

# POWERING OUR DIGITAL LIVES

Did you know that every time we go online—whether surfing the web, posting on social media, shopping, or attending virtual appointments and meetings—we consume energy and generate data? It's so seamless we hardly think about the power behind it. The rising energy demand in data centers reflects our ever-growing need for data in modern life. In the "age of AI," data truly is power.

## POWER MEASUREMENT BASICS



### WATT

The energy (in Joules) consumed by an electrical device per second that it's running. For instance, a 60-watt bulb uses 60 Joules each second, creating enough heat to warm your hands.<sup>1</sup>



### KILOWATT (KW)

The equivalent of 1,000 watts; enough to power a space heater or upright vacuum cleaner for one hour.<sup>3</sup>



### KILOWATT HOUR (KWH)

A measure of energy used over an hour, varying by device and serving as a baseline for comparison.<sup>3</sup>



### MEGAWATT (MW)

Equal to 1,000,000 watts; theoretically, a Tesla Model S could travel approximately 4,000 miles on one MW.<sup>4</sup>

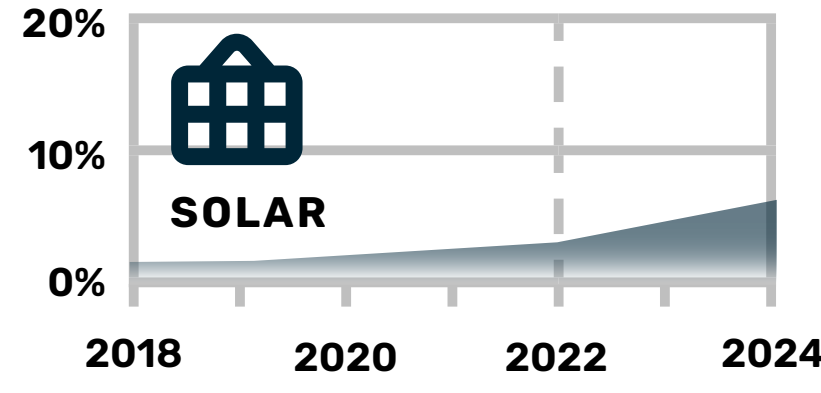
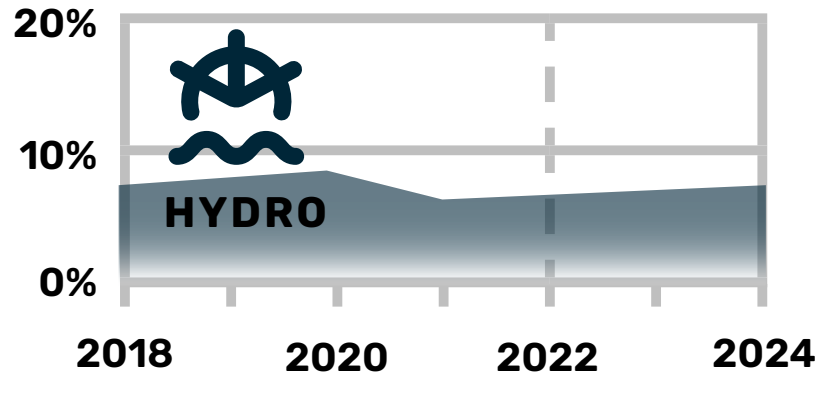
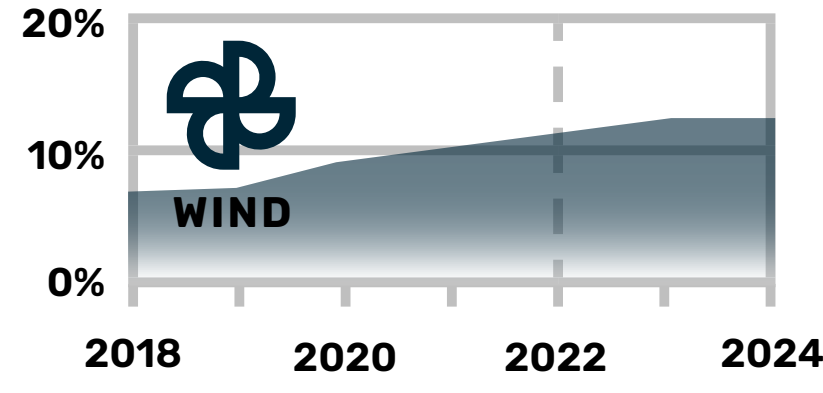
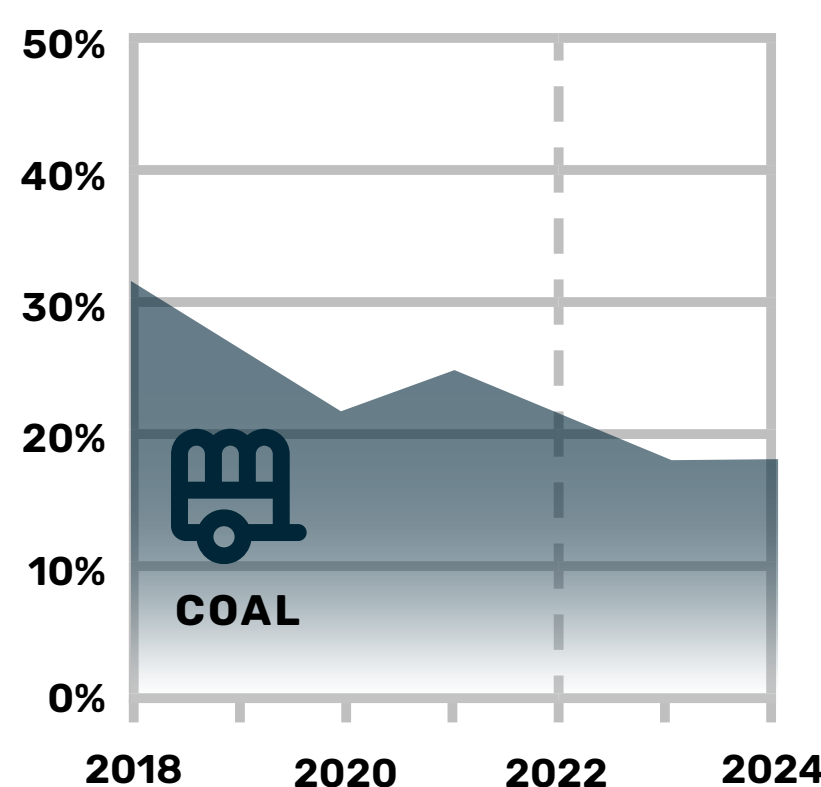
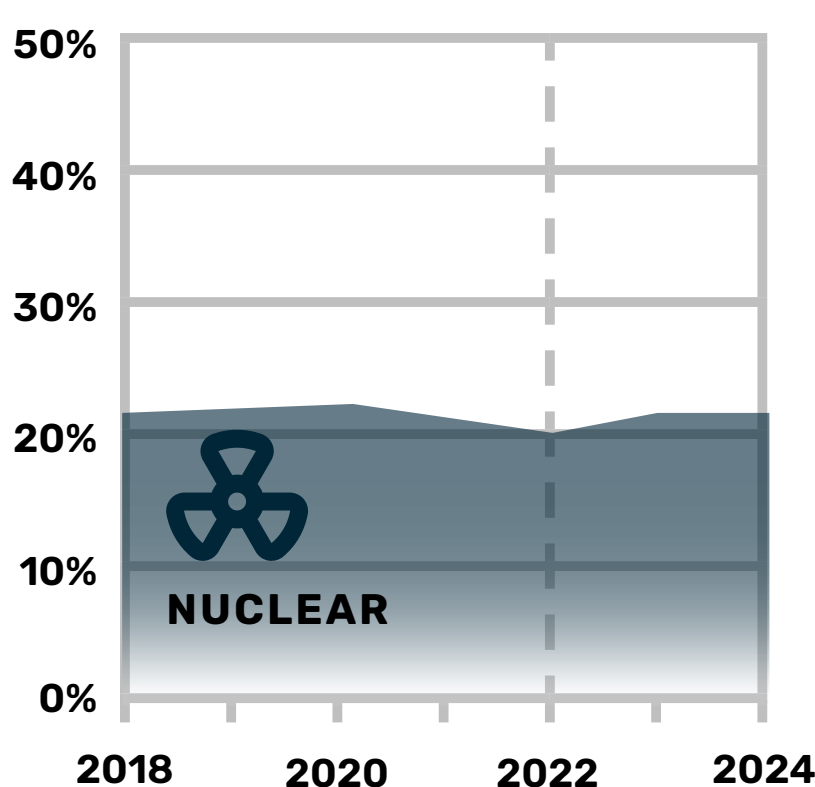
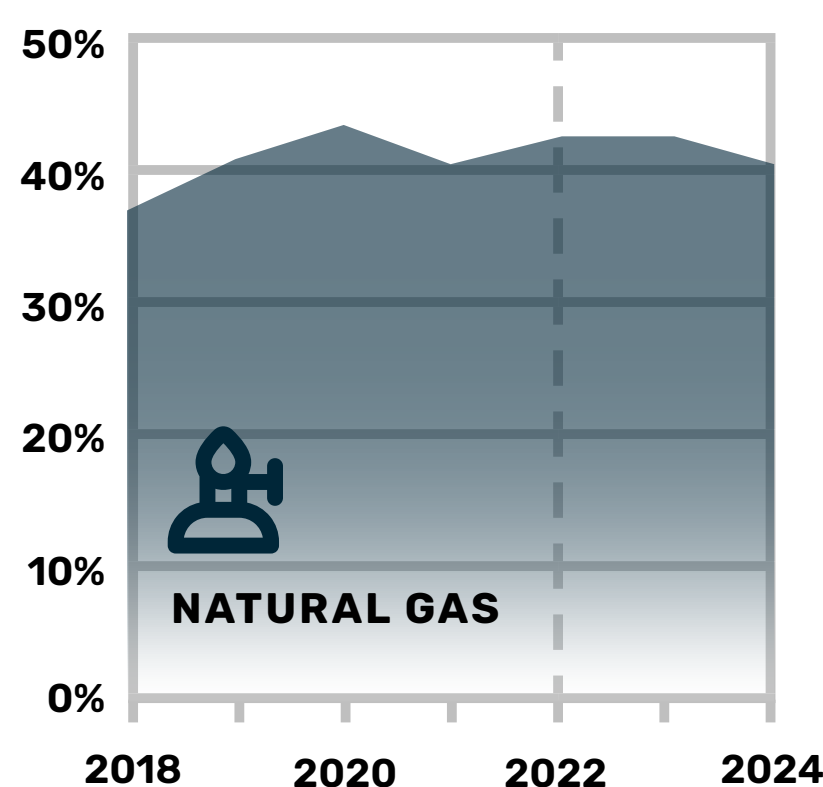


