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Geothermal Local Benefits

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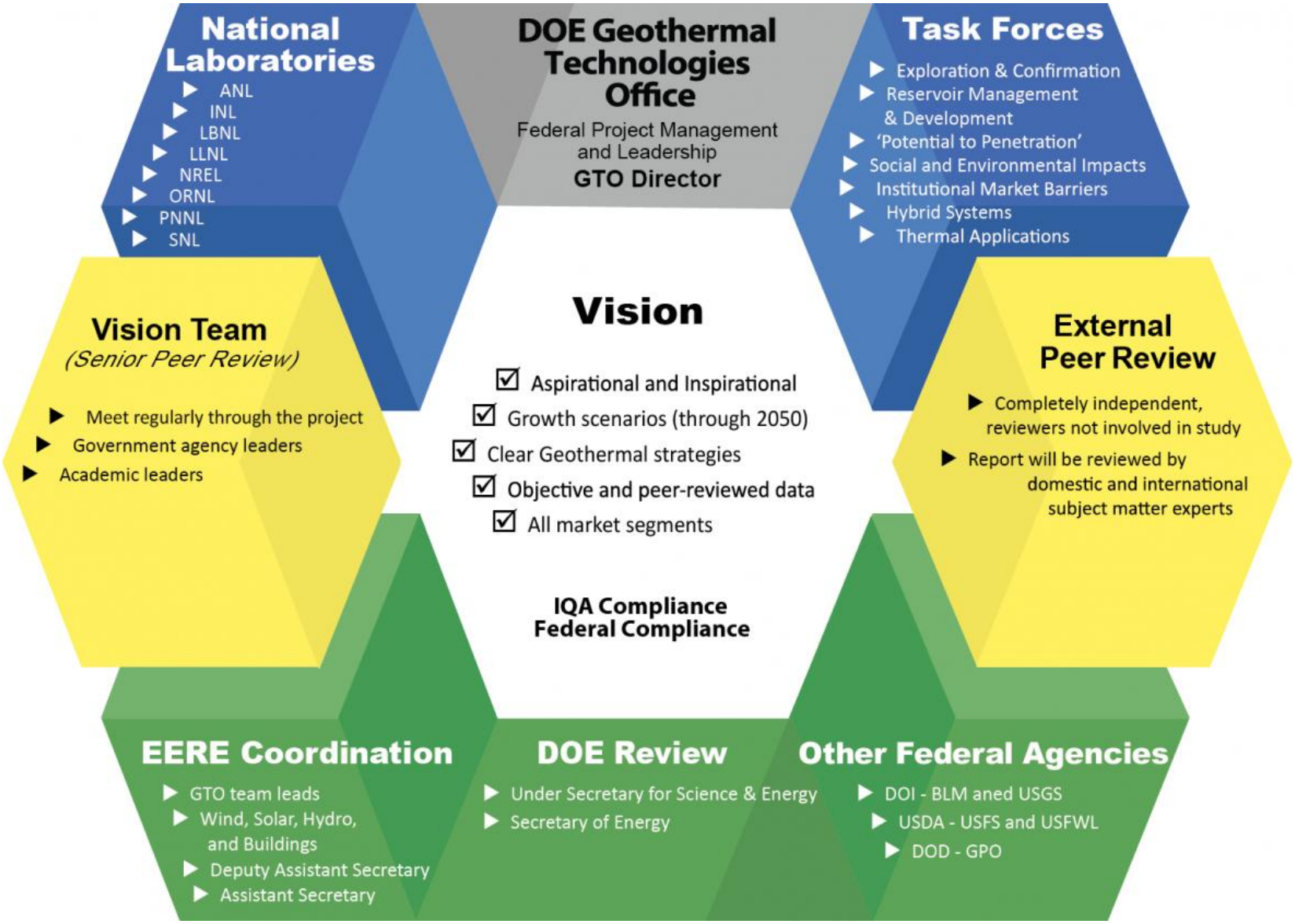
DOE GeoVision Study



GeoVision Barriers Taskforce Efforts

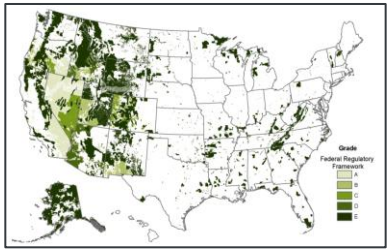
What are the non-technical barriers to geothermal power development?

