



DEPARTMENT OF  
**ECOLOGY**  
State of Washington



WASHINGTON STATE DEPT OF  
**NATURAL  
RESOURCES**  
WASHINGTON  
GEOLOGICAL SURVEY



# Geothermal Energy Resources Collaborative Process

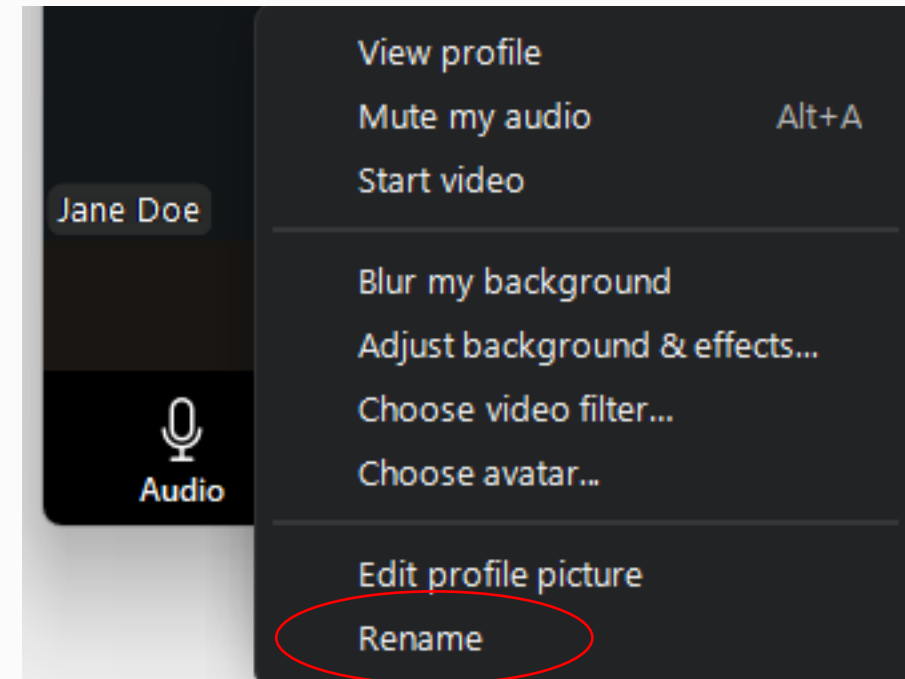
August 19, 2025

# Zoom options

- This meeting is being recorded
- Closed captioning is available through Zoom
- Send us a “Chat” if you need technical assistance
- Use the “Q&A” to ask questions
- Please stay on mute while others are speaking
- You are welcome to turn on your camera

# Renaming in Zoom

- To rename yourself, right click on your current name to access the "Rename" option
- Use your first and last name and include your affiliation



# Agenda

- 1** Welcome
- 2** Geothermal Collaborative Process
- 3** Geothermal Resources and Technologies
- 4** Opportunities and Risks
- 5** Next Steps and Opportunities for Input

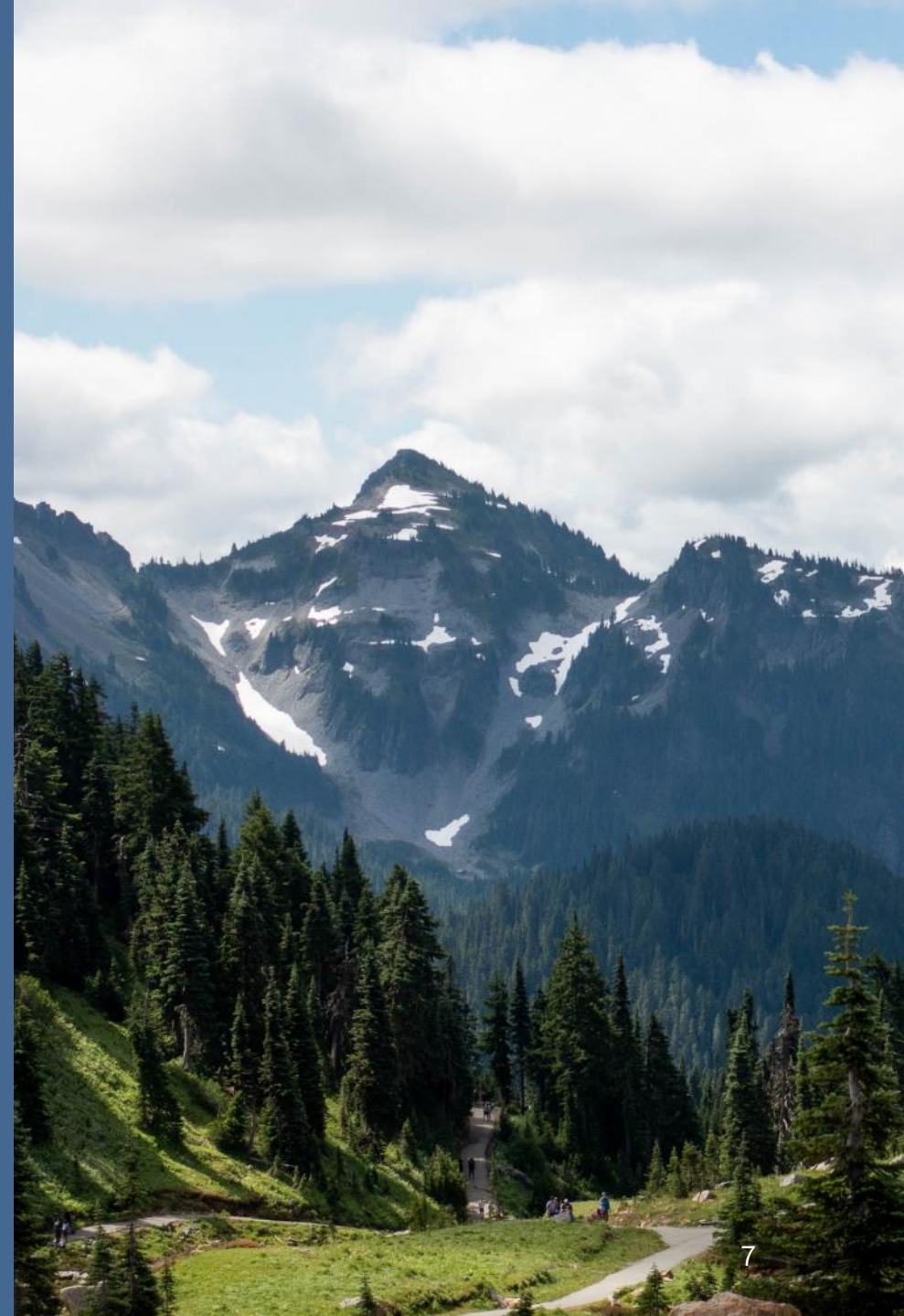
# Introductions

- Ecology
  - Diane Butorac
  - Alex Shin
  - Amelia Fujikawa
- Department of Natural Resources
  - Jessica Czajkowski
  - Lee Florea
  - Rian Skov

# Polls



# Geothermal Collaborative Process



# Collaborative process

- Collaborative process to identify opportunities and risks of geothermal energy development ([Senate Bill 6039](#))
- **Objectives**
  - Providing information about geothermal areas and technologies
  - Gathering input from local governments, Tribes, communities, industry and other interested parties
  - Considering the potential impacts of developing geothermal energy resources
  - Identifying key factors to consider when siting projects

# State agencies involved

- Department of Natural Resources (DNR) Washington Geological Survey
- Department of Commerce (Commerce)
- Department of Archaeology and Historic Preservation (DAHP)
- Department of Fish and Wildlife (WDFW)
- Energy Facility Site Evaluation Council (EFSEC)

# Potential geothermal sites

- Interest in developing Washington's geothermal energy resources
- Currently no proposed projects
- Focused on three geographic areas identified by DNR:
  - Mount Baker
  - Mount St. Helens
  - Wind River valley
- Process will also consider statewide factors

# Tribal engagement

- Ecology is planning several Tribal forums to gather input
- At the request of Tribes, the process can include additional participation with independent subject matter experts

# Interested Parties

- Communities
- Local and regional agencies
- Industry, utilities, and labor
- Federal agencies
- State research institutions
- Environmental and other organizations

# Workshops

- In-person and virtual community and Tribal workshops
- Topics will vary based on community and Tribal interests
- Workshops announced on our [website](#) and [email](#)

