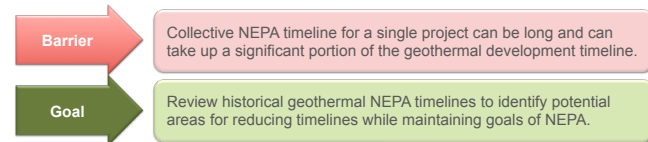


# Geothermal Permitting and NEPA Timelines

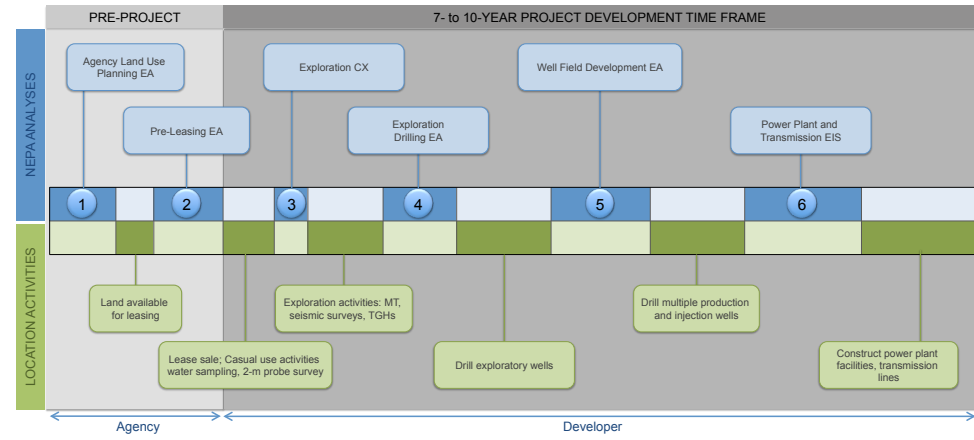
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## OVERVIEW



- Data were collected to inform analyses of NEPA timelines
- Collected data were made publically available via NEPA Database in case others might find it useful
- NREL used a wiki platform to allow industry and agencies to maintain the content in the future (if desired) so that it continues to provide relevant information to users
- The long-term success of the NEPA Database will depend on the willingness of federal agencies, industry, and others to populate the database with NEPA and related documents, and to use the data for their own analyses
- As the information and capabilities of the database expand, developers and agencies can save time on new NEPA reports by accessing a single location to research related activities, their potential impacts, and previously proposed and imposed mitigation measures.

## GEOHERMAL PROJECT TIMELINE



## NEPA ANALYSIS BY ACTIVITY TYPE

Activity	Permit Applications <sup>2</sup>										Total	
	Notice of Intent to Conduct Exploration				Geothermal Drilling Permit <sup>3</sup>			Plan of Operations/Plan of Development <sup>3</sup>		Plan of Utilization <sup>3</sup>		
	CU	CX	DNA	EA	CX	DNA	EA	DNA	EA	EIS	EA	EIS
<b>Surface Exploration</b>												
Water Sampling	2											2
2-Meter Probe	2	1										3
TGH		9	5	3			1		1			19
<b>Geophysical Exploration</b>												
Electrical/MT/Gravity	20	11									1	32
Seismic	1	11										12
Unknown (NOI Unavailable)		13										13
<b>Drilling</b>												
Exploration Drilling (excluding TGH)				1	2	3		10				16
Development Drilling					1	15	4					20
Well Field Development						1		1	7			9
<b>Power Plant</b>												
Power Plant										7	3	10
<b>Totals</b>	<b>25</b>	<b>45</b>	<b>5</b>	<b>4</b>	<b>1</b>	<b>18</b>	<b>8</b>	<b>1</b>	<b>18</b>	<b>8</b>	<b>3</b>	<b>136</b>

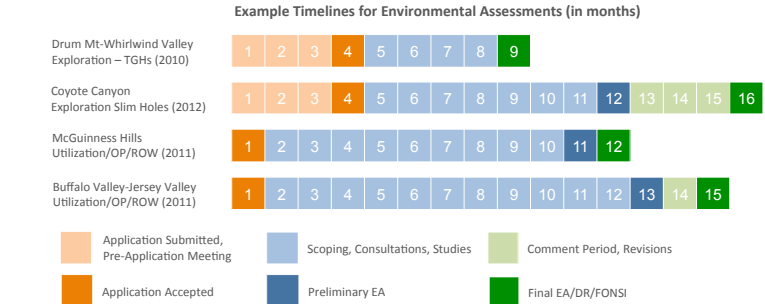
<sup>1</sup> Documents in NEPA Database adequate for analysis  
<sup>2</sup> NEPA Analysis: CU-Casual Use, CX-Categorical Exclusion, DNA-Determination of NEPA Adequacy, EA-Environmental Assessment, EIS-Environmental Impact Statement  
<sup>3</sup> Some GGP, POU, POU, and POU EAs included in the above table overlapped and are represented for each category to which they applied.

