

MIT Position Description

Job Title: Research Scientist--2	Position Title: Techno-economic Analysis Research Leader
Pay Grade:	% Effort or Wkly Hrs: 100%
Department: MIT Energy Initiative (MITEI)	Reports to: MITEI's Director of Research
Prepared by: MITEI Deputy Dir. Of Science & Technology	Date: May 11, 2025

Position Overview

Leads techno-economic analyses (TEA) and lifecycle assessments (LCA) associated with key energy transition challenges and technologies in fields such as low-carbon fuels , hydrogen carriers, industrial process decarbonization, carbon management (including carbon capture, utilization, and storage as well as carbon dioxide removal), and energy storage. Also collaborates with researchers across MIT to supply these analyses for energy-related studies and to provide opportunities for graduate students to learn the methodology for their own research.

Principal Duties and Responsibilities (Essential Functions)

Initiates, conducts, and sometimes directs research related to the energy transition, especially techno-economic analyses and lifecycle assessments.

Originates analytical tools and uses existing tools; incorporates knowledge about engineering systems, supply chains, materials/chemical processing, economic constraints, and energy/material flows into advanced models

Initiates and prepares new proposals, prepares project budgets, seeks PI approval, and monitors timelines and deliverables for sponsored projects.

Collaborates with MITEI sponsors on special research projects: develops statements of work, runs and attends periodic meetings, and delivers reports.

Reviews the results obtained by graduate students and postdoctoral researchers and provides expert input, as well as mentoring and guidance on successful completion of projects and products.

Leads and co-authors scholarly peer-reviewed papers.

Participates in professional societies, including attending and presenting at conferences.

Conducts invited peer reviews of articles submitted to scholarly journals

Performs other duties assigned by the PI, including interaction with MITEI sponsors and participation in MITEI sponsor events or proposal reviews.

Supervision Received

Has wide latitude to identify and propose new projects, subject to the advice/approval of MITEI leadership; to conduct day-to-day work without supervision; to make technical decisions about analyses;

and to formulate strategy about presentation and publication of results and completion of reports. Results are typically viewed as authoritative.

Attends weekly meetings with the MITEI Director of Research to provide updates on plans, progress, and challenges and to receive technical advice about formulating analyses in fields that are not in the main area of engineering expertise.

Attends periodic meetings with MITEI's Deputy Director for guidance on goal-setting, career-building, and group management.

Supervision Exercised

Hires, supervises, and financially supports postdoctoral researchers (up to three at a time) and graduate students. Meets weekly with all members of the research group, usually individually, to monitor progress and ensure adherence to research and publication timelines.

Co-advises Ph.D. students in collaboration with MIT faculty.

Hosts visiting students and postdoctoral scientists for special training.

Qualifications & Skills

Earned Ph.D. in an engineering field, with at least 4 years experience conducting techno-economic analysis and lifecycle assessments, of which two should be after completion of the Ph.D.

Strong understanding of energy systems, energy flows, and the energy transition.

Proved record of research productivity in the form of peer-reviewed publications in high-impact journals.

Experience giving presentations at national professional meetings.

Evidence of success in proposing research, managing funding, producing results, and meeting deliverable timelines.

Able to travel to conferences or other professional activities several times per year.

Experience in managing and mentoring early career researchers.

Discretion in managing sensitive issues with MITEI sponsors.

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