# Technical research and facilitation

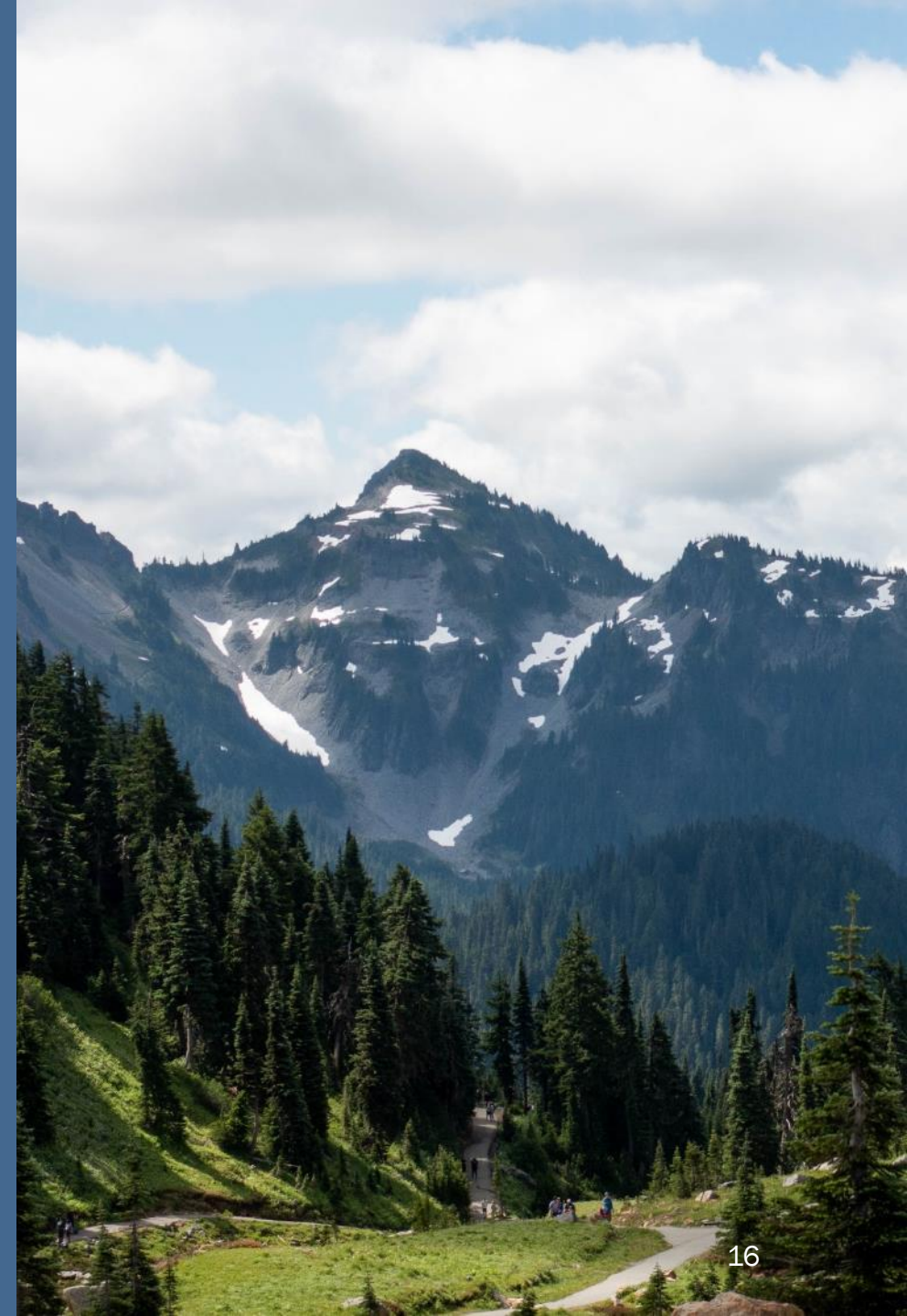
- Facilitation of the collaborative process workshops
- Technical research on emerging technologies, potential impacts, siting considerations, and regulatory framework

# Legislative report

- Ecology prepare reports for the governor and Legislature with recommendations
- Update due June 30, 2026
- Final report due June 30, 2027



