TO MAKE OUR ENERGY SYSTEMS MORE SUSTAINABLE AND address climate change, society must transition its electricity infrastructure toward zero emission sources over the coming century. Many governments have already accepted this fact, passing ambitious policies to bring renewable energy up to 20% or more of the electricity mix within the next decade. Wind, solar, biomass, wave energy, and hydropower are all likely to grow rapidly as fossil fuels are replaced. This shift will require significant investments in infrastructure for electricity generation, transmission, and distribution.

Despite the advantages of shifting to renewable energy sources, it is becoming increasingly clear that siting necessary electricity infrastructure will be challenging. Environmental and social concerns, ranging from impacts on wildlife to neighbors worried about property values or their health, often complicate projects. While national governments set ambitious goals and pass strong policy incentives for investment, including feed-in tariffs and quotas, they often fail to recognize that renewable energy infrastructure will need to be sited in willing communities. And willingness is not always forthcoming.

In this article, we explore some of the reasons why individuals and communities oppose new energy infrastructure, including renewable energy. We discuss the traditional approach to dealing with opposition and the reasons why this approach doesn’t lead to optimal outcomes. We then introduce three ways in which decision-making can be done differently in the quest for better results: the consensus building approach (CBA), public workshops, and deliberative opinion polling (DOP).

The CBA offers an alternative model in which stakeholder representatives are assembled for face-to-face, facilitated dialogue to collaboratively evaluate their disagreements and interests and attempt to devise creative outcomes that leave everyone satisfied. The CBA is designed for public disputes that involve multiple parties and interests, like most energy projects. Various techniques are employed to help parties effectively manage substantive and procedural issues. For example, joint fact-finding (JFF) is used to help parties collectively identify and fill gaps in the data.

Both DOP and public workshops are meant to engage and capture the opinions of the general public. Public workshops are not a new concept, but innovative techniques are now being used to make them more productive. The goal is to shift the emphasis from officials presenting and defending what are, in their minds, foregone conclusions to forums in which deliberation is fostered and opinions are more effectively captured.
Keypad polling is one technology being employed to quickly capture the opinions of a group. DoP offers a new take on the workshop concept, bringing together randomly selected and representative groups of citizens to intensively learn about and deliberate on issues. The goal is to get a representative snapshot of how the wider public might feel if everyone had the time, opportunity, and proclivity to deliberate on a particular set of issues.

All three approaches to deliberation have been applied in a variety of energy- and environment-related situations around the world with significant success, but each also has its limitations. We introduce the CBA, DoP, and public workshops and provide two examples that illustrate their use in practice for energy infrastructure. But before we turn to these examples, we first need to understand the nature of opposition to energy infrastructure projects.

Opposition to Energy Infrastructure
Whether they involve conventional or renewable generation, energy infrastructure projects are often mired in controversy. Since the Chernobyl disaster and the Three Mile Island accident, concern with siting nuclear plants has been significant. For some, nuclear energy is a key part of the transition to renewable energy, yet siting these facilities has become virtually impossible in North America and Europe. Public concerns have extended to siting nuclear waste facilities. The U.S. Department of Energy first considered constructing a nuclear waste repository at Yucca Mountain, Nevada, in 1978. More than 30 years and billions of dollars later the project was scrapped, having never accepted radioactive material.

Hydroelectricity is often no less controversial; damage to the natural environment, cultural landscapes, and communities often engenders fierce opposition. The massive Glen Canyon Dam (Figure 1) on the Colorado River in northern Arizona is a major source of hydroelectricity. More than 50 years after construction began, power generation, environmental, Native American, recreation, and other interest groups are still fighting both in and out of courts. As South American countries build new hydropower capacity, similar problems are arising.

The best locations for wind farms, dams, and other generation facilities are typically not where the demand is, necessitating new transmission lines across private property and sensitive environmental areas. As the 1970s Cooperative Power Association/United Power Association (CU) power line dispute in Minnesota demonstrated, the construction of high-voltage transmission lines across miles of public and private land often brings controversy. As is the case with most energy projects, there are concentrated costs to one community (e.g., power lines overhead) and diffuse benefits to the world at large (e.g., greenhouse gas mitigation). This asymmetry between bearing the costs and reaping the benefits creates significant tension.

