Coordinating Permit Offices and the Development of Utility-Scale Geothermal Energy

Aaron Levine, Katherine Young, and Kermit Witherbee

National Renewable Energy Laboratory Golden, CO, USA

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ABSTRACT

An Icelandic investor in geothermal power projects reported in 2011 that the average time to develop a geothermal power plant in the United States can take as long as five to seven years. Permitting is a major component of the development process and appears to be a key development concern. Better coordination across government agencies could reduce uncertainty of the process and the actual time of permitting. As a result, the United States Department of Energy Geothermal Technologies Office (GTO) requested that the National Renewable Energy Laboratory (NREL) analyze the potential use of coordinating permit offices for utility-scale geothermal power plants.

This study examines various forms of coordinating permit offices at the state and federal level in the western United States, discusses inefficiencies and mitigation techniques for permitting natural resource projects, analyzes whether various approaches are easily adaptable to utility-scale geothermal development, and addresses advantages and challenges for coordinating permit offices.

Key successful strategies identified include:

- Flexibility in implementing the approach (i.e. less statutory requirements for the approach);
- Less dependence on a final environmental review for information sharing and permit coordination; and
- State and federal partnerships developed through memorandum of understanding to define roles and share data and/or developer information.

A few of the most helpful techniques include:

- A central point of contact for the developer to ask questions surrounding the project;
- Pre-application meetings to assist the developer in identifying all of the permits, regulatory approvals, and associated information or data required;
- A permit schedule or timeline to set expectations for the developer and agencies; and
- Consolidating the public notice, comment, and hearing period into fewer hearings held concurrently.

Introduction

Background

In 2011, the United States Department of Energy's Geothermal Technologies Office (GTO) assembled a geothermal Blue Ribbon Panel for a guided discussion on the future of geothermal energy in the United States and GTO's role in geothermal power development. The Geothermal Blue Ribbon Panel Recommendations Report captures the discussions and recommendations of the experts. Therein, the panel identified the inefficiency and length of time involved in the permitting process as a major concern for geothermal energy development (U.S. Department of Energy, 2011). A 2011 report stated the average time to develop a geothermal power plant can take as long as five to seven years (Islandsbanki, 2011).

In March 2012, in response to the Blue Ribbon Panel report, GTO initiated a Geothermal Regulatory Roadmap (GRR) effort to facilitate the development of utility-scale geothermal energy in the western United States. To date, the GRR covers the development of utility-scale geothermal energy on federal lands, tribal lands, and within ten states. Throughout the development of this roadmap, GRR team members collected information from industry, agency and other stakeholder personnel regarding potential recommended improvements in geothermal permitting. One suggestion to combat inefficiency and length of time involved in the permitting process is a coordinating permit office that facilitates permits between the developer and the multitude of state and/or federal agencies. Various forms of a coordinating permit office have been employed at both the state and federal levels to address the coordination of renewable energy projects and other large natural resource extrac-

tion projects involving oil and gas or other minerals. As a result, GTO requested that the National Renewable Energy Laboratory (NREL) analyze the potential use of coordinating permit offices for utility-scale geothermal power plants.

Roadmap

The regulatory process for developing utility-scale geothermal energy, including both environmental review and permitting can be a lengthy endeavor. The uncertainty and length of time involved in the process may deter investors from funding geothermal projects. Finding ways to streamline and speed up the regulatory process are key issues for geothermal developers and governments seeking to develop geothermal resources. Coordinating permit offices represent one possible strategy for accomplishing this goal. This study begins with a brief description of the methodology used to analyze various state and federal approaches to a coordinating permit office. Thereafter, this study highlights various approaches to coordinating the permit process used by:

- The Hawaii Department of Business, Economic Development, and Tourism (DBEDT) for renewable energy projects;
- The Alaska Department of Natural Resources (DNR) for large project coordination; and
- The Bureau of Land Management (BLM) for oil and gas projects on BLM-administered public lands.

Analysis of Existing Coordinating Permit Offices

To analyze the approaches to coordinating permit offices, the authors:

- Examined statutes, administrative rules, executive orders, memoranda of understanding (MOUs), and budgetary documents;
- Interviewed agency representatives affiliated with coordinating permit offices; and
- Reviewed published reports on coordinating permit offices.

State and federal agencies have employed coordinating permit offices to help facilitate the complex permitting scheme required to develop renewable energy projects as well as other forms of natural resource extraction in the United States. This section highlights various approaches used in Hawaii, Alaska, and by the BLM for BLM-administered public lands throughout the western United States. For each approach, the analysis includes:

- How the office is created;
- Who oversees the office;
- How the office is funded;
- What projects are eligible for the process;
- Timeframes for the coordinated process relative to a process without coordination;
- The office's general procedures for coordinating permits and authorizations from different county, state, and federal agencies;
- Examples of inefficiencies identified in the permitting process and mitigation techniques; and
- The adaptability of the approach to utility-scale geothermal development.

Hawaii

In 2008, Hawaii enacted a comprehensive regulatory scheme through statutes and administrative rules for coordinating the permit process for renewable energy projects that have a generation capacity of at least five megawatts. To date, Hawaii has not fully utilized this regulatory scheme, but continues to work towards implementing the process.