# Geothermal Resources and Technologies

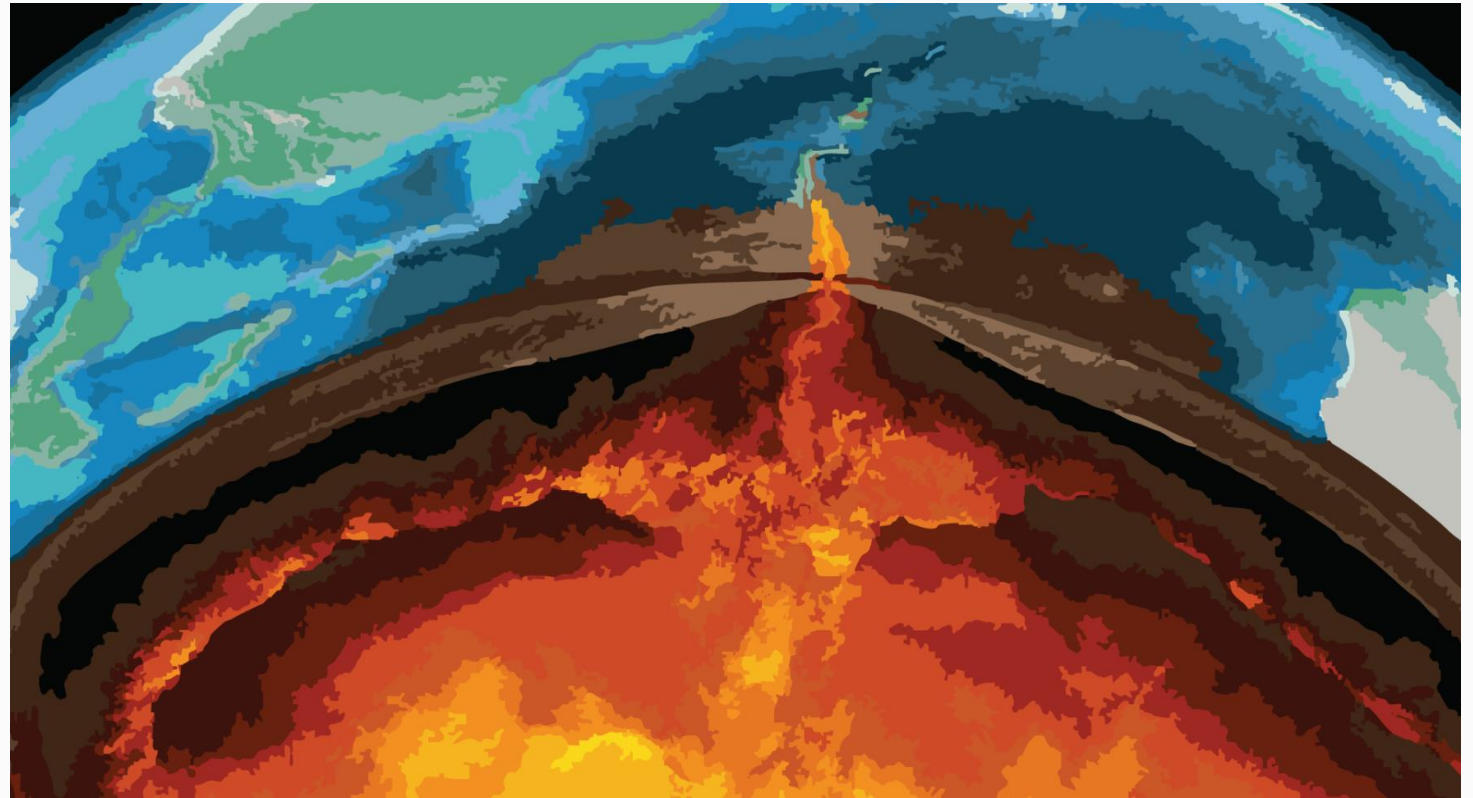


# Interactive StoryMap



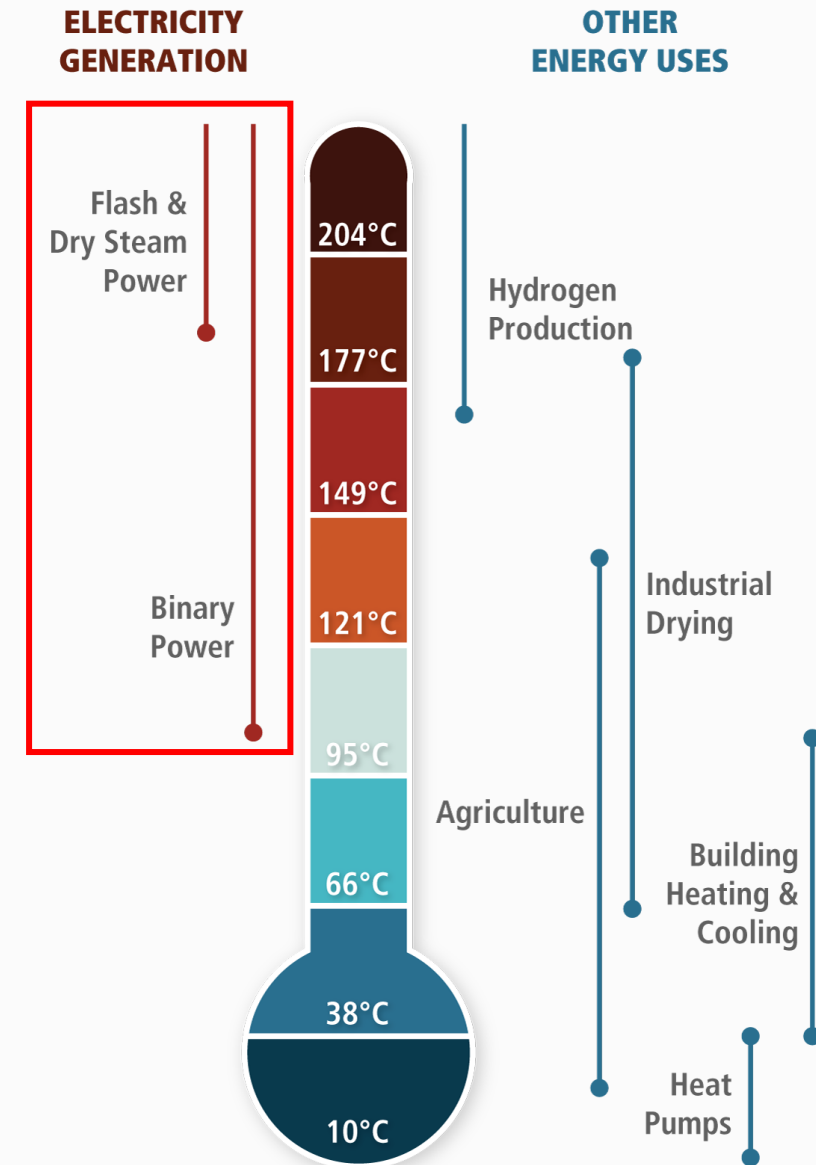
# Geothermal energy

- Geothermal energy is produced from heat inside the earth.
- In some areas, hotter rocks and fluids are closer to the surface.
- A geothermal resource has accessible heat to use for a specific application.

