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# THE GEORGE WASHINGTON UNIVERSITY

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WASHINGTON, DC

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## The Stella Group, Ltd.

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The Stella Group, Ltd.. is a strategic technology optimization and policy owner's rep firm for clean distributed energy users and companies which include advanced batteries and controls, energy efficiency, fuel cells, geoexchange, heat engines, microhydropower (including tidal and wave), modular biomass, photovoltaics, small wind, and solar thermal (including CSP, daylighting, water heating, industrial preheat, building air-conditioning, and electric power generation). Scott Sklar serves on the national Boards of Directors of the non-profit Business Council for Sustainable Energy and S3dif. He teaches three unique interdisciplinary sustainable energy courses at The George Washington University (GWU) and serves as Energy Director of GWU's Environment & Energy Study Institute (EEMI). Scott Sklar was awarded the prestigious The Charles Greely Abbot Award by the American Solar Energy Society (ASES) and on April 26, 2014 was awarded the Green Patriot Award by George Mason University in Virginia. He was appointed to the US Department of Commerce (DOC) Renewable Energy & Energy Efficiency Advisory Committee (RE&EEAC), term ended 2020.

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**Brief News Update & Analysis : SUNDAY Contact: Ken Bossong, 301-588-4741 ; 301-270-6477 x.6 (1/6/2023)**  
**For Release: Tuesday – January 3, 2023**

- **LAST EIA REPORT OF 2022 REVEALS:** Year-to-date, renewables have provided 22.60% of total U.S. electrical generation compared to 20.40% a year earlier.

**Washington DC – According to a review by the SUN DAY Campaign of data recently released by the U.S. Energy Information Administration (EIA), renewable energy sources (i.e., biomass, geothermal, hydropower, solar, wind) provided almost 23% of the nation's electrical generation during the first ten months of 2022. Year-to-date, renewables have provided 22.60% of total U.S. electrical generation compared to 20.40% a year earlier. Accordingly, they are on track to reach or surpass EIA's forecast of renewables providing 22% of U.S. electricity in calendar year 2022.[2]**

The final issue of EIA's "Electric Power Monthly" report series published in 2022 (with data through October 31) reveals that during the first ten months of 2022, renewable energy sources (including small-scale solar systems) [1] increased their electrical output by 14.26% compared to the same period a year earlier. By comparison, electrical generation by all energy sources combined grew by just 3.14%.

Output by solar alone increased by 26.23% and its share of total U.S. electrical generation year-to-date (YTD) surpassed 5.0%, providing 5.05% through the end of October. For perspective, solar's YTD share first reached 1.0% in March 2016. Since then, solar's monthly generation has increased almost six-fold. The trend seems likely to continue - in October alone, solar's output was 31.68% greater than a year earlier, a rate of growth that strongly eclipsed that of every other energy source.

Further, for the ten-month period, electrical generation by wind expanded by 16.86% and provided almost a tenth (9.80%) of total electrical generation. In addition, generation by hydropower grew 6.13% and accounted for 6.14% of the total. Electrical output by geothermal as well as wood & wood-derived fuels also increased by 6.45% and 0.16% respectively. Only generation by "other biomass" fell - by 4.85%.

Taken together, during the first ten months of 2022, renewable energy sources comfortably out-produced both coal and nuclear power by 16.62% and 27.39% respectively. However, natural gas continues to dominate with a 39.40% share of total generation.

"As we begin 2023, it seems very likely that renewables will provide nearly a quarter - if not more - of the nation's electricity during the coming year," said Ken Bossong. "And ... the combination of just wind and solar will outpace nuclear power and even that of coal during the next twelve months."

**Notes:** [1] Unless otherwise indicated, the electricity figures cited above include EIA's "estimated small-scale solar photovoltaic" (e.g., rooftop solar systems) which accounts for 28.9% of total solar output and over six percent (6.4%) of total net electrical generation by renewable energy sources. [2] See, for example, U.S. Energy Information Administration, "EIA expects renewables to account for 22% of U.S. electricity generation in 2022" (August 16, 2022) <https://www.eia.gov/todayinenergy/detail.php?id=53459> ;

**Sources:** EIA's latest "Electric Power Monthly" report was released on December 22, 2022. For the data cited in this news release, see Table ES1.A "Total Electric Power Industry Summary Statistics 2022 and 2021" and Table ES1.B. "Total Electric Power Industry Summary Statistics, Year-to-Date 2022 and 2021" at: [https://www.eia.gov/electricity/monthly/epm\\_table\\_grapher.php?t=table\\_es1a](https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=table_es1a) ; [https://www.eia.gov/electricity/monthly/epm\\_table\\_grapher.php?t=table\\_es1b](https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=table_es1b)

# What's in the final bipartisan infrastructure bill for clean energy

by **John Engel** - 11.8.2021

<https://www.renewableenergyworld.com/policy-regulation/whats-in-the-final-bipartisan-infrastructure-bill-for-clean-energy/>

Renewable energy advocates celebrated Congress' passing of the [\\$1.2 trillion bipartisan infrastructure bill](#), which includes billions of dollars for renewable energy projects and research. President Joe Biden called the funding package a "[once-in-a-generation](#)" investment solar, wind, energy storage, and electric vehicle technologies that will create millions of jobs. "Now the House and Senate must continue their work on the Build Back Better Act (BBBA) to enact key climate provisions and the largest federal investment in clean energy in American history," Zichal said. "Clean energy infrastructure means jobs. With over 415,000 Americans already working in wind, solar and energy storage across America, the Build Back Better Act investment in infrastructure will continue the rapid growth of job-creating clean energy projects and help meet our emissions reduction targets."