Creation and Oversight

The Hawaii State Legislature created the Renewable Energy Facility Siting Process (REFSP) through the enactment of Hawaii Revised Statutes (HRS) Chapter 201N (HRS §201N-1 et seq.). The REFSP is overseen by the Energy Resources Coordinator ("Coordinator"), which the state legislature designated as the Director of Department of Business, Economic Development & Tourism (DBEDT) (HRS §196-3). Additionally, the Coordinator designates a Renewable Energy Facilitator ("Facilitator") to report to the Coordinator and assist in the coordinated permit process (HRS §201-12.5; Hawaii Administrative Rules §15-36-04). The Facilitator administers the day-to-day coordination and implementation of the REFSP (HRS §201-12.5).

Funding

The REFSP is completely funded through a developer fee to cover the Coordinator's services in overseeing the permit process (HRS §201N-4(a)). The developer and DBEDT enter into a cost reimbursement agreement, which sets the agreed upon fees for facilitating the permit process (HAR §15-36-06(b)). These fees cover the cost and expenses of all DBEDT staff, contractors, and other relevant state and county agencies which assume added costs incurred from use of the REFSP (HRS §201N-4(a)). The REFSP is structured for the developer to pay all fees to DBEDT, after which DBEDT transmits reimbursement payments to the agencies or contractors (HAR §15-36-19). DBEDT is still in the process of determining the costs for entering the REFSP.

The state of Hawaii funds the Facilitator position to administer the REFSP with the Energy Security Special Fund (ESSF) (HRS §201-12.5(c)). The ESSF receives funding from the Environmental Response, Energy, and Food Security (EREFS) tax, which places a $1.05 (US Dollars) tax on each barrel of petroleum (excluding aviation fuel) sold by a petroleum distributor to any retail dealer or end user of petroleum in Hawaii (HRS §243-3.5(a)). Fifteen cents of the EREFS tax on each barrel of petroleum is deposited in the ESSF (Ibid).

Eligibility

Renewable energy projects (including wind, solar, hydro, biogas, geothermal, hydrokinetic, and biomass) with a capacity to produce at least 200 MWe are automatically eligible to enter the REFSP (HRS §201N-1; HRS §269-91). Renewable energy projects with a capacity between 5-199 MWe (or biofuel production facilities with a capacity to produce or distribute one hundred thousand (100,000) gallons or more annually) may enter the REFSP at the discretion of the Coordinator (HRS §201N-1). Criteria for renewable energy projects with a production capacity

between 5-199 MWe are not defined by statute, regulation, or official policy documents. However possible considerations include:

- The developer's background and experience in building energy projects;
- The permitting team and consultants for the project;
- The status of existing permit applications for the project;
- Utility interconnection;
- Background information on the project, including site location and how far along the developers are in the project; and
- Evidence of financial means to carry out the project, including whether the developer has procured a power purchase agreement with an electric utility (Black, 2013).

Timeframes

Without the REFSP, the average total permitting time for renewable projects, including a concurrent public utilities commission process, can take two to four years to complete (Black, 2013). The REFSP hopes to reduce total permitting time to one to two years to complete. The REFSP is designed to ensure all permits identified in a permit plan developed between the applicant and DBEDT are issued or denied within 12 months after the Coordinator accepts the permit plan application (HRS §201N-4(f); HAR §15-36-14). However, if the agency provides a report demonstrating that the agency diligently tried to process the permit but more time is needed, the agency receives an additional six months to process the permit (HRS §201N-4(g); HAR §15-36-14(a)). If the agency fails to provide a report to the Coordinator after not processing the permit within 12 months after the Coordinator accepts the permit plan application, the permit is automatically approved after an additional 6 months (HRS §201N-4(g); HAR §15-36-14(b)). If the agency provides a report within 12 months after the Coordinator accepts the permit plan application, but does not process the permit within an additional 6 months, the Coordinator is authorized to approve the outstanding permit application (HRS §201N-4(g); HAR §15-36-14(a)).

General Procedures

The REFSP is designed to start with DBEDT holding a pre-application conference with the developer to determine whether to designate the project as a renewable energy facility and whether the applicant is willing and able to comply with its duties under the REFSP (Hines, 2013). If designated, DBEDT with assistance from the developer form a permit plan application for the development of the project, which includes all necessary permits and information, a timetable for obtaining the permits and coordinating the environmental review, and a cost reimbursement agreement (Hines, 2013). At this point, DBEDT and State Energy Office Permitting Team will begin to assist the developer in starting the application process and agency consultation for the necessary permits. In beginning to assist the developer through the application process, the Facilitator and permitting team will try to identify duplicate information and negotiate an agreed upon format for agencies with overlapping data requirements to accept the information. DBEDT must then wait for a Final Hawaii Environmental Impact Statement before accepting the permit plan application (before which agencies cannot issue a final permit decision) (HRS §201N-8(b)).

After accepting the permit plan application, DBEDT must hold a public meeting on the island on which the proposed renewable energy facility will be built. The public meeting promotes public awareness of the project, provides opportunity for public input regarding project development and construction, and provides DBEDT the opportunity to gain public and community sentiment on the project to incorporate into project planning (HRS §201N-10; HAR §15-36-11). DBEDT may also use the meeting to coordinate with the appropriate federal, state, and county permitting agencies to combine public hearings to satisfy permit procedures and requirements where appropriate and feasible (HAR §15-36-11(e)). Following this meeting, DBEDT may accept the permit plan for the project, which must be posted and updated on DBEDT's website for the duration of the project to keep the public informed of permitting progress (HAR §15-36-12; HAR §15-36-13)). Based on the permit plan, the Facilitator coordinates the timely processing of the permit plan with state and county agencies (HRS §201N-5; HRS §201N-6). Additionally, the Coordinator must assist the applicant in obtaining all federal permits, which may include consulting with federal agencies, organizing interagency working groups, coordinating federal permits, and general oversight and assistance (HRS 201N-7(a)). *See Figure 1: Timeline for Hawaii Environmental Policy Act (HEPA) and State Permitting Processes*.

