

DATE

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 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. If the Bureau of Reclamation were to cover most of the 8,000 miles of canals 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 canals 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

¹ According to Brandi McQuin, "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." Also, "a gigawatt, or 1 billion watts, is enough to power 750,000 homes." See Nathan Frandino, *California to cover canal with solar panels in experiment fight drought, climate change*, Reuters, Aug. 25, 2022, <https://www.reuters.com/business/environment/california-cover-canal-with-solar-panels-experiment-fight-drought-climate-change-2022-08-25/>. Thus, assuming the solar potential for the rest of the Bureau of Reclamation's canal network is similar to that in California, an ~8,000 mile canal network could generate around 26 gigawatts of renewable capacity, produce even more water savings, and power just under 19 million homes. See also McQuin, 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).

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 system is twice as large as California's, the water saving from this could be significant. 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.⁴ 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 an additional benefit of providing clean energy that displaces existing dirty energy in those communities. In addition the move can increase job opportunities for Black, Brown, Indigenous and low-wealth communities throughout the west.

President Biden's Bureau of Reclamation has full authority to execute this plan. Congress has already 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, or any other appropriate uses.⁵ 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.⁶ Solar panels covering canals have also begun to be installed in other nations including Lebanon and India.⁷ 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,

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>.

⁴ Environmental Working Group, *Power Drain*, <https://www.ewg.org/research/power-drain>.

⁵ 43 U.S.C § 387.

⁶ Turlock Irrigation District, *Project Nexus*, <https://www.tid.org/about-tid/current-projects/project-nexus/>.

⁷ 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>.

GROUPS