

How Do We Balance The Provision Of Flexible And Reliable Power With The Transition To Clean Energy?



THE U.S. ENERGY INFORMATION ADMINISTRATION

Anticipates that global electricity generation will increase by up to **76% IN 2050**¹

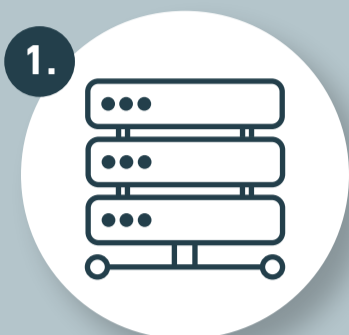
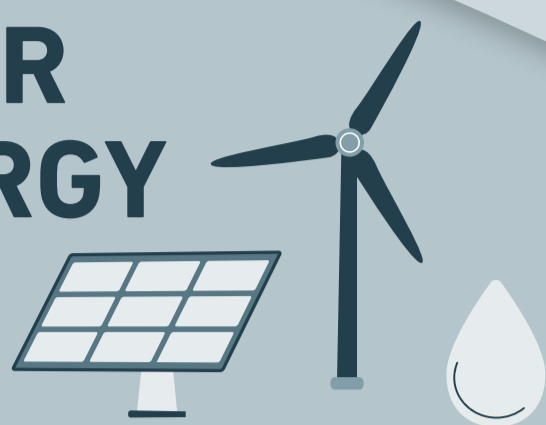
THE U.S. DEPARTMENT OF ENERGY

The challenge is harnessing renewable resources, which are **100x greater** than our annual electricity needs. In 2020, the United States renewable energy production in gigawatt hours was only

0.2% OF THE TOTAL RENEWABLE POTENTIAL²

DEMAND FOR CLEAN ENERGY SOLUTIONS

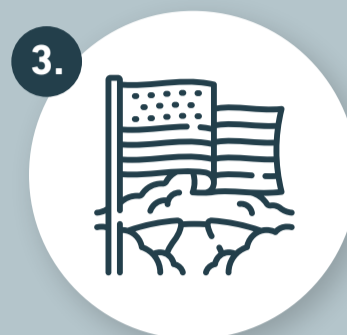
Is Significantly Rising



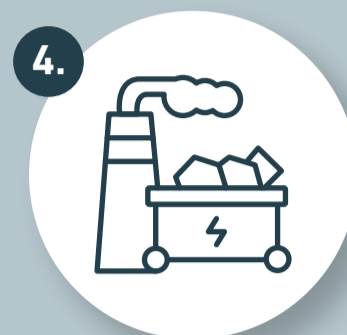
1. GROWTH IN DATA CENTERS



2. MOVE TOWARD ELECTRIFICATION



3. ONSHORING OF MANUFACTURING



4. RAMP DOWN OF COAL

A DECARBONIZED SOLUTION

Reliable and flexible while reducing carbon footprint



PEAKER PLANTS

Smaller, more flexible power units marked by their quick ramp up speeds. **Peakers** are brought Online only when demand spikes, maintaining grid stability and reliability.

GROWTH IN DATA CENTERS

Use of Artificial Intelligence (AI)

PROBLEM

AI-driven technology will significantly **increase demand** on our grids.

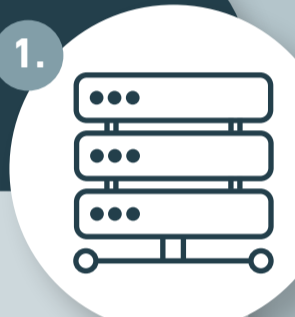
The energy required today is **5-8 times higher** than historical requirements.

Requires more power during certain times of the day during periods of high usage.

SOLUTION

Meeting Peak Demand

Peakers provide power quickly and for short periods of time, sometimes just a few hours per day. This quick ramp-up is an attractive capability, adding to a profile that responds well to a flexible grid that needs to be reliable above all else.



ELECTRIFICATION

Fossil Fuels to Electric

PROBLEM

Rapid rise in electric vehicle (EV) adoption, with over 1 million units sold in the U.S. in 2023,³ reveals urgent needs for scaling infrastructure and managing energy grid impacts.

Regulations that discourage the use of gas in construction industry, both commercial and residential buildings are moving towards greater electricity usage.

SOLUTION

Grid Stability and Reliability

Peakers are more flexible and can respond faster than traditional baseload power plants. They can be activated on short notice to balance the grid when there is a sudden surge in demand or a drop in supply.



DID YOU KNOW?

Solar production soars at midday, and then peak demand jumps even higher in the early evening hours as solar production declines

DID YOU KNOW?

Green hydrogen holds great potential as a fossil fuel replacement because once it is generated, it can be stored across seasons and used at any time of day.

ONSHORING OF MANUFACTURING

Return to the U.S.

PROBLEM

Legislation encouraging the return of manufacturing to the U.S., and industrial electrification is a complex process that will require extensive power capabilities.

SOLUTION

Flexibility And Responsiveness

Peaker plants help meet the surge in demand by quickly ramping up production during periods of high demand or when other power sources are unavailable.



THE RAMP DOWN OF COAL

The Path to Net Zero

PROBLEM

The continued retirement of coal plants due to new regulations and policy.

Wind and solar don't provide 24/7 generation.

SOLUTION

Complimenting Renewable Energy

Peakers can be operated sustainably to match decarbonization goals. They can run highly efficient advanced class gas turbines on natural gas while also transitioning to a green hydrogen fuel mix.



Utilities must balance maintaining reliable energy generation with meeting these needs equitably and justly.

Learn more at <https://power.mhi.com/regions/amer/> & Download the Full Utility Dive Playbook

¹ <https://www.reuters.com/business/energy/global-energy-consumption-increase-through-2050-outpace-efficiency-gains-eia-2023-10-11/#:~:text=Global%20electric%20power%20generating%20capacity,both%20global%20capacity%20and%20generation>
² <https://www.energy.gov/eere/analysis/renewable-energy-resource-assessment-information-united-states>
³ <https://www.nada.org/nada/market-beat>