



# Careers in Clean Energy

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3/20/2025

# About Me: Main Job Responsibilities/Highlights



## Certificate Programs

- Undergraduate: Engineering for Energy Sustainability
- Graduate: Energy Analysis and Policy

## Public Outreach Events

- Sustainable Energy Seminar
- Forward in Energy Forum
- KidWind Challenge

## Other Energy Education

- Collegiate Wind Competition
- Career Workshops/Presentations

**energy.wisc.edu**

**“The evidence is clear: the time for action is now. We can halve emissions by 2030.”**

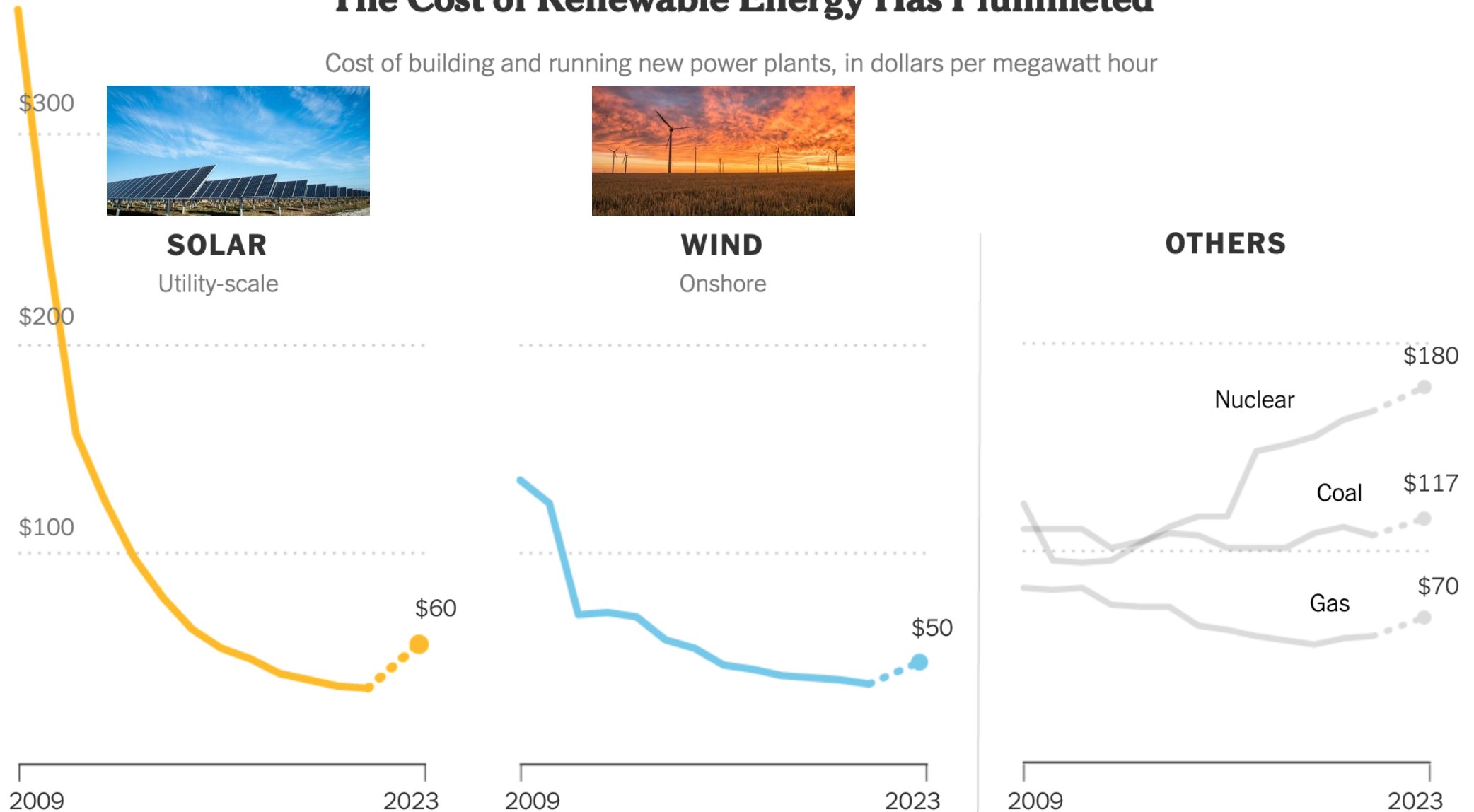
-IPCC Sixth Assessment Report, Working Group III: Mitigation  
(released April 4, 2022)