## ACTIVELY ENGAGE PUBLIC

Variable	# of Yes (of 31 EA)	Average # of Days			Median # of Days		
		Yes	No	Difference	Yes	No	Difference
Native American Concern?	25	368.8	307.3	61.5	337	256.5	80.5
Significant Tribal Comment?	9	400.9	330.4	70.5	354	297	57
Significant Public Comment?	5	428.8	317.8	111.0	456	309.5	146.5
ESA Species Present?	3	404.7	341.9	62.8	380	311.5	68.5
Migratory Birds Present?	36	364.8	119.0	245.8	331.5	155	176.5
BLMSS Present?	33	388.1	119.0	269.1	337	113	224
Exceptional Concern for Ambient Environment?	10	361.0	341.8	19.2	331.5	296	35.5
Overlapping Jurisdictions of Federal Agencies?	11	390.0	329.7	60.3	302.0	327.0	-25.0

**NEPA Timeline Reduction Potential** → Actively engaging with tribes and the public, and avoiding areas containing wildlife protected under the Endangered Species Act (ESA), when possible

## TRACK TIMELINES



**NEPA Timeline Reduction Potential** → Tracking timelines and identifying applicant/agency delays will increase transparency and provide data for increased accountability.

## DEVELOP COMPREHENSIVE EAs and EISs

Geothermal Area	NEPA Tiered Document Name/ Number	EA		DNA	
		Days to Approve	Date of FONSI / ROD	Application Date	Days to Approve
Salt Wells Geothermal Area	Salt Wells Geothermal Energy Projects Final Environmental Impact Statement Final DOI-BLM-NV-CC-E5-11-10-1793	749	9/30/11	12/6/11	51
Gabbs Valley Geothermal Area	Environmental Assessment Gabbs Valley and Dead Horse Wells Geothermal Exploration Projects - DOI-BLM-NV-CO-10-2010-0006-EA			12/31/11	27
				5/20/11	26
				1/31/12	16
Dixie Meadows Geothermal Area	Dixie Meadows Geothermal Exploration Project DOI-BLM-NV-CO-10-2011-0516-EA		11/13/10	10/11/12	14
				1/4/13	27
Coyote Canyon Geothermal Area	Coyote Canyon South Exploration DOI-BLM-NV-CO-10-2011-0516-EA	510	1/17/12	6/29/12	154
Tungsten Mountain Geothermal Area	Tungsten Mountain Geothermal Exploration Environmental Assessment DOI-BLM-NV-CO-10-0029-EA		12/18/12	1/11/13	34
				12/18/12	21
		336	12/18/12	1/14/13	56
				4/2/12	14
		407	3/28/12	7/31/12	31
				8/13/12	44

**NEPA Timeline Reduction Potential** → Develop EAs and EISs that are more comprehensive than necessary.

## UTILIZE CUs, DNAs, and CXs

Resulting Environmental Review	Approximate Time Frames	Comments
Casual Use (CU)	<1 month	A CU does not require any NEPA analysis and usually results from the review of a NOI for geothermal exploration.
Determination of NEPA Adequacy (DNA)	1 month	Not all new proposed actions will require new environmental analysis. In some instances an existing EA or EIS may be relied upon in its entirety.
Categorical Exclusion (CX)	2 months	A CX can allow a federal agency not to complete an EA for activities that do not have a significant effect on the quality of the human environment. A CX can be established administratively through agency rulemaking or legislatively through congressional action.
Environmental Assessment (EA)	10 months	EAs are conducted to determine whether action would significantly affect the environment. The EA process results in either a Finding of No Significant Impact (FONSI) or the preparation of an Environmental Impact Statement (EIS).
Environmental Impact Statement (EIS)	25 months	The EIS process requires public participation for all federal agencies.

**NEPA Timeline Reduction Potential** → Utilizing CUs, DNAs, and CXs (which take considerably less time) whenever possible can help to reduce cumulative NEPA timelines.

## IMPLEMENT AGENCY POLICY CHANGES

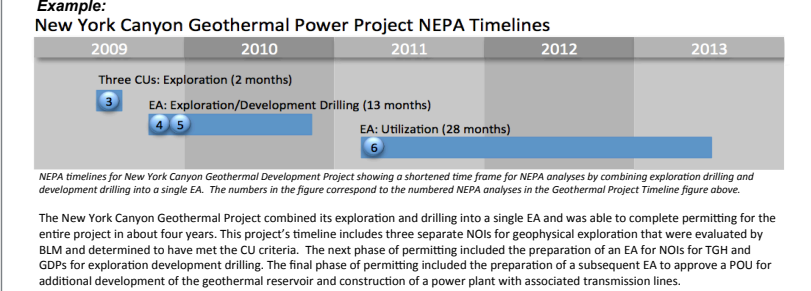
Geothermal Leases – Post 2008 Programmatic Geothermal EIS<sup>1</sup>

State	Leases Offered	Additional Documents	
		DNA	EA
CA	15	12	3
CO	3	1	2
ID	12	12	0
NV	267	246	21
OR	11	11	
UT	68	13	55
<b>Totals</b>	<b>376</b>	<b>295</b>	<b>81</b>

<sup>1</sup> - Sales through 11/19/2013. Data source: LR2000, BLM Geothermal Lease Sale Results.

**NEPA Timeline Reduction Potential** → Implementing agency policy changes can help facilitate the goal of lowering the NEPA permitting timelines.

## COMBINIE NEPA ANALYSES



**NEPA Timeline Reduction Potential** → Combining environmental analyses for exploration and development drilling.