- Taskforce developed a group of experts from industry, environmental consultants, agencies (BLM, USFS, DOE), and GEA to provide input.
- Four categories of barriers were identified:
  - Land Access (e.g. accessing USFS lands if no staff/budget to process leases)
  - Permitting (e.g. permitting timelines)
  - Market
  - Transmission
- Barriers expert team met monthly to provide input into analyses
- Report is being drafted now, as GeoVision results are being finalized. Expected to be drafted by the end of the month for use by the GeoVision writing team; published before the end of the fiscal year. We hope to present a summary of results of Barriers work at the annual meeting.

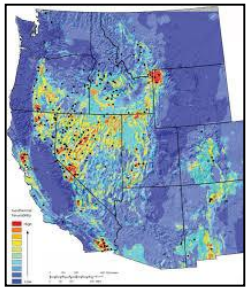
GeoVision Barriers Taskforce Efforts

1. Define Barrier → e.g., permitting timeframes

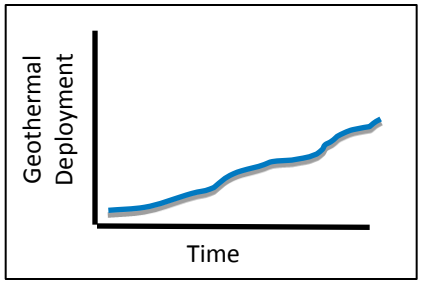
2. Measure, Grade, and Map the Barrier →



Federal Regulatory Framework Barrier Grade Map

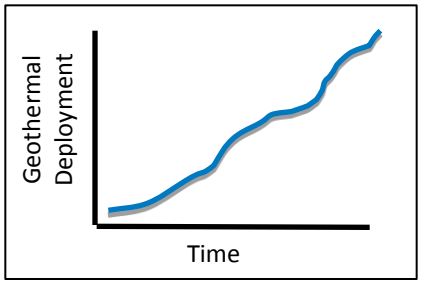
3. Measure Impact of Barrier on Deployable Resources → +  USGS Geothermal Potential