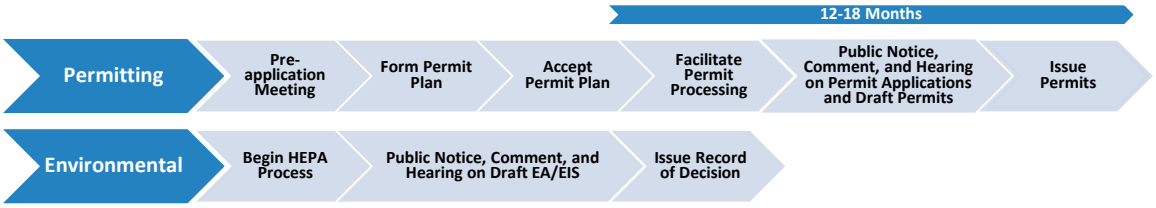

Figure 1. Timeline for Hawaii Environmental Policy Act (HEPA) and State Permitting Processes - The Hawaii Renewable Energy Facility Siting Process (REFSP) partially overlaps with the Hawaii environmental review process (Hawaii Revised Statutes, Chapter 343). The Department of Business, Economic Development, and Tourism (DBEDT) will begin considering the developer for the REFSP process and initiate the permitting process before or during the environmental review process, but by statute cannot accept the permit plan until the environmental review process is complete. DBEDT will conduct agency outreach and coordination to discuss federal, state, and county permits required for the project at the earliest practicable time.

Examples of Inefficiencies and Mitigation Techniques

Major concerns in the permitting process include duplication of effort on the part of agencies, duplication of information supplied on the part of the developer, and overall efficiency.

First, the REFSP aims to consolidate public hearings required for various federal, state, and county permits into fewer hearings through a public meeting held on the island where the developer intends to build the project (Black, 2013). While it may be infeasible or inappropriate to hold one hearing that covers all of the permits, consolidating the effort into fewer meetings held at the

same time (or over the course of a few days) reduces agency effort (especially where one agency oversees multiple permits) and shortens the time required to complete the public hearing process.

Second, the REFSP aims to facilitate information sharing through DBEDT acting as the accepting agency for the state environmental review process through DBEDT distributing information gathered during the environmental review process to the appropriate agencies to help shape project mitigation measures (Black, 2013) . Additionally, through DBEDT's HRS 201N authority, the REFSP tries to identify agencies with duplicate data and information requirements and negotiate an agreed upon format for the developer to submit to the information to the agencies (Hines, 2013).

Third, the REFSP establishes a system to coordinate the federal environmental review process with the state environmental review process (HRS §201N-7(a)). Increased agency coordination on the federal and state environmental review process can reduce the agency effort required to complete the environmental review process and the duplicate information the developer must otherwise supply.

Fourth, the REFSP tries to reduce overall permitting time. As mentioned above, without coordination renewable energy projects in Hawaii can take from two to four years to permit. To reduce permit processing time, the REFSP creates a permit plan to concurrently process permits and places a statutory maximum permit processing time of eighteen months on the permitting agencies.

Areas of Continued Concern

An impediment to the concurrent permit process is that the Coordinator may not accept the permit plan and host a public meeting on the island where the project is located until a Final EIS is complete. As a result, the Coordinator can initiate the permit process, but permits will not be approved until after the completion of the Hawaii environmental review process and likely the acceptance of the permit plan, a subsequent meeting to receive community input on the island where the project is proposed, a refinement to the permit plan, and final review and approval by the agency.

Agencies have raised concerns with the statutory mandate to process permits within 12 to 18 months (Black, 2013). Agencies may choose to deny a permit as the deadline nears rather than allow the permit to be approved by an outside source. Likewise, DBEDT is a facilitating body, rather than a regulatory body and prefers not to exercise the statutory authority to approve permits (Black, 2013).

Renewable energy developers may be reluctant to engage in the REFSP out of fear of losing control over the overall permitting process for their respective project. They may lose control by having to defer to DBEDT's overall project management authority for the permits granted under the REFSP.

Sidebar 1. Proposed Geothermal Exploration Categorical Exemption

In an attempt to reduce the multiple phases of HEPA for geothermal projects, the Hawaii Department of Land and Natural Resources proposed a categorical exemption from HEPA for exploration drilling in 2012. The Hawaii Environmental Council did not approve the proposal.

