



**The Colorado river serpentine near Lake Havasu City, Arizona, on April 3, 2023.
Will Lanzoni/CNN**

California Water and Infrastructure Report

For May 18, 2023

(With expanded coverage of all the Western States)
by Patrick Ruckert

Published weekly since July, 2014

An archive of all these weekly reports can be found at both links below:

<http://www.californiadroughtupdate.org>

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A Note to Readers

Following the obligatory U.S. Drought Monitor map, the focus this week is on the California floods and the Colorado River.

Included in the first section is an interesting historical article on the emergence of Tulare Lake as flood waters at least partially restore the formerly largest U.S. lake west of the Mississippi. Beginning more than one hundred years ago, as water was diverted from the Central Valley rivers to an expanding agriculture industry and dams were built to hold back the water that filled the lake, the lake disappeared and all of the former lake bed since grew crops worth billions of dollars. This year's flooding is refilling the lake once again and drowning crops and entire towns in the area.

The maps below show the lake as it was more than 100 years ago.



This map of California's waterways as they existed before significant human intervention was based on historical maps made between 1843 and 1878, when most parts of the state were relatively untouched by settlers. California Governor's Office of Planning and Research, courtesy David Rumsey Map Center. Tulare Lake is near the south end of the Central Valley.

The Colorado River

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The breaking news this week is that an agreement between California and Arizona has been reached to end the stand-off on how the reductions in withdraws from the river will be divided.

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Before these winter storms, both reservoirs were at record low levels at about 25% of capacity. They are the largest man-made reservoirs in the U.S. and hold about 50 million acre feet of water when at capacity. Even with the lakes rising as much as 50 feet in elevation, as one water manager put it, that gives a few months relief, but not much more.

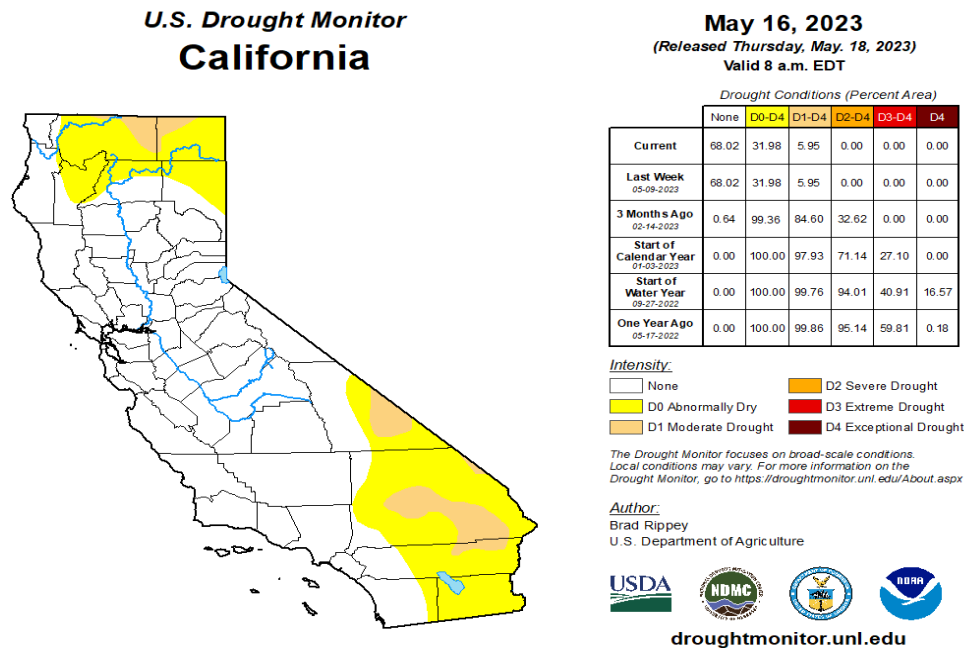
With 40 million people relying on the water from the river, and 800% of that going to agriculture, preventing the reservoirs from going to "dead pools" is a national emergency.