“The problem is getting worse, but the solutions are getting better.” –  
Prof. Greg Nemet



# The Cost of Renewable Energy Has Plummeted

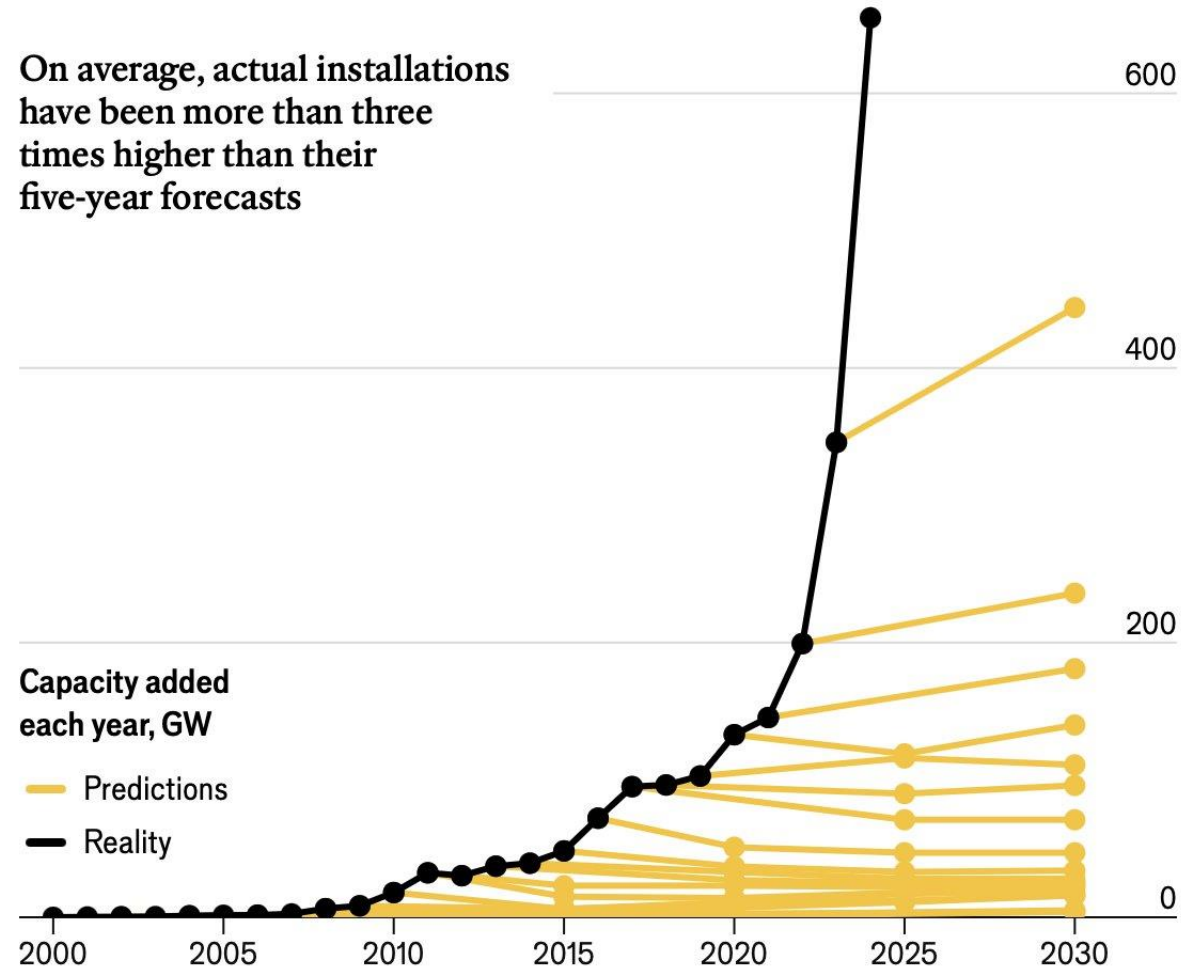
Cost of building and running new power plants, in dollars per megawatt hour



Source: [Lazard](#) • Notes: Charts reflect the mean levelized cost of energy, which captures the price of building and running new power plants but excludes other electrical system costs. Lazard did not release data for 2022. In 2023, costs rose because of supply-chain problems, inflation and other issues. • By The New York Times <https://www.nytimes.com/interactive/2023/08/12/climate/clean-energy-us-fossil-fuels.html>

