

The conflict between state and local governments in Colorado over oil and gas regulation has reached new heights in response to the advent of unconventional energy development. Over the last decade, the combination of hydraulic fracturing and horizontal drilling has allowed the oil and gas industry to develop vast new resources—often at the doorsteps of Colorado residents. While the debate is often cast in scientific terms—questions about air pollution, groundwater contamination, induced seismicity, and water use abound—it also touches on fundamental political and philosophical questions. How do you weigh the rights of mineral rights owners against those of surface property owners? How can you effectively protect the public good, which relies both on energy and on a safe and healthy environment? Who has the right to decide where oil and gas facilities are located and how they operate?

These questions are not decided in a philosophical vacuum. Some local communities have answered these questions for themselves with bans and moratoriums on hydraulic fracturing—the legality of which is currently being debated both in the legislature and before the Colorado Supreme Court. A few communities have sought a middle path between state and local control, forging voluntary agreements with industry that aim to address local concerns while not superseding the rights of the state. The town of Erie created some of the first such agreements when they signed Memorandums of Understanding with both Anadarko and Encana in August of 2012, and they have indicated their ongoing dedication to this policy solution with their negotiation of a new Operator Agreement with Encana, signed in 2015.

Understanding how communities and industry can come to mutually agreeable solutions advances the mission of the ConocoPhillips Center for a Sustainable WE2ST, which seeks to promote the joint sustainability of water and unconventional energy resources. True sustainability requires strong relationships among communities, governments and industry. My research, as a graduate fellow of the ConocoPhillips Center for a Sustainable WE2ST, sought to understand Erie's story—what relationships, conflicts, and events led to the creation of these agreements? How effective have these agreements been in achieving their goals of addressing community concerns and preventing future conflict? To answer these questions, I have interviewed key stakeholders in Erie, including representatives from local government, the community, and the oil and gas industry, and I have observed Town Hall meetings from the past five years.

Erie's story touches on two big ideas in academic literature: the role of science in policy making and the features of effective community agreements. The first idea, broadly called 'scientism', identifies the tendency of governments to engage with science to inform public policy, but at the exclusion of other, value-based considerations. This reliance on scientific authority can, at times, lead governments to bolster their own authority and dismiss criticism from the public as uneducated, without considering the validity of value-based disagreements. Erie has challenged this paradigm in multiple ways. Erie's community members have mobilized to gather their own data and use scientific reasoning to inform their arguments throughout the last five years, giving the lie to the idea that the public cannot meaningfully engage with science. At the same time, Erie's Board of Trustees has undergone a sea change, transforming into a governing body that not only responds meaningfully to citizens but also creates room for discussion of ideas beyond the bare scientific facts. These relationships, alone, show that local governments provide fertile ground for novel policy solutions.

However, we must also consider the agreements themselves. Academic literature generally concludes that supraregulatory agreements, like the ones Erie created, are most effective when they: 1) address community concerns, 2) are enforceable, and 3) foster ongoing interaction between the industry and

the community. From the beginning, Erie's agreements effectively addressed community concerns; however, the first agreement relied exclusively on technical and scientific solutions, and failed to be meaningfully enforceable or to foster ongoing interactions. The second generation of agreements has made headway on these fronts, but none of the agreements, thus far, is perfect. The enforceability of these agreements—given the current murky relationship between state and local governments on the issue—remains an open question, and community-industry interactions remain tepid and one-sided. However, the growth I have observed indicates that these agreements hold promise as one potential path forward out of the jurisdictional quagmire we find ourselves in.

Memorandums of Understanding, and other similar supraregulatory agreements, show promise as a potential solution to tensions around unconventional oil and gas development in Colorado. However, in order to create more effective agreements, local governments must step outside of purely technical and scientific solutions, moving instead to innovations in the decision-making processes themselves that ensure ongoing and meaningful communication between communities and the oil and gas industry.