

Frequently Asked Questions – CEO IA Program

1. What is the Bureau of Economic Geology?

Established in 1909, the Bureau of Economic Geology is the oldest research unit at The University of Texas. The Bureau is the State Geological Survey of Texas and has been an integral part of the development of the state's economic success through the years. Our mission is to serve society by conducting objective, impactful, and integrated geoscience research on relevant energy, environmental, and economic issues. Our vision is to be a trusted scientific voice to academia, industry, government, and the public, all of whom we serve. More information can be found at following link or QR code.

<https://www.beg.utexas.edu/about/who-we-are>



2. What is an Industrial Affiliate program (IA)?

Industrial Affiliate programs are research consortia that provide gateway for sponsors and university researchers to explore broad research topics of mutual interest. Basic research programs conducted under IAs are supported by multiple companies through annual membership fees. Because IAs do not grant intellectual property rights or require deliverables, members gain access to the University's research programs and relevant faculty and students **without paying indirect costs or overhead**. More information can be found at following link or QR code. <https://research.utexas.edu/oie/agreements-templates/industrial-affiliate-programs-iaps/>



3. What is the Comparing Electricity Options (CEO) project?

Comparing Electricity Options (CEO) is a data-driven analysis of local and global environmental impacts, including greenhouse gas (GHG) and local emissions, land and water pollution and use, associated with supply chains and life-cycle of electricity generation plants.

4. What type of electricity options are being compared in this project?

CEO will start with combined cycle gas turbine (CCGT) plants, and wind and solar plants, with and without batteries. Other technologies may be added as requested by growing IA membership.

5. How will this study be unique?

CEO has developed a multidisciplinary team that broadly covers a life-cycle perspective of the supply chain. Along with the skillset of this large research team (currently 10 members), objectivity is built into the study. Study outputs will be in line with United Nations Goal *to achieve sustainable development in its three dimensions - economic, social and environmental - in a balanced and integrated manner.*

6. What is life cycle assessment?

“Life cycle assessment is a cradle-to-grave or cradle-to-cradle analysis technique to assess environmental impacts associated with all the stages of a product's life, which is from raw material extraction through materials processing, manufacture, distribution, and use.”

<https://www.sciencedirect.com/topics/earth-and-planetary-sciences/life-cycle-assessment>



7. Will this study follow any international standards for assessment and evaluation?

Yes, ISO standards 14040:2006 will be followed to conduct this study.

8. What is the duration of CEO project?

It is anticipated that the full program for the electricity options being considered will require three years to complete. The timeline includes phases with intermediate goals that will provide meaningful outcomes. It is also anticipated that the first set of outcomes will be completed in mid-2022. As in every large-scale project of this nature, there are always opportunities for extension with added objectives (e.g., different energy technologies, additional material/mineral supply chains).

9. Who will benefit from this project?

CEO will benefit those who seek science- and fact-based analyses about the broader environmental implications of different electricity-generating options. Companies investing in mining, oil and gas, renewable energy, battery storage and other energy technologies, legal firms advising these companies, investors in these sectors, and policymakers should all benefit from this project.

10. How would a mining company benefit from joining CEO?

Mining companies are transitioning their heavy machinery and mining equipment toward electric drive motors, which will require intensive energy. Mining companies are seeking energy sources with the lowest carbon footprint and least impact to the ecosystem overall. CEO seeks the same

information, and, as an industry partner in this work, there would be close collaboration toward this goal.

11. What are the benefits for a battery manufacturing company to join this project?

A component of CEO's work is understanding the supply chain of minerals used in batteries, currently including Ni, Li, Cu, and Co. A portion of this work will compare overall environmental impacts of minerals being mined at various locations around the world. A rigorous comparison can help battery companies build their supply chains to minimize environmental impacts.

12. Will this work be published?

Yes, resulting studies will be published in peer-reviewed scientific journals. The Bureau is adept at working with industry and their propriety data. Contact research members with questions about how this works.

13. What media of knowledge transfer are expected from CEO to industry partners?

Outcomes of the work, including publications, nonproprietary data gathered, and other releasable information will be accessible to CEO members.

14. What student interactions are expected?

All MS students will be expected to develop and complete thesis-level research, including presentations at various conferences (budget permitting) and hosted CEO seminars. All IA members will have opportunities to meet with students.

15. What is the history of success of previous IA at the Bureau?

The Bureau of Economic Geology has operated IAs for many years; in some cases, for decades. These programs have conducted cutting-edge research on several geoscience topics, providing opportunities for companies and researchers to work together on common technical issues.

16. How many IAs are currently running at the Bureau?

Currently, the Bureau conducts research within 12 IAs.

17. How can we join the CEO project?

New partners can join and support the CEO project by getting in touch with any team member listed in the Contacts section.

18. Is there a required number of years to commit to CEO?

CEO partners are asked to commit to a 2-year investment. With the understanding of the limitations of forward planning, and there may be some flexibility with this request.

19. How early should an industrial partner join?

Several partners have already signed up and others are encouraged to participate soon.

20. Who should we contact to join the program?

Please reach out to any CEO contacts listed in the contacts section.