



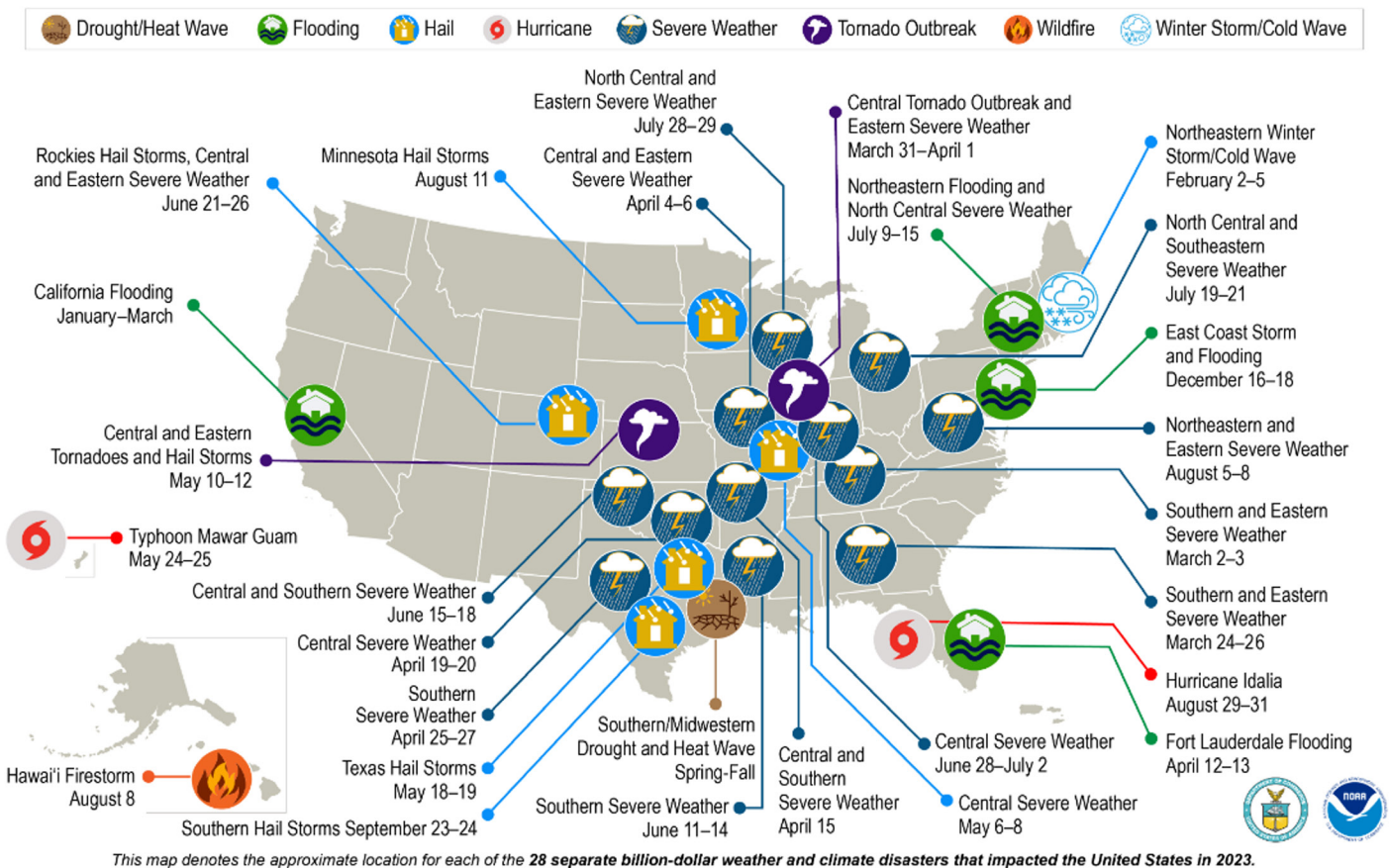
Decarbonization

Decarbonization is the process of eliminating carbon dioxide (CO₂) and other greenhouse gas (GHG) emissions from the global economy as quickly as possible to minimize the impacts from climate change. It aligns with the Austin community value of environmental sustainability.