4. Estimate potential deployment with barrier → +  =

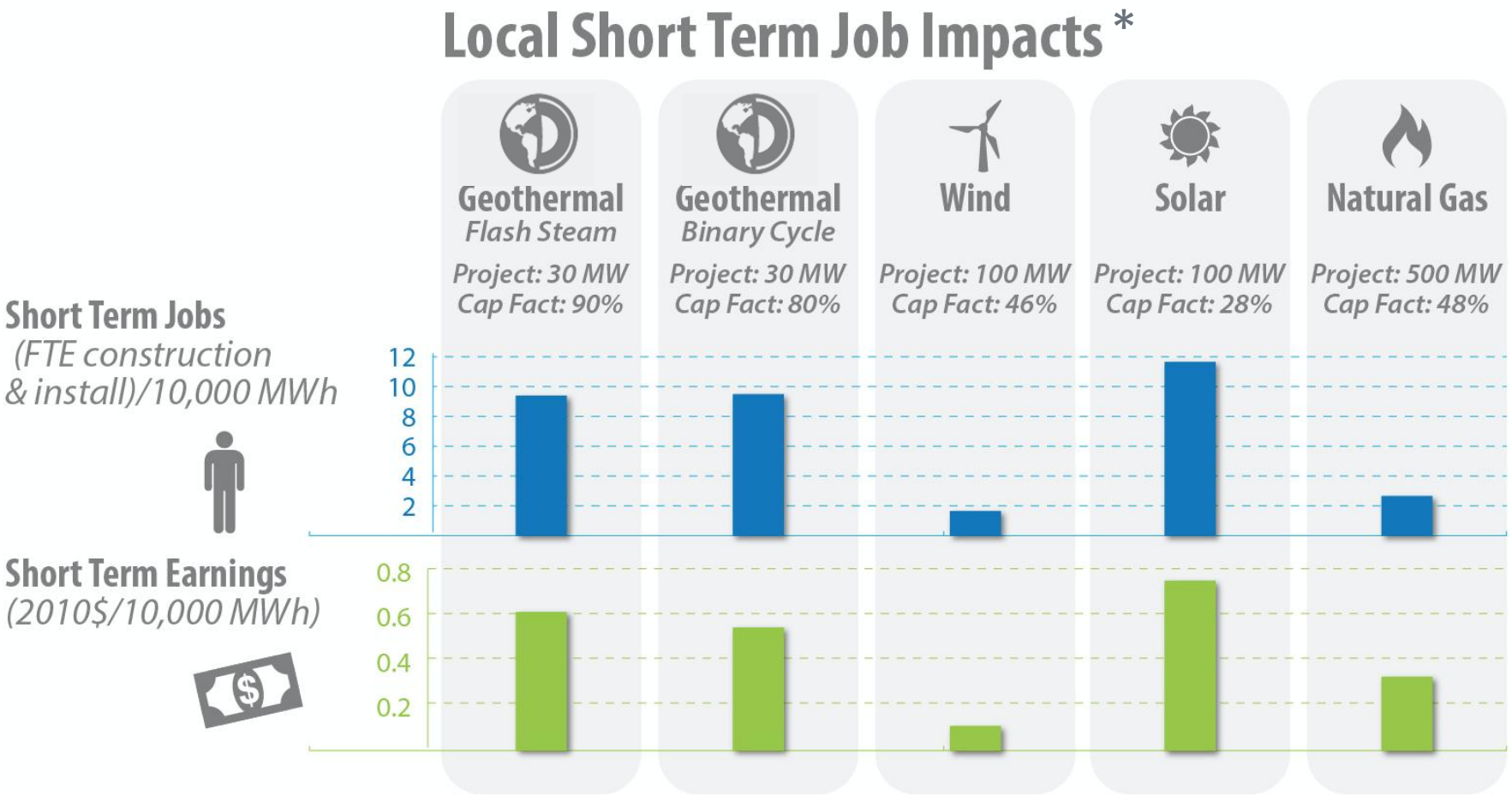


5. Identify ways to overcome barrier, and evaluate impact to deployable resources → streamline permitting, e.g., with use of CX for exploration drilling