The **Feature** this week is a report by my colleague Kesha Rogers on recent and exciting developments in the drive to achieve net energy production from fusion: ***"The Power of Fusion:***

Making America Energy Independent!”

A second item is a one hour video by Benjamin Deniston, ***“America Needs More Than Energy Independence — It Needs Energy Advancement!”***

U.S. Drought Monitor



The West

Aside from some heavy precipitation in the central Rockies and environs, much of the West experienced warm, mostly dry weather. As a result, there were only minor Western changes to the drought-depiction, some due to further assessment of the impact of cold-season precipitation as the snow-melt pace accelerated.

Indeed, a Northwestern heat wave—rare for this time of year—resulted in multiple monthly record highs, starting on May 14. On that date in Oregon, both Astoria and Seaside attained 93°F. Astoria tied a monthly record, originally set on May 16, 2008, while Seaside toppled its monthly mark of 86°F, attained most recently on May 19, 1978.

Notably, Portland, Oregon, achieved highs of 90°F or greater on 4 consecutive days, from May 12-15. Prior to this year, Portland’s May record of three 90-degree readings occurred in 1947 and 1987, with only the latter being observed on 3 consecutive days (May 6-8, 1987).

Meanwhile in Washington, Hoquiam (91°F on the 14th) posted a monthly record high, shattering the standard of 87°F originally set on May 29, 2007. With a high of 92°F on the 14th, Quillayute, Washington, tied a monthly record first achieved on May 7, 1987.

Elsewhere, Western reservoir storage as a percent of average for the date reflected varying degrees of drought recovery. As May began, California’s 154 primary intrastate reservoirs held 28.6 million acre-feet of water, 104 percent of average.

However, storage on that date in the Colorado River basin was 15.5 million acre-feet, just 48 percent of average. Still, the surface elevation of Lake Mead has risen nearly 9 feet since setting an end-of month record low of 1,040.92 feet in July 2022.

California is Awaiting the Big Flood as the Snowpack Begins to Melt

Drought and Deluge

Experts are racing to protect the Central Valley from a catastrophic flood

<https://www.comstocksmag.com/longreads/drought-and-deluge>

The U.S. Army Corps of Engineers has identified Sacramento as having the greatest flood disaster risk in the U.S. This photo was taken at the convergence of the Sacramento and American rivers during our series of atmospheric rivers earlier this year that brought excess rain to the region. (Photo by Fred Greaves)

Coming out of the state's [driest three-year period ever recorded](#), the new year launched a series of atmospheric rivers that pummeled California's lowlands with rain, hail and violent winds, and packed the Sierra Nevada with near-record depths of snow. This blessing of water will be carried into the dry season, but so will the devastation.

Saving Sacramento

Sacramento has been dealing with floods since the very beginning. The city has been identified by the U.S. Army Corps of Engineers as the greatest flood disaster risk in the U.S., with New Orleans coming in second, according to Johnson. The worst flood events in the Central Valley are usually caused by a series of cold storms that build a massive snowpack in the Sierra Nevada, which is then melted by a warmer storm system. The right conditions can cause hundreds of thousands of cubic feet per second of snowmelt to rush down the American River, reaching Sacramento within 24 hours.

“All the streams and rivers that drain from the Sierra Nevada and the coastal range into the Sacramento River system, that all has to get past us to get out under the Golden Gate Bridge,” Johnson says. “The bypass system during large flood events takes 80-85 percent of the flow.”



Folsom Dam and Reservoir is being raised 3.5 feet in a \$16 million project to allow more water inflows during storms and increase water storage. (Photo courtesy of Sacramento Area Flood Control Agency (SAFCA))

California fights to save city, prison in peril from rising Tulare Lake floodwaters

By [Hayley Smith](#) Staff Writer

May 12, 2023 Updated 6:45 AM PT

<https://www.latimes.com/california/story/2023-05-12/newsom-announces-funding-to-raise-corcoran-levee>

Central Valley Californians threatened by this year's [massive Sierra snowmelt](#) will receive much-needed state funding as they rush to raise the Corcoran levee, a critical piece of flood control infrastructure that protects the city of Corcoran and its sprawling prison complex from [the rising waters of Tulare Lake](#).