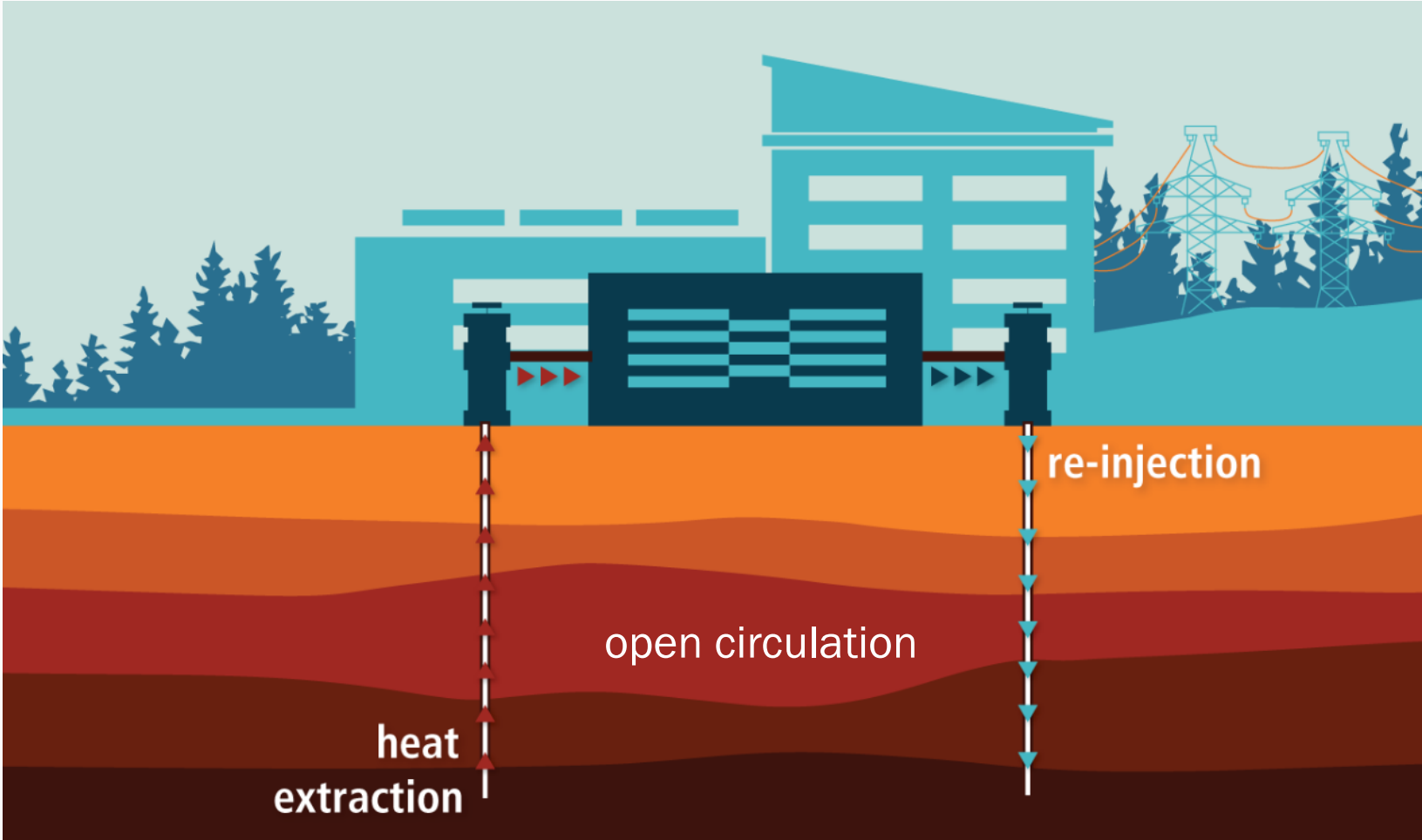


# Geothermal power

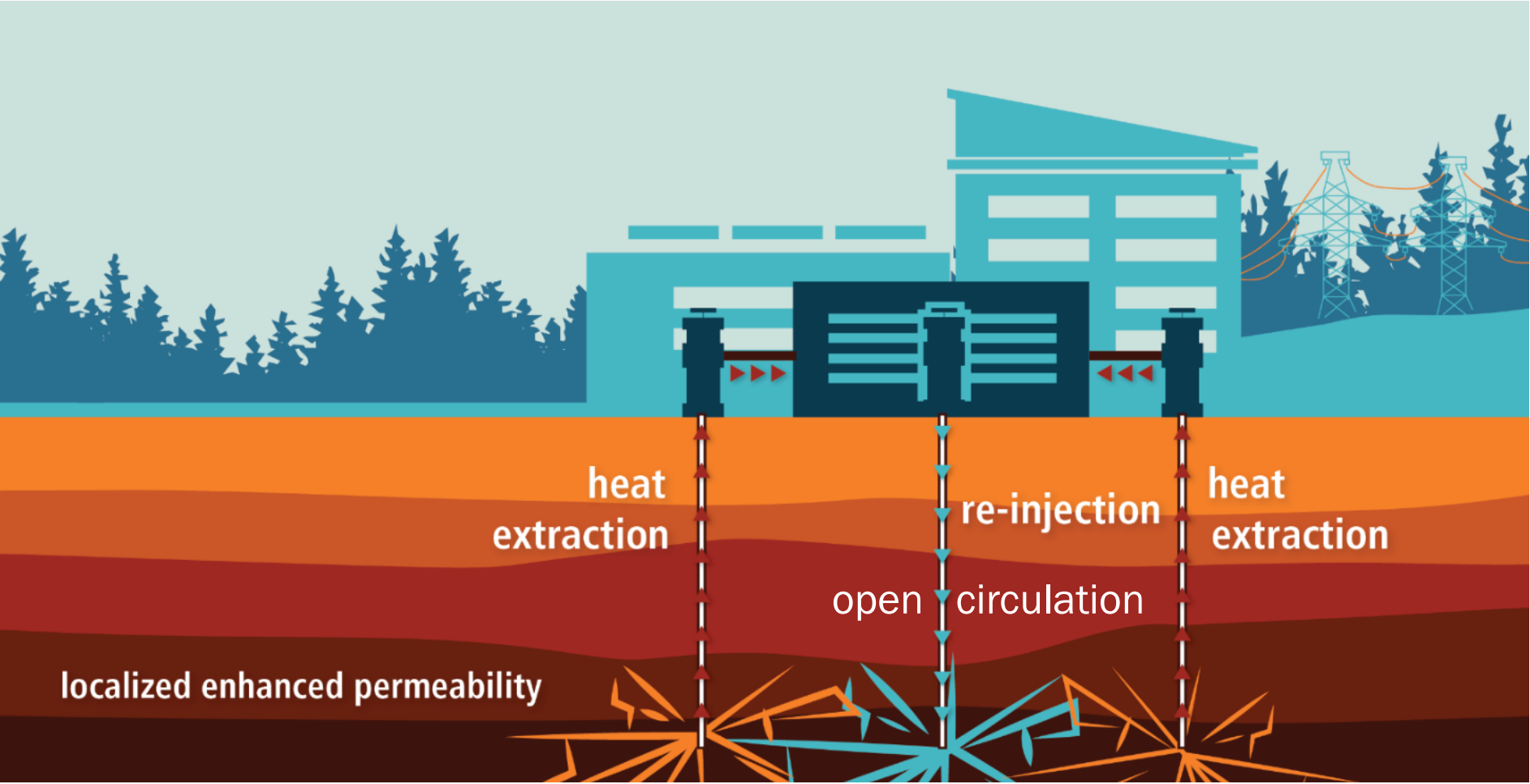
- One geothermal application is the production of electricity.
- Electricity is generated by drilling into the Earth to harness heat for power generation.
- A variety of systems work by using geothermal heat to produce steam that spin turbines.