Adaptability to Geothermal Development

Specific to geothermal development, the Hawaii environmental review process (HEPA) can take place at both the exploration drilling and the facility development phases. Some developers have considered conducting HEPA review twice: once to cover exploration drilling and once to cover facility development. Others have considered encompassing exploratory and development activities in one EIS, presuming a resource will be found during exploration. Where the developer is considering two environmental review stages, the REFSP would not be available for exploration drilling as exploratory activities do not meet the REFSP eligibility requirements. DBEDT could assist developers through the exploratory stages via regular agency coordination and consultation, but not the REFSP. Additionally, DBEDT's use of the Final EIS as a tool for information sharing between the agencies with regulatory authority over the project may be limited by separate environmental reviews for the exploration drilling and facility development phases of the project, especially if all of the necessary information is not included in the initial EIS (*see Sidebar 1: Proposed Geothermal Exploration Categorical Exemption).*

Alaska

In the early 1990s, Alaska developed a program within the Alaska Department of Natural Resources (DNR) for coordinating the permit process for large-scale natural resource development projects (Alaska OPMP Homepage). The coordinated process was originally developed in response to the mining industry and has become standard practice for permitting mining projects in Alaska (Crafford, 2013). *See Figure 2: Timeline of Large Project Coordination.*

Creation and Oversight

In the Alaska Land Act (Alaska Statute 38.05.01 et seq.), the Alaska State Legislature authorized the Alaska DNR Commissioner to "lead and coordinate all matters relating to the state's review and authorization of resource development projects (AS §38.05.020(b)(9))." Based on this language, the Alaska DNR Office of Project Management and Permitting (OPMP) offers a voluntary Large Project Coordination (LPC) program to coordinate the permitting and review process for large resource development projects (Crafford, 2013). Within the Alaska DNR,

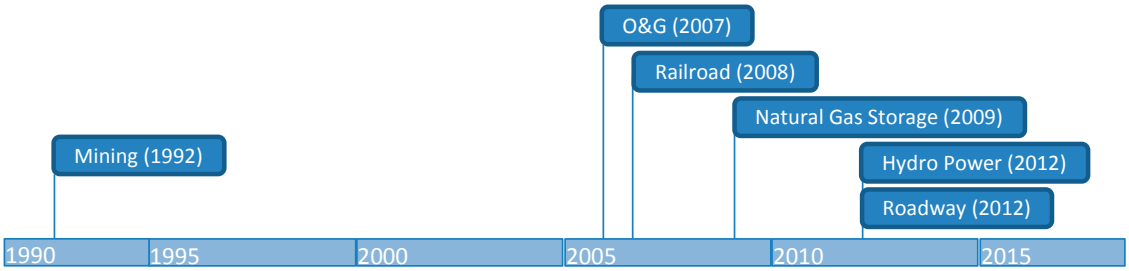

Figure 2. Timeline of Large Project Coordination - The Alaska process has expanded over the last 20 years to include a diverse group of natural resource projects. Expansion has been predicated on industry requests to use the streamlined process. The increase in project types by industry request, despite additional developer costs, suggests that industry has recognized this coordinated process as being a more effient way of obtaining the required permits.

the Commissioner has designated a Director of the OPMP who oversees the LPC program, underneath whom are a large mine project manager and six large project coordinators assigned to manage multiple permit reviews and provide project coordination (Alaska OPMP Homepage; FY2013 Operating Budget). The Director of OPMP assigns a project coordinator to each project to facilitate interagency coordination and a cooperative working relationship with the project developer (Alaska OPMP Homepage). The large project coordinator is responsible for identifying information required from resource developers, facilitating information sharing, and facilitating communication between state and federal agencies and the developer (Crafford, 2013).

Funding

OPMP receives funding from different sources, including:

- General fund appropriations from the Alaska Legislature;
- Capital funding from state agencies to coordinate capital projects;
- Cost reimbursement from state agencies;
- Federal funding; and
- Developers seeking to use the LPC program, who fund the program through fees paid to OPMP for large project coordinators and the permitting effort from other state agencies (FY2013 Operating Budget).

Developers negotiate and enter into MOUs with OPMP which details an estimate of the costs associated with entering the LPC process. On a quarterly basis, each permitting agency sends an expense report to the OPMP for the actual costs of the work completed on the project. The OPMP then sends a quarterly bill to the developer to recoup the costs spent by OPMP and the agencies and refunds the agencies with the developer's payment. On an annual basis, OPMP and the developer execute financial amendments to the MOU, which establishes a continuing budget for the upcoming year (Crafford, 2013). *See Figure 3 Office of Project Management and Permitting (OPMP) Funding Sources.*

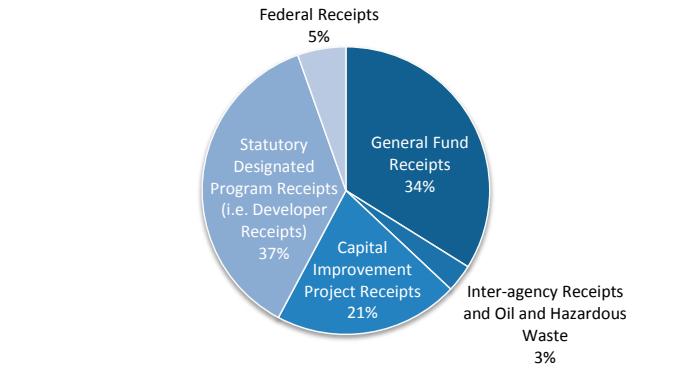

Figure 3. Office of Project Management and Permitting (OPMP) Funding Sources – OPMP receives funding from sources at the state and federal levels for project management, review, stewardship, and permitting services for large natural resource development projects. OPMP also coordinates inter-departmental state review and comment on federal plans for compliance with the Alaska National Interest Lands Conservation Act and administers the federal Coastal Impact Assistance Program. The chart above illustrates how OPMP receives a majority of its funding from the Alaska General Fund and project developers. General Fund receipts are mainly used for personnel positions and costs that are not attributable to private sector projects. Statutory Designated Program Receipts (i.e., Developer Receipts) include money received by OPMP from the developer that is then transmitted to other Alaska state agencies through reimbursable service agreements and money received for OPMPs coordination services. Source: FY2013 Alaska Operating Budget Report.