Although opposition has traditionally focused on conventional generation projects, such as new coal plants, people are increasingly becoming worried about renewable energy infrastructure. There is often a gap between people’s support for renewable energy in general and their support for specific infrastructure in their communities. Concerns are typically strongest around wind turbines, but resistance can also occur with solar, particularly when ground-mounted on agricultural land, and with other renewables. The reasons why individuals and groups in some communities resist new energy infrastructure vary but include visual impacts on the landscape, potential property value losses, health concerns, and environmental impacts (Figure 2). These concerns may be amplified by the fact that renewables have a larger footprint per megawatt. As distributed energy sources are increasingly used, it is likely that more people will live with generation in their communities; tensions are unlikely to go away.

Typical Approaches to Energy Infrastructure Decision-Making
The obstacles to energy infrastructure development are typically complicated by the fact that no single entity is responsible for proposing projects or making decisions. A
A variety of agencies are concerned with discrete sets of issues, such as permitting or environmental impact assessments. Similarly, many nongovernmental entities are typically focused on narrow sets of problems, such as local wildlife or climate change. The energy developer is mostly concerned with ensuring that the project is approved as quickly as possible. Stakeholders rarely have the same interests, which leads to conflict during planning.

The way in which energy infrastructure project controversies are traditionally handled is less than ideal. When conflict occurs, the institutions to resolve disputes or disagreements—including the courts and political lobbying—are inefficient and lead to winner-take-all outcomes. Proponents may attempt to steamroll their projects by lobbying and invoking their legal rights in an attempt to capture regulators and marginalize opposition. Similarly, opponents do all they can to disrupt projects, taking proponents and regulators to court, launching public campaigns, and sometimes even resorting to civil disobedience. It is rare for proponents and opponents to come to a compromise that leaves everyone satisfied, or at least accepting, of the outcome. Instead, most projects generate win-lose outcomes in which one side gets what they want—the project they planned or a cancellation—and the other side is left with nothing but lingering resentment and a desire to “get them” next time. Furthermore, when delays occur in one project, it can undermine investment in nearby projects, leading to constant calls for “investor certainty” through clarified planning processes.

A better alternative would be a fair, democratic process that engages stakeholders and their communities in deliberation, taking their various interests into account. When successful, these processes should lead to plans and projects that are more creative and considerate and thus that are more likely to be successful.

**The Consensus Building Approach**

The CBA offers an alternative to the conventional ways in which infrastructure-related decisions are made. As L. Susskind, J. Raab, and others have noted, it is particularly useful when projects are contentious or involve multiple parties and multiple decision-making forums, as is often the case with energy infrastructure. Rather than each party engaging in planning, decision making, lobbying, and legal proceedings unilaterally, stakeholders are assembled for face-to-face facilitated dialogue to collectively assess the various dimensions of the project at hand.
and seek creative options that satisfy everyone’s key needs and concerns.

Those with authority are not expected to give it up but rather to engage with the other parties as honest brokers with a willingness to take broadly supported proposals seriously. It is in their best interest to do so to avoid project opposition and delays later. Likewise, experts are not expected to discount the knowledge they have, but rather to bring it to the table for inclusion into the various factors that inevitably weigh on any decision.

In practice, the approach is tailored to meet the needs of each particular context. Professional neutrals are typically engaged to facilitate effective collaborative processes. These facilitators or mediators bring process design experience and an element of neutrality. The CBA is now mature enough that numerous firms offer a wealth of experience around the world, including practices specializing in energy and infrastructure projects.

The first step of a CBA process is typically the preparation of a stakeholder or situation assessment. The project proponent, an agency with oversight, or another key stakeholder (or group of key stakeholders) acts as the convenor, hiring a neutral party to conduct an assessment to get a better idea of the situation. The neutral will interview all relevant parties, using various techniques to ensure that they reach the breadth of people with a stake. The interviews and subsequent report will typically focus on five things:

✔ Who are the key stakeholder groups?
✔ Are they willing to participate?
✔ What are their primary interests and concerns?
✔ How likely is it that an agreement can be reached?
✔ What sort of process might be appropriate?

Provided that the proponents agree to proceed and appropriate representatives are found for each stakeholder group, the next step is to meet and solidify the process. The professional neutral must have the confidence of the group, the objectives must be agreed upon, and it must be clear how those with legal authority are going to use the outcomes from the process. Neutrals will typically work with groups to devise some ground rules and a time line.

With the foundations in place, the next step is to deliberate. What makes the CBA different from conventional negotiations is the emphasis on seeking creative solutions that meet everyone’s needs. This is accomplished via a process in which participants feel comfortable revealing their underlying interests so that they can better understand each other and devise recommendations that offer mutual gains. It would be unrealistic to expect parties to sacrifice anything for no reason but entirely reasonable for them to give on some issues of lesser importance in exchange for an agreement that gives them more of what they care most about. The deliberative process is thus one of value creation: getting all of the options on the table and building a shared appreciation of who cares most about each issue. It takes time, but the results are typically more robust and widely supported than would otherwise be the case.

