3. Environmental Analysis

3.1 Introduction to Environmental Analysis

Chapter 3 describes existing (baseline) environmental conditions within the proposed project area by resource/factor and evaluates potential impacts on these resources that could result from activities associated with the proposed project and its alternatives. The environmental resource issues examined in sections within this Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) are as follows:

- Aesthetics and Visual Resources;
- Air Quality and Greenhouse Gases;
- Biological Resources;
- Cultural Resources;
- Geology, Soils, Minerals, and Paleontology;
- Hazards, Health, and Safety;
- Hydrology and Water Quality;
- Land Use, Grazing Allotments, and Designated Areas;
- Noise and Vibration;
- Public Services and Utilities;
- Recreation;
- Socioeconomics, Population and Housing, and Environmental Justice; and
- Traffic and Transportation

The environmental analysis for each resource topic includes a discussion of all issues raised during the public scoping period from July 27, 2009, to August 26, 2009. The analysis also reflects comments and suggestions made through consultation with federal, state, and local agencies, including the United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), and National Historic Preservation Council (NHPC) for both California and Nevada. Also presented by resource topic are Applicant Proposed Measures (APMs) and mitigation measures for identified impacts.

Each Chapter 3 resource section includes the following subsections:

- Environmental Setting;
- Applicable Laws, Regulations, and Standards;
- Impact Analysis, including the following: NEPA Impact Criteria, CEQA Impact Criteria, Methodology, Applicant Proposed Measures, Proposed Project, and all Alternatives;
- Mitigation Measures; and
- Whole of the Action / Cumulative Action (emphasizing Ivanpah Solar Electric Generating System [ISEGS] project)

The analysis of potential cumulative effects in conjunction with other past, planned, or reasonably foreseeable projects is described in Chapter 5, “Cumulative Scenario and Impacts.”

3.1.1 Regulatory Framework

Existing laws, regulations, and standards may affect the proposed project in terms of its location, duration, footprint, discharges, and work practices. Laws and regulations may also specify permits and benchmarks necessary for project authorization or evaluation and necessitate agency consultation. Laws, regulations, and permits may come from federal, state, or local bodies and agencies. Sections 3.2 through 3.14 identify applicable laws and regulations for each resource topic; additionally, Table 1-2 in Section 1.2 of this document identifies major permits, approvals, and consultations that would typically be required for a project of this nature.

3.1.1.1 State and Federal Requirements for the EIR/EIS

This document has been prepared to comply with the California Environmental Quality Act (CEQA), the State Guidelines (California Code of Regulations, Title 14, Section [§] 15000 et seq.), the National Environmental Policy Act (NEPA) of 1969, and the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500–1508).

3.1.1.2 Information Requirements under CEQA and NEPA

State regulations implementing CEQA (CEQA Guidelines §15222) strongly encourage cooperation with the lead federal agency in preparation of a joint environmental document. Federal regulations implementing NEPA (40 CFR 1502(b)) encourage cooperation and preparation of joint federal and state environmental documents to reduce duplication. This document was designed to satisfy the requirements of both CEQA and NEPA; where possible, the discussion of potential impacts on each environmental resource area under CEQA and NEPA was combined. For example, each resource section contains one consolidated existing setting section. However, there are differences in the requirements of, approach to, and terminology used under CEQA and under NEPA, as described below. Because of these differences, while redundancy was avoided to the greatest extent possible, priority was placed on fulfilling the requirements of both the state and federal acts.

Although information requirements are not specifically prescribed, NEPA requires a project description. Section 1502.14(b) of the CEQ regulations requires "substantial treatment of each alternative considered in detail including the proposed action." This regulation does not dictate an amount of information to be provided, but rather prescribes a level of treatment, which may in turn require varying amounts of information, to facilitate a comparison of the project as proposed and its alternatives.

The analysis of each environmental resource area begins with an examination of the existing physical environmental conditions that may be affected by the proposed project. The effects of the project are defined as changes to the existing environmental conditions that are attributable to project construction, components, or operation. The analysis for each environmental resource area then offers a comparative analysis for each of the project alternatives, including the No Project Alternative.

The State CEQA Guidelines §15125(a) state in part:

> An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published … from both a local and regional perspective. This environmental setting will normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to an understanding of the significant effects of the proposed project and its alternatives.

In reference to alternatives, the State CEQA Guidelines §15126.6(a) state:

> An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.

Due to the similarity in information requirements for both NEPA and CEQA, the existing conditions setting, which describes the environmental conditions that may be affected by the project, serves both purposes. However, because NEPA requires a comparison of alternatives to facilitate agency decision-making and CEQA requires an analysis of only those alternatives that would substantially lessen one or more significant impacts, the analysis of alternatives differs in this section under NEPA and CEQA.