Eligibility

The LPC program does not have specific eligibility requirements. Generally, since the developer is paying an additional fee to enter the LPC, the projects tend to be large and capital intensive (Crafford, 2013).

Timeframes

The Director of OPMP stated that projects take longer when not using the coordinated approach, but specific timeframes for projects using the LPC compared to projects using a process without a coordinating office will vary from project to project. Each project presents a unique set of concerns and data requirements that make it difficult to quantify a general permitting timeframe. However, OPMP does establish permitting timelines for projects completing the LPC (FY2012 Operating Budget).

General Procedures

The LPC process begins with the Director of OPMP assigning a large project coordinator to the project. Thereafter, if the project is on state lands or will require financial assurance or a reclamation plan, the developer submits a Plan of Operations/Development to the OPMP, which includes a single reclamation plan, post closure water treatment plan, and/or financial assurance agreement for the project. The large project coordinator then distributes the Plan of Operations to all relevant state agencies to minimize duplication in the state permitting process and eliminate multiple financial assurance agreements and reclamation plans for the project. The OPMP and the large project coordinator work closely with all borough, state, and federal agencies to assist the developer in obtaining all of the necessary authorizations. The large project coordinator will organize project-specific meetings (starting at the pre-application stage) with all relevant borough, state, and federal agencies with regulatory authority over the project to discuss the project, mention any overlapping areas of concern, and identify the necessary permit information. The developer must submit a permit application to each permitting agency, but supporting study data is submitted to the large project coordinator, who then submits the information to any agency requiring the information. OPMP also tries to consolidate the public notice, comment, and hearing requirements for individual state draft permits to occur during the National Environmental Policy Act (NEPA) draft EIS public notice, comment, and hearing period (Crafford, 2013).

For purposes of NEPA, DNR is the cooperating agency. OPMP receives the NEPA information and then shares it with the other state agencies. State agencies are brought into the NEPA process only when the agency has a specific role. Once agencies have reviewed the NEPA documents, comments by state agencies are delivered to OPMP and the large project coordinator prepares a consolidated response to comments to submit to the lead federal

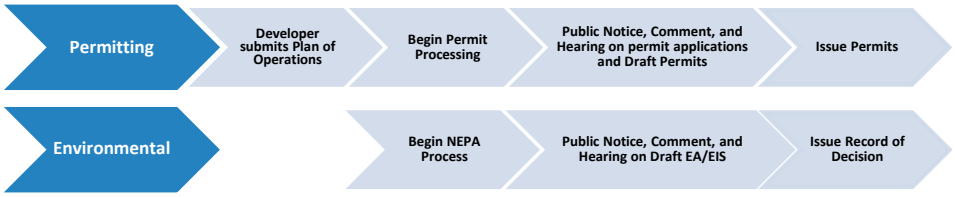

Figure 4. Timeline for NEPA and Alaska State Permitting Processes – The Alaska Large Project Coordination process integrates the NEPA process with the state permitting process. Typically, the draft permit notice, comment, and hearing is aligned with the EA/EIS notice, comment, and hearing process. By integrating the two processes, Alaska agencies are prepared to issue state permits when the lead federal agency issues the record of decision.

agency. OPMP works to integrate the state permitting process with NEPA to the extent that state agencies issue permits when the lead federal agency issues its record of decision on the project (or soon after) (Crafford, 2013). See *Figure 4: Timeline for NEPA and Alaska State Permitting Process*.

Examples of Inefficiencies and Mitigation Techniques

The Alaska LPC tries to reduce duplication in effort on the part of the agencies, reduce information supplied on the part of the developer, and improve overall project efficiency.

First, the LPC program aims to reduce duplication in effort by trying to consolidate the public notice, comment, and hearing requirements for individual state permits to occur during the NEPA public notice, comment, and hearing period. When possible the public notice, comment, and hearing period is consolidated into a single notice and comment period, whereby the public submits comments on the project as a whole and the project coordinator distributes the comments to the relevant state agency (Crafford, 2013). When Alaska uses the consolidated notice and comment process, the large project coordinator produces a consolidated response to comments, instead of each agency being responsible for publishing a separate response (Crafford, 2013). Consolidating the notice, comment, and hearing requirements also saves time by allowing all of the notice, comment, and hearing periods to occur at the same time as opposed to spread out over an extended period of time with each state agency holding a separate (potentially non-concurrent) notice, comment, and hearing period.

Second, the LPC program aims to reduce duplications in efforts on the part of agencies and the developer through the Plan of Operations/Development. The Plan of Operations/Development allows the developer to complete one financial assurance agreement and/or reclamation plan for the entire project. Thereafter, OPMP can distribute the financial assurance agreement and reclamation plan to the permitting agencies, avoiding the developer having to create separate agreements with each agency.

Third, the LPC program aims to reduce the amount of developer-supplied duplicate information by having the developer submit all study data and information to the large project coordinator who then can distribute the information to any agency that needs the information.