6. Estimate potential deployment with barrier mitigated → +  =



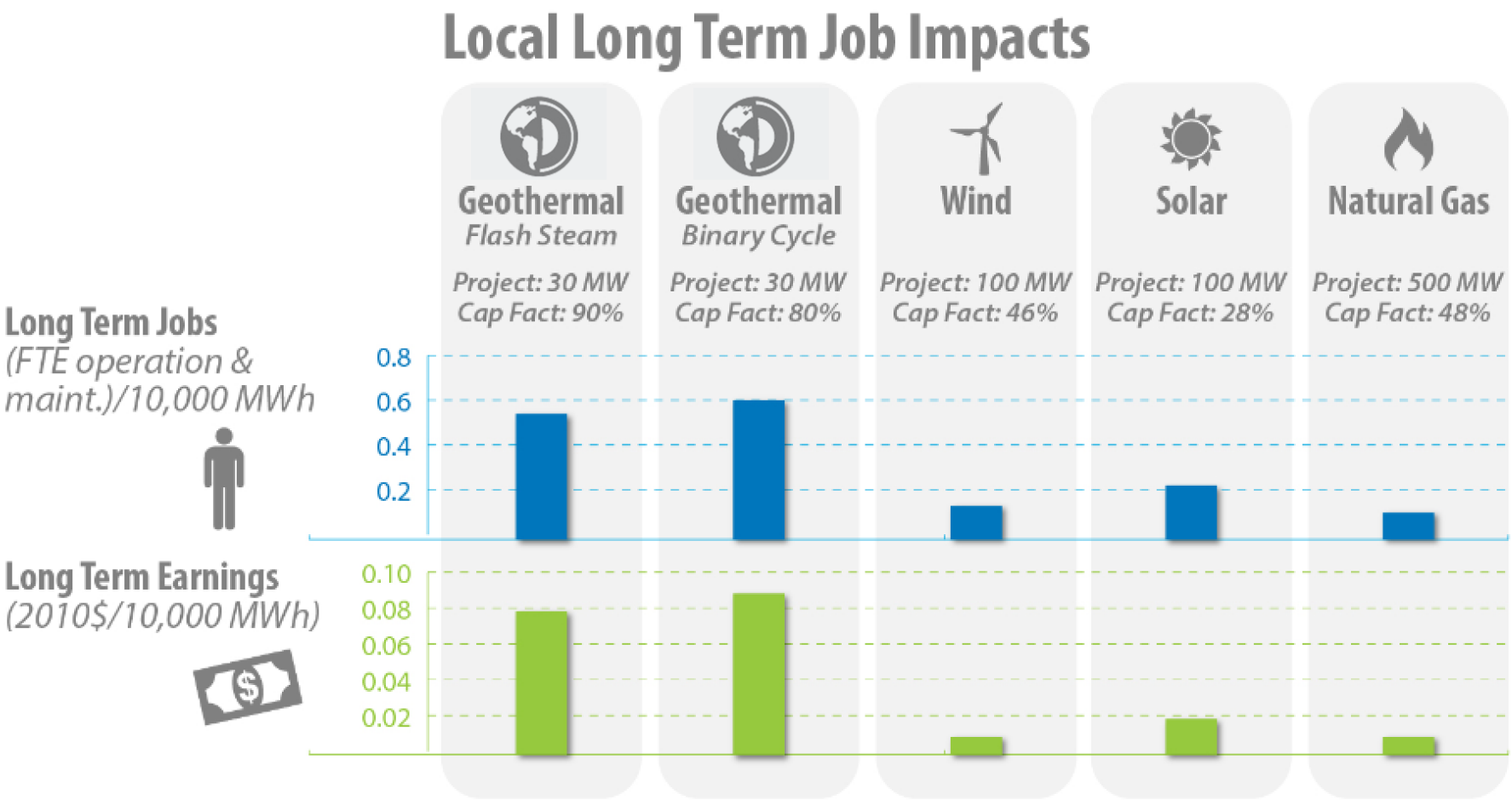
Preliminary Analysis: Local Benefits



- Per MWh provided to the grid, geothermal provides the second highest number of short-term (construction) jobs to the local community.