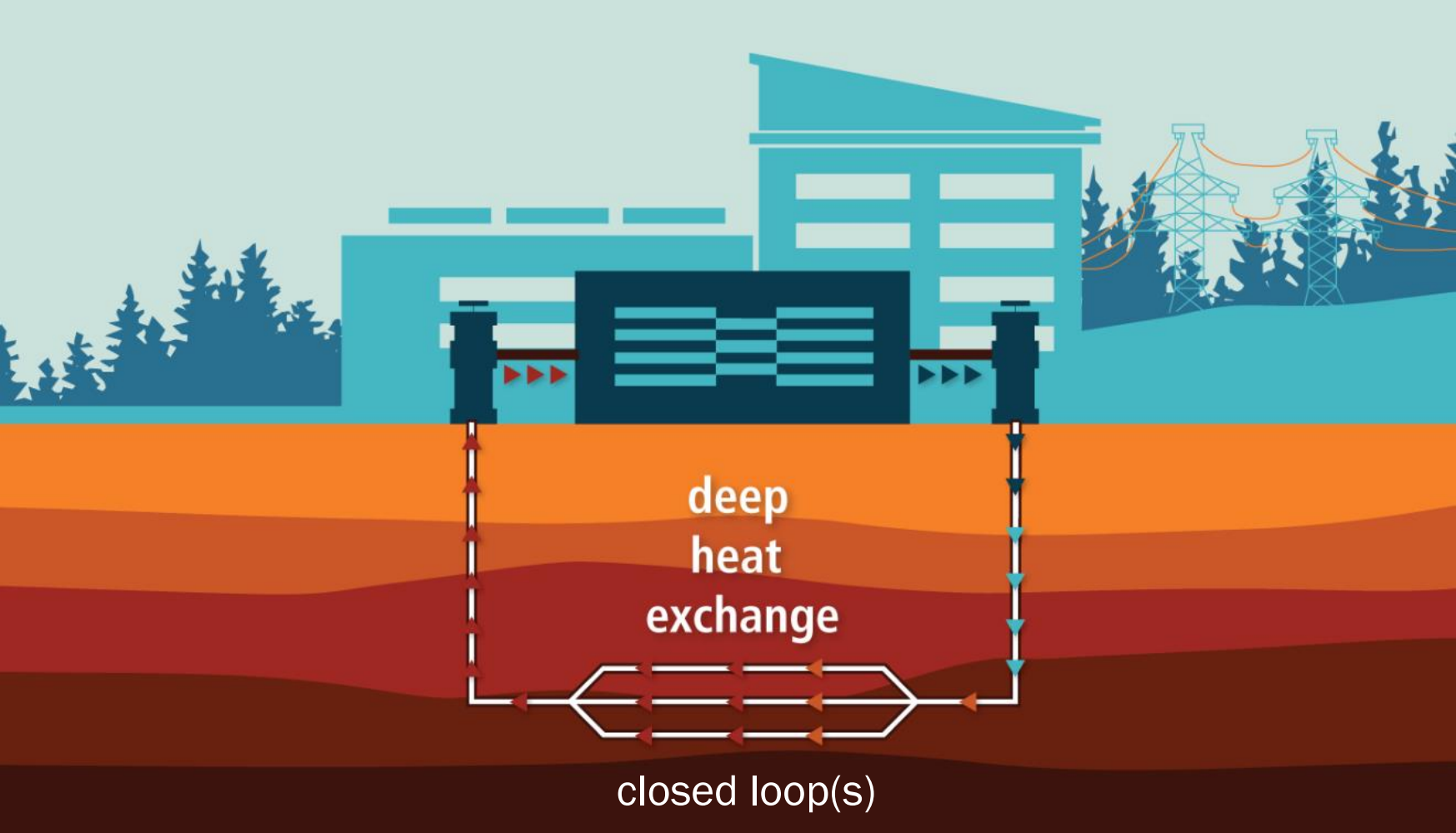
# Conventional geothermal



# Enhanced geothermal systems



# Advanced geothermal systems

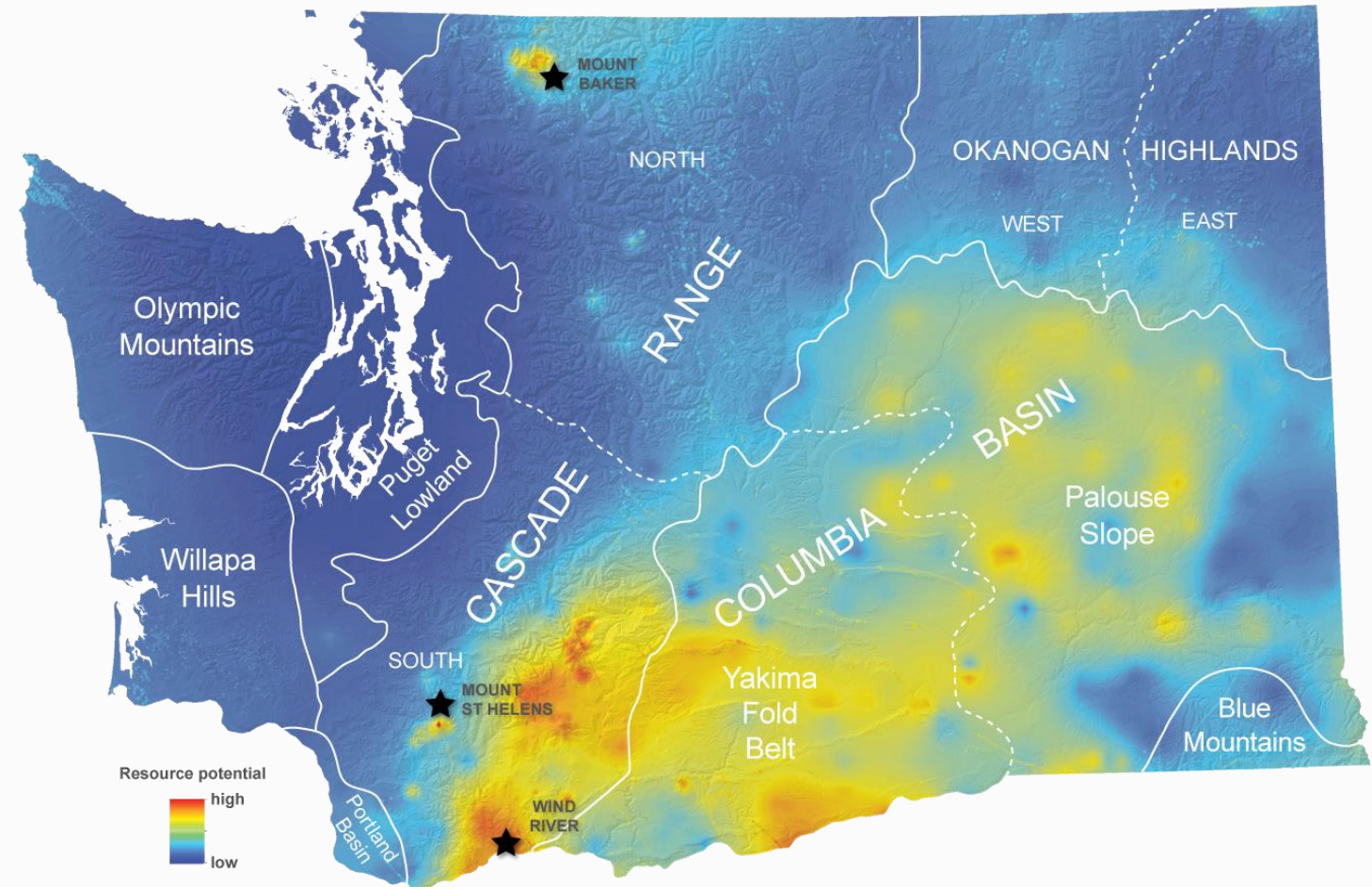


# Project examples

- Conventional: The Geysers, California
- EGS: Newberry demonstration project, Oregon
- EGS: Frontier Observatory for Research in Geothermal Energy (FORGE), Utah
- EGS: Desert Peak, Nevada
- AGS: Eavor-Loop Geretsried, Bavaria; in construction

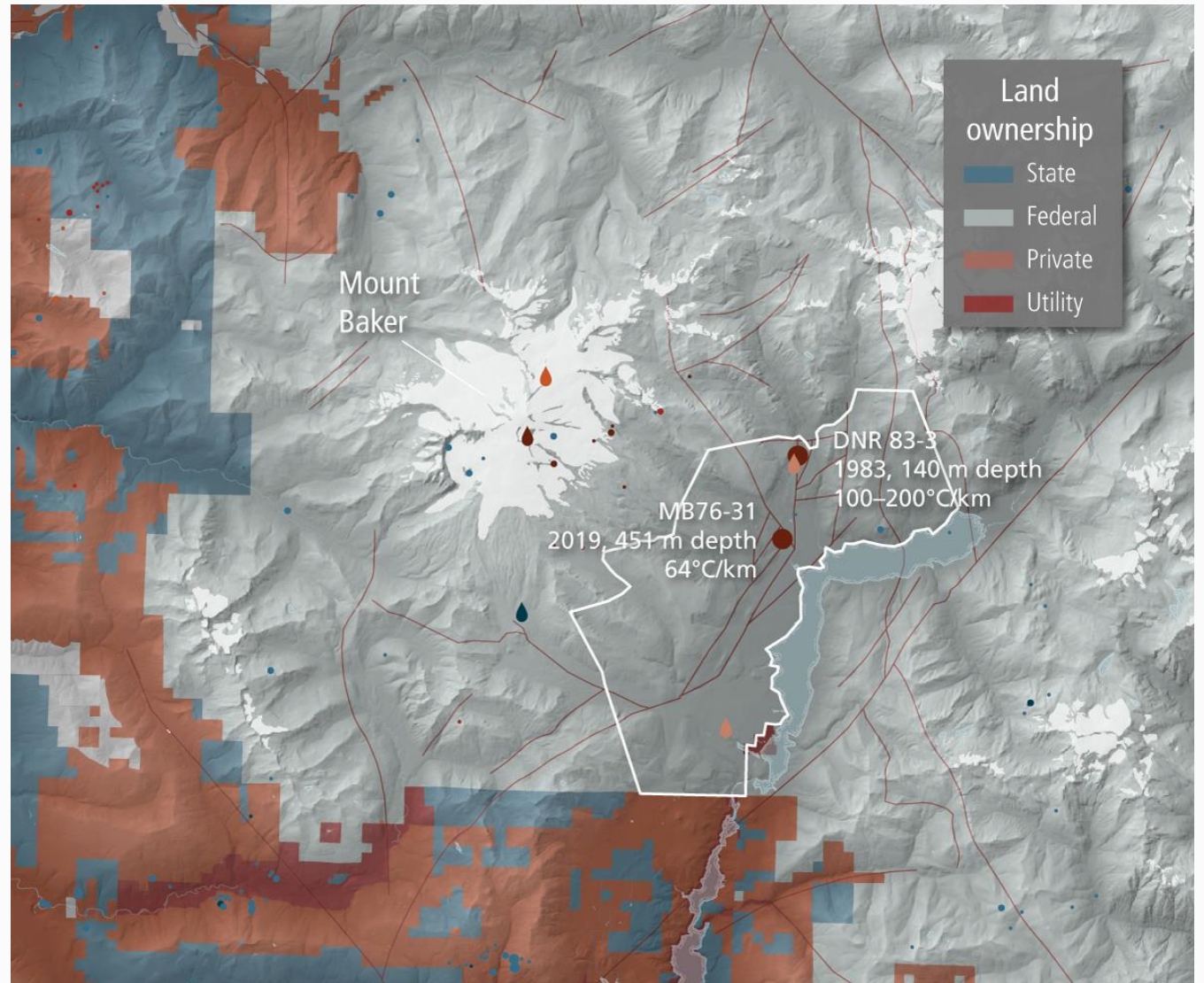
# Washington exploration

- Washington Geological Survey has conducted studies since the 1970s to identify areas of geothermal potential
- 2014 Geothermal Favorability Model of Washington State
- 2019 Play-fairway analysis at three focus areas



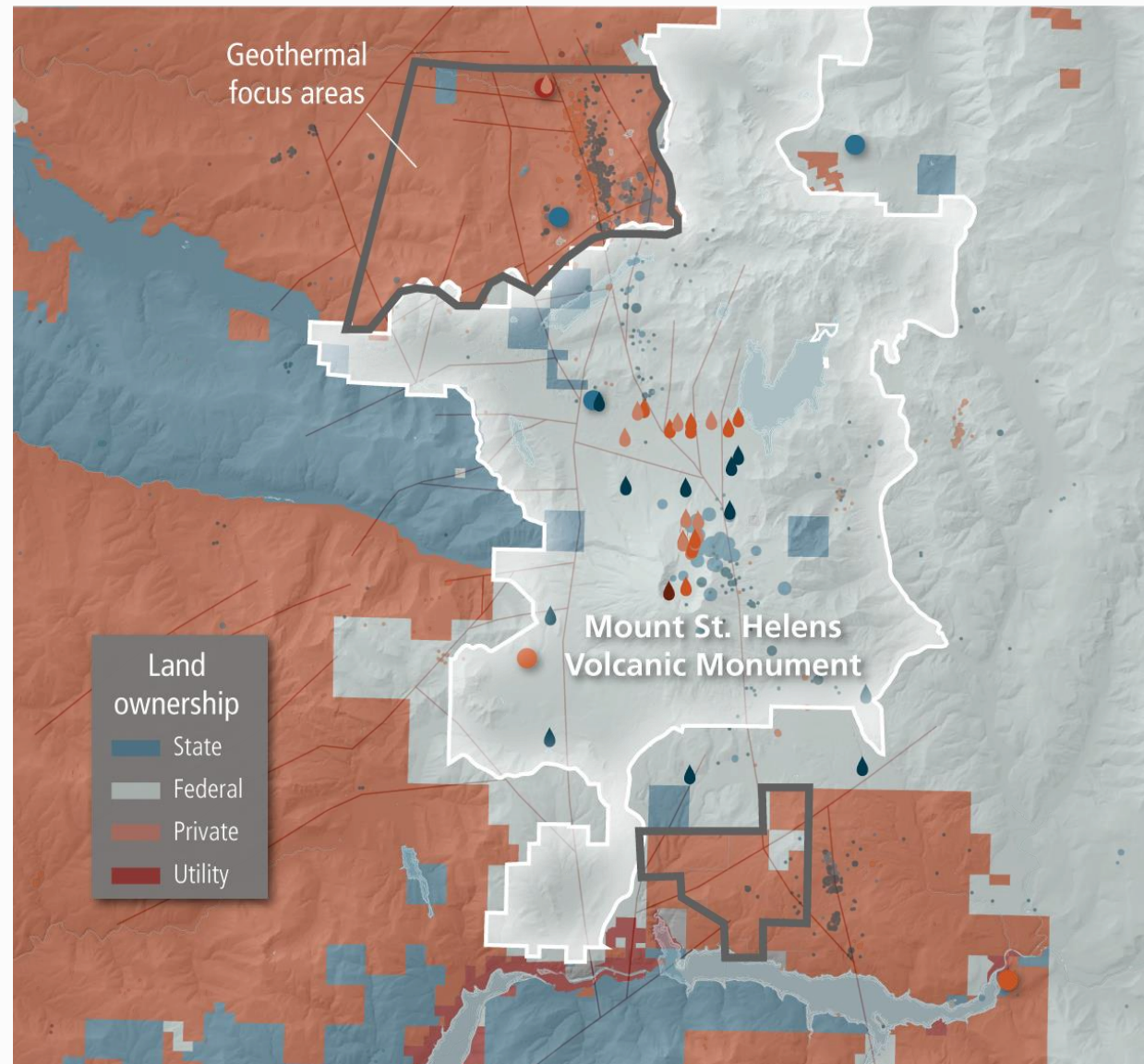
# Focus area— Mount Baker

- Federal geothermal lease lands
- Temperature-gradient wells
- Hot springs
- Minor seismicity
- Abundant faults and fault intersections



