - Idaho National Lab
 - National Renewable Energy Lab
 - Lawrence Berkeley National Lab
 - Oakridge National Lab
- U.S. Dept. of Interior
 - Bureau of Indian Affairs
 - Office of Indian Energy and Econ. Dev.
 - Division of Energy and Mineral Dev.
- White House Administration
- U.S. Dept. of Agriculture
- U.S. Dept. of Commerce
- NOAA | ACOE | EPA
- U.S. Bureau of Ocean Energy Management

❖ International

- United Nations



Thank you. Questions?



Jana Ganion
Energy Director
Blue Lake Rancheria
jganion@bluelakerancheria-nsn.gov



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