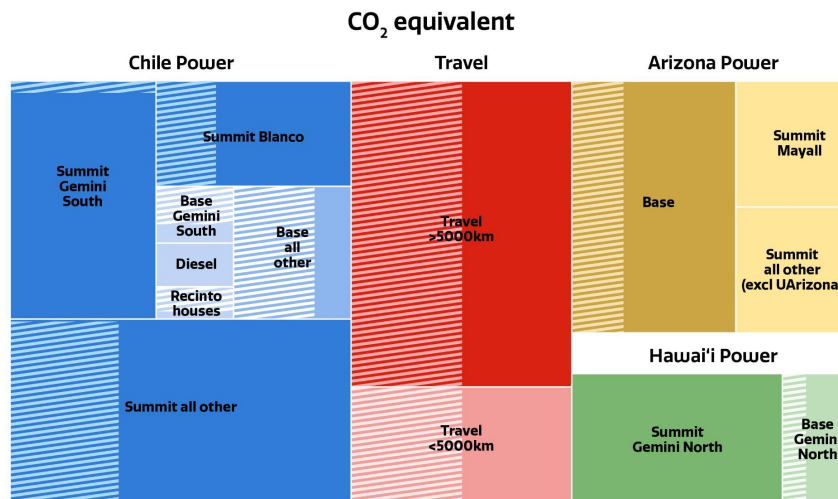


The U.S. National Science Foundation's NOIRLab - which includes CSDC, CTIO, Gemini Observatory, KPNO, Vera C. Rubin Observatory, and US-ELTP - aims to reduce the organization's carbon footprint by 30% (2500 tons CO₂ equivalent) by 2027. This goal will be achieved by:

1. Reducing NOIRLab-funded travel by 50%
2. Using the savings to invest in energy-efficient equipment and renewable energy production at all of our sites.



Above: A representation of NOIRLab's carbon footprint. The area of each rectangle is proportional to the footprint of the named activity or facility. This includes electricity, diesel use for backup power, and travel. The larger rectangles show the carbon footprint in 2019. The hatched areas represent the planned 30% reduction due to the projects listed. **See the related talk by Nicolas Flagey.**

Hawai'i

High-efficiency transformers, LED lighting, and photovoltaic systems were already installed in Hilo and on Maunakea between 2015 and 2018. By 2027 an additional 100 kW will be added to the Hilo photovoltaic system.

Arizona

NOIRLab's Headquarters is based in Tucson, Arizona. Planned sustainability improvements here include:

- Installation of higher-efficiency transformers;
- Full use of double-paned windows;
- LED lighting;
- Hot/cold zone data center configuration;
- Installation of a 222-kW photovoltaic system on the roof of the facility.

Chile

Improvements to the La Serena offices and Cerro Tololo and Cerro Pachón mountain facilities include:

- Installation of high-efficiency transformers and LED lighting
- Energy-efficient data center management in La Serena and at Rubin Observatory;
- The installation of nearly 800 kW of additional photovoltaic (PV) generation capacity.

Future

NOIRLab has received NSF funding to work towards generating all of Gemini South's mountain electricity needs from photovoltaic panels, thus reducing NOIRLab's carbon footprint by an additional 850 tons of CO₂ equivalent. When additional funds become available we have plans to begin the following:

- High-efficiency transformers and window/door replacements at Kitt Peak and in Tucson
- PV system for Kitt Peak
- EV charges at all sites
- Large PV system to power Rubin operations