Impacts of Climate Change

Extreme weather events intensified by climate change continue to increase in both frequency and severity across the United States. Texas is particularly vulnerable to high-impact, extreme weather events. According to the National Oceanic and Atmosphere Administration’s climate.gov website, our state has had some of the greatest total financial impacts since 1980 from billion-dollar extreme weather events. In 2023 alone, Texas experienced at least four separate billion-dollar weather and climate disasters.

U.S. 2023 Billion-Dollar Weather and Climate Disasters



Source: climate.gov

Challenges to Decarbonizing the Electric Industry

The electric industry is changing rapidly, and decarbonization also has to navigate these changes. Overall, electricity generation accounts for approximately 25% of total GHG emissions in the United States. These emissions peaked around 2007 and continue to trend downward.

The retirement of older coal and natural gas fired power plants has supported this trend, and non-emitting renewable energy sources like wind, solar and geothermal have replaced that power supply. These types of resources continue to grow rapidly, especially in Texas.

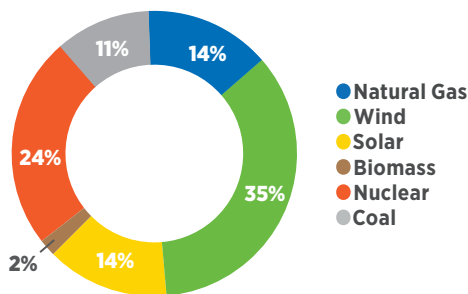
There are some challenges that come with this transition. One is managing the intermittent

power production from energy sources that are dependent on the weather, such as wind and solar. Another is the time and cost required to build new transmission infrastructure to transport the energy from these new power sources, which are often built in locations where the renewable resource is most plentiful, to the locations where the power needed, often in major cities across the state. On the other end of the energy equation, decarbonization of the electric industry also must adjust to the current period of unprecedented demand growth, driven by data centers, electric vehicles and electric appliances replacing gas versions. This shift adds to the challenge of generating enough electricity when and where it is needed.

Austin Energy's Path to Decarbonization

In 2020, Austin Energy committed to transition from coal and gas fired power plants toward 100% carbon-free electricity generation by 2035. In progress toward that goal, Austin Energy is a national leader in clean energy, with 75% of its electricity coming from carbon-free sources in FY23.

Percent of Energy Generated from Austin Energy Assets (MWh) FY23



However, Austin Energy's decarbonization efforts are facing the same challenges mentioned above. Additionally, changes and uncertainty in the ERCOT market following the 2021 winter storm have impacted our ability to meet the commitment to be carbon free by 2035. Removing all remaining traditional generation sources and replacing them with only some combination of local solar, demand response, energy efficiency and battery energy storage could come with significant risk. Setting the right technology mix to align with the community priorities of environmental sustainability (decarbonization), reliability and

affordability is one of Austin Energy's primary objectives when planning for the future. Part of that is seeing what a pathway to 100% carbon free would look like.

Net Zero or Carbon Neutral as a Bridge Solution

Another option in continuing Austin Energy's progress and leadership in clean energy is aiming for net zero or carbon-neutral emissions. This option could provide flexibility for Austin Energy to continue making progress in reducing CO₂ emissions while lowering costs and outage risks. When Dr. Michael Webber, with the University of Texas at Austin, presented to the Austin Energy Utility Oversight Committee meeting in July, he stated "A variety of researchers — Princeton, UT Austin, Energy Information Administration, International Energy Agency, etc. — have conducted studies on how to decarbonize the economy at the global, national and state level. These studies have a variety of similar and overlapping conclusions. The general consensus is net-zero is cheaper, faster and more equitable than carbon-free." Austin Energy is looking to further explore this option as the path to carbon-free becomes increasingly challenging.