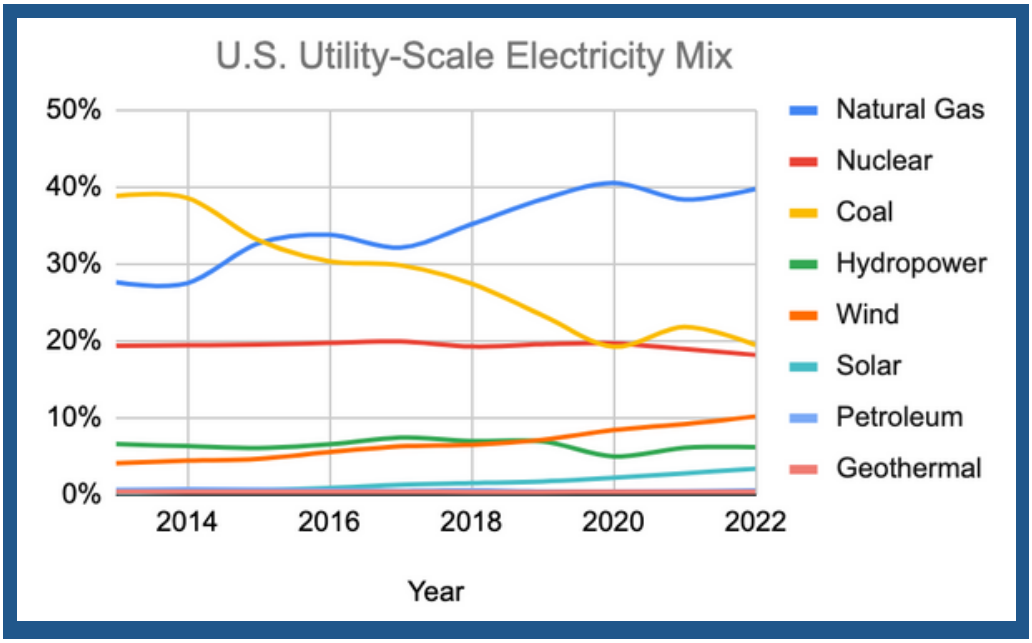
THE U.S. ELECTRICITY MIX

In 2022, the United States consumed 4.05 trillion kilowatt hours of electricity. The sources and methods for generating that amount of power vary by region and level of technology. Some sources are fuel-based and rely on commodities, while others are technology-based and harness natural energy from wind, water, and sunlight. Together, these sources provide constant baseload power and are dispatched to meet peak energy demands. The price of home utility bills all the way to industrial manufacturing costs largely depend on what resources are used and how efficient they are. Learn more about each resource powering the United States energy grid.



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Energy Spotlight

NATURAL GAS

Impact Snapshot

39.8% Share of U.S. electricity mix

9.15% Share of global electricity mix

+44% U.S. 10-year change

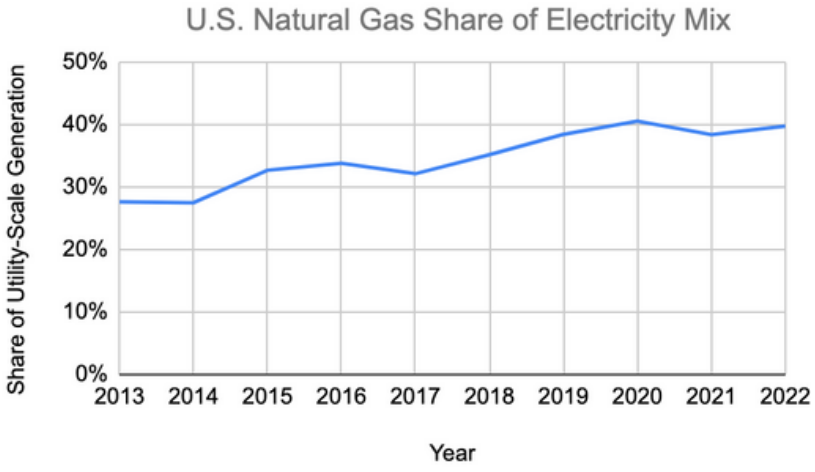
+2% Global 10-year change

Type: Hydrocarbon

Classification: Commodity

Source: Geologic

Flexibility: Baseload, Dispatchable



What you need to know:

Natural gas is used to generate electricity, but can also be used for residential/commercial/industrial heat, transportation fuel, and to produce other fuels and chemicals.

When generating electricity, the lifecycle emissions of Natural Gas equal 486 grams of carbon dioxide equivalent per kWh and it has a median levelized cost of $46.7/MWh.