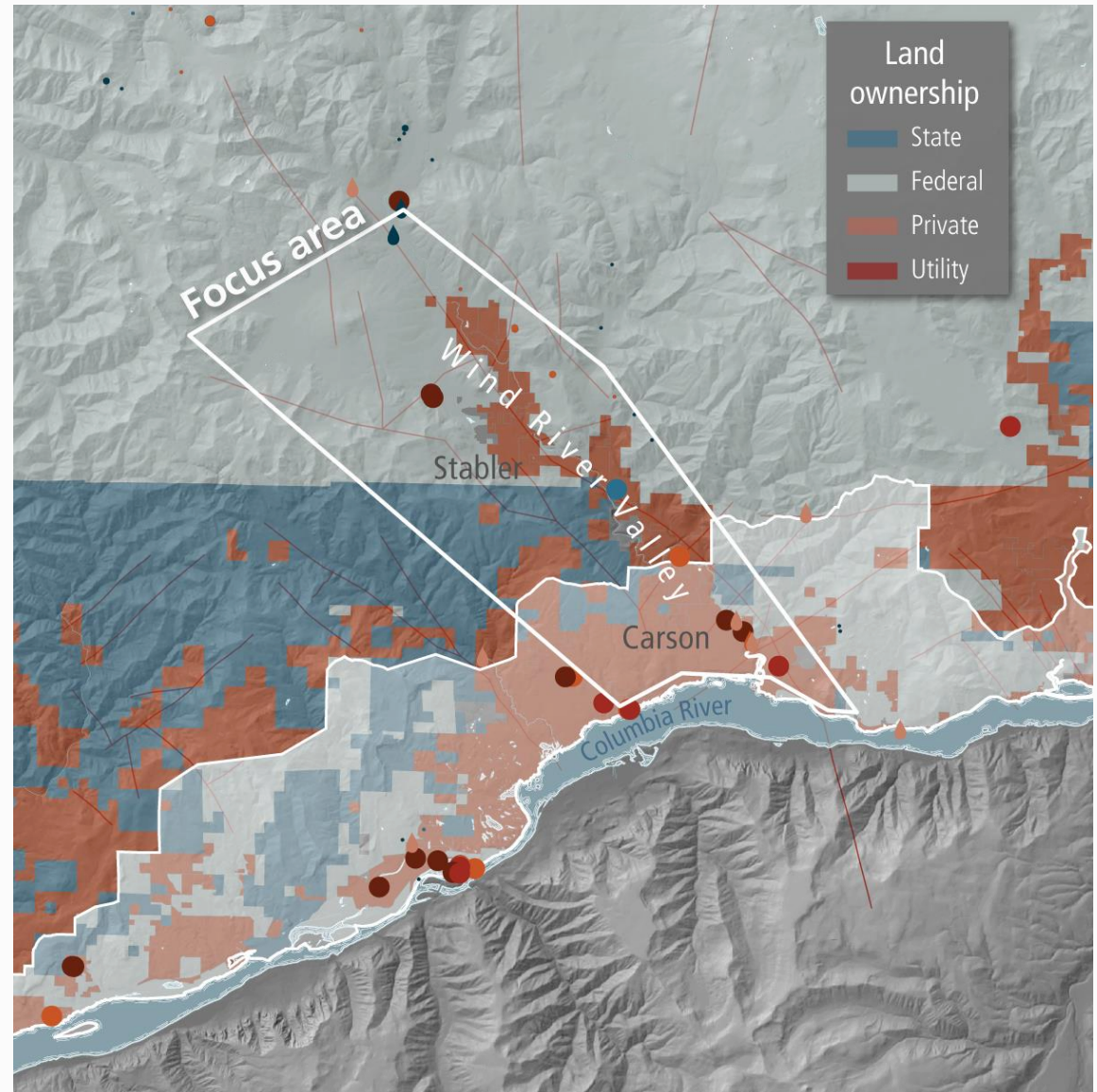
# Focus area— Mount St. Helens

- Privately held timber lands
- Temperature-gradient wells
- Hot springs
- Mount St. Helens seismic zone



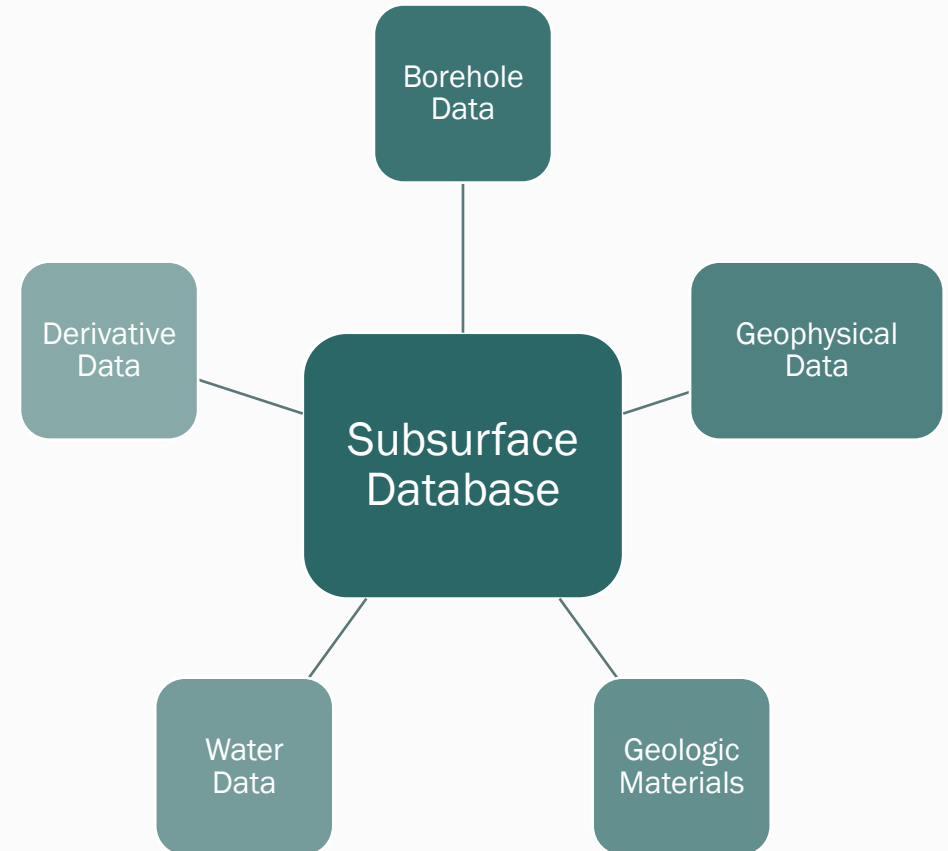
# Focus area— Wind River valley

- Mixture of land ownership
- Temperature-gradient wells
- Hot springs
- Limited seismicity
- Abundant faults and fault intersections