Local and county officials have for weeks been pleading with the state to help finance the project — a [substantial feat of engineering](#) that will involve raising the 14.5-mile earthen embankment about 4 feet to keep floodwaters at bay. The levee is key to protecting critical infrastructure in the area, including medical facilities, power plants and dual prison facilities that hold about 8,000 inmates.

Gov. Gavin Newsom announced the funding Thursday, saying the state will shoulder the \$17 million needed to raise the levee from 188 feet above sea level to 192 feet, the historical level needed to protect the community from flooding.

The governor also announced an additional \$290 million for flood response and preparation projects.

Perhaps nowhere is the work more urgent than in Corcoran, where this year's wet winter [refilled the dry Tulare Lake](#) for the first time in 25 years. Residents there have spent the last several weeks eyeing the snow-capped Sierras with anxiety, with many fearing that the levee is too low to hold back the millions of gallons of runoff that are expected to flow into the basin as its melts.



600,000 years of history, and Tulare Lake isn't done yet

'The lake has a mystique'

- [PARKER BOWMAN pbowman@hanfordsentinel.com](mailto:pbowman@hanfordsentinel.com)
- May 13, 2023 Updated May 13, 2023

https://hanfordsentinel.com/news/local/600-000-years-of-history-and-tulare-lake-isnt-done-yet/article_680ec871-732d-5e85-84a7-5945da302275.html

Much like the shifting shorelines and water levels of the lake itself, the history of Tulare Lake has remained difficult to map.

“The lake has a mystique,” said local historian Michael Semas. “There is a desire to know more. I think the mystery has always intrigued everybody.”

With the resurgence of Tulare Lake for the first time in more than a quarter of a century following a historically wet winter that left Kings County soggy and flooded, the history of what was once the largest body of fresh water west of the Mississippi River is again being embraced — not just for what it can tell us about the past — but about the present, and future.

Road closures, submerged farms and NASA photographs confirm that on some level, Tulare Lake has returned, and local authorities and farmers are waiting to see how much worse the flooding will get.

The thawing of a record-breaking snowpack in the Sierra Nevada, dubbed "the big melt," is projected to fill the Tulare Lake basin this summer with 1 million acre feet of water.

A history of change

The lake, at its largest, covered about 1,800 square miles of the Valley. From its northernmost point at Summit Lake, near Riverdale, to its southernmost point — generally about five miles north of what is now Wasco-Lost Hills Road — it spread over about 60 miles.

East to west, the lake's waters would span the 35-mile stretch from what is now Kettleman City to Pixley.

The Colorado River: Abundant Snowpack Gives Some Breathing Room

The end of May was to be showdown time on the Colorado River. Seven States and the federal Interior Department were to come to an agreement on how two to four million acre feet per year were to be reduced from what the states withdraw from the river.

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gives a few months relief, but not much more.

With 40 million people relying on the water from the river, and 800% of that going to agriculture, preventing the reservoirs from going to “dead pools” is a national emergency.

The articles below present some detail of the more recent developments.

States near historic deal to protect Colorado River

States and Interior Department are still wrestling over process, compensation for conserving a river that sustains millions

By [Joshua Partlow](#)

May 17, 2023 at 6:00 a.m. EDT

<https://www.washingtonpost.com/climate-environment/2023/05/17/water-rights-colorado-river-near-deal/?>