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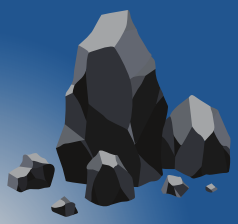


Energy Spotlight

COAL

Impact Snapshot

19.5% Share of U.S. electricity mix

35.71% Share of global electricity mix

-50% U.S. 10-year change

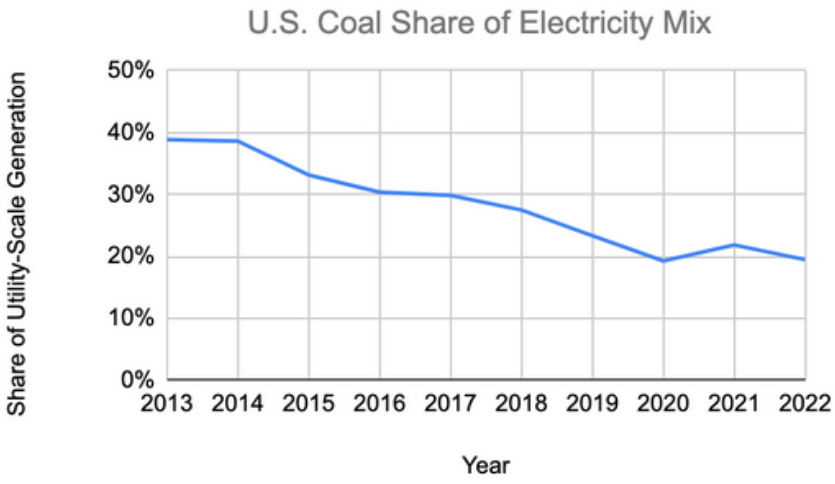
-12% Global 10-year change

Type:
Hydrocarbon

Classification:
Commodity

Source:
Geologic

Flexibility:
Baseload, Dispatchable



What you need to know:

Coal is used to generate electricity, but can also be used for industrial heat and to produce other fuels and chemicals.

When generating electricity, the lifecycle emissions of Coal equal 1,001 grams of carbon dioxide equivalent per kWh and it has a median levelized cost of $98.4/MWh.

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Energy Spotlight

NUCLEAR

Impact Snapshot

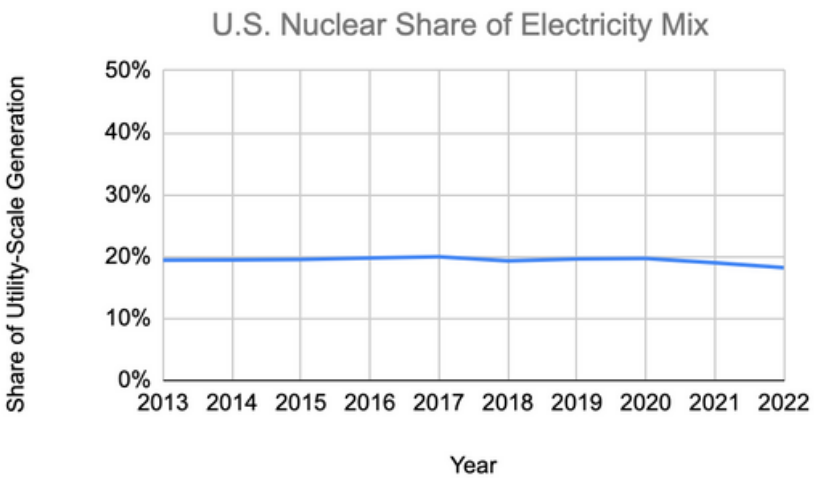
18.2%	Share of U.S. electricity mix	9.15%	Share of global electricity mix
-6%	U.S. 10-year change	-14%	Global 10-year change

Type:
Nuclear Fission

Classification:
Commodity, Technological

Source:
Geologic

Flexibility:
Baseload, Semi-dispatchable



What you need to know:

Nuclear is used to generate electricity, but can also be used for industrial heat which is also useful for producing other fuels and chemicals.

When generating electricity, the lifecycle emissions of Nuclear equal 13 grams of carbon dioxide equivalent per kWh and it has a median levelized cost of $82.6/MWh.