Hydrogen was perhaps the biggest clean energy winner in the bipartisan infrastructure package, securing \$9.5 billion for research and deployment of clean hydrogen technologies.

## **What's in the bipartisan infrastructure bill for clean energy?**

### **Grid upgrades**

- \$65 billion for grid reliability and resiliency upgrades, but only \$2.5 billion of that is dedicated to new power lines, [as noted by Canary Media](#). Issues surrounding [interconnection, grid enhancements, and cost-sharing](#) continue to limit the expansion of clean energy technologies and the decarbonization of the grid.
- \$3 billion for the Smart Grid Investment Matching Grant Program.

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- Infrastructure bill continued –

### **Wind, solar, geothermal**

- Funding for renewable energy demonstration projects, including \$84 million for enhanced geothermal systems, \$100 million for wind energy, and \$80 million for solar energy.

### **Energy efficiency and weatherization**

- \$50 billion for climate resilience, weatherization, and cybersecurity
- \$250 million for energy efficiency revolving loan fund capitalization grant program
- \$40 million for establishment of competitive grant program to train individuals to conduct energy audits of commercial and residential buildings
- \$225 million grant program to enable the Building Technologies Office within DOE to update building energy codes
- \$20 million for energy efficiency workforce development
- \$3.5 billion for Weatherization Assistance Program

### **Energy storage**

- \$355 million Energy Storage Demonstration Projects and Pilot Grant Program
- \$150 million for a Long-Duration Demonstration Initiative and Joint Program
- \$825.7 million for mineral security projects

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- Infrastructure bill continued –

## **Hydrogen**

- \$8 billion for four clean hydrogen hubs to demonstrate the production, processing, delivery, storage, and end-use of clean hydrogen
- \$500 million for clean hydrogen manufacturing and recycling to support a clean hydrogen domestic supply chain
- \$1 billion for demonstration, commercialization and deployment to decrease the cost of electrolyzers

## **Hydropower**

- \$125 million for hydroelectric production incentives
- \$75 million for hydroelectric efficiency improvement incentives
- \$553.6 million for hydroelectric resiliency upgrades
- \$10 million for a pumped storage demonstration project to facilitate long-duration storage of intermittent renewable electricity

## **Electric vehicles**

- \$7.5 billion for electric vehicle charging stations
- \$5 billion for the purchase of electric school buses and hybrids

## HOME ENERGY EFFICIENCY

- **What the Energy Efficient Home Improvement [Tax] Credit covers:** Recently expired, this credit is getting a renewal and a big upgrade.
- Compared to the previous \$500 lifetime max, consumers can now get 30 percent back, up to \$1,200 per year, for energy-saving renovations like [adding insulation or swapping out exterior windows](#) that better keep cool air out in the winter and inside in the summer.
- Also incentivizes the purchase of certain electric, energy-efficient appliances, like heaters, AC units, and boilers. It ups the annual credit cap to \$2,000 per year for [über-efficient heat pump air conditioners](#), [heat pump water heaters](#), and boilers.

If you're unsure which changes to make, the new law also offers a \$150 tax credit per household for a home energy audit.

**IRA - When it starts and ends:** The tax credit applies to projects completed between January 1, 2023 and the end of 2032.

There are a handful of appliances, like hot-water boilers, for which the credit expires at the end of 2027.

- **Who qualifies:** As long as the improvements were made to a noncommercial home, you qualify.
- If you're a renter or living in a multifamily building, you qualify too.

Earlier this year, Congress passed the biggest climate bill in history — cloaked under the name the “[Inflation Reduction Act](#).” But while economists say the bill may not reduce inflation very much, it could do one important thing for a country trying to move away from fossil fuels: Spur millions of households across America to switch over to cleaner energy sources with free money.

LINK: <https://www.washingtonpost.com/climate-solutions/2022/12/29/climate-tax-credits-clean-energy/>

#### **Heat pumps — the best choice for decarbonizing at home**

**Tax credit available on Jan. 1:** 30 percent of the cost, up to \$2,000. **Income limit:** None

#### **Electric vehicles — top choice for cutting car emissions**

**Tax credit available on Jan. 1:** Up to \$7,500 depending on the make and model of the car. **Income limit:** <\$150,000 for single filers; <\$300,000 for joint filers

Starting Jan. 1, a new EV tax credit will offer consumers up to \$7,500 off the purchase of an electric vehicle. For the first few months, Americans will get somewhere between \$3,751 and \$7,500 off their purchase of an EV, depending on the size of the battery in the car.