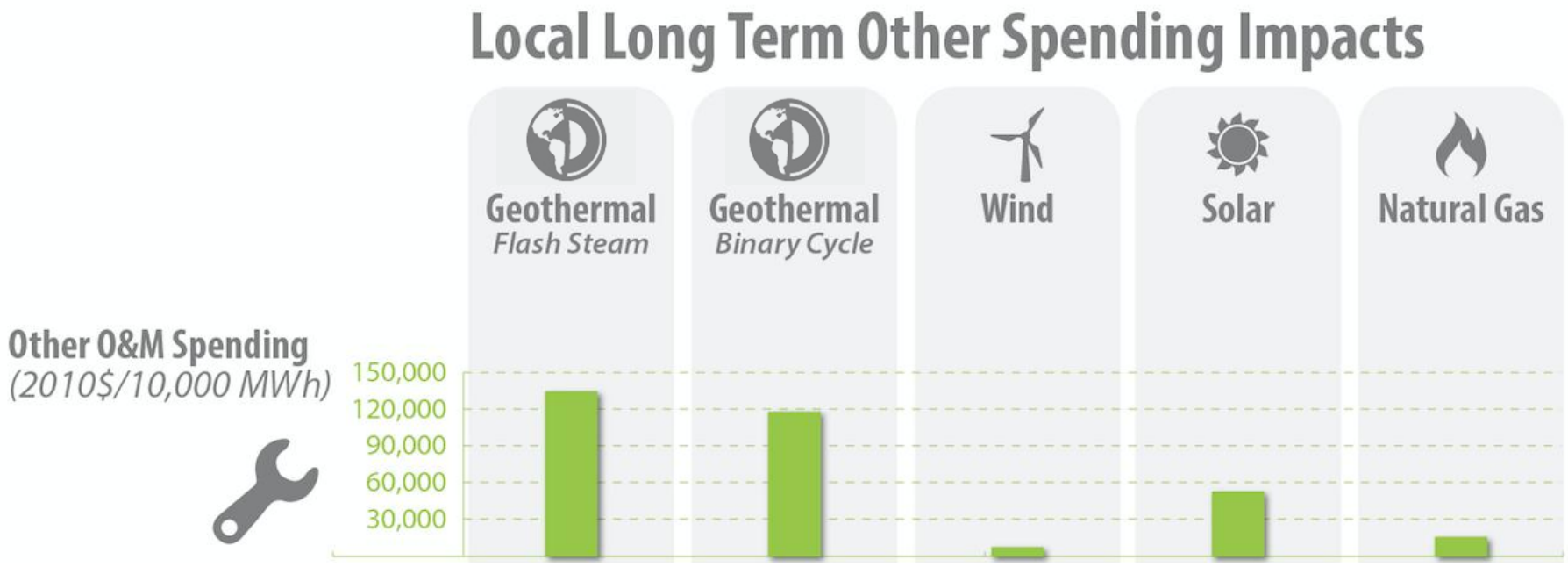
**Different than Impacts team analysis, which looks at total (not per MWh), nation-wide impacts from varying levels of geothermal deployment*

Preliminary Analysis: Local Economic Benefits



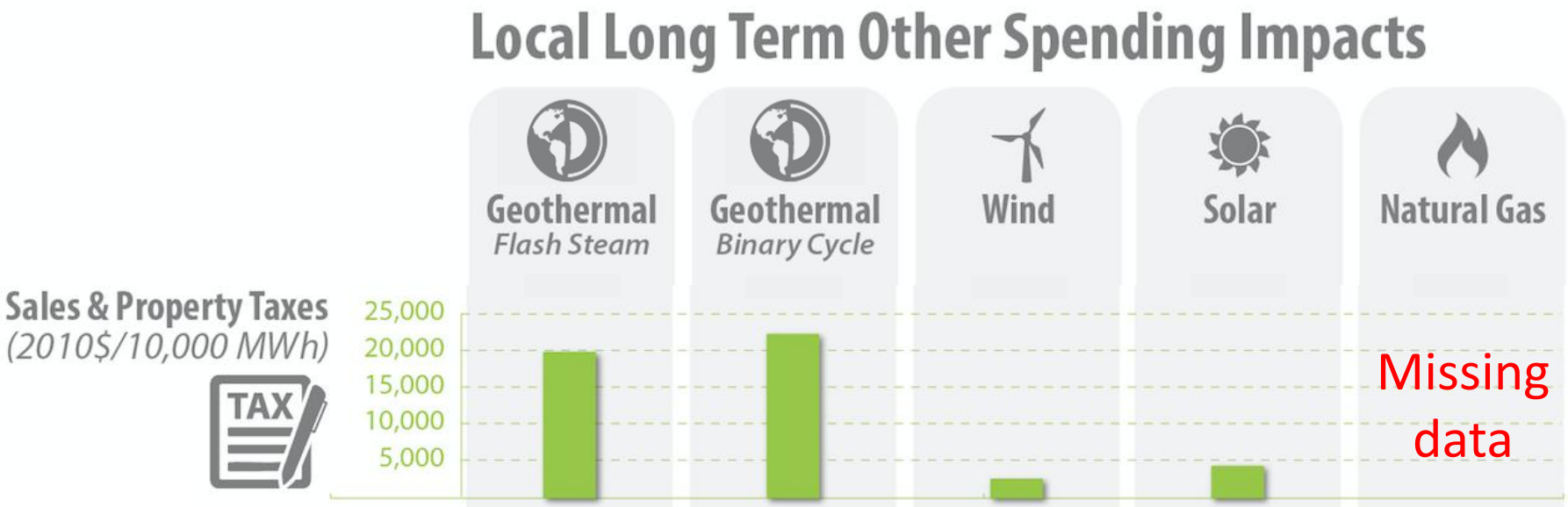
- Per MWh provided to the grid, geothermal provides the highest number of long-term wage-earning jobs to the local community.
- Earnings per job is higher for geothermal than other technologies