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Energy Spotlight

WIND

Impact Snapshot

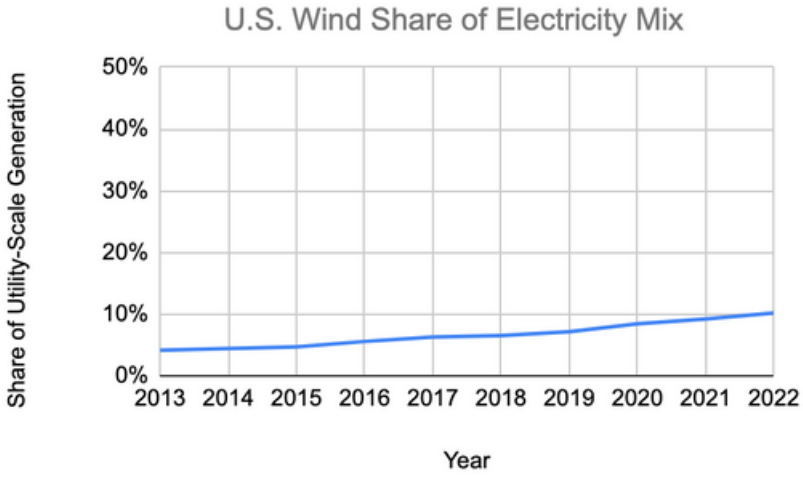
10.2%	Share of U.S. electricity mix	**7.52%**	Share of global electricity mix
+147%	U.S. 10-year change	**+168%**	Global 10-year change

Type: Renewable

Classification: Technological

Source: Wind

Flexibility: Intermittent, Non-dispatchable



What you need to know:

Wind power is solely used to generate electricity.

The lifecycle emissions of Wind power equals 13 grams of carbon dioxide equivalent per kWh and it has a median levelized cost of $66.5/MWh.

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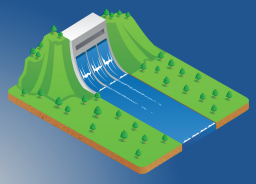


Energy Spotlight

HYDRO

Impact Snapshot

6.2% Share of U.S. electricity mix

15.16% Share of global electricity mix

-6% U.S. 10-year change

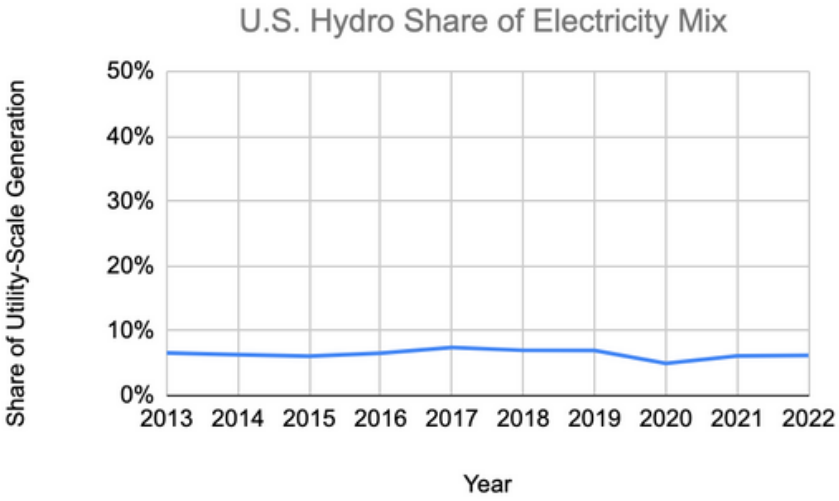
-8% Global 10-year change

Type:
Renewable

Classification:
Technological

Source:
Water

Flexibility:
Baseload, Semi-dispatchable



What you need to know:

Hydropower is used solely to generate electricity.

The lifecycle emissions of Hydropower equals 21 grams of carbon dioxide equivalent per kWh and it has a median levelized cost of $23.9/MWh.

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Energy Spotlight

SOLAR

Impact Snapshot

3.4% Share of U.S. electricity mix

4.52% Share of global electricity mix

+1,445% U.S. 10-year change

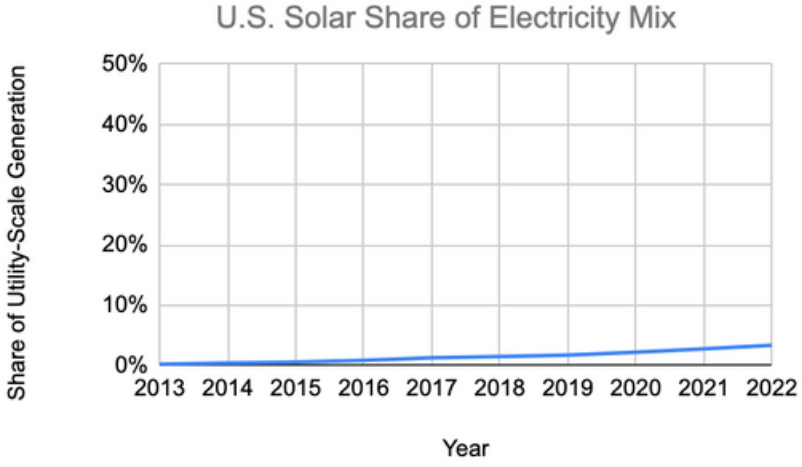
+679% Global 10-year change

Type: Renewable

Classification: Technological

Source: Sun

Flexibility: Intermittent, Non-dispatchable



What you need to know:

Solar power is used solely to generate electricity.

