



*The Department of the Air Force is committed to developing and deploying policies and guidance to ensure the enterprise is prepared to deliver energy and water whenever and wherever it is needed.*

## FY 2021 Air & Space Force Energy Facts

**6.9%** DAF electricity from renewable sources

**595,000 MWh** of renewable energy use

**31.9%** reduction in energy intensity since FY 2003

**26.8%** reduction in total water intensity since FY 2007

## Climate Impacts on Installation Energy

The global climate crisis poses serious challenges to national security, defense strategies, and mission continuity. Department of the Air Force (DAF) installations have seen first-hand how climate change and severe weather can disrupt the DAF's ability to deliver critical resources like energy and water to mission-critical facilities, threatening installation readiness, resiliency, and safety.

Installation Energy is uniquely positioned to both experience the impacts of climate change, as well as play a critical role in securing climate-ready solutions for the DAF, including mitigating emissions that contribute to worsening climate conditions. To ensure the DAF is prepared to anticipate and adapt to current and future threats to its installations, "climate-informed" is a quality that must be considered in all future energy projects (Figure 1).



*Figure 1. The four qualities of Department energy projects for mission assurance through energy assurance.*

The four qualities the DAF is championing build a holistic approach to installation resilience and help ensure the Air and Space Forces can secure agile and effective operational capability. This includes prioritizing renewable energy technologies that enhance mission assurance, reducing contributions to greenhouse gas emissions, and bolstering vulnerable energy and water infrastructure against climate and severe weather threats to enhance installation resiliency.





# Air and Space Force Climate Highlights\*



## Clean Energy

To contribute to the nation's efforts to curtail future carbon emissions and mitigate climate change-related impacts, the DAF continues to invest in a variety of onsite alternative energy technologies that also promote mission assurance through energy assurance. In FY21, 6.9% of DAF energy came from renewable sources. Projects of note include a 15 megawatt (MW) solar array at **Nellis Air Force Base (AFB)**, **Vandenberg AFB's** 28MW array, **Hill AFB's** 3.55MW array, and **Eglin AFB's** recent expansion of its 30MW solar array by 3.5MW.

## Tyndall Air Force Base

Following the devastation caused by Hurricane Michael in 2018, **Tyndall AFB** in Florida is being reconstructed as an Installation of the Future and includes cutting-edge approaches to ensure the installation can withstand future climatic threats. The minimum design wind speed of 165mph for all new facilities exceeds the highest wind speed captured during Hurricane Michael, and incorporates the Florida Building Code's High Velocity Hurricane Zone best practices. Facilities are also being designed 14 to 19 feet above today's mean sea level, incorporating a 7 foot predicted sea level rise scenario through 2100. These adaptation measures are critical to protecting and maintaining mission-essential energy and water systems.

## Winter Storm Uri

Winter Storm Uri impacted 28 DAF installations across the mid-west and southern United States in February 2021, causing limited power or water interruptions. Several installations were able to effectively partner with local electrical power providers to minimize outages and mitigate impacts to the installations. Personnel at **Tinker**, **Altus**, and **Offutt AFBs** communicated routinely with the local electrical power provider prior to and during the storm to ensure continuity of operations, reducing energy consumption by operating on-base back up power, and helping the utility providers minimize rolling blackouts.

## Offutt Air Force Base

**Offutt AFB**, Nebraska, experienced a historic and severe flooding event in 2019. Three campuses at Offutt AFB were destroyed and will be rebuilt in 100-year floodplains due to mission requirements. The elevation of the entire site is being raised above the 100-year flood plain in accordance with the 2021 National Defense Authorization Act. The Missouri River Natural Resources District is also raising and widening the levees to protect Offutt AFB against future flooding events. These adaptation measures are critical to protecting and maintaining mission-essential energy and water systems.

*\* These examples are not meant to be exhaustive of all climate-related activities within the DAF.*



The Department of the Air Force Installation Energy Program is committed to developing and deploying policies and guidance to ensure the enterprise is resilient to climate hazards and prepared to deliver energy and water whenever and wherever needed.

For more information:

[safie.hq.af.mil/InstallationEnergy](https://safie.hq.af.mil/InstallationEnergy)

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