[pwapi_token=eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdWJpZCI6IjQ4MzQ3ODI1IiwicmVhc29uLjoiZ2lmdCIsIm5iZiI6ImTY4NDI5NjAwMCwiaXNzIjoiOi3Vic2NyaXB0aW9ucyIsImV4cCI6ImTY4NTU5MTk5OSwiaWF0IjoxNjg0Mjk2MDAwLzE3d3dy53YXNoaW5ndG9ucG9zdC5jb20vY2xpbWF0ZS1lbnZpcm9ubWVudC8yMDIzLzA1LzE3L3dhdGVyLXJpZ2h0cy1jb2xvcmFkby1yaXZlci1uZWZyLWRIYWwvIiwiaWF0Ijoi2023-05-17T06:00:00Z](https://www.washingtonpost.com/climate-environment/2023/05/17/water-rights-colorado-river-near-deal/?pwap_token=eyJ0eXAiOiJKV1QiLCJhbGciOiJIUzI1NiJ9.eyJzdWJpZCI6IjQ4MzQ3ODI1IiwicmVhc29uLjoiZ2lmdCIsIm5iZiI6ImTY4NDI5NjAwMCwiaXNzIjoiOi3Vic2NyaXB0aW9ucyIsImV4cCI6ImTY4NTU5MTk5OSwiaWF0IjoxNjg0Mjk2MDAwLzE3d3dy53YXNoaW5ndG9ucG9zdC5jb20vY2xpbWF0ZS1lbnZpcm9ubWVudC8yMDIzLzA1LzE3L3dhdGVyLXJpZ2h0cy1jb2xvcmFkby1yaXZlci1uZWZyLWRIYWwvIiwiaWF0Ijoi2023-05-17T06:00:00Z)

After nearly a year wrestling over the fate of their water supply, California, Arizona and Nevada — the three key states in the [Colorado River’s current crisis](#) — have coalesced around a plan to voluntarily conserve a major portion of their river water in exchange for more than \$1 billion in federal funds, according to people familiar with the negotiations.

The consensus emerging among these states and the Biden administration aims to conserve about 13 percent of their allocation of river water over the next three years and protect the nation’s largest reservoirs, which provide [drinking water](#) and hydropower for tens of millions of people.

But thorny issues remain that could complicate a deal. The parties are trying to work through them before a key deadline at the end of the month, according to several current and former state and federal officials familiar with the situation.

Participants are discussing cutting back about 3 million acre-feet of water over the next three years, the majority of it paid for with federal money approved in the [Inflation Reduction Act](#). But the parties are still negotiating how much of those water savings will go uncompensated. In meetings over the last month, representatives for the three states, which form the river’s Lower Basin, have also raised doubts about the federal government’s environmental review process that is now underway to formally revise the rules that govern operations at Lake Powell and [Lake Mead](#).

State officials have suggested they could make a deal on their own and are resisting a May 30 deadline to comment on the alternatives the federal government has laid out in that process, according to people familiar with the talks. The review process is intended to define Interior Secretary Deb Haaland’s authority to make emergency cuts in states’ water use, even if those cuts contradict existing water rights.

Massive Wyoming Snowpack Could Hold Colorado River Crisis ‘Maybe For A Few

Months'

Record-breaking snowpacks in Wyoming's high country won't be enough to break a "mega-drought" in the Colorado River Basin or make Wyoming's fight for its share of water rights any less complicated, water experts say.

[Mark Heinz](#)

May 14, 2023

<https://cowboystatedaily.com/2023/05/14/massive-wyoming-snowpack-could-hold-colorado-river-crisis-maybe-for-a-few-months/>

A record-breaking snowpack in Wyoming is welcome, but won't bust a yearlong drought for the Colorado River and the states fighting over its water. (Wyoming Department of Transportation)

Far from ending the "mega-drought" that's gripped the Colorado River Basin for years, a massive Wyoming snowpack will do little more than buy Wyoming and other downriver states some time.

"This will stave off the crisis we're headed toward maybe for a few months," Thomas Minckley, a professor of Geology and Geophysics at the University of Wyoming, told Cowboy State Daily.

"Notice that I said 'months' and not 'years,'" he added.

