



Environmental Review Form for Argonne National Laboratory

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<b>Created By:</b>	Hamada, Yuki

**Creator**

Badge:	<b>212742</b>	Name:	<b>Hamada, Yuki</b>
Cost Center:	<b>167</b>	Division:	<b>EVS</b>
Job Title:	<b>Biophysical Scientist, Remote Sensing</b>	Employee Type:	<b>Regular Full-Time Exempt</b>
Building:	<b>240</b>	Lab Extension:	<b>2-0087</b>

**General Information**

Project/Activity Developing a Deep Learning-Computer Vision Framework to Monitor Avian Interactions  
Title: with Solar Energy Facility Infrastructure

ASO NEPA Tracking No.: Type of Funding: DOE Solar Energy Technology Office (SETO)

B & R Code: Identifying Number: 2064-1571

SPP Proposal Number: CRADA Proposal Number:

Work Project Number: ANL Accounting Number: (Item 3a in Field Work Proposal)

Other (explain): Control Number: 2064-1571

List appropriate NEPA Owners:

Division: EVS NEPA Owner:

**Financial Plans**

To select a Financial Plan, click the magnifying glass icon to open a search window.

Cost Center: Project: Phase: Task:

**Description of Proposed Action**

There will be two types of outdoor activities in this project: (1) RGB video collection to generate training data for developing machine/deep learning (ML/DL) models for bird monitoring and (2) evaluation of the ML/DL models using RGB video cameras to assess bird monitoring accuracy. RGB video collection will be conducted during the 3-year project period at one or two locations on the Argonne site and several off-site locations where solar photovoltaic (PV) energy infrastructure or infrastructure relevant for the project (e.g., large, flat, smooth man-made structures such as buildings) is present. RGB video will be collected using high-definition, AI-enabled, commercially available video cameras each of which will be mounted on a tripod. During the first year, one or more cameras will be deployed to collect video at each site. The cameras will be positioned adjacent to pre-selected arrays of PV panels to collect video of bird activities around solar energy infrastructure. Each camera will be connected to network attached storage (NAS) to store recorded video and a battery pack to enable continuous video recording over approximately a one-week period. Recorded video will be retrieved, and a battery pack will be replaced weekly to collect video over a few weeks to a few months during the first year. More automated camera systems will be developed and used for the second year, and additional video collection locations will be added. The size of the video collection sites could range from less than one acre to 2000 acres that contain a few to hundreds of rows of PV panels. Video collection and associated field observations could occur at any time of year if weather and site conditions permit. ML model evaluation and accompanied video collection for a validation purpose will be conducted at two or three off-site PV facilities in the third year. The ML/DL model evaluation will be conducted using an improved version of high-definition, AI-enabled video cameras each of which will be mounted on a tripod. The size of the ML model evaluation sites could range from 100 to 2000 acres. The ML/DL model evaluation will focus on bird migration seasons during the March-May and August-October seasons with a possibility of additional field observations during the summer. The on-site location will be the solar PV arrays located behind Building 372. Off-site locations may include solar energy facilities on BLM administered lands and DoD installations. All planned activities will be conducted inside the fenced area each facility. The planned activities are primarily setting up cameras and recording video, and they will not disturb the sites. The EVS PI will contact our site liaison for all work performed at government owned locations to notify of our NEPA duty prior to site mobilization and attain permission to work..

## Description of Affected Environment

Collection of RGB video and field observation for evaluation of ML/DL models using video camera systems will be carried out in outdoor environments at two to several on-site and off-site locations where PV infrastructure and other infrastructure relevant for the project (e.g., buildings) is present, such as utility-scale solar energy facilities. Off-site video collection and software evaluation may be performed at solar energy facilities in the Chicago land area, Boulder CO, and the regions of desert southwest. Very minimal or no environmental impacts are expected in association with the video collection activities for this project. The locations where video will be collected are highly developed sites already containing long rows of PV panels. The video equipment used will not interfere with wildlife movement or activities in any way, and will not impact site air, soil, or water resources. The equipment located at the site will be removed once video collection activities are completed.

