

CLIMATE LITIGATION

What Role Does Science and Engineering Play in Climate Change Litigation?

➤ This is the first installment of a series of articles addressing the importance of science and engineering in climate change litigation. The objective is to identify and discuss key technical issues that may affect legal outcomes. General topics, such as climate mitigation, adaptation, and resilience will also be discussed in the context of ongoing litigation.

For more than 30 years the “polluter pays” principle has stood for the premise that “responsible parties” pay for cleanups. Recently, several climate change lawsuits have been filed seeking damages and injunctive relief against oil and gas companies, industry groups, and governments. The lawsuits allege that these entities are directly or indirectly responsible for accelerating or amplifying global climate change and should be held liable for localized climate change damages.

The global and local nature of climate change has resulted in various complex legal and technical issues. The U.S. Supreme Court recently heard arguments on a very important procedural question related to climate litigation: Should climate litigation be heard in state or federal courts? In this case, the Mayor and City of Baltimore (Baltimore) sued 26 multinational oil and gas companies which Baltimore claims are

responsible for contributing to climate change. Baltimore alleges that the companies did so by producing, promoting, and fraudulently marketing fossil fuel products long after learning of the climate-related dangers associated with them. Specifically, Baltimore argues that the companies engaged in a “coordinated, multi-front effort” to conceal their collective knowledge of climate change. Baltimore also argues that the companies discredited the “growing body of publicly available scientific evidence.”

Even though the legal issue of state or federal jurisdiction is a procedural one, the behavior of greenhouse gases (GHGs) in the atmosphere is a key element of the case. The defendant oil companies collectively argue that climate litigation should be exclusively heard in federal courts because GHG emissions travel across state and national borders, thus federal law applies under a number of constitutional theories. Baltimore argues that climate related damages (e.g., costs to repair and harden infrastructure) are local and thus fall under state law. The oil companies respond that having cases heard in state court would involve 50 different regulatory programs based on various scientific interpretations and understandings, which would lead to a great deal of uncertainty for the defendants.

Technically, both arguments have merit, and scientific methods have been applied to accurately determine how GHGs behave in the atmosphere. For example, mathematical models that take into consideration atmospheric characteristics such as advection, convection, and pressure gradients have found that GHG emissions and other climate contributors, such as black carbon, can travel across both state and international borders. Further, methods such as monitoring, reporting, and verification (MRV) are used to calibrate climate models and confirm their technical assumptions. MRV can be used to determine the fate and transport GHG compounds and the extent of cross-border migration. Organizations such as the International Standards Organization (ISO) have developed MRV standards for this purpose.

The extent of localized damages due to climate change can also be assessed using scientific and engineering methods. For example, the magnitude and severity of existing or potential climate-related damages and the adaptive measures to prevent

further harm can be modeled using engineering and geospatial visualization techniques. Cost assessments can be made using standard engineering cost-benefit analyses.

Of course, identifying the source of the alleged damages and their extent has nothing to do with the allegation of fraud that is being asserted by Baltimore against the defendants. Eventually, when the lower courts (whether federal or state) hear the underlying case, they will need to resolve the fraud issue. This will most likely involve an expert's review of the factual record, including past marketing, production, distribution, and climate risk studies performed by the oil companies. Experts will need to determine how this information was generated and how the oil companies represented the data to the scientific community and the public.

Whether climate litigation moves forward in state or federal courts, scientific analysis and expert opinions will play an ever-increasing role in addressing the facts and issues in the case and clarifying them for the court.

About First Environment

First Environment is a full-service environmental consulting firm that provides climate change consulting and expert services to clients worldwide, including GHG reporting and verification/validation, mitigation and adaptation planning, risk management, resilience design and implementation, and global standards conformance development and auditing.

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