Fourth, the LPC program aims to improve efficiency by reducing conflict and defining roles between borough and state agencies. For example, through the LPC program, OPMP developed an MOU between the Alaska Department of Natural Resources and the North Slope Borough and has worked closely with the North Slope Borough concerning oil and gas activities that have overlapping authority at the local and state levels. OPMP holds monthly teleconferences and quarterly face-to-face meetings with the North Slope Borough to discuss oil and gas projects on the North Slope. The regularly scheduled meetings have helped foster better communication and delegation of roles in the regulatory process (Crafford, 2013).

Fifth, the LPC program aims to improve efficiency by reducing conflict and defining roles between state and federal agencies. Through the LPC program, OPMP holds meetings between relevant state and federal agencies to minimize conflict between state and federal agencies on overlapping issues and keep the agencies informed on all aspects of the project (Crafford, 2013).

Sixth, the LPC program aims to improve efficiency in the NEPA process by reducing state agency resources and addressing interagency conflicts at the state level. Through DNR (OPMP) acting as the cooperative agency, other state agencies are only brought into the process when necessary, eliminating the need for those agencies to spend time on the NEPA process that is not specific to the their areas of expertise. Additionally, since the large project coordinator consolidates all comments from state agencies into one response, interagency conflicts at the state level are resolved through the LPC process before OPMP submits the comments to the federal agency. This helps the federal agency avoid having to address state-level interagency conflicts, which could prolong the NEPA process (Crafford, 2013).

Seventh, the LPC program aims to improve efficiency in the federal regulatory process by providing assistance to federal agencies. The LPC program has funded third-party contractors to assist federal agencies with limited personnel. For example, the proposed development of a large hydropower project in Alaska requires significant federal personnel to review study plans. OPMP was able to create an MOU with the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) under which the developer provided money to OPMP through the LPC program that OPMP used to pay third-party engineering firms to provide support to USFWS and NMFS. The arrangement allowed the USFWS and the NMFS to write the scope of work for the subcontractors, while the OPMP finalized the contract and paid for the subcontractors' services (Crafford, 2013; FY2014 Budget Proposal).

Adaptability to Geothermal Development

Specific to geothermal development, the LPC program appears adaptable to the multi-layer environmental review process (NEPA) requirements placed on utility-scale geothermal development. The OPMP could coordinate the notice, comment, and hearing for each phase of NEPA review to coincide with the applicable permits for that phase of development (i.e. exploration, well development/power production) or for future phases of development if the specific regulatory authorization allows.

Furthermore, the LPC is not statutorily limited by a Final EIS requirement, which would allow a greater level of facilitation for all phases of the project at an earlier time.

Finally, the LPC appears to be a viable tool for information sharing between agencies, since the large project coordinator can organize notice, comment, and hearing periods and distribute study data and information prior to the completion of a Final EIS.

Bureau of Land Management

The Bureau of Land Management (BLM) oversees an oil and gas federal permit streamlining pilot project to improve coordination of oil and gas permits on BLM-administered public lands.

Creation and Oversight

The Energy Policy Act of 2005 (EPAct 2005) established the Federal Permit Streamlining Pilot Project, which created seven BLM pilot project offices across Colorado, Montana, New Mexico, Wyoming, and Utah. Congress delegated authority to the Secretary of the Interior to create the pilot project, but the pilot project offices are overseen by a BLM field manager within each of the seven pilot project offices (EPAct 2005 §365(a) & (c)(2)). BLM is currently supporting an amendment to EPAct 2005 that would replace the Miles City, Montana Office with the Montana/Dakotas State BLM Office to expand the jurisdiction of the pilot project (H.R. 767; Connell Statement).

Funding

EPAct 2005 established the BLM Permit Process Improvement Fund (Fund), amending Section 35 of the Federal Mining Lease Act (30 USC 191) (EPAct 2005 §365(g)). EPAct 2005 requires the Secretary of the Treasury to deposit fifty percent (50%) of any rentals received from oil and gas leases in any state (other than Alaska) on or after the enactment of EPAct 2005 in the Fund (EPAct §365(g)(2)(b)). Thereafter, from 2006 through 2015, the Fund is available to the Secretary of the Interior for expenditure, without further appropriation or fiscal year limitation, to use for the pilot project coordination and processing of oil and gas use authorizations (EPAct §365(g)(3)). The Fund may also be used for the pilot project coordination and processing services from:

- The United States Fish and Wildlife Service (USFWS);
- The Bureau of Indian Affairs (BIA);
- The United States Forest Service (USFS);
- The United States Environmental Protection Agency (EPA);
- The United States Army Corps of Engineers (USACE); and
- The states of Wyoming, Montana, Colorado, Utah and New Mexico (EPAct 2005(h)).

The Fund amount was reported at twenty-three million dollars ($23 million) annually in 2007 (BLM, 2008).

Eligibility

Oil and gas projects on BLM-administered public lands within the jurisdiction of the seven pilot project offices are eligible for the streamlined permitting process.

Timeframes

According to the 2008 BLM Report, the average Application for Permit to Drill (APD) approval time (from complete to approved) increased 64 days on average from the year before implementation (FY05) when approval time was 155 days to the end of the second year of implementation (FY07) when approval time was 219 days. BLM attributed a number of causes for the increase in timeframe, including:

- More complex APD Project Plans of Development (POD) resource projection situations;
- Pending land use plan decisions; and
- Pending project NEPA actions.