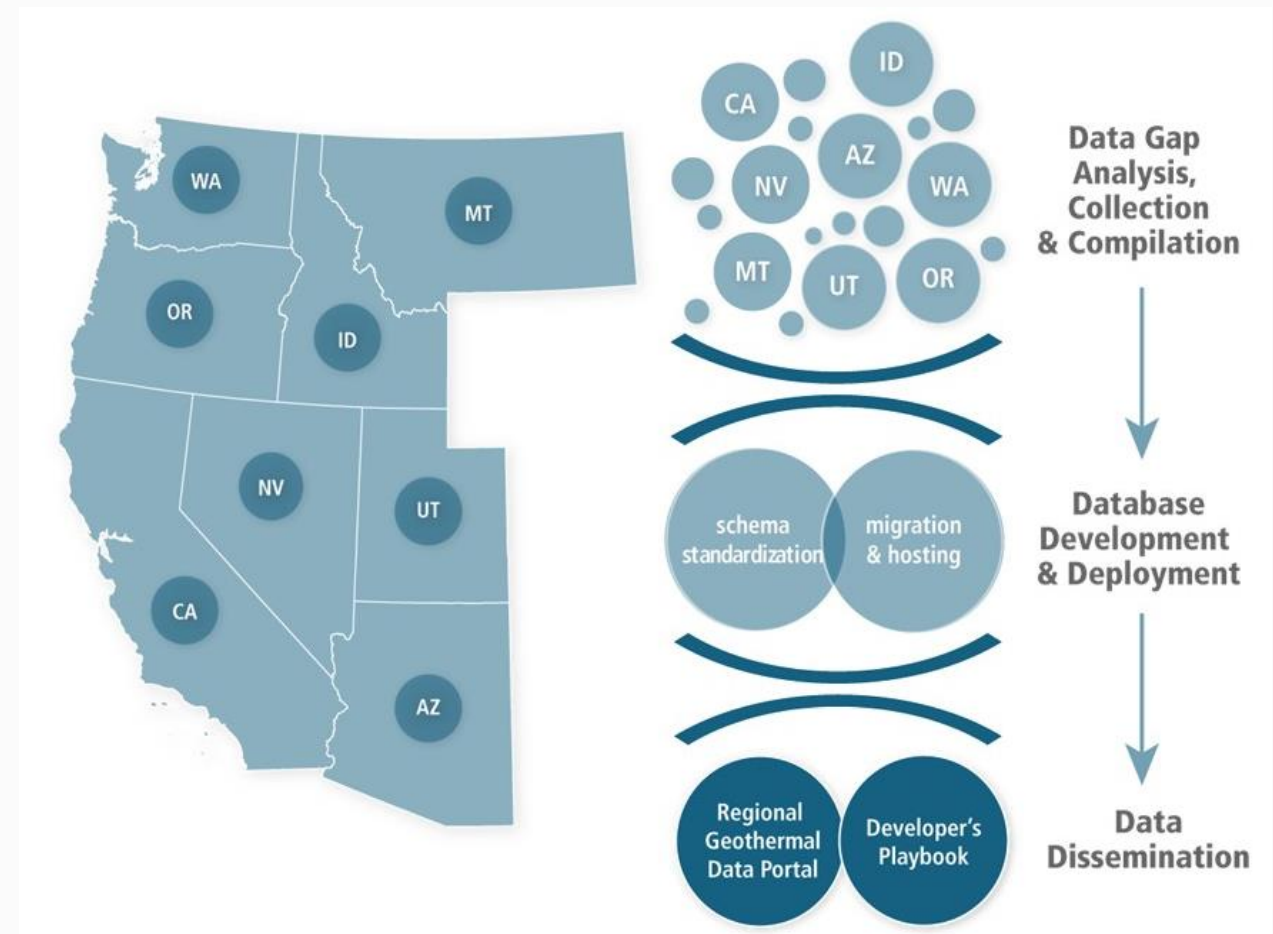
# Continued data collection and evaluation

- Collect new field data in priority areas
- Assess induced seismicity hazards
- Design and assemble a comprehensive subsurface database suitable for geothermal exploration



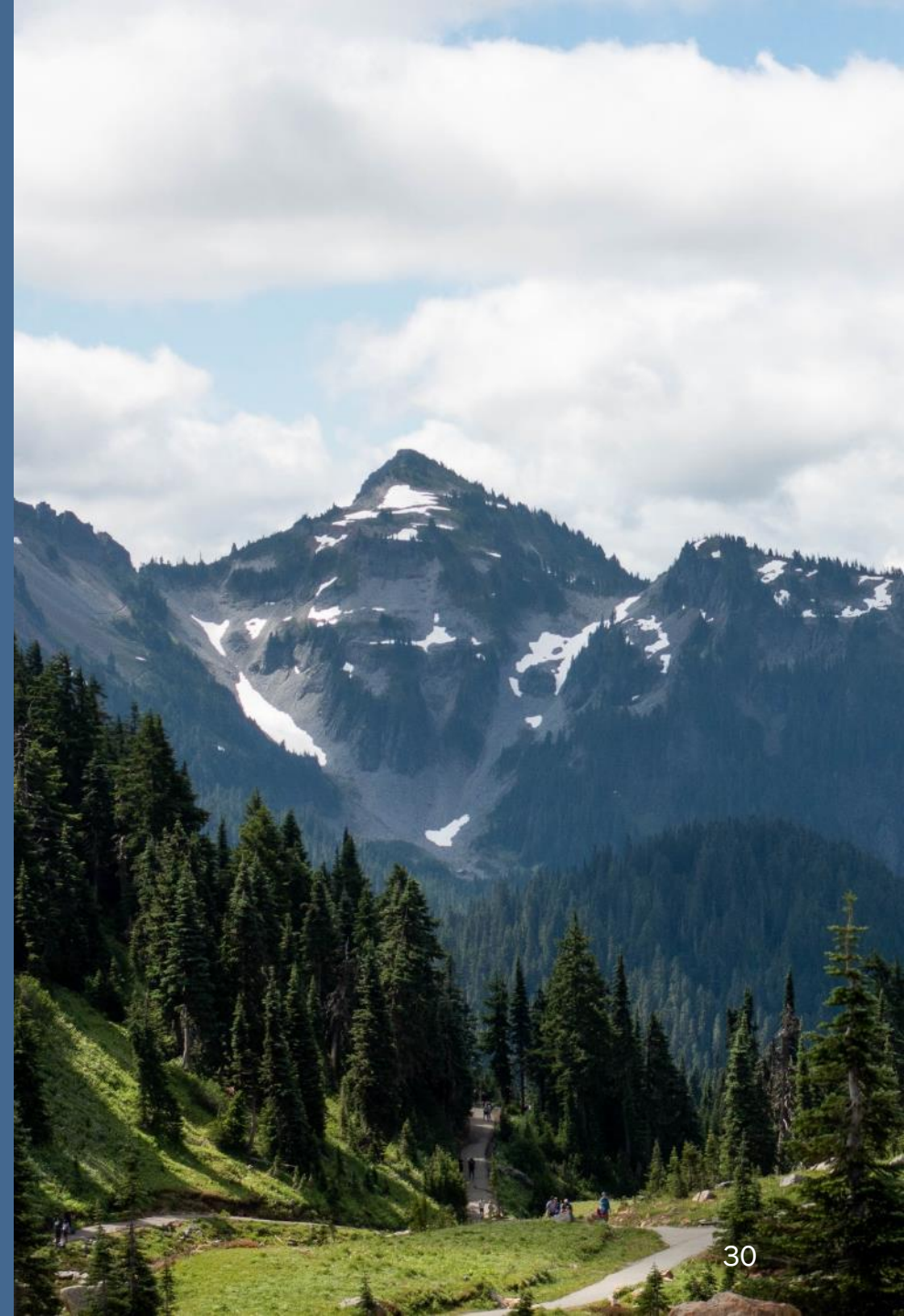
# Planned studies and partnerships

- Three focus areas
  - Play-fairway publications
  - Preliminary induced seismic hazard assessments
  - Hydrogeologic and geothermal water assessments
- U.S. Department of Energy Geothermal Regional Partnership Grant (award decision pending)