Lake Mead water level rise steady as Lake Powell surges

by: [Duncan Phenix](#)

Posted: May 17, 2023 / 01:49 PM PDT

https://www.8newsnow.com/news/local-news/lake-powell-rising-much-faster-than-lake-mead-reclamation-data-shows/?mc_cid=2ab3910997&mc_eid=9b7b868339

LAS VEGAS (KLAS) — Over the last three weeks Lake Mead's water level has risen 4.6 feet thanks mainly to extra water being released from Lake Powell beginning on April 24. On the morning of May 17, Lake Mead's water level appeared to level off but its rise is expected to continue through at least the end of May.

In fact, Lake Mead has actually risen 11.05 feet since hitting a low mark of 1,040.71 feet above sea level on July 27, 2022. Currently, Lake Mead's water level is at 1,051.76 feet.

Since the beginning of May, Lake Mead has been rising approximately three inches a day, which is great news for people who make a living at the lake and for anyone who boats, fishes, or swims there. However, three inches a day is nothing compared to how fast Lake Powell's water level is rising.

Thanks to the record snowpack that is melting off the Colorado Rockies, Lake Powell is rising on average just under one foot a day in May. Lake Powell's water level has risen almost 15 feet in May and more than 20 feet since it dropped to an all-time low on Apr. 13.

Arizona's farms are running out of water, forcing farmers to confront climate change

May 18, 2023 5:17 AM ET

[Ximena Bustillo](#)

<https://www.npr.org/2023/05/18/1176657700/arizona-farms-running-out-water-farmers-climate-change-colorado-river>



A dry irrigation canal runs between fields in Maricopa, Ariz., on Aug. 18, 2022. Matt York/AP

Western states and feds are closing in on a landmark deal to prevent Lake Mead from plummeting further

By [Ella Nilsen](#), CNN

Published 2:27 PM EDT, Wed May 17, 2023

<https://www.cnn.com/2023/05/17/us/colorado-river-deal-lake-mead-climate/index.html>

Three Western states and the federal government are nearing a deal to leave millions of gallons of water in the [Colorado River's Lake Mead](#) – water that would have otherwise been used to irrigate fields or generate hydropower – in exchange for at least \$1 billion in federal funding for [voluntary water cuts](#), according to two sources familiar with the plan.



The Colorado river serpentine near Lake Havasu City, Arizona, on April 3, 2023. Will Lanzoni/CNN

The Colorado River system provides water and electricity to more than 40 million people in seven states, as well as irrigation for Western farmers. But that system has shown [alarming water loss](#) after a multi-year, climate change-fueled drought collided with decades of overuse.

Western states and the federal government have been in tense discussions for months to come up with a plan to prevent the Colorado River and the nation's largest reservoirs, Lakes Mead and Powell, from teetering into disaster.

Top water negotiators from California, Arizona and Nevada have discussed leaving 3 million acre-feet of water in Lake Mead over the next four years, the sources said – while cautioning negotiations with the US Interior Department were fluid and could change.

The tentative amount would be around 10% of the states' normal water allocation and would be in addition to previously agreed-to cuts that were negotiated in 2019 and 2007. The federal funding being offered for water cuts was part of \$4 billion in [drought relief funding](#) passed in the Inflation Reduction Act.

States and the US government are trying to clinch a framework agreement ahead of May 30, the end of the comment period for a dramatic [environmental analysis](#) released by federal officials last month. That analysis could force the three states to cut nearly 2.1 million additional acre-feet of their Colorado River usage in 2024 alone. At the time, top federal officials said publicly they hoped their proposal would spur discussion among states who have spent the past year sparring over cuts.

A good winter has eased tension

Positive discussions about voluntary water cuts would have seemed unthinkable last year after a devastating dry spell [pushed Lake Mead](#) down to about 1,040 feet – just 27% of its capacity and the lowest level since the reservoir was filled in the 1930s.

But this winter brought blockbuster, [above-average snowpack](#) to much of the West, which has given states far more water to work with than previous years.