However, from the first year the pilot project was implemented (FY06) to the second year (FY07), the average NEPA processing time decreased 25% percent from 81 days to 61 days (BLM, 2008).

General Procedures

The pilot project began with an MOU between the agencies within the Department of the Interior (BLM, USFWS, BIA, Minerals Management Service (MMS), Bureau of Reclamation (BOR)), the USFS, USACE, EPA, United States Department of Agriculture (USDA), and State Governors (BLM, 2008). The MOU provides principles and goals to follow in the pilot project and establishes the roles, responsibilities, and authorities for each agency (EPAct 2005 §365(b)). Subsequently, the MOU agencies staffed personnel in the pilot offices to facilitate the processing of each agency's regulatory authorization in the APD, Sundry Notice, and Right-of-way (ROW) approval processes.

Examples of Inefficiencies and Mitigation Techniques

Like the state coordinating permit offices discussed, the pilot project tries to reduce duplication in effort on the part of the agencies, reduce duplication in information supplied on the part of the developer, and improve overall project efficiency.

First, the pilot project aims to reduce duplication in effort through better coordination between federal and state agencies. BLM has established working relationships with state historic preservation offices (SHPOs), as well as state natural resource, environmental, and oil and gas agencies to reduce duplication and help streamline the permitting process (BLM, 2008). For example, the BLM Miles City Pilot Office completed an MOU with the Montana Board of Oil and Gas Conservation to prepare a joint environmental analysis that satisfies the requirements of both the Montana Environmental Policy Act (MEPA) and NEPA (BLM, 2008).

Second, the pilot project aims to reduce duplication in information supplied by the developer through interfacing with state agencies. The pilot project offices have worked with state agencies to develop data sharing agreements through MOUs (BLM, 2008).

Third, the pilot project aims to improve efficiency on the part of agencies through improved interagency consultation and coordination. For example, the BLM and USFWS routinely work on Endangered Species Act Section 7 and sensitive species consultations required for processing APDs, Sundry Notices, or Right-of-Ways (ROWs) (BLM, 2008). Face-to-face communication due to co-location has allowed the agencies to better understand differing points of view or positions and address the conflicting views more quickly (BLM, 2008).

Fourth, the pilot project improved efficiency in the NEPA process. BLM attributes enhanced interagency coordination, greater use of categorical exemptions, and expanded use of comprehensive strategies to facilitate the processing of more well permits through

a single NEPA action as the causes of the 25% decrease in NEPA processing time (BLM, 2008).

Adaptability to Geothermal Development

Currently, the pilot project is only applicable to oil and gas developments within the jurisdiction of the seven pilot offices. While the pilot project is currently not adaptable to geothermal, techniques used by the pilot project may be adaptable. The pilot projects use of data-sharing agreements between state and federal agencies, co-location of federal personnel, and state-federal partnerships in developing a single environmental review document could all be useful in a federal geothermal coordinating permit office.

New offices using the same principles as the pilot project would require a new federal statute or an amendment to EPAct 2005. However, in 2009 BLM created five BLM Renewable Energy Coordination Offices (plus a National Renewable Energy Office in Washington DC) to facilitate renewable energy (solar, wind, biomass, and geothermal) development on BLM-administered public lands. Renewable energy coordinating offices exist in Arizona, California (two offices), Nevada, and Wyoming (*see Sidebar 2: BLM Wyoming*).

Sidebar 2. BLM Wyoming

BLM Wyoming established a renewable energy coordination office in 2009 for the development of wind energy on BLM-administered public lands in Wyoming. The "office" is in reality a virtual office, using BLM Wyoming employees in locations closest to the proposed wind site to process the relevant permits (BLM Wyoming Renewable Energy Homepage).

Discussion

Table 1 below summarizes the different approaches discussed in this paper that have developed at the state and federal level for coordinating the permit process for large-scale development projects.

Coordinating permit offices have both advantages and challenges when compared to a permitting process without coordination. This section highlights advantages and challenges at the general level and at the approach specific level.

Table 1. Coordinating Permit Offices - Different mechanisms have been employed in Hawaii, Alaska, California, and on BLM-administered public lands for coordinating various natural resource projects.

Jurisdiction	Agency	Year Started	Technology	Authorization
Hawai'i	Hawai'i Department of Business, Economic Development, and Tourism (DBEDT)	2008	Renewable energy as defined in HRS 269-91	HRS 201N: 14 statutory sections; HAR Title 15, Chapter 36: 19 sections of administrative rules
Alaska	Alaska Department of Natural Resources Office of Project Management and Permitting	Early 1990s	Large natural resource projects: mining, oil and gas, transportation, hydro	AS 38.05.020(b)(9) authorizing statute provides one line within one section of the statute for guidance.
California	California Renewable Energy Action Team (REAT)	2008	Renewable energy: predominantly solar and wind	Executive Order # S-14-08
BLM-administered Public Lands	Regional BLM Renewable Energy Offices	2009	Renewable energy	Policy documents
BLM-administered Public Lands	Regional BLM Oil & Gas Pilot Program Offices	2005	Oil and gas	EPAct 2005

Advantages

First, coordinating permit offices provide a central point of contact for the developer to ask questions surrounding the project. This is helpful when the developer does not know which agency would address a particular question, or when multiple agencies may have seemingly conflicting authority. The project coordinator or central point of contact will be familiar with individual agency contacts, processes, and general timelines for each required permit or approval.