### GIGAWATT (GW)

Equal to 1,000,000,000 watts; sufficient to power about 750,000 homes simultaneously.<sup>5</sup>

## HOW POWER IS MEASURED

Annual share of U.S. electricity generation, power sector only (2018-2024)



DATA SOURCE: U.S. Energy Information Administration, Short-Term Energy Outlook, February 2023. DATA VALUES: U.S. electricity generation, NOTE: The six energy sources show accounted for at least 98% of annual electricity generation from the electric power sector during this time period.<sup>6</sup>

## ENERGY MIX FOR U.S.

37%  
NATURAL GAS

20%  
NUCLEAR

18%  
COAL

11%  
WIND

8%  
HYDRO

7%  
SOLAR

## HOW DATA IS GENERATED AND CONSUMED

143 MINUTES  
PER DAY

Average daily social media usage  
of internet users worldwide<sup>7</sup>

21 HOURS  
PER WEEK

Average time Americans spend  
streaming digital media<sup>8</sup>

562.5 MB  
PER HOUR

Volume of data streamed at 480p  
resolution on YouTube<sup>9</sup>

2,301,000 KW  
IN 2023

Amount of energy consumed in data  
centers for ~65 million Telehealth visits<sup>10</sup>

## 2024 STATE OF DIGITIZATION IN THE U.S.



331.1 million Internet users; Internet  
penetration is 97.1%<sup>11</sup>



239.0 million social media users;  
70.1% of the total U.S. population<sup>11</sup>



396.0 million active cellular mobile  
connections; 116.2% of the total population<sup>11</sup>

## data center *(noun)*

A data center is a physical location that stores computing machines and their related hardware equipment. It contains the computing infrastructure that IT systems require, such as servers, data storage drives, and network equipment. It is the physical facility that stores any company's digital data.<sup>12</sup>



### ON-PREMISES

Smaller, private facilities serving a single business



### COLOCATION

Multitenant facilities owned/leased by a data center provider serving many businesses



### HYPERSCALE

Large facilities designed to scale massively typically for one or two businesses

## WE'RE ALL ENERGY AND DATA CENTER CONSUMERS

Ultimately, data center energy use starts with you and me. Every time we engage in digital activity, we consume and generate data, activate network equipment and prompt servers to process data – all of which translates into energy usage in one or more data centers.

WANT TO LEARN MORE?

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