SoCAL WATER: The impact of Reclamation’s SEIS alternatives on Metropolitan’s Colorado River supplies; Abundant precipitation refills storage

[Maven](#)

May 18, 2023 0 15

<https://mavensnotebook.com/2023/05/18/socal-water-the-impact-of-reclamations-seis-alternatives-on-metropolitans-colorado-river-supplies-abundant-precipitation-refills-storage/>

Metropolitan’s One Water and Stewardship Committee meeting on May 8 featured a presentation on the Bureau of Reclamation’s draft Supplemental Environmental Impact Statement (SEIS) and what it means for Metropolitan’s Colorado River supplies. They also discussed how the improved water supply will affect Lake Mead and Southern California’s water supplies.

Colorado River draft Supplemental Environmental Impact Statement (SEIS)

Alternative 1

Alternative 1: Priority

California begins to share in shortage when no Arizona fourth priority Colorado River water is available. The Central Arizona Project and other post-1968 rights are fourth priority.

Lower Basin Shortage Modeling Assumptions

- Stage 1 shortages:
 - Nevada: 4%
 - Arizona: 96%
 - California: take no Stage 1 shortages
- Stage 2 shortages:
 - Nevada: 4%
 - Arizona: 19.6%
 - California: 76.4%

May 8, 2023 One Water and Stewardship Committee Date 8 To Slide 9

Shanti Rosset, Program Manager for Metropolitan, updated the committee members on the Colorado River draft Supplemental Environmental Impact Statement (SEIS) and its potential effects on Metropolitan’s water supplies.

Last November, the Bureau of Reclamation initiated the process to amend the 2007 guidelines. On April 14, Reclamation published the draft SEIS in the Federal Register, triggering a 45-day comment period. While the draft SEIS notes that California and the other six Colorado Basin states submitted alternatives, Reclamation developed three alternatives for analysis:

- Alternative one reduces deliveries to the lower basin according to priority.
- Alternative two reduces deliveries to all lower basin water users on a pro-rata basis.
- The no-action alternative, a NEPA requirement, includes the existing guidelines, Treaty Minute 323, and Drought Contingency Plan agreements.

Alternative one administers new shortages according to the priority system. With this alternative, Reclamation modeled shortages in two stages.

Alternative 2

Alternative two reduces deliveries to all lower basin water users on a pro-rata basis. The percentage of reduction is based on Lake Mead elevations. The box below shows the percentage of additional reductions that peak at 15.55% at elevation 1035 to 1040.

Lake Mead Elevation (feet)	2007 ROD Shortages + 2019 DCP Contributions (1,000 af)				Percentage Additional Reduction**	2024 Additional Shortage* (1,000 af)			
	AZ	NV	CA	Total		AZ	NV	CA	Total
1,090 – >1,075	192	8	0	200	2.67%	75	8	117	200
1,075 – 1,050	512	21	0	533	7.11%	199	21	313	533
<1,050 – >1,045	592	25	0	617	8.23%	230	25	362	617
1,045 – >1,040	640	27	200	867	11.56%	324	35	509	867
1,040 – >1,035	640	27	250	917	15.55%	435	47	684	1,166
1,035 – >1,030	640	27	300	967	14.88%	417	45	655	1,116
1,030 – 1,025	640	27	350	1,017	14.21%	398	43	625	1,066
<1,025 – 1,000	720	30	350	1,100	13.11%	367	39	577	983
<1,000 – 975	720	30	350	1,100	13.11%	367	39	577	983
<975 – 950	720	30	350	1,100	13.11%	367	39	577	983
<950	720	30	350	1,100	13.11%	367	39	577	983

Draft SEIS

Alternative 2: Pro-Rata

In Alternative 2, reductions would be made on all Lower Basin water users on a pro-rata basis. The percentage of reduction is based on Lake Mead elevations.

Item # 7a - Slide 11

The blue box shows where Lake Mead is forecast to operate in 2024, according to the April 24-month study. Between 1050 and 1075, a 7.11% reduction would be applied to all lower basin water users.

