

HYDROTHERMAL DEVELOPMENT INSTITUTIONAL BARRIERS SURVEY

This survey should take approximately 10 minutes or less to complete. The data collected from this survey will be compiled by NREL staff. All responses will remain anonymous and will be aggregated prior to publishing.

The primary objective of this survey is to capture industry perspective on institutional barriers to hydrothermal development. Industry-identified barriers will be documented in a published report in Spring 2011 and will be posted on the DOE Geothermal Technologies Program website.

The questions have been designed for several industry groups including developers, utilities, policy makers, regulators, financiers, and service companies). There are general questions that will apply to all industry groups and specific questions that will apply to particular industry groups.

1. Please rate the following tasks by the difficulty they pose to project development.

	Not a Barrier	Small Difficulty	2	3	4	Large Difficulty
Exploration	0	1	2	3	4	5
Permitting	0	1	2	3	4	5
Environmental	0	1	2	3	4	5
Financing	0	1	2	3	4	5
Drilling	0	1	2	3	4	5
Well-field Development	0	1	2	3	4	5
Power Plant Construction	0	1	2	3	4	5
Transmission	0	1	2	3	4	5
Power sales	0	1	2	3	4	5
Other (describe):	0	1	2	3	4	5

2. Please rate the following potential barriers to hydrothermal exploration.

	Not a Barrier	Small Barrier	2	3	4	Large Barrier
Finding skilled labor	0	1	2	3	4	5
Securing property rights	0	1	2	3	4	5
Obtaining exploration permits	0	1	2	3	4	5
Poor exploration data quality	0	1	2	3	4	5
High cost of exploration techniques	0	1	2	3	4	5
Inadequate computer models	0	1	2	3	4	5
Obtaining financing	0	1	2	3	4	5
Public perception	0	1	2	3	4	5
Lack of market to support geothermal	0	1	2	3	4	5
Other (describe):	0	1	2	3	4	5

3. Please rate the following potential barriers to geothermal permitting.

	Not a Barrier	Small Barrier	2	3	4	Large Barrier
Understanding permitting process	0	1	2	3	4	5
Unclear/Untested permitting regulations	0	1	2	3	4	5
Length of permitting process	0	1	2	3	4	5
Permitting officials not geothermal trained	0	1	2	3	4	5
Inter-agency conflicts during permitting	0	1	2	3	4	5
Securing Water Rights	0	1	2	3	4	5
Lengthy public hearings/appeals	0	1	2	3	4	5
Other (describe):	0	1	2	3	4	5

4. Do you have a dedicated permitting specialist?

Yes (circle one: in-house subcontractor)

No

Don't know

5. Please rate the following potential barriers to **geothermal drilling.**

	Not a Barrier	Small Barrier	2	3	4	Large Barrier
Finding skilled labor	0	1	2	3	4	5
Drill rig availability	0	1	2	3	4	5
Knowing where to drill	0	1	2	3	4	5
Obtaining proper drilling permits	0	1	2	3	4	5
Equipment failure	0	1	2	3	4	5
Unanticipated problem during drilling	0	1	2	3	4	5
Obtaining funding for drilling	0	1	2	3	4	5
Other (describe):	0	1	2	3	4	5

6. Please rate the following potential barriers to **obtaining a Power Purchase Agreement.**

	Not a Barrier	Small Barrier	2	3	4	Large Barrier
Terms of PPA too stringent	0	1	2	3	4	5
Power prices too low	0	1	2	3	4	5
Geothermal not cost-competitive	0	1	2	3	4	5
Difficulties with public utility commission	0	1	2	3	4	5
Transmission/Infrastructure not available	0	1	2	3	4	5
Interconnect agreement not available	0	1	2	3	4	5
Other (describe):	0	1	2	3	4	5

7. Please rate the following potential barriers to **project financing.**

	Not a Barrier	Small Barrier	2	3	4	Large Barrier
Obtaining PPA prior to financing	0	1	2	3	4	5
Too few financiers	0	1	2	3	4	5
Utilities/Regulators not familiar with geo	0	1	2	3	4	5
Financiers unfamiliar with geothermal risks	0	1	2	3	4	5
Project delays/uncertainties	0	1	2	3	4	5
Other (describe):	0	1	2	3	4	5

8. Please rate the following potential barriers to **obtaining transmission rights.**

	Not a Barrier	Small Barrier	2	3	4	Large Barrier
Remote project location/no transmission	0	1	2	3	4	5
Interconnect agreements	0	1	2	3	4	5
High interconnect costs	0	1	2	3	4	5
High transmission tax	0	1	2	3	4	5
Long lead times to upgrade infrastructure	0	1	2	3	4	5
Environmental permit for new transmission	0	1	2	3	4	5
Long queues for transmission	0	1	2	3	4	5
High infrastructure upgrade costs	0	1	2	3	4	5
Economies of scale do not justify additional transmission capacity	0	1	2	3	4	5
Other (describe):	0	1	2	3	4	5

9. What do you consider the greatest challenge in the development process?

10. Do you feel lack of data is a barrier to development? If so, at what stage of development? What type of data would be most useful?

11. Which state(s) do you operate in? (Please circle all applicable answers)

AK

CO

LA

NV

UT

Other _____

AZ

HI

NM

OR

WA

CA

ID

NV

TX

WY