Preliminary Analysis: Local Economic Benefits



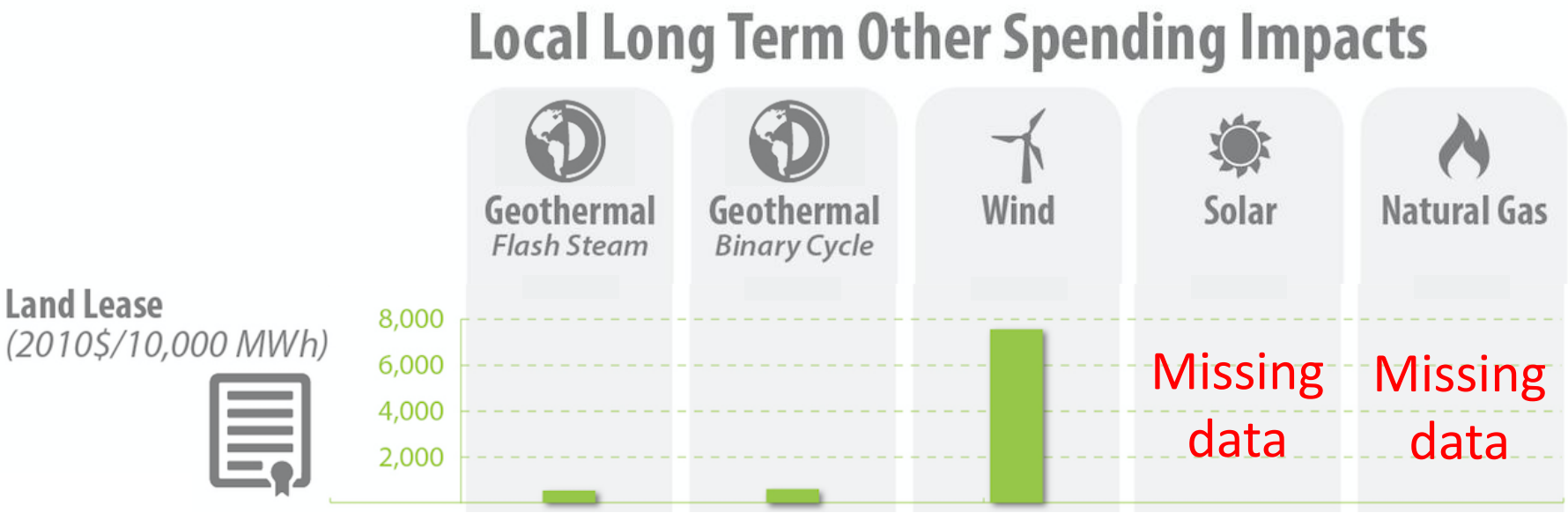
- Long-term spending per MWh delivered to the grid is highest for geothermal, which puts more money back into the economy.
- NOTE: current data includes all O&M spending and does not provide breakout of local vs. non-local. For example, some chemicals used for handling scaling and corrosion may not be locally sourced. We are currently soliciting input from geothermal community to split these out. This will be updated in the final results.

