

July 19, 2023

The Honorable Deb Haaland
Secretary
Department of the Interior
1849 C Street, NW
Washington, DC 20240

The Honorable Camille Touton
Commissioner
Bureau of Reclamation
1849 C Street, NW
Washington, DC 20240

Re: Deploy Solar Energy Systems on Bureau of Reclamation Canals and Aqueducts to Accelerate Renewable Energy, Protect Wildlife Habitat and Reduce Water Loss

Dear Secretary Haaland and Commissioner Touton:

On behalf of our organizations, we ask you to develop a bold, new initiative to accelerate the widespread deployment of solar photovoltaic energy systems above the Bureau of Reclamation's network of water conveyance canals and aqueducts. If the Bureau of Reclamation were to cover most of the 8,000 miles of canals and aqueducts it owns and operates, this could potentially generate over 25 gigawatts of renewable energy—enough to power nearly 20 million homes—and reduce water evaporation by tens of billions of gallons.¹ Prioritizing the deployment of solar energy above these facilities creates a win-win situation that would better conserve public lands, support renewable energy jobs, and benefit communities throughout the west in numerous ways.

While less damaging than fossil fuel extraction and power plants, utility-scale renewable energy projects on public lands permanently destroy and convert public lands to industrial zones that can no longer provide any other benefits such as wildlife habitat or recreation opportunities. Focusing the deployment of solar energy on water-conveyance canals—an already built environment—and already within the Bureau of Reclamation's control, could allow the Department to meet the requirements of the Energy Act of 2020 mandate to deploy 25 gigawatts of onshore renewable energy on public lands without destroying a single additional acre of habitat.² By prioritizing already disturbed lands first, the Department can minimize impacts to wildlife, while increasing renewable energy generation.

Despite a wet winter, much of the western United States remains in a long-term drought that is likely to worsen as climate change intensifies. The Bureau of Reclamation and the states dependent on the Colorado River are already considering unprecedented water cuts to protect the water supplies for 40 million people who rely on the river. In a study examining similar action on water canals within California, scientists estimated that shade provided from solar panels could reduce the water loss due to evaporation by 63 billion gallons of water per year, an amount equivalent to annual water consumption of roughly 2 million people per year.³ Given that the Bureau's canal

¹ See Nathan Frandino, *California to cover canal with solar panels in experiment fight drought, climate change*, <https://www.reuters.com/business/environment/california-cover-canal-with-solar-panels-experiment-fight-drought-climate-change-2022-08-25/> (“if California's ~4,000 mile canal network were covered with solar panels, it could produce 13 gigawatts of renewable capacity...[and reduce water loss by] 63 billion gallons.”) See also McKuin, Brandi, et al. *Energy and water co-benefits from covering canals with solar panels*. *Nature Sustainability* 4.7 (2021): 609-617, <https://escholarship.org/content/qt8cj5j07p/qt8cj5j07p.pdf>.

² 43 U.S.C. 3004(b).

³ EPA, *Statistics and Facts*, <https://www.epa.gov/watersense/statistics-and-facts>; Soumya Karlamangla, *California Wants to Cover Its Canals With Solar Panels*, *NY Times*, <https://www.nytimes.com/2023/04/13/us/california-solar-panels-canals.html>.

system is twice as large as California's, the water saving from this could be significant.⁴ Furthermore, shading provided by solar panels provides additional benefits, such as reducing aquatic weed and algae growth, which can reduce maintenance and the use of pesticides in these canals.

Moving water requires the use of massive pumping systems, which consume significant amounts of energy solely for the purpose of transporting the water. For example, the California Central Valley Project's pumps alone use approximate one billion kWh of electricity annually.⁵ Deploying solar power on canals would allow these systems to efficiently provide clean energy to pump water and reduce the need to rely on diesel power generators, which increase localized air pollution.

Many of the areas where the Bureau of Reclamation's canals are located are in environmental justice communities, some of which suffer from the worst air quality in the country. Thus in addition to addressing air pollution, focusing the deployment of renewable energy on the Bureau's canal system could also provide additional benefits of providing clean energy that displaces existing dirty energy in those communities, while also providing increased job opportunities for Black, Brown, Indigenous and low-wealth communities throughout the west.

The Bureau of Reclamation has full authority to execute this plan. Congress has provided the Department of the Interior with the clear authority to grant leases to authorize uses of Bureau of Reclamation lands, including for utilities, transmission lines, and other appropriate uses.⁶ Indeed, given the Bureau of Reclamation's long history of creating hydroelectric power, the generation of gigawatts of solar power on its canals would be a purely additive benefit, and could even help address shortfalls in electricity generation as when hydroelectric facilities are unable to operate due to low water levels.

California is moving forward a pilot project to install solar panels over some of its existing canals, with widths ranging from 20-100 feet wide.⁷ Solar panels covering canals have also begun to be installed in other nations including Lebanon and India.⁸ The United States should be the leader in implementing innovative ways to combat the climate crisis while also protecting public lands and wildlife for current and future generations. Covering the Bureau of Reclamation's canal system with solar panels would be a strong step in the right direction.