↓ **EASY PV**  
*how solar outgrew expectations*

On average, actual installations have been more than three times higher than their five-year forecasts



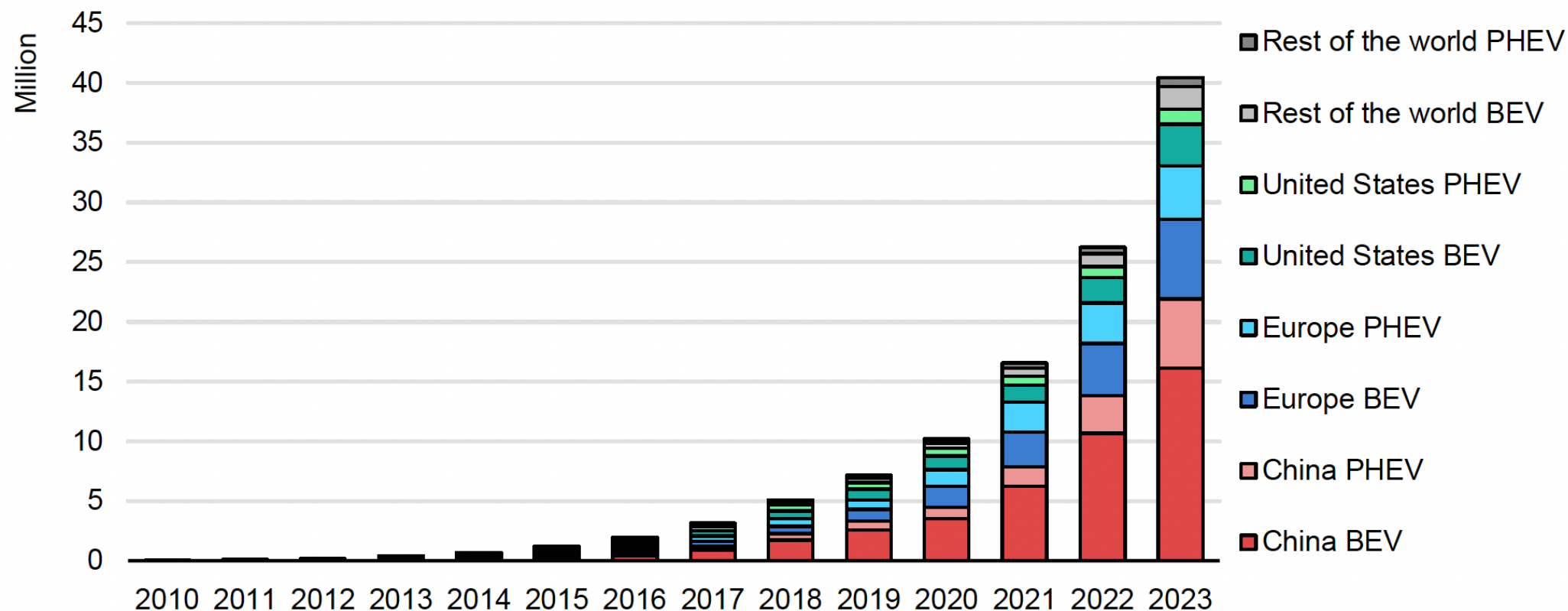
Sources: IEA; Energy Institute; BloombergNEF



# EV Adoption

*BEV/PHEV 18% of all car sales in 2023  
Just 2% in 2018*

## Global electric car stock trends, 2010-2023



IEA. CC BY 4.0.

Notes: BEV = battery electric vehicle; PHEV = plug-in hybrid vehicle. Includes passenger cars only.

Sources: IEA analysis based on country submissions and data from ACEA, EAFO, EV Volumes and Marklines.

# All Types of Clean Energy Leaders Needed

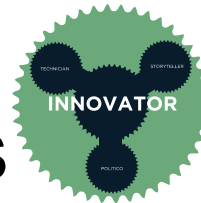
- **Politicos**

Students drawn to careers as politicians, policy advocates, lawyers, lobbyists, judges, activists- people who craft and advocate for a transformative clean energy public agenda.



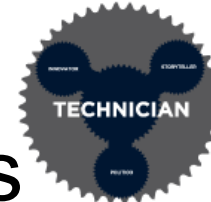
- **Innovators**

Students drawn to careers as engineers, scientists, inventors, entrepreneurs- people who discover and demonstrate the power of clean energy solutions.



