

# Transitions in Energy Systems

Fall 2022 | SYSE 581A2  
5:15 - 8:00 p.m. Wednesday  
Dr. Tim Coburn

**Dr. Tim Coburn** is a Professor in the Systems Engineering Department at CSU with a joint appointment at NREL in the Joint Institute for Strategic Energy Analysis (JISEA). He previously served as Director of the School of Energy Economics, Policy and Commerce at the University of Tulsa and as Professor of Energy and Operations Management.

## Learn about the future of energy systems

This course will introduce students to the foundational ideas from across the global energy complex, some of which are technical-, scientific-, business-, and policy-oriented through case studies, industry applications, and guest lectures.

Students completing this course will be able to:

- **Identify** what the energy system entails, identifying its main subsystems, components, stakeholders, constraints, and risks.
- **Summarize** what is meant by “energy transition,” addressing the need and rationale for such a change, and identifying the prospective drivers and implications from the business, scientific, social, environmental, and political perspectives.
- **Compare** the advantages, disadvantages, and tradeoffs of competing contemporary energy sources.
- **Evaluate** the relationships among energy policy and practice, governmental regulation, technological innovation, evolving markets, and corporate and environmental sustainability as they relate to the energy sector.

Topics covered in this course:

- Systems thinking in the energy context
- Transitioning to a new economy
- Aspects of energy justice and a "just" transition
- Individual subsystems: electric grid, buildings, transportation, industry & manufacturing, new ventures (hydrogen, small-scale nuclear, etc.)
- Much more!



**A systems approach to today's energy transition.**

**Questions?**

**Dr. Tim Coburn**  
Professor

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**We recommend registering for Fall 2022 classes by August 15.**



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