Rio Mesa Solar Project

REAT Agency Response

March 19, 2012

Basis for Survey Data Requests

Agency Responsibilities

- CEQA: Evaluate and disclose project impacts; recommend mitigation
- CESA: Quantify take and fully mitigate impacts to state-listed species (desert tortoise, Gila woodpecker, possibly elf owl)
- Partner agencies:
  - BLM: NEPA analysis
  - USFWS: Bald & Golden Eagle Protection Act; Migratory Bird Treaty Act

Considerations for impacts analysis

- Technology hazard: heliostat and tower strikes; singeing or burning; vision damage
  - Tolerance/effects of energy flux unknown
  - Scale of hazard: much greater than Solar One
- Major migration corridor
- Extensive project-specific habitat loss
- Cumulative habitat loss in Colorado River corridor

Technology Risk Factors

- Concentrated light / energy flux near tower and standby zones, and elevated heat near tower
  - Burning or singeing feathers, and subsequent flight impairment
  - Vision damage
  - Thresholds for singeing or vision damage are unknown
  - Staff biologists and engineers are working with BSE to evaluate
- Collisions with the heliostat mirrors and towers
  - Scale of project much larger than Solar One and SEDC
  - Potential lake-like appearance to birds aloft
  - Reflection of open sky for birds in surrounding shrubs and on the ground
- Environmental setting
  - Immediate surrounding habitat (desert mountains, shrublands, microphyll woodlands)
  - Nearby habitat (irrigated agricultural lands)
  - Extensive wetlands including wildlife refuges in lower Colorado River Basin
  - Major migratory flyway (branch of Pacific Flyway; millions of birds every spring and fall)

Avian Hazard: Project Comparison

	Solar 1 (San Bernardino Co.)	SEDC (Israel)	Rio Mesa (Riverside Co.)
Project Acreage	80 acres 10 MW	6 MW	5,750 acres 750 MW
Mirrors	1,818 heliostats, each one 22.6 x 22.6 ft (512 ft^2); Total = 931,000 ft^2	1,610 heliostats, 75-150 ft^2 each. Total = 120,000 – 240,000 ft^2	3 generators x 85,000 heliostats each (255,000 total); 2 mirrors per heliostat; each mirror 8.5 x 12 ft (205 ft^2) Total = 52 million ft^2
Tower(s)	One; 282 ft. tall	One; 256 ft tall	Three; each one 760 ft tall
Adjacent land use/ habitat	Desert shrubland; adjacent agriculture & evap. ponds	No agriculture or wetlands; adjacent evaporation ponds; within major migratory flyway	Major migratory flyway; desert shrubland; microphyll woodland; irrigated agriculture +/- 1 mile distant; Colorado River wetlands and wildlife refuges within +/- 5 miles
Bird Mortality	70 mortalities documented during 40 weeks of surveys 19 were waterfowl & shorebirds; 51 (incl. all burns) were other species	No monitoring protocol or replicable study; no anecdotal mortality reports	unknown

Survey	REAT Recommendations (from DR 1A and addendum; February 2011)	Applicant's survey proposal (3/9/12)	Differences	Agency determination
Migratory Birds	• From late July to the end of May, weekly surveys within the project area and accessible ag lands within 4 miles. • 5 to 10 migration count locations - REAT agencies agree with 7 observation points in BSE's January counterproposal. • 3 consecutive days per week (possible fourth day of point counts pending REAT review of 2011 BLM point count methods and results). • At least 8 hours per day under good weather conditions, encompassing midday hours (dawn -dusk).	• Feb 21 - May 31 2012, and Aug 15 – Nov 1 2012. • REAT recommended protocol dated 12/16/11 and the observation points approved in Data Request Set 1A	Schedule differences. BSE proposes no surveys from late July-Aug 14 2012 or from Nov 2012 - Feb 20 2013. No winter migration surveys	Concur w/stopping Nov 1 pending review of existing data to be provided by BSE w/in 3 weeks Need surveys 12/15 – 1/31 surveys, on the ground or radar **Rationale**: need to understand magnitude and abundance year-round; this is peak winter use season
Raptor Migration	• From August to April, weekly surveys using unlimited distance bird migration survey methods. • three observation points, at least 2 miles apart, within four miles of the project footprint (access permitting). • four consecutive days per week. • At least 8 hours per day good weather, encompassing midday hours (9am – 5pm).	• March 6 - April 30 2012 and Sept 1 – Nov 30 2012. • REAT recommended protocol dated 12/16/11 and the observation points approved in Data Request Set 1A.	Schedule differences. BSE proposes no surveys during Aug 2012 or Dec 2012 - Mar 5 2013. No winter migration surveys	Need surveys 12/15 – 1/31 surveys, on the ground **Rationale**: need to understand species use year-round (esp. eagles); this is peak winter use season

