National Aeronautics and
Space Administration

NASA Earth Observations for Energy Management

Tuesdays, June 1, 8, 15, & 22, 2021

10:00-11:30 or 16:00-17:30 EDT (UTC-4)

Energy impacts everything we do, from providing basic services such as cooking and cleaning to providing development opportunities and improving overall quality of life. However, energy management, through energy production, transmission, and distribution, is impacted by environmental and climate conditions, including weather patterns or extremes and climate change. Energy providers are turning to cleaner and renewable energy sources, as well as assessing and implementing actions to make their energy management activities more resilient to environmental hazards. Decision-makers need to better understand where energy resources exist and how they are impacted by physical environmental conditions, weather, and climate.

This training will offer participants an introduction to how NASA EOs can contribute to a greater understanding of energy management applications. The course will summarize priorities and challenges for energy management and how various NASA EOs can support decision-making. Attendees will gain familiarity with a broad set of relevant NASA datasets, tools, platforms, and resources, as well as hear about case studies and real-world applications related to climate resilience, energy efficiency, and renewable energy.

Part 1: Introduction to Earth Observations (EOs) for Energy Management

- We will present an introduction to the energy sector and climate resilience, including how NASA EOs can support efforts in improving climate resilience and sustainability for improved energy management. A demonstration of the ESRI StoryMap for Electric Utilities will be offered to explore various energy-specific data parameters and variables. It will be followed by a question-and-answer session.

Part 2: Using NASA Products for a More Climate Resilient Energy Sector

- We will present various real-world, illustrative examples of the ways in which NASA EOs may be combined with other datasets to better understand the impact of extreme events, such as wildfires and hurricanes, on energy infrastructure. Additional examples focused on the application of NASA EOs for monitoring renewable resources for energy management will also be presented. Participants will be encouraged to participate in a question-and-answer session with presenters.

Part 3: NASA Resources for Renewable Energy and Building Energy Efficiency Applications

- We will present an overview of the Earth Observations (EOs) data products available through the NASA Prediction of Worldwide Energy Resources (POWER) Project to support Renewable Energy and Building Energy Efficiency Applications. Including how the EOs data products are produced and how they can be accessed through the POWER web services and tools. This will be followed by a question-and-answer session.

Part 4: Data Access: Utilizing the NASA POWER Web Services for Energy Related Applications

- We will present a brief review of the NASA Prediction of Worldwide renewable Energy Resources (POWER) Project web services, tools, and key partnerships that facilitate usage of NASA Earth Observations (EOs) data. Then we will discuss illustrative case studies of how POWER data are used for applications in solar energy, wind energy, and energy efficiency, followed by a question-and-answer session.

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