States near historic deal to protect Colorado River

“After nearly a year wrestling over the fate of their water supply, California, Arizona and Nevada — the three key states in the Colorado River’s current crisis — have coalesced around a plan to voluntarily conserve a major portion of their river water in exchange for more than \$1 billion in federal funds, according to people familiar with the negotiations. ... But thorny issues remain that could complicate a deal. The parties are trying to work through them before a key deadline at the end of the month, according to several current and former state and federal officials familiar with the situation. ...” [Read more from the Washington Post \(gift article\)](#).

Feature:

There are two items in the Feature this week. First, the one immediately below by Kesha Rogers. The second in a video presentation by Benjamin Deniston: *“America Needs More Than Energy Independence — It Needs Energy Advancement!”*

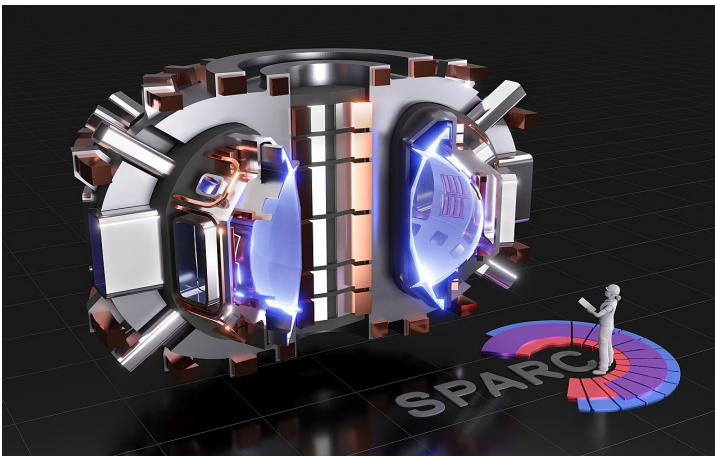
The Power of Fusion: Making America Energy Independent!



By [Kesha Rogers](#)

May 13, 2023

https://www.larouchepac.com/the_power_of_fusion_making_america_energy_independent



An artist's 3d rendering of a fusion reactor called SPARC, which is being developed by researchers at the Massachusetts Institute of Technology and a spinoff company, Commonwealth Fusion Systems.

An under-appreciated element of [President Donald Trump's Agenda 47](#) is energy independence. While "Drill Baby Drill," may secure energy independence in the short term, it does not guarantee our future energy needs, here on Earth and throughout the solar system. The development of fusion power is the future of energy independence for humanity. In a video statement released by President Trump, back in February 2023, he highlighted the need to unleash American energy by lowering energy costs for middle class families that have skyrocketed under Joe Biden's failed leadership and energy-killing regulations. Trump declared, "When I'm back in the White House, I will bring back pro-American energy policies at long last."

Despite the insane Biden agenda, we continue to witness a rapid pace of advancements in the development of fusion energy experiments here in the United States and around the world. Back in February, I wrote an article titled ["Fusion Energy Builds A Wondrous Future; Biden's Utopians Would Obliterate It."](#) There I highlighted recent breakthroughs in the development of fusion energy that herald a new future for the United States in manufacturing, infrastructure, and powering frontier missions for exploration of the Moon and Mars.

Just how close are we to harnessing the power of the sun? Fusion, the process that powers the sun,

occurs when two light hydrogen atomic nuclei collide at very high pressure and fuse together into one heavier element, helium, releasing energy. Unlike the process of fission energy which involves the splitting of heavy elements like uranium, to generate energy, nuclear fusion releases four times more energy per reaction than nuclear fission.

Revisiting Some of the Latest Achievements in Fusion Energy

The most recent breaking news involves Helion Energy signing an agreement with Microsoft for the world's first commercial purchase of fusion power. Helion, based in Everett, Washington, announced an agreement to use its fusion power plant to provide electricity to Microsoft by 2028. Constellation, an energy company headquartered in Baltimore Maryland, will manage the transmission for the project. Helion's plant will provide at least 50 MW of power after a one-year ramp-up period. In its announcement Helion notes that it has been advancing its fusion technology for more than a decade. Helion is reported to be the first private company to reach plasma temperatures of 100 million degrees.

