

March 5, 2021
12 – 1 pm

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Dr. Martin Keller

Research at the National Renewable Energy Laboratory (NREL) to Enable a Decarbonized Economy by 2050

Presented by Dr. Martin Keller, Director of NREL

Integrated
Energy Pathways

Electrons to
Molecules

Circular
Economy for
Energy Materials

AzSEC

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Abstract & Bio

[Abstract](#)

The United States Department of Energy's National Renewable Energy Laboratory (NREL) conducts advanced scientific research that is transforming energy. Three initiatives are pivotal to our strategy at NREL and drive most of our research: Integrated Energy Pathways, Electrons to Molecules, and Circular Economy for Energy Materials. To formulate our strategy, leaders at NREL deliberated upon the following assumptions:

- Growth of energy use in the developing world will far outpace growth elsewhere.
- Global renewable power demand will grow.
- Hydrocarbons will remain a necessary part of the global energy mix.
- Urbanization trends will dominate new infrastructure growth.
- Electrification and electric vehicle adoption will grow strongly.
- Demand for high-density liquid fuels will grow.
- Digitization, data, and decentralization will be strong drivers of the energy transition.

These same assumptions must be considered as implementation plans are developed to decarbonize the economy by 2050. Toward this end, NREL researchers are working to understand how to control the millions upon millions of power electronics that will interact with the grid on a broader scale while still ensuring that the grid is resilient, reliable, and secure.

[Bio](#)

Martin Keller has served as Director of the National Renewable Energy Laboratory (NREL) and President of the Alliance for Sustainable Energy—the company that operates NREL for the U.S. Department of Energy—since 2015. Under his leadership, the number of full-time employees at NREL has increased by more than 32%. Martin is a visionary leader who is committed to people, teams, and partnerships. He innovatively and pragmatically applies private sector best practices at NREL to achieve game-changing scientific outcomes. Working collaboratively with his leadership team, Martin developed a strategy for NREL focused on three key initiatives: integrated energy pathways, circular economy, and electrons to molecules. This strategy drives advanced scientific research, programs, projects, and partnerships at NREL.

Martin received his Ph.D. in Microbiology from the University of Regensburg, Germany.