Description
Program Summary

The Decarbonization and Energy Virtual Institute (DEVI) is an initiative of Schmidt Sciences' Climate Institute to advance the methodological frontier of decarbonization modeling by addressing key knowledge gaps in complex interdependencies of decarbonization pathways, with an emphasis on yielding actionable insights for policy and technology deployment strategies.

DEVI is soliciting short expressions of intent (EOIs) for two categories of projects : a) sectoral modeling efforts up to USD 3 million over 5 years and b) economy-wide modeling efforts on coupling models from different sectors and scales up to USD 10 million over 5 years. Projects may focus on key geographies that will drive carbon emissions in the near-to-mid term, but methodologies developed must have relevance beyond individual country contexts. Projects must be cross-disciplinary and multi-institutional collaborations targeting fundamental research across four focus areas: a) advances in the understanding of complex interdependencies in decarbonization pathways; b) methodological advances that improve model representation of said interdependencies; c) rigorous uncertainty analyses and model validation; and d) generating context-specific insights highlighting the needs, constraints and impacts of decarbonization pathways.

Our Mission

The goal of DEVI is to support transformative research that advances the state of the art in computational models in order to accurately represent, predict and evaluate energy transition pathways and their varied needs and impacts. This funding effort is motivated by the limitations of current modeling paradigms in capturing complex interdependencies between the energy system and its human and natural contexts that influence the implementation of decarbonization strategies. These interdependencies include: feedbacks and nonlinear dynamics within and across sectors and between energy and climate, multiple decision makers responsible for the transition at different scales, linkages with key resources such as capital, water, land and critical minerals, interactions between national planning and localized implementation, and multiple sources of sometimes deep uncertainty. Limitations in capturing these interdependencies hinder the accuracy and reliability of current models in representing energy systems and evaluating decarbonization pathways to project likely outcomes, and restrict their applicability in informing decision making.

Projects may anchor their modeling efforts within sectoral or national contexts but methodological advances must transcend geographical boundaries to highlight fundamental patterns and interdependencies in energy and decarbonization. We expect new knowledge

APPLY