On April 12th, China generated a super-hot fusion plasma, sustained and confined for 403 seconds, bringing commercial scale fusion energy one step closer to reality. The vehicle was its "artificial sun," officially known as the Experimental Advanced Superconducting Tokamak (EAST). In writing this article I also learned that researchers in Thailand are generating hydrogen plasma to study nuclear fusion using a tokamak reactor donated by China, known as Thailand Tokamak-1 (TT-1).

Back in February we reported on the Lawrence Livermore National Labs' National Ignition Facility achievement of fusion breakeven by creating a controlled thermonuclear fusion reaction that generated more energy out than impinged upon the fuel capsule. This was an experiment in inertial confinement, conducted with 192 lasers fired at a 1mm wide deuterium and tritium capsule inside a hohlraum container. The lasers delivered 2.05 MJ of energy into the capsule, generating 3.05 MJ of fusion. Did you know that every time the National Ignition Facility runs a fusion experiment the very center of its target chamber becomes the hottest place in the solar system? There have been five attempts to reproduce these results, but these attempts have failed.

Even prior to the successful breakthrough by the Lawrence Livermore Lab, there has been a growing number of private investments in fusion start-up technology.

In an opinion piece recently published in *The Hill* by Congressional Representatives Raja Krishnamoorthi, (D-IL) and Kelly Armstrong (R-ND), they discuss the economic implications of fusion energy for our nation's energy future, and the growing bipartisan support for fusion energy development. The two members of Congress noted that by creating a controlled nuclear fusion reaction that generated more energy than used... "The researchers demonstrated the potential of fusion as a groundbreaking power source." They also noted that, "This nuclear fusion breakthrough not only brings us one step closer to reproducing the power of the sun in a laboratory, but it also helps us guarantee American energy independence."

Unlike primitive and intermittent wind and solar power sources, fusion will certainly lead us toward a more prosperous economic future. When addressing the need to increase the standard of living of the population, advanced forms of energy are an essential element in achieving that goal. Increasing productivity per capita for the economy as a whole, means increasing the energy flux density of the power sources available to the population, from lower states of energy output, to increasingly higher forms. This decreases the rate of entropy and increases your rate of productivity. It is extremely important that we make more foundational investments in our economic and energy infrastructure. As stressed by Reps. Krishnamoorthi and Armstrong, developing the highly skilled workforce to meet the demands of fusion technology, will lift the entire economic platform to new levels of productivity.

Today young people are not being engaged in a national mission orientation to enhance their skills in science, technology, engineering, and math—keystone requirements for increasing the productivity of society through which we can produce our way out of the current economic and cultural collapse. Instead, the emphasis seems to be on destroying an entire generation by cultivating narcissism, social alienation, poisonous drug use, and equally poisonous ideologies of sexual fluidity. The mission of producing fusion, an unbounded energy source which can lift entire poverty-wracked economies throughout the world into prosperity, while powering the exploration of nearby space and Mars, can deliver just that jolt of cultural optimism necessary to destroy this current satanic exercise in human destruction.

America Needs More Than Energy Independence — It Needs Energy Advancement!



By [Benjamin Deniston](#)

May 16, 2023

https://www.larouchepac.com/america_needs_more_than_energy_independence_it_needs_energy_advancement

(A one hour video)

While it's right for the American First movement to rally behind the calls for energy independence, we must primarily look to energy advancement. Creating and securing a better future for our nation and our posterity requires fundamental technological, scientific, and physical economic progress—and energy advance is critical.

As we can learn from the work of Lyndon LaRouche, progress is always tied to increasing energy flux-density. This is a universal principle— for human societies, for the natural world more generally, and for the universe as we know it.

Tonight we're joined by LaRouchePAC's Kesha Rogers and Ben Deniston.