The lifecycle emissions of Solar equal 43 grams of carbon dioxide equivalent per kWh and it has a median levelized cost of $53.8/MWh.

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Energy Spotlight

PETROLEUM

Impact Snapshot

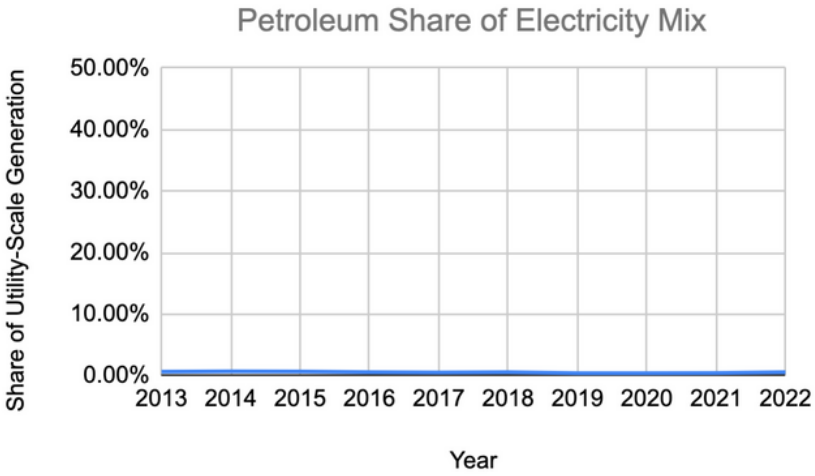
0.6%	Share of U.S. electricity mix	3.12%	Share of global electricity mix
-10%	U.S. 10-year change	-36%	Global 10-year change

Type: Hydrocarbon

Classification: Commodity

Source: Geologic

Flexibility: Baseload, Dispatchable



What you need to know:

Petroleum is used sparingly to generate electricity, but is predominantly used for industrial heat, transportation fuel, and to produce other fuels and chemicals.

When generating electricity, the lifecycle emissions of Petroleum equal 840 grams of carbon dioxide equivalent per kWh and it has a levelized cost exceeding $300/MWh.

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Energy Spotlight

GEOTHERMAL

Impact Snapshot

0.4% Share of U.S. electricity mix

0.35% Share of global electricity mix

+3% U.S. 10-year change

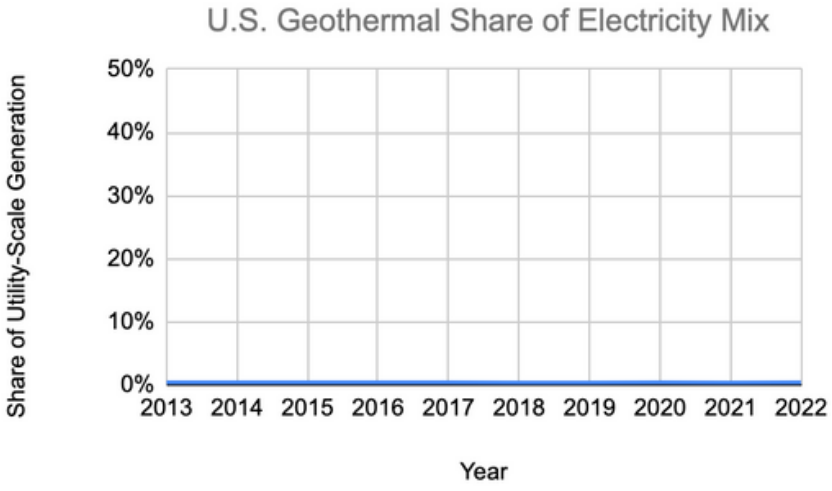
+9% Global 10-year change

Type: Renewable

Classification: Technological

Source: Geologic

Flexibility: Baseload, Semi-dispatchable



What you need to know:

Geothermal is used for some space heating applications, but is primarily used for generating electricity.

The lifecycle emissions of Geothermal equal 37 grams of carbon dioxide equivalent per kWh and it has a levelized cost of $248.8/MWh.

Sources:

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About Aii

The Alliance for Innovation and Infrastructure (Aii) is an independent, national research and educational organization that explores the intersection of economics, law, and public policy in the areas of climate, damage prevention, energy, infrastructure, innovation, technology, and transportation.

The Alliance is a think tank consisting of two non-profits: the National Infrastructure Safety Foundation (NISF), a 501(c)(4) social welfare organization, and the Public Institute for Facility Safety (PIFS), a 501(c)(3) educational organization. Both non-profits are legally governed by volunteer boards of directors. These work in conjunction with the Alliance's own volunteer Advisory Council.

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