Sincerely,

1000 Grandmothers for Future Generations

198 methods

350 Eugene

350 Hawaii

350 Montana

⁴ Constructing solar atop the Central Arizona Project, for example, could realize water savings and power production benefits while providing non-fossil power for lost hydropower output at Glen Canyon Dam, consistent with utilities' greenhouse gas reduction targets. A map of utility greenhouse reduction targets and state requirements for 100% carbon-free electricity is at <https://sepapower.org/utility-transformation-challenge/utility-carbon-reduction-tracker/>.

⁵ Environmental Working Group, *Power Drain*, <https://www.ewg.org/research/power-drain>.

⁶ 43 U.S.C § 387.

⁷ Turlock Irrigation District, *Project Nexus*, <https://www.tid.org/about-tid/current-projects/project-nexus/>.

⁸ Kalpana Sunder, *The 'solar canals' making smart use of India's space*, BBC, <https://www.bbc.com/future/article/20200803-the-solar-canals-revolutionising-indias-renewable-energy>.

350 Seattle
350 Ventura County Climate Hub
Action for the Climate Emergency
Alabama Interfaith Power & Light
Alliance for the Wild Rockies
American Bird Conservancy
Animals Are Sentient Beings
Animas Valley Institute
Benedictine Sisters of Erie, PA
Bronx Jews for Climate Action
Buffalo Field Campaign
California Wilderness Coalition
Californians for Western Wilderness
Center for Biological Diversity
Center for Cultural Evolution
Church Women United in New York State
Citizens Action Coalition of Indiana
Citizens Alliance for a Sustainable Englewood
CLEO Institute
Climate Hawks Vote
Community for Sustainable Energy
Cooperative Energy Futures
CWA Local 9415 (Communications Workers of America)
DC Environmental Network
Detroit Hamtramck Coalition for Advancing Healthy Environments
Earth Ethics
Endangered Species Coalition
Energy Allies
Environmental Communion New Jersey Association Social Justice & Witness Task Force
Environmental Justice Ministry Team, Cedar Lane Unitarian Universalism Church
Extinction Rebellion Portland
Extinction Rebellion Western Massachusetts
First Church Unitarian, Littleton MA
First Wednesdays San Leandro
Fly Fishers of Davis
Food & Water Watch
Forest Keeper
Friends of the Earth
Green Workers Alliance
GreenFaith
Greenpeace USA
Hispanic Access Foundation
Honor the Earth
Humane Action Pennsylvania
Humane Action Pittsburgh
inNative
Inspiration of Sedona
Interfaith EarthKeepers

In the Shadow of the Wolf
Knox Climate Watch
Labor Network for Sustainability
Maryland Ornithological Society
Mid-Missouri Peaceworks
Ministry for Earth of UUA New Orleans
Mojave Desert Land Trust
Mothers Out Front
Nassau Hiking and Outdoor Club
Native Plant Society of the United States
Natural Capitalism Solutions
Network NOVA
New Energy Economy
New Mexico Climate Justice
North American Climate, Conservation and Environment
Northeast Organic Farming Association of New Hampshire
Northern California Council, Fly Fishers International
Northern Michigan Environmental Action Council
Nuclear Information and Resource Service
NY4WHALES
NYPAN Greene
Ocean Conservation Research
Oceanic Preservation Society
Ohalah: the Associate of Rabbis and Cantors for Jewish Renewal
Physicians for Social Responsibility, AZ Chapter
Predator Defense
Preserve Montgomery County VA
Protect All Children's Environment
Protect Our Water, Heritage, Rights
Public Justice Center
Public Lands Project
Putnam Progressives
Repowered
Resource Renewal Institute
Responsible Decarbonization Alliance
Revolving Door Project
San Bernardino Valley Audubon Society
San Francisco Bay Physicians for Social Responsibility
San Luis Valley Ecosystem Council
Santa Barbara Standing Rock Coalition
Santa Barbara Urban Creeks Council
Santa Cruz Climate Action Network
Santa Cruz Fly Fishing
Save the Pine Bush
Sisters of St. Dominic of Blauvelt, New York
Snake River Alliance
Solar Bear/Native Sun Community Power Development
Solar United Neighbors

South Asian Fund For Education Scholarship and Training Inc
St. Andrews Austin Texas Earth Care Committee
STAND.earth
Sunrise Movement Durham
Syracuse Cultural Workers
Taproot Earth
Terra Advocati
The Climate Center
The People's Justice Council
The Rewilding Institute
Tidelines Institute
Tó Nizhóní Ání - "Sacred Water Speaks"
Touching Earth Sangha
Transition Sebastopol
Tucson Audubon Society
Turtle Island Restoration Network
Umpqua Watersheds
Unitarian Universalist Fellowship of Hidalgo County Texas
Unite North Metro Denver
Veterans for Climate Justice
Veterans Green Jobs Initiative
Vibrant Littleton
Vote Climate
Wall of Women
Wasatch Clean Air Coalition
Waterspirit
WESPAC Foundation, Inc.
Western Watersheds Project
WildEarth Guardians
Wild Arizona
Women's Earth and Climate Action Network, International