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**A WEBINAR PRESENTED BY**

## THE WATERLOO INSTITUTE FOR SUSTAINABLE ENERGY

**Tuesday June 21, 2022**
**12:00 pm – 3:00 pm**

[How to Join the Zoom Meeting]

# DECARBONIZATION PATHWAYS AND FLEXIBILITY REQUIREMENTS IN THE CHILEAN ELECTRIC POWER SYSTEM

**Daniel Eduardo Olivares Quero**, Associate Professor, Faculty of Engineering and Sciences, and Director, Center for Energy Transition (CENTRA), Universidad Adolfo Ibáñez (UAI)

Several countries are adopting plans to reduce the contaminant emissions from the energy sector through renewable energy integration and restrictions on fossil fuel generation. This process poses important computational and methodological challenges on expansion planning modeling due to the operational details needed for a proper analysis. In this talk, I will first introduce a planning model including an effective representation of the operational aspects of the system to understand the key role of flexible resources for decarbonization. Then, I will discuss the main results of a case study for the Chilean power system, which is currently undergoing an ambitious coal phase-out process, including the analysis of a scenario that leads to a completely renewable generation mix. The results show that highly renewable generation mixes are feasible but rely on an effective balance of the key flexibility attributes.

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**Biography**

Daniel Eduardo Olivares Quero is an Associate Professor at the Faculty of Engineering and Sciences of the Adolfo Ibañez University (UAI), Director of the UAI Center for Energy Transition (CENTRA), and Adjunct Associate Professor at the ECE Department of the University of Waterloo. He has more than 12 years of experience in scientific studies and technical-economic analysis of the electricity sector in the national and international context. He holds a Civil Electrical Engineering degree from the University of Chile, and a Ph.D. in Electrical and Computer Engineering from the University of Waterloo, Canada. Additionally, he is an associate researcher at the Solar Energy Research Center (SERC-Chile), and an associate researcher at the Complex Engineering Systems Institute (ISCI). His research focuses on the development of control schemes, and computational models and tools for the efficient operation and planning of sustainable energy systems. Prof. Olivares has been a consultant on various technical, economic, and regulatory aspects in Chile for the Ministry of Energy, the National Energy Commission, and the National Electrical Coordinator in Chile, as well as international organizations such as GIZ and the Bank World.

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