If information is incomplete or unavailable, NEPA permits this uncertainly; 43 CFR 1502.22(b) states that the EIS must include: (1) a statement that such information is incomplete or unavailable, (2) a statement of the relevance of the incomplete or unavailable information in evaluating reasonably foreseeable significant adverse impacts on the human environment, (3) a summary of existing credible scientific evidence that is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and (4) the agency's evaluation of such impacts based on theoretical approaches or research methods generally accepted in the scientific community. The State CEQA Guidelines discuss forecasting in §15144: "Drafting an EIR or preparing a Negative Declaration necessarily involves some degree of forecasting. While foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can." However, §15145 of the State CEQA Guidelines states: "If, after thorough investigation, a Lead Agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact." Instances where information is incomplete or unavailable are noted in the document.

3.1.2 Organization of the Environmental Analysis

The contents of each resource area subsection are described below. Depending on the nature of a resource, organization and content within each subsection may vary, but each section was written to satisfy the requirements of NEPA and CEQA. These sections assess and disclose the impacts of the project and its alternatives to all required and potentially impacted resources in the project area.

3.1.2.1 Environmental Setting

A consolidated environmental setting section serves the purposes of both NEPA and CEQA for each resource area discussed in this chapter. The environmental setting of the project area is described using information from literature reviews, fieldwork, and input from appropriate federal, state, and local agencies. Understanding these conditions (such as existing air quality, population growth trends, and recreational opportunities) allows for characterization and anticipation of the proposed project's impacts, and forms a basis for the environmental analysis. Sources for the literature reviews included published technical reports, internet resources, data from government sources, aerial photographs, and information provided by the applicant. Where existing information on the project area was insufficient or outdated or where surveys or studies were specifically required by jurisdictional agencies, surveys and studies were conducted to determine the existing environmental conditions. This work included geotechnical, cultural resources, biological, visual, and wetland delineation surveys.

3.1.2.2 Applicable Laws, Regulations, and Standards

This subsection outlines the applicable laws, regulations, and standards for each resource area. All applicable federal and state laws, regulations, and standards are summarized and their applicability to the project explained. It is assumed in the analysis that the applicant will fully comply with all applicable regulations, will prepare any required plans, and will obtain any necessary permits or waivers.

Applicable local laws, regulations, and standards are included in this subsection as well; however, pursuant to California law and CPUC General Order 131D, public utilities such as Southern California Edison (SCE) are generally not subject to local discretionary action jurisdiction (Section XVI.B). CPUC General Order 131D specifically requires public utilities to consult with local agencies on land use issues, but ultimately the CPUC has the authority to permit public utility projects. This information is included for disclosure purposes. Instances where SCE may fail to comply with local laws, regulations, and standards are noted in the analysis of impacts.

3.1.2.3 Impact Analysis

NEPA Impact Criteria

In accordance with NEPA and the BLM NEPA Handbook H-1790-1 (2008), this document considers the environmental effects of the project and its alternatives. Under NEPA, an EIS is prepared when the proposed action is expected to result in significant environmental effects (BLM 2008). The intent of the environmental analysis is to provide a scientific and analytic basis for comparing the proposed project and its alternatives (40 CFR 1502.16). Impacts are quantified to the extent possible. Determination of an impact's significance is derived from standards set by regulatory agencies at the federal, state, and local levels; knowledge of the effects of similar past projects; professional judgment; and plans and policies adopted by government agencies.

To facilitate comparison of alternatives, impacts are described in terms of context, intensity, and duration. *Context* refers to the geographic area of impact, which varies with the physical setting of the activity and the nature of the resource being analyzed. *Intensity* refers to the severity of the impact. *Duration* refers to how long the impact may last, and may be either short or long term:

- Short term – effects that occur during the construction phase
- Long term – effects caused during the construction and/or operations phases that remain longer than these phases

In determining the significance of an impact under NEPA, the impact is classified as adverse or beneficial and then rated negligible, minor, moderate, or major. Generally, these terms are defined as follows:

- Negligible effects may or may not cause observable changes to baseline conditions; regardless, they do not alter the baseline conditions;
- Minor effects cause observable and temporary or short-term changes to baseline conditions in a relatively small area, but they do not alter baseline conditions in the long term;
- Moderate effects cause observable and short-term change to baseline conditions, and/or they alter baseline conditions in the long-term; and
- Major effects cause observable and substantial long-term changes to baseline conditions.

CEQA Impact Criteria

Significance criteria, as set forth in the CEQA Appendix G Environmental Checklist (Association of Environmental Professionals [AEP] 2009) and CPUC policy, are identified in this EIR/EIS for each environmental resource area. The significance criteria serve as a benchmark for determining whether a project would result in significant adverse environmental impacts when evaluated against the baseline or existing environmental conditions. Issues that were raised during the scoping process are also addressed in the relevant resources subsection throughout this EIR/EIS.

Under the CEQA criteria, potential impacts are assessed by the agency and determined to be either no impact, a less than significant impact, an impact that is less than significant with mitigation, or a significant impact. As under NEPA,

determination of an impact's significance is derived from standards set by regulatory agencies on the federal, state, and local levels; knowledge of the effects of similar past projects; professional judgment; and plans and policies adopted by governmental agencies.