## Potential Environmental Effects

- Attach explanation for each "yes" response near bottom of form.
- **See Instructions for Completing Environmental Review Form.**

Section A (Complete For All Projects)		Yes	No	Explanation
1.	Project evaluated for Pollution Prevention and Waste Minimization opportunities and details provided under items 2, 4, 6, 7, 8, 16, and 20 below, as applicable	<input type="radio"/>	<input checked="" type="radio"/>	
2.	Air Pollutant Emissions	<input checked="" type="radio"/>	<input type="radio"/>	Minor emissions from cars upon installation and retrieval for camera systems at and from remote sites.
3.	Noise	<input type="radio"/>	<input checked="" type="radio"/>	
4.	Chemical/Oil Storage/Use	<input type="radio"/>	<input checked="" type="radio"/>	
5.	Pesticide Use	<input type="radio"/>	<input checked="" type="radio"/>	
6.	<b>Toxic Substances Control Act (TSCA) Substances</b>			
6a.	Polychlorinated Biphenyls (PCBs)	<input type="radio"/>	<input checked="" type="radio"/>	
6b.	Asbestos or Asbestos Containing Materials	<input type="radio"/>	<input checked="" type="radio"/>	
6c.	Other TSCA Regulated Substances	<input type="radio"/>	<input checked="" type="radio"/>	
6d.	Import or Export of Chemical Substances	<input type="radio"/>	<input checked="" type="radio"/>	
7.	Biohazards	<input type="radio"/>	<input checked="" type="radio"/>	
8.	Effluent/Wastewater (If yes, see question #12 and contact Peter Lynch (HSE) at 2-4582 or lynch@anl.gov)	<input type="radio"/>	<input checked="" type="radio"/>	
9.	<b>Waste Management</b>			
9a.	Construction or Demolition Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9b.	Hazardous Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9c.	Radioactive Mixed Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9d.	Radioactive Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9e.	Asbestos Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9f.	Biological Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9g.	No Path to Disposal Waste	<input type="radio"/>	<input checked="" type="radio"/>	
9h.	Nano-material Waste	<input type="radio"/>	<input checked="" type="radio"/>	
10.	Radiation	<input type="radio"/>	<input checked="" type="radio"/>	
11.	Threatened Violation of ES&H Regulations or Permit Requirement	<input type="radio"/>	<input checked="" type="radio"/>	
12.	New or Modified Federal or State Permits	<input type="radio"/>	<input checked="" type="radio"/>	
13.	Siting, Construction, or Major Modification of Facility to Recover, Treat, Store, or Dispose of Waste	<input type="radio"/>	<input checked="" type="radio"/>	
14.	Public Controversy	<input type="radio"/>	<input checked="" type="radio"/>	
15.	Historic Structures and Objects	<input type="radio"/>	<input checked="" type="radio"/>	
16.	Disturbance of Pre-existing Contamination	<input type="radio"/>	<input checked="" type="radio"/>	
17.	Energy Efficiency, Resource Conserving, and Sustainable Design Features	<input type="radio"/>	<input checked="" type="radio"/>	

Section B (For Projects that Occur Outdoors)		Yes	No
18.	Threatened or Endangered Species, Critical Habitats, and/or other Protected Species	<input type="radio"/>	<input checked="" type="radio"/>
19.	Wetlands	<input type="radio"/>	<input checked="" type="radio"/>
20.	Floodplain	<input type="radio"/>	<input checked="" type="radio"/>
21.	Landscaping	<input type="radio"/>	<input checked="" type="radio"/>
22.	Navigable Air Space	<input type="radio"/>	<input checked="" type="radio"/>
23.	Clearing or Excavation	<input type="radio"/>	<input checked="" type="radio"/>
24.	Archaeological Resources	<input type="radio"/>	<input checked="" type="radio"/>
25.	Underground Injection	<input type="radio"/>	<input checked="" type="radio"/>
26.	Underground Storage Tanks	<input type="radio"/>	<input checked="" type="radio"/>
27.	Public Utilities or Services	<input type="radio"/>	<input checked="" type="radio"/>
28.	Depletion of a Non-Renewable Resource	<input type="radio"/>	<input checked="" type="radio"/>
Section C (For Projects Outside of ANL)		Yes	No
29.	Prime, Unique, or Locally Important Farmland	<input type="radio"/>	<input checked="" type="radio"/>
30.	Special Sources of Groundwater (such as sole source aquifer)	<input type="radio"/>	<input checked="" type="radio"/>
31.	Coastal Zones	<input type="radio"/>	<input checked="" type="radio"/>
32.	Areas with Special National Designations (such as National Forests, Parks, or Trails)	<input type="radio"/>	<input checked="" type="radio"/>
33.	Action of a State Agency in a State with NEPA-type Law	<input type="radio"/>	<input checked="" type="radio"/>
34.	Class I Air Quality Control Region	<input type="radio"/>	<input checked="" type="radio"/>