In processes involving complex technical and environmental issues, like most energy infrastructure projects, disagreements around data are often central. Whether it is air quality, the risk of an accident or habitat loss, opposing parties typically amass reams of conflicting data to support their respective positions. Project proponents downplay the risks and consequences while opponents use data to make technical cases against proceeding. Rather than being arbiters of neutral science, experts become weapons engaged by each side. JFF is one alternative that groups can employ, and Figure 3 outlines the key steps. The group collectively identifies information gaps and points of disagreement, chooses experts that all parties trust, and agrees to accept these data as the standard to be used. Parties will still draw different conclusions from the data, but at least the underlying science can become less contentious and thus less of a barrier to agreement.

Once the options are on the table and substantial value has been created, the task becomes distributing it and crafting an agreement that all parties can live with. This is often accomplished by working off of packages of potential agreements. A party might offer a straw proposal that is particularly good for them but that they think gives others some things they want; the proposer then asks the other parties to identify elements that they cannot live with and how they would change them. Amendments are iteratively made until an agreement exists that everyone can support. Parties will naturally be looking to capture as much value for themselves as they can at this point, but the quest for near unanimity forces them to consider other’s interests. The consequences of walking away from the table are typically uncertainty and less influence over the final outcomes. That being said, no party should accept anything less than what Fisher and Ury call their best alternative to the negotiated agreement.
### Key Steps in the Joint Fact Finding Process

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<th>Assess</th>
<th>Convene</th>
<th>Define</th>
<th>Conduct</th>
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<tr>
<td>Need for JFF</td>
<td>Identify the Scientific or Technical Dispute</td>
<td>Identify a Convener for JFF</td>
<td>Stakeholders Identify the Scientific or Technical Dispute</td>
<td>Stakeholders Jointly Select Experts to Participate in the JFF Study</td>
<td>Stakeholders Present Findings and Recommendations to Their Constituent Groups</td>
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<td>Identify a Convener for JFF</td>
<td>Ground Rules, Roles, Responsibilities, and Timeline</td>
<td>Convener Enlists a Professional Neutral</td>
<td>Stakeholders Frame Overall Mission and Objectives of the JFF Study</td>
<td>Neutral Facilitates Education on Complex Issues (e.g., Modeling, Statistical Analysis)</td>
<td>Constituents Ratify JFF Recommendations</td>
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<td>Convener Enlists a Professional Neutral</td>
<td>Stakeholders Identify Key Issues</td>
<td>Neutral Undertakes a JFF Assessment—Identifies Information/Knowledge Gaps, Needs—Documents Stakeholder Interests—Determines Incentive to Participate</td>
<td>Stakeholders Translate General Questions into Research Questions</td>
<td>Study Team Compares Findings to the Published Literature</td>
<td>Stakeholders Present Findings and Policy Recommendations to the Public and Decision Makers</td>
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<tr>
<td>Neutral Undertakes a JFF Assessment—Identifies Information/Knowledge Gaps, Needs—Documents Stakeholder Interests—Determines Incentive to Participate</td>
<td>Stakeholders Generate Technical Questions</td>
<td>Define Scope of Study</td>
<td>Stakeholders Undertakes the Work, Incorporating Scientific and Indigenous Knowledge</td>
<td>Study Team Clarifies Remaining Uncertainties, Solicits Peer Review as Needed</td>
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<td>Determine That JFF Is Appropriate for Addressing the Conflict</td>
<td>Neutral Identifies and Helps Balance Differences in Stakeholder Capacity</td>
<td>Convene Stakeholder Process</td>
<td>Stakeholders Determine Costs and Benefits of Additional Information Gathering</td>
<td>Experts Translate Findings into Accessible Language</td>
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<td>The process is not over once a preliminary agreement has been reached, particularly when it involves complex technical issues and heterogeneous constituencies. First of all, the representatives that engaged in the negotiations must sell the agreement reached to their respective constituencies. Ideally, the constituents will have been kept abreast of the proceedings and have confidence in their chosen representatives, reducing the challenge of getting buy-in. Contingent agreements are often made in infrastructure projects as one way to account for uncertainty. They might be as simple as a provision requiring that a certain piece of equipment be installed if a particular pollution threshold is reached or as complicated as ongoing collaborative adaptive management, in which the negotiation process does not end but instead reconvenes intermittently to review new information and make iterative decisions. Finally, those with actual decision-making authority must accept the agreement reached and commit to its implementation.</td>
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**The CBA and JFF in Practice: Wind Energy in Falmouth, Massachusetts**