- **Technicians**

Students drawn to careers as builders, carpenters, mechanics, electricians, farmers, accountants- people who build and maintain the infrastructure of clean energy solutions.



- **Storytellers**

Students drawn to careers as journalists, marketers, artists, musicians, filmmakers, teachers- people who capture, share and promote our new energy story.



# Discover your climate action





# Employer Types in Clean Energy

- **Electric Utilities**
  - Alliant Energy, Madison Gas and Electric
- **Independent Power Providers**
  - Invenergy, NextEra, Arevon, Hecate
- **Construction/Installation Firms**
  - Mortenson, Findorff, Boldt, Sun Peak
- **Manufacturers**
  - Johnson Controls, GE, Ingeteam, Tesla
- **Chemical/Biochemical Companies**
  - Novozymes, Dupont, IOP
- **Energy Services Providers**
  - Slipstream, Franklin Energy, APTIM
- **Economic, Environmental or Engineering Consulting Firms**
  - Navigant, DNV GL, GDS Associates, Affiliated Engineers
- **Government Agencies**
  - WI Public Service Commission, FERC, U.S. Dept. of Energy, local govt.
- **Non-Profits/Advocacy**
  - Sierra Club, Clean Wisconsin, RENEW Wisconsin, MTERA
- **R&D Firms/Think Tanks**
  - NREL, Argonne Natl Lab, EPRI, RMI
- **Also, plenty of startups (or start your own)!**



# Going from Here to There: Get Informed and Involved

# Get Informed

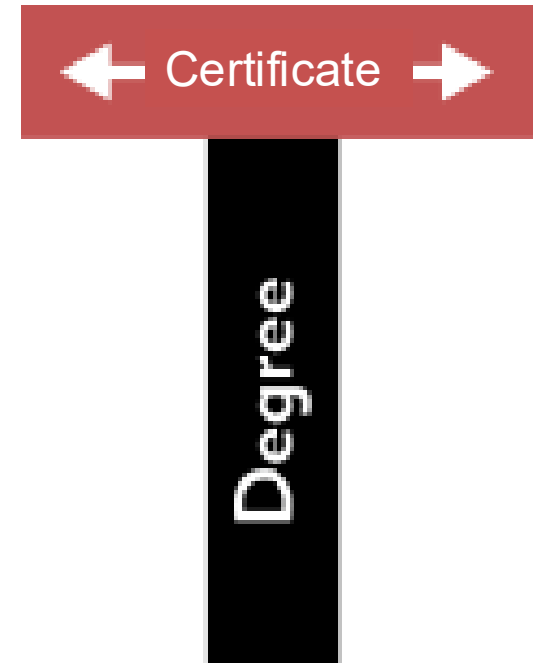
- Take courses in energy to build “energy literacy”
- Explore degree and certificate programs
- Read the news (e.g. Midwest Energy News)
- Attend energy events ([energy.wisc.edu/events](http://energy.wisc.edu/events))

# Educational Programs at UW

- **Certificate in Engineering for Energy Sustainability**
  - Undergraduate certificate
- **Energy Analysis and Policy Certificate**
  - Graduate certificate
- **Environmental Studies Major or Certificate**
  - Take Energy Theme courses
- **Sustainability Certificate**
- **Sustainable Systems Engineering**
  - Online Master's degree

