

Our visualization is a map of the Turks and Caicos Islands showing areas of high and low suitability for the placement of solar panels. Solar panel placement suitability is determined using surface temperature, elevation, slope, and normalized difference vegetation index (NDVI) data. Surface Temperature and NDVI data are derived from Landsat 8 and 9 imagery downloaded from the EarthExplorer website provided by the U.S. Geological Survey (USGS). Images were filtered for cloud cover less than 16% and covered the time period 2022-2024 then combined into a mean composite image. Elevation and slope are derived from the ASTER Global Digital Elevation Model V003 provided by NASA EarthData. A shapefile of the Turks and Caicos boundaries was downloaded from the Humanitarian Data Exchange. We hope this visualization will advance the Climate Action Sustainable Development Goal as it provides a starting point for assessing the installation of solar panels and transitioning to a renewable source of energy on an island nation that currently receives most of its power from fossil fuels. Data processing and visualization was performed using QGIS and Python using the rasterio, shapely, geopandas, and numpy packages. Heroku is used to host the website containing the visualizations.