Between 2010 and 2012, the town of Falmouth, Massachusetts, erected two 1.65-MW wind turbines. As soon as the first turbine began to operate, problems arose. Many neighbors living nearby began to report health impacts, including loss of sleep and headaches, which they attributed to the sound—both audible and inaudible—from the turbines. These health impacts have been referred to as “wind turbine syndrome,” which may be reported when new wind projects are built. Affected people living near the turbines...
began to write letters to the local government, arguing that the impacts were never adequately studied or explained to community members before construction and that the turbines should be taken down. In response to these concerns, the town undertook a number of actions—including public forums, multiple sound studies, and commissioning a mitigation options report—to better understand the problems and explore the costs of different responses.

The town’s efforts to address the growing conflict through meetings and consulting reports did not resolve community members’ concerns. In an attempt at compromise, the town began to curtail the use of the wind turbines to reduce noise at certain hours, but this action cost the town financially. By late 2011, the town’s elected representatives decided to bring in a neutral facilitator. The Consensus Building Institute (CBI) was selected, undertook a situation assessment, and convened a JFF process shortly thereafter. The assessment found that stakeholders were unlikely to reach consensus about the ideal outcome—affecting neighbors felt strongly that only turbine removal would relieve their concerns, and others felt equally strongly that this would be the wrong thing to do for the climate and/or the fiscal needs of the town. However, CBI found that there was a need for all stakeholders, and the community as a whole, to understand the range of options for moving forward and the implications of those options. The group would clarify potential long-term solutions and identify key questions and the legitimate criteria to answer them. Next, the group would jointly review and interpret information to evaluate options based on the findings. In addition to these outcome-oriented goals, there were also process goals, including rebuilding trust in the community and providing a venue for transparent information and deliberation about the turbines.

In this case, and in many others like it, it was critical to identify legitimate representatives to speak for the central interests at stake. Participants included five negatively impacted neighbors (including one whose concerns were primarily economic), two people concerned with addressing climate change, two residents concerned about the town’s fiscal situation, two residents concerned with seeing an amicable outcome, and three town employees. To make progress, the group had to accept three key ideas as given: residents’ adverse health experiences, the honest motivations of town employees, and the fact that wind energy reduces greenhouse gas emissions. Given that these ideas were in active dispute, it was clear that the turbines had significantly divided the town.

The group’s main task was gathering information for joint review in an attempt to establish facts about the wind turbines and the consequences if various policy options were chosen. For example, the panel reviewed sound and noise mitigation studies. The process also included a survey of residents living near the wind turbines. This survey helped to give a sense of what proportion of individuals felt impacted and what kinds of compensation affected residents would consider. After the process concluded, a final report was issued outlining the potential options for the town moving forward. These packaged options explained the financial impacts of each potential solution in significant detail. This kind of analysis allows for more informed decision making and, ideally, better solutions for the entire community. The report was given to the town’s Board of Selectmen, who used it as the basis for their recommendation to remove the turbines. This recommendation will go to a town meeting for a vote and then onto a ballot initiative for community approval for the tax increases necessary to fund this step. The report may similarly inform citizens as they decide how to cast their votes.

This case demonstrates the pitfalls of insufficient or ineffective community engagement during the siting of new energy infrastructure and how difficult it is to overcome these conflicts after the facilities are constructed. Information needs to be made available to the public, including potential negative impacts. It may be worthwhile during the planning stage to come up with several options for potential projects and allow the community to devise win-win solutions in advance, through a consensus building process. Massachusetts Clean Energy Center, which funded the facilitation process, is now undertaking a new program to engage with communities at the outset in planning for new renewable energy infrastructure. This approach, which uses up front engagement to find compatible solutions, is likely to prove more effective than resolving disputes after they arise through JFF around existing infrastructure. Although this case provides somewhat of a cautionary tale, JFF helped move a community past impasse to action, by removing key “facts” from the realm of contention, allowing policymakers to decide based on a balanced picture of the options, values, and interests at stake.

Public Workshops and Deliberative Opinion Polling

Public engagement affords opportunities to learn more about what people value and the choices they prefer. Organizers can also benefit from participants’ reflections and insights. The CBA as outlined above focuses on engaging distinct stakeholder group representatives. Public workshops and DOP, or what James Fishkin calls deliberative polling, focus instead on engaging members of the general public.

DOP and the various forms of public workshops vary in design but often focus on presenting participants with background information from a variety of sources, starting questions and tradeoffs, and then asking them to deliberate and share their opinions. The extent to which true deliberation is engendered and participant responses are taken seriously varies widely, but numerous approaches are now being employed to improve process design.