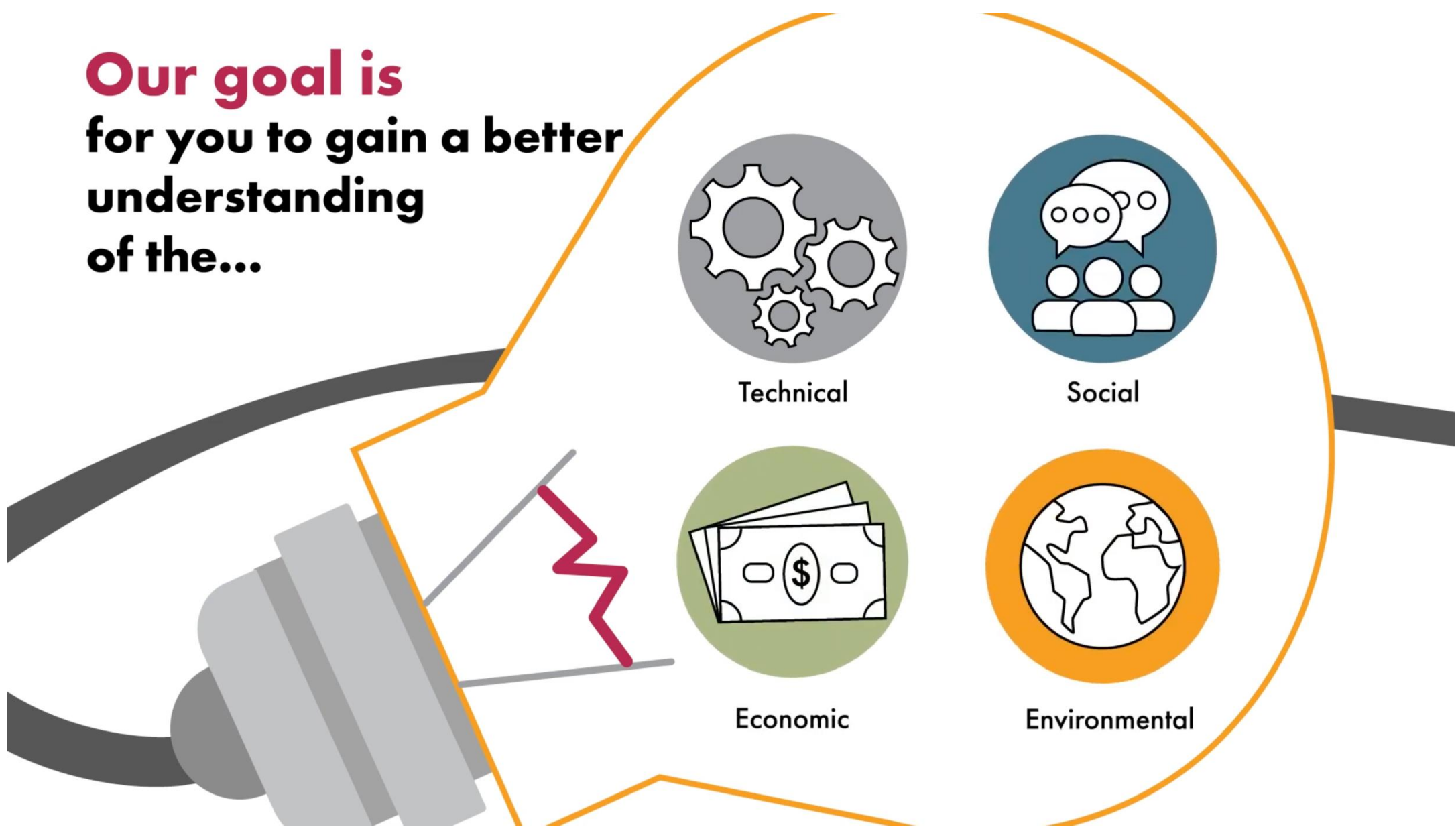
# Why get a certificate?

- Interdisciplinary breadth
  - “T-shaped” graduate
- Mastery of new skills or knowledge
- Building community
- Tell your story to employers
  - Interest/passion, well-roundedness





**Our goal is  
for you to gain a better  
understanding  
of the...**



**factors that shape our society's use of energy resources**

# Example Courses in Each Area

- **Technology**

- Env. St. 367 – Renewable Energy Systems
- Env. St. 411 – Energy Resources

- **Environment**

- Env. St. 339 – Environmental Conservation
- Env. St. 355 – Intro to Air Quality

- **Economics**

- AAE 246 – Climate Change Economics and Policy
- AAE 371 – Energy, Resources and Economics

- **Policy**

- Env. St. 349 – Climate Change Governance
- Env. St. 439 – US Environmental Policy and Regulation


- **Social**

- Env. St. 112: Environmental Studies: Social Science Perspectives

# Get Involved

- Student orgs
  - <https://sustainability.wisc.edu/student-organizations/>
- Internships
- Research Experience
- Study Abroad
- Volunteer/Community Service
- Leadership: ASM Sustainability, Nelson Ambassadors, Leadership certificate

# energy.wisc.edu – Student Resources

**Wisconsin Energy Institute**  
Forward in Energy

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The Wisconsin Energy Institute provides a number of academic opportunities for both undergraduates

# Questions?

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- [www.energy.wisc.edu](http://www.energy.wisc.edu)