### Categorical Exclusion

Other (Use field below to enter other categorical exclusion)

### ANL NEPA Reviewer Use Only

- My approval is the final approval necessary  
 This form requires additional approval from DOE

### To be Completed by DOE/ASO

Section D	Yes	No
Are there any extraordinary circumstances related to the proposal that may affect the significance of the environmental effects of the proposal?	<input type="radio"/>	<input checked="" type="radio"/>
Is the project connected to other actions with potentially significant impacts or related to other proposed action with cumulatively significant impacts?	<input type="radio"/>	<input checked="" type="radio"/>
If yes, is a categorical exclusion determination precluded by 40 CFR 1506.1 or 10 CFR 1021.211?	<input type="radio"/>	<input type="radio"/>
Can the project or activity be categorically excluded from preparation of an Environment Assessment or Environmental Impact Statement under Subpart D of the DOE NEPA Regulations?	<input checked="" type="radio"/>	<input type="radio"/>
If yes, indicate the class or classes of action from Appendix A or B of Subpart D under which the project may be excluded: This project may be excluded under the following Categorical Exclusion: 10 CFR Part 1021, Subpart D, Appendix B, Categories: B3.3 Research related to conservation of fish, wildlife, and cultural resources, and B3.8 Outdoor terrestrial ecological and environmental research		
If no, indicate the NEPA recommendation and class(es) of action from Appendix C or D to Subpart D to Part 1021 of 10 CFR.		

### Attachments

File Description:

### Comments

## Add Approver

Approver Name	Approver Badge	Reason	Delete
Hartmann, Heidi M.	40468	Solar Program Manager	
Walston, Leroy J., Jr.	57760	Avian-Solar Expert	

## Notifications

The approval notification email will be copied to the people listed below.

Badge	Name	Division	Delete

## ASO-CX Number

**ASO-CX- 369**

Comments:

## Approval

<u>Approver</u>	<u>Action</u>	<u>Date Routed</u>	<u>Action Date</u>	<u>Approval Reason / Comments</u>	<u>Approval Type</u>
Hamada, Yuki	APPROVED	2020-01-17	2020-01-17 07:58:19.0	Creator :	PRIMARY
Hamada, Yuki	APPROVED	2020-01-17	2020-01-17 07:58:19.0	Project Manager :	PRIMARY
Hartmann, Heidi M.	APPROVED	2020-01-17	2020-01-23 09:26:32.0	Solar Program Manager :	PRIMARY
Walston, Leroy J., Jr.	APPROVED	2020-01-17	2020-01-17 15:04:43.0	Avian-Solar Expert :	PRIMARY
Wozny, Bryan M.	APPROVED	2020-01-23	2020-01-23 11:11:49.0	NEPA Owner Approval for Argonne Environmental Review :	PRIMARY
Ptak, Jill S.	APPROVED	2020-01-23	2020-01-23 12:07:41.0	ANL NEPA Reviewer :	PRIMARY
Hellman, Karen B.	APPROVED	2020-01-23	2020-01-28 17:31:00.0	ANL-985 Review and Approval :	PRIMARY
Dunn, Michael W. for Kearns, Paul K.	APPROVED	2020-01-28	2020-02-04 10:16:06.0	ANL-985 ANL COO Review and Approval :	DELEGATE
Joshi, Kaushik N.	APPROVED	2020-02-04	2020-02-07 11:56:32.0	ANL-985 DOE-ASO Review and Approval : <b>This Categorical Exclusion is tracked as ASO-CX-369.</b>	PRIMARY
Siebach, Peter Rudolf	APPROVED	2020-02-07	2020-02-10 16:42:31.0	ANL-985 DOE NEPA Compliance Officer Review and Approval :	PRIMARY