Survey	REAT Recommendations (from DR 1A & addendum; Feb 2011)	Applicant's survey proposal (3/9/12)	Differences	Agency determination
Golden Eagle	• Surveys according to Pagel et al. 2010 • Recommended ground verification and other detection tools (e.g., carcass placement) • Emphasized early season surveys and prey base evaluation	• Phase 1 and 2 helicopter and ground surveys during 2012 breeding season (Pagel et al. 2010). Survey will begin March 24, 2012. • Pete Bloom is the lead biologist for these surveys.	No carcass work (but BSE still considering) No early season (Jan-Feb) surveys	Concur w/caveats: Any nest, regardless of condition, should be considered active – as stated by Bloom in 3/14 FWS meeting. FWS uncomfortable not having early season surveys. Acceptance is project-specific and not precedent setting.
Gila Woodpecker and Breeding Birds	• At least eight full coverage surveys beginning in early March and continuing on 8-10 day intervals through early May. • Microphyll woodlands in and within one mile of project footprint. • Conduct absolute counts using line-transect or comparable technique.	• 3 line-transect surveys • Microphyll woodlands in and within 500 feet of project footprint. • If any Gila woodpecker located in either of the first two surveys, acreage of established territories will be considered occupied and no subsequent surveys will occur in these areas	Less surveys (8 vs 3) Smaller survey area around project (1 mi vs 500 ft) Absolute counts vs assuming occupation	Need 8 surveys **Rationale**: surveys encompass all breeding birds Reduce survey buffer to 1320 feet (0.25 mile) **Rationale**: range is 80 acres; potential for impacts to downstream microphyll woodland habitat Need absolute counts **Rationale**: required for CESA evaluation

Survey	REAT Recommendations (from DR 1A and addendum; February 2011)	Applicant's survey proposal (3/9/12)	Differences	Agency determination
Elf owl	• Generally based on cactus ferruginous pygmy-owl (AGFD 2000) • At least three repeated site visits during the breeding season • Conduct absolute counts using line transects or comparable technique with recorded calls (play-back method) • Throughout the microphyll woodland in the project area and within one mile	• Based on the cactus ferruginous pygmy-owl protocol as suggested in Data Request Set 1A, if required by the Committee	None (pending Committee determination)	Must be conducted to determine presence or absence and quantify numbers if present (per CESA). Marginally suitable habitat exists on site, species observed west of site in Riverside Co.
Bat monitoring	• One year of continuous acoustic monitoring • Deploy three Anabat stations within microphyll woodland habitat with maximum coverage of the project area.	• Started on February 9, 2012 and will continue for 1 full year using Anabat acoustical monitoring • REAT recommended protocol dated 12/16/11 and three REAT approved Anabat monitoring stations	None	Concur
Radar	• Characterize spring and fall nocturnal migration pulses of avifauna (and bats) for the project area. • Recommend working with a recognized expert to develop site-specific methods	• Five nights per week from March 12 - May 31, 2012, and Sept 1, - October 31, 2012.	None (REAT recommendations were not specific)	Concur

Summary: Data Requirements

- Migratory birds
  - REAT conditionally concurs with Applicant's current proposal for Spring and Fall; needs surveys (on-the-ground or radar) between 12/15/12 and 1/20/13
- Migratory raptors
  - REAT concurs with Applicant's current proposal for Spring and Fall; needs surveys (on-the-ground) between 12/15/12 and 1/20/13
- Golden eagle nest surveys
  - REAT concurs with Applicant's current proposal, noting that this is a project-specific recommendation
- Spring-summer breeding season
  - Breeding bird surveys, including Gila woodpecker: REAT needs 8 surveys (not 3) for Gila woodpecker and other breeding birds to include microphyll woodland on-site and a 0.25 mile buffer area. Must have absolute count of Gila woodpecker for CESA.
  - Elf owl surveys: REAT needs nocturnal elf owl surveys throughout all microphyll woodland on-site and a 1.0 mile buffer area off-site.
- Bat monitoring – concur
- Radar – concur