Methodology

This subsection describes the methodology used to determine whether and how the project and its alternatives would affect the resource. All documents reviewed, all calculations performed, and any databases, maps, or sources of information used in assessing the impact on a particular resource are described here.

Applicant Proposed Measures

The applicant has incorporated a number of measures and procedures to avoid or reduce impacts on specific environmental resources into the description of the proposed project. In the assessment of the impacts, these measures have been assumed to be part of the project, and are not included as CPUC- or BLM-required mitigation measures; however, implementation of each APM will be monitored through a Mitigation and Monitoring Program (MMP). The APMs that are intended to reduce the potential impacts in a particular resource area (such as air quality or biology) are listed in the section addressing that area.

Proposed Project

The assessment of the environmental impacts of the proposed project considers both the construction and the operation and maintenance phases of the project. The following project components are considered in the analysis of impacts on each resource:

- Powerlines, including the 35-mile 230-kV transmission line, the 1-mile 115-kV subtransmission line extension, and the approximately 1-mile segments of 12-kV and 33-kV distribution;
- Substations, including the new Ivanpah Substation and upgrades to the existing Eldorado Substation; and
- The telecommunication system, including Path 1 along the proposed transmission route and the redundant Path 2 that combines overhead optical groundwire (OPGW), undergrounded OPGW, and a microwave path.

Alternatives

Under NEPA and CEQA, a reasonable range of alternatives must be considered. NEPA requires consideration of a "reasonable" number of alternatives. In determining the scope of alternatives, the emphasis is on "reasonable." "Reasonable" alternatives include those that are practical and feasible from a technical and economic standpoint and by using common sense (CEQ 40 Questions; #1). The information must be sufficient to enable reviewers and decision-makers to evaluate and compare alternatives.

State CEQA Guidelines §15126.6(a) provides, in part, that "an EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project."

Impacts from alternatives are compared with those of the proposed project to determine their relative environmental merit and feasibility. The following alternatives, as described in Chapter 2, are analyzed in this chapter:

- The No Project / No Action Alternative
- Transmission Alternative Route A
- Transmission Alternative Route B
- Transmission Alternative Route C
- Transmission Alternative Route D
- Transmission Subalternative Route E
- The Golf Course Telecommunication Alternative
- The Mountain Pass Telecommunication Alternative

3.1.2.4 Mitigation Measures

The APMs, as described above, are considered a part of the project. If an analysis concludes the possibility of a potentially significant impact exists even after APMs are considered, both NEPA and CEQA require specific actions. Under CEQA, the analysis establishes the impact significance and determines additional required mitigation. Mitigation measures that are specified by the lead agencies to reduce any potential significant environmental impacts remaining after project modification are identified by the prefix "MM," for example, MM VIS-1 denotes the first mitigation measure listed for visual resources.

Both §1508.20 of the CEQ regulations for implementing NEPA and the State CEQA Guidelines §15370 define mitigation as:

(a) Avoiding the impact altogether by not taking a certain action or parts of an action;

(b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation;

(c) Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;[1]

(d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

(e) Compensating for the impact by replacing or providing substitute resources or environments.

If it is determined that impacts would remain significant after mitigation, that is, they would continue to exceed the significance criteria, further measures may be proposed, or the impact may be determined to be significant and not mitigable.

3.1.2.5 Whole of the Action / Cumulative Action

Under CEQA, "project" is defined as "the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment" (CEQA Guidelines §15378(a)). The CPUC has determined that ISEGS, which intends to connect to EITP, constitutes a reasonably foreseeable physical change in the environment and will be analyzed as part of the "whole of the action" under CEQA.

[1] CEQA Guidelines § 15370(c) substitutes the word "impacted" for "affected."

The BLM has determined that the ISEGS proposed project qualifies as a cumulative action to the EITP proposed project. The ISEGS Final Staff Assessment / Draft Environmental Impact Statement (FSA/DEIS) has determined that the ISEGS project would result in significant impacts; given the geographical proximity and the overlapping schedules of the proposed project and the ISEGS project, it is reasonable to assume that the proposed EITP project, when considered in combination with ISEGS, would contribute to cumulatively significant impacts. Pursuant to CEQ regulation (40 CFR 1508.25(a)(2)), the ISEGS project will be discussed as part of the action within this Draft EIR/EIS.

Information on the environmental setting (baseline), applicable regulations, environmental impacts, and mitigation measures required by the California Energy Commission (CEC) for ISEGS are discussed under this subsection for each resource evaluated in Chapter 3 for disclosure purposes and to assist agency decision-makers.

3.1.3 Underlying Assumptions

The conclusions in this document are based on the analysis of potential environmental impacts and the following assumptions:

- The applicant will comply with all applicable laws and regulations;
- The applicant will contract, construct, and operate the project as described in Chapter 2, including all APMs; and
- The applicant will implement the mitigation measures as required by the CPUC and the BLM.

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