Second, coordinating permit offices often coordinate pre-application meetings. Pre-application meetings assist the developer in identifying all of the permits and regulatory approvals necessary for developing the project as well as the data and information the developer must submit for those permits and approvals. Pre-application meetings can also assist in reducing the number of incomplete applications, which is an agency concern that adds time to the permitting process.

Third, coordinating permit offices may reduce permitting time through mitigating duplication that would exist without the coordinated approach. As mentioned in the section above, coordinating permit offices have developed information sharing mechanisms to reduce information duplication as well as MOUs and other arrangements between agencies to define roles and eliminate duplicate efforts.

Fourth, coordinating permit offices develop a permit schedule or timeline, which sets expectations for the developer and the agencies. A timeline can highlight where agencies can complete authorizations in parallel to reduce time and provide more certainty in the permitting timeframe. The developer may have more success in seeking investor funding with a more certain permit schedule or timeframe.

Fifth, coordinating permit offices identify permitting areas where additional resources are necessary to complete the authorization in a timely manner and may apply developer funds to those areas to complete the authorization.

Challenges

First, coordinating permit offices require the developer to pay additional costs to the government and/or the state legislature to appropriate funds to cover the additional costs for the coordinating permit office. However, from the developer's standpoint, depending on the magnitude of the fee, the additional cost may easily be offset by the money saved due to the reduced permitting timeframe.

Second, where the applicant funds the office through additional fees, some coordinating approaches have struggled to determine how to transfer the funds between agencies and how the accepting agency would account for the developer fees in their annual budget reports (Black, 2013).

Third, coordinating permits between the state and federal level may be difficult and require the negotiation and agreement on an MOU to guarantee buy-in and cooperation. While difficult, such federal-state cooperation can be accomplished and may be crucial considering the large amount of geothermal resource on federal lands *(see Sidebar 3: California Renewable Energy Action Team (REAT) and Renewable Energy Policy Group (REPG))*.

Fourth, current coordinated approaches, especially those approaches based on comprehensive statutes and regulations, may be difficult to adapt to the current environmental review constraints facing geothermal development. Those using less flexible approaches may struggle to streamline the permitting process beginning at the exploration phase of the project when environmental review is required at multiple stages.

Sidebar 3. California Renewable Energy Action Team (REAT) and Renewable Energy Policy Group (REPG)

One example of successful coordination between state and federal agencies was developed by the California Renewable Energy Action Team (REAT), a centralized "one-stop" permit process to develop renewable energy projects in California. REAT created the California Renewable Energy Permit Team (REPT), a federal-state partnership between the California Department of Fish and Game, the California Energy Commission, the BLM, and the USFWS (developed through an MOU). The REPT MOU was the basis for the joint development and preparation of a Solar Energy PEIS, Best Management Practices (BMPs), and a Desert Energy Conservation Plan (DECP) in the Mojave and Colorado Desert regions of California. In 2012, the United States Secretary of the Interior and Governor of California signed a MOU to maintain a Renewable Energy Policy Group (REPG) consisting of the Department of Interior, the California Governor's Office, and participating state departments and programs. The REPG meets regularly to distribute permitting milestone guidance that provides developers with permitting schedules aligning the state and federal processes as well as works with REAT on the above mentioned BMPs and DECP. (Report to President; MOU between DOI and California; MOU between BLM, USFW, CDFG, and CEC).

Conclusion

The complexity of the permitting process for utility-scale geothermal development is a hurdle for increasing geothermal power production in the United States. The length of time and uncertainty in the permitting process continue to be major inhibitors to obtaining financing for utility-scale geothermal projects. This paper examined aspects of five approaches to coordinating the permit process at the state and federal level. The coordinating permit offices reviewed employ many of the same techniques for coordinating the regulatory process. A few of the most helpful techniques include:

- A central point of contact for the developer to ask questions surrounding the project;
- Pre-application meetings to assist the developer in identifying all of the permits, regulatory approvals, and associated information or data required;
- A permit schedule or timeline to set expectations for the developer and agencies; and
- Consolidating the public notice, comment, and hearing period into fewer hearings held concurrently.

Additionally, coordinating permit office approaches may be more adaptable to utility-scale geothermal development if they:

1. Are less dependent on a Final EIS for information sharing. Such approaches are able to share data and information and process permits earlier in the regulatory process by not waiting for the completion of a Final EIS (or multiple environmental reviews).
2. Employ MOUs with federal agencies to define roles, establish timelines, and share resources (since a large amount of geothermal resource is on federal lands). Coordinating office approaches, such as the California REAT/REPG that create comprehensive MOUs with federal agencies will likely have greater success in coordinating authorizations between federal and state agencies than coordinating office approaches that do not guarantee buy-in. Without a cooperative agreement in place between state and federal agencies, agencies may lack similar priorities, making the coordination effort difficult.

For an additional cost, coordinating permit offices have the potential to increase efficiency and certainty in the permitting process, reducing the length of time required to permit geothermal projects. However, the amount of time reduced from the process may depend on the flexibility of the coordinating office to adapt to the multi-phased environmental review process facing geothermal development and the ability of the process to coordinate data sharing, timelines, and authorizations between state and federal agencies.

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