# Opportunities and risks



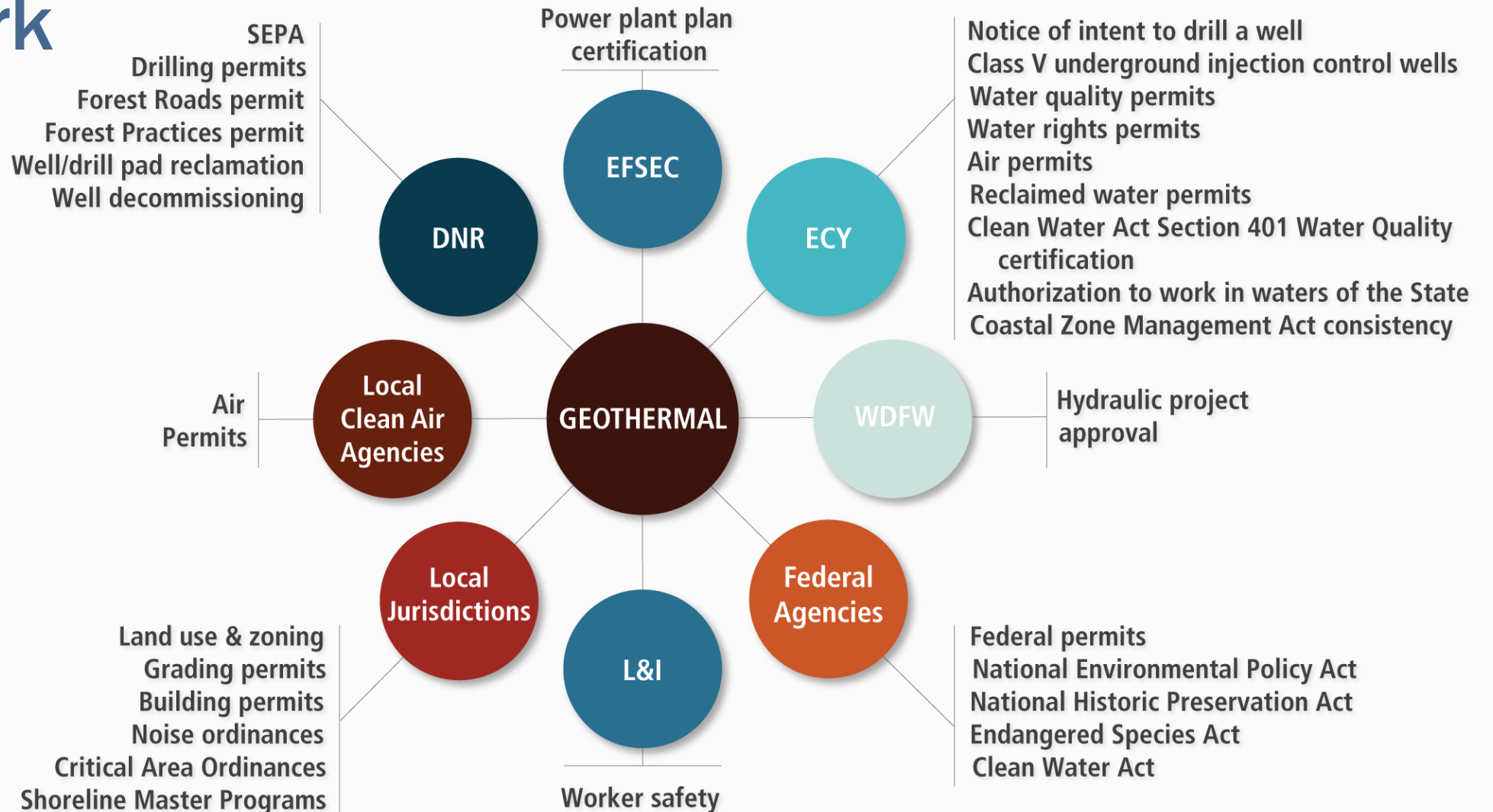
# Assessment of potential impacts

- Tribal rights, interests, and resources, including Tribal cultural resources, of federally recognized Indian Tribes
- State and federal endangered species
- Overburdened communities
- Induced seismicity
- Water use, impacts to water quality and water resources, and connectivity
- Hydraulic fracturing

# Siting and development factors

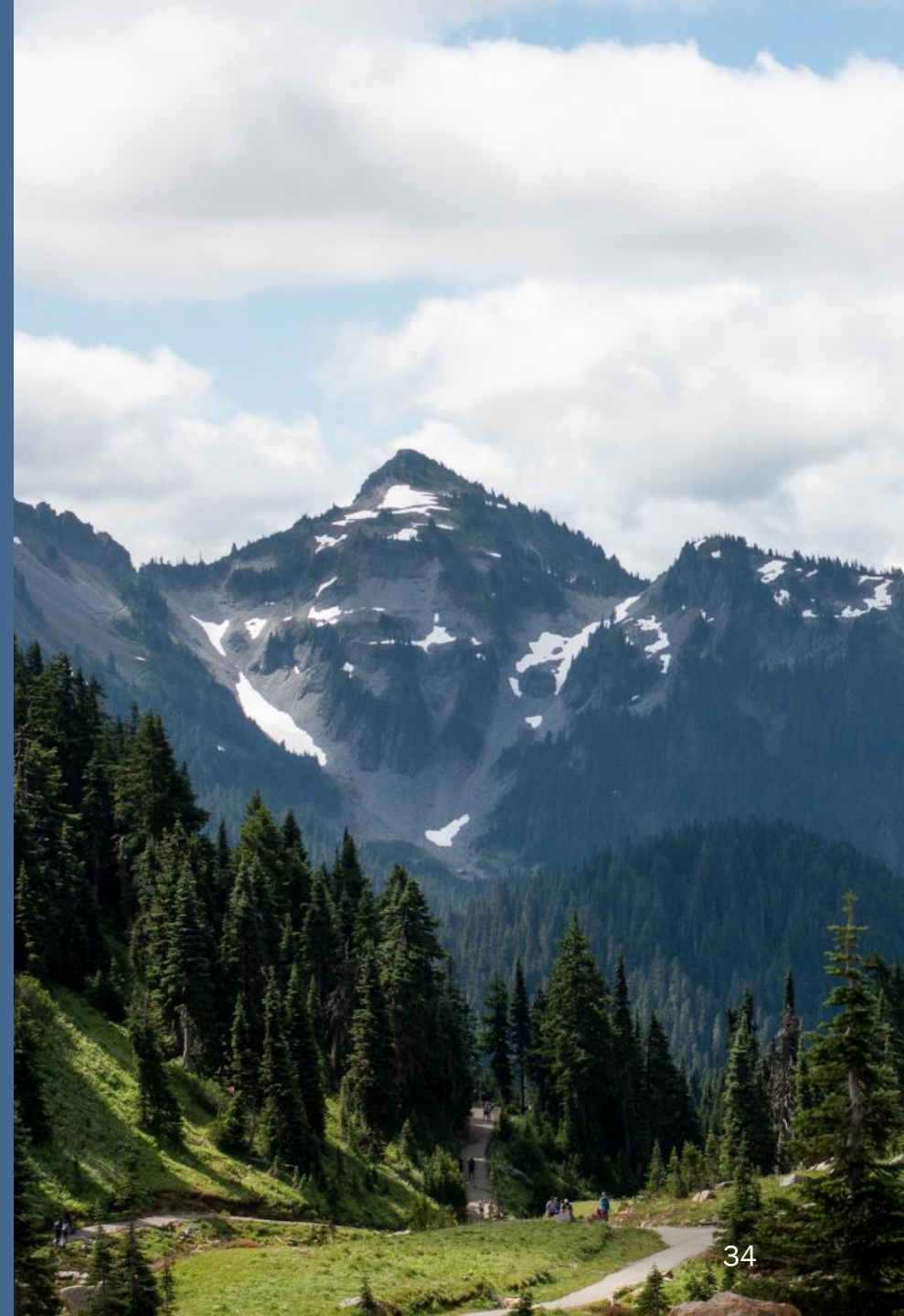
- Geologic suitability
- Proximity to electrical transmission and distribution infrastructure
- Connectivity between groundwater and surface water resources

# Regulatory framework





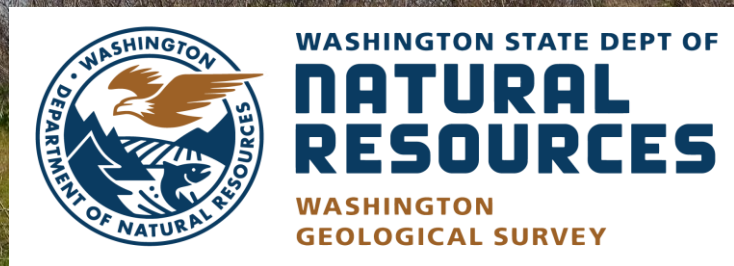
# Next Steps and Opportunities for Input



# Upcoming workshops

- In-person and virtual community and Tribal workshops and Tribal forums
  - Winter 2025
  - Multiple meetings in spring and summer 2026
  - [Sign up for email notifications and updates](#)

# Questions?



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## Links

[Geothermal Collaborative Process](#)

[Washington Geothermal Experience](#)

# Questions

- Raise your hand
- Submit written questions to the “Q&A” tool