Preliminary Analysis: Local Economic Benefits



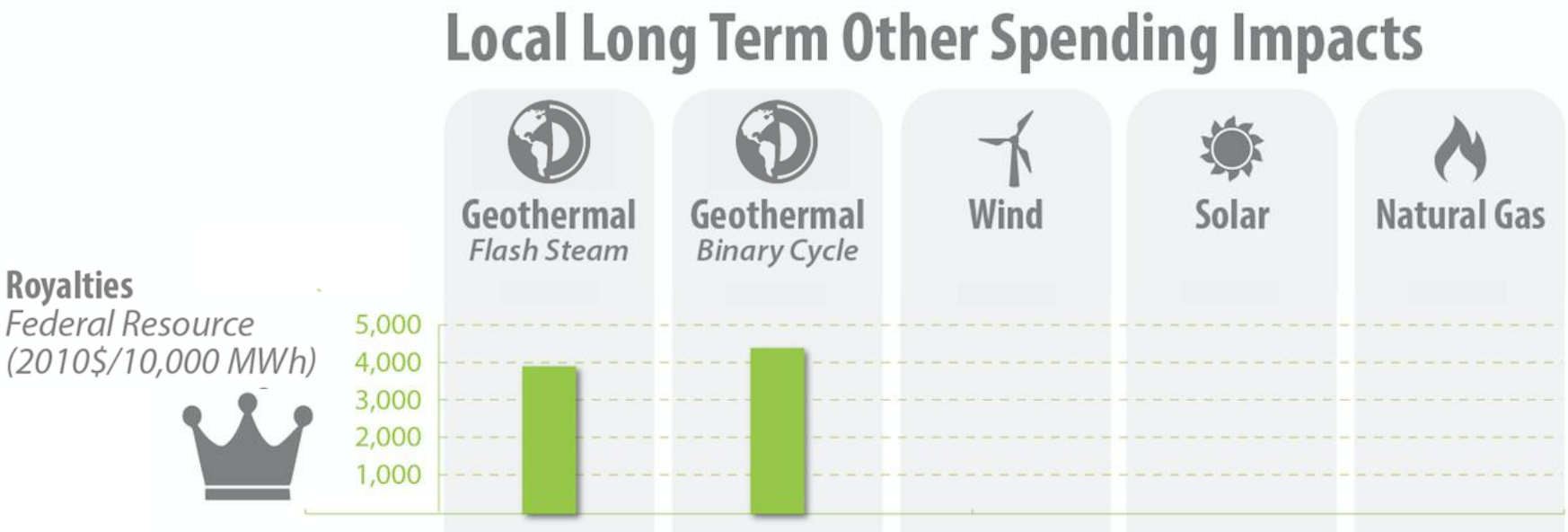
- Annual state and local sales and property taxes per MWh delivered to the grid is highest for geothermal, which gives money back into the community.
- NOTE: current sales and property tax data is missing for natural gas. We are currently working to identify a credible source for these data. This will be updated in the final results.

Preliminary Analysis: Local Economic Benefits



- Annual land leasing fees per MWh delivered to the grid is highest for wind (and potentially solar?), due in part to the high geographic footprint per MWh of these technologies.
- NOTE: current land lease spending is missing for solar and natural gas. We are currently working to identify a credible source for these data. This will be updated in the final results.

Preliminary Analysis: Local Economic Benefits



- Only geothermal pays royalties to extract federal resources back to the state and local communities. 25% of all royalties paid go back to the local community (as represented by the graphic). An additional 50% of the royalty goes to the state (not represented in graphic). Only 25% of geothermal royalties paid go to the federal treasury.
- NOTE: though natural gas pays royalties to extract federal minerals, these royalties go to the federal treasury and not back to the state or local community.

Thank You!

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