Beginning about March 2023, however, that \$7,500 credit will be split into two parts: Consumers can get a \$3,750 credit if the vehicle has a battery containing at least 40 percent critical minerals from the United States (or a country that the United States has a free-trade agreement with) and another \$3,750 credit if at least 50 percent of the battery’s components were assembled and manufactured in North America. Those rules haven’t been finalized yet, so the tax credit starting on Jan. 1, 2023 is a stopgap measure until the White House has ironed out the final version. EV chargers Credit is up to \$1,000.

#### **Rooftop solar — the best choice for generating clean energy**

**Tax credit available now:** 30 percent of the cost of installation, no cap. **Income limit:** None

NOTE: There are many other credits also coming out in 2023: for EV chargers (up to \$1,000), heat pump water heaters (up to \$2,000), and even cash for sealing up the doors and windows of your home (up to \$1,200).

The most important thing to know, Briscoe said, is whether you qualify for the upfront discounts for low- and moderate-income Americans — which won’t be available until later in 2023 — or the tax credits, which will be available Jan. 1. (Try this [tool](#).) If going the tax credit route, it’s better to spread the upgrades out across multiple years, since there is an annual limit on how many of the credits you can claim in a given year.



## 2023 EV Tax Credit Explained: What's Changed and What's Ahead

Which vehicles qualify for the federal electric vehicle tax credit has changed for 2023 because of the Inflation Reduction Act. **explanation of how the EV tax credit works (for the 2022 tax year, and for 2023), and some updates from the IRS on which vehicles qualify for the electric vehicle tax credit.**

First, for EVs placed into service after December 31, 2022, the Inflation Reduction Act extended the up to \$7,500 EV tax credit for 10 years—until December 2032. **The tax credit is taken in the year that you take delivery of the EV.**

If you purchased an electric vehicle before the Inflation Reduction Act became effective (so before August 16, 2022), and that vehicle is otherwise eligible for the old EV tax credit, you can claim that credit under the rules that applied before the Inflation Reduction Act became law. (That's true even if you don't take possession of the EV until after August 16, 2022.)

The Inflation Reduction Act also imposes income limits on who can claim the credit:

- If you're single, and your modified adjusted gross income is over \$150,000, you won't qualify for the EV tax credit.
- The EV tax credit income limit for married couples who are filing jointly is \$300,000 or file as head of household making \$225,000+.

**Vehicle price and type also matter.** Vans, pickup trucks, and SUVs with a manufacturer's retail suggested price (MSRP) of more than \$80,000, won't qualify for the credit. For clean cars to qualify for the EV tax credit, the MSRP can't be more than \$55,000. Also, if you buy a used clean vehicle, it will only qualify for the tax credit if it costs \$25,000 or less. And in case you were wondering, "used" or "previously owned" for purposes of the EV tax credit, mean that the car is at least two years old.

<https://www.kiplinger.com/taxes/605081/ev-tax-credit-inflation-reduction-act-2022-changes>

**According to IRS guidance, 1.8 GW of solar is eligible for 40% and 50% tax credits via the IRA, with the Low-Income Communities Bonus Credit Program.**

FEBRUARY 16, 2023 [JOHN FITZGERALD WEAVER](#)

LINK: [https://pv-magazine-usa.com/2023/02/16/irs-releases-guidance-on-low-income-solar-tax-credit-booster/?utm\\_source=USA+%7C+Newsletter&utm\\_campaign=e99ddf8d75-RSS\\_EMAIL\\_CAMPAIGN&utm\\_medium=email&utm\\_term=0\\_80e0d17bb8-e99ddf8d75-158716569](https://pv-magazine-usa.com/2023/02/16/irs-releases-guidance-on-low-income-solar-tax-credit-booster/?utm_source=USA+%7C+Newsletter&utm_campaign=e99ddf8d75-RSS_EMAIL_CAMPAIGN&utm_medium=email&utm_term=0_80e0d17bb8-e99ddf8d75-158716569)

The U.S. Internal Revenue Service (IRS) has [released guidance](#) on the Low-Income Communities Bonus Credit Program. The program provides an incentive that potentially increases the investment tax credit from 30% up to 40% for up to 900 MWdc of solar and wind, and 50% for an additional 900 MW of solar and wind power projects.

Projects in Category 1 and 2 qualify for a 10% increase to the Investment Tax Credit, while those in Category 3 and 4 qualify for a 20% increase.

Category 1: Located in a Low-Income Community	700 megawatts
Category 2: Located on Indian Land	200 megawatts
Category 3: Qualified Low-Income Residential Building Project	200 megawatts
Category 4: Qualified Low-Income Economic Benefit Project	700 megawatts

Category 3 and 4 applications will be accepted first, sometime in the fall of 2023. The exact date will be announced via a website, which has not yet been developed. After 60 days, the IRS will switch to applications for Category 1 and 2.

If the program has more capacity applications than it has available capacity, the selection will be made via a lottery process. Projects are not allowed to be placed in service prior to being approved for the incentive.

LINK: <chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.irs.gov/pub/irs-drop/n-23-17.pdf>

**THERE'S NO SUCH THING AS A DUMB QUESTION !!!**

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