Ideally, workshops are coorganized and designed by key actors that represent varying opinions on the matter at hand. In the energy sector, workshops might be steered and
informed by experts from utilities, regulatory authorities, and environmental organizations. When this happens, participants are more likely to feel that they are getting balanced information and thus are more apt to attend in the first place and feel that their opinions are genuinely being heard.

Well-run workshops typically leave plenty of room for small-group discussion, as that is the venue in which people feel most comfortable and have the greatest opportunity to deliberate (Figure 4). However, there must be effective means through which the results of the small groups can filter up to the larger groups and to decision makers. One way is through the generation and ranking of key points or questions, which can then be shared through a presentation to the larger group.

Participants should know what will happen after the workshop. The purpose of the process should be clear and compelling beforehand so that people feel that their participation will be worthwhile, contributing to something concrete, whether that be decision making around a particular project or a broader policy framework.

Keypad polling is an effective tool for efficiently gathering the opinions of participants. Participants are presented with questions related to their preferences, perceptions, knowledge, and demographics and vote via electronic keypads. The results are instantaneously available to both organizers and the group itself, allowing for quick follow-up and reflection.

The most significant difference between DOP and most public workshops is how participants are solicited and selected. Public workshops are generally open to anyone, and organizers work to keep sessions as convenient, brief, and substantively accessible as possible to attract large and diverse groups. Sessions are promoted via various means. In practice, such workshops generally attract those with strong interest in the issues and who are most able to attend. In contrast, DOP are premised on the selection of random and demographically representative samples that mirror the wider public. Participants are selected using formal sampling techniques and are often paid to attend to incentivize participation and remove barriers.

DOP is typically more intense than open public workshops, providing background materials in advance, engaging participants for a longer time period, and placing even greater emphasis on shared learning and deliberation. Pre- and post-meeting polling is conducted to identify if and how deliberation shifts participants’ opinions. The goal is to get an idea of what the public opinion at large might be if everyone had time to learn about and deliberate on the given issues.

**Workshops and DOP in Practice: Vermont’s Energy Future**

Facing a unique situation in which the contracts for two-thirds of the state’s electric power were set to expire in the coming few years, Vermont took the opportunity in 2007 to assess its energy mix and do some longer term thinking about the various tradeoffs around cost, reliability, environmental impacts, the scale of generation, and energy imports. Rather than the key players—power generators, regulators, and political leaders—making the decisions behind closed doors and then revising plans very late in the game when opposition emerged, a comprehensive process was conducted to proactively engage citizens across the state. Over 1,000 people participated in the Vermont Energy Future process as citizen participants, observers, facilitators, and experts. The engagement process had two main components: a series of regional workshops and a DOP event.

Five regional workshops were held throughout Vermont. Each lasted approximately five hours and was designed to convey necessary background information and then actively engage the participants to generate feedback. After introductory presentations, almost an hour was spent in facilitated small-group discussions around the challenges and options for Vermont. Each group generated and priority-ranked questions for the expert panel that followed. After the panel, a round of keypad polling took place in which the participants were asked more than 40 questions to capture their collective opinions and priorities on key issues. Each workshop concluded with some time for participants to make additional comments directly to the state’s energy commissioner.

The outcomes of the workshops were somewhat surprising. Keypad polling results indicated that participants are generally more concerned about air quality, greenhouse gas emissions, and dependence on nonrenewable resources than about protecting the state’s scenic beauty and, perhaps more surprisingly, than about keeping electricity rates low.
and stable. Participants overwhelmingly expressed support for energy efficiency and renewables over conventional fuel sources. These results do not obviate the concerns of neighbors when a wind farm is proposed nearby nor give utilities free rein to increase rates because they are shifting to renewables. But they do suggest that support for renewable energy infrastructure is high and that regulators, utilities, and others can champion further development, recognizing that opinions often vary and that they will surely still face opposition when project siting becomes concrete.

Workshop participants were generally positive about the experience. In particular, they liked the keypad polling and small group facilitated discussions and assigned the lowest value to the question and answer sessions. This suggests that people are happiest when they are directly engaged in deliberating rather than simply attending conventional meetings as spectators, where they may ask a few questions while experts provide all the knowledge.

The regional workshops were designed to engage a large number of people from across the state. The emphasis was on gathering a variety of Vermonters and creating a space in which they could learn more about the issues, deliberate with others, and ultimately share their opinions. Anyone was welcome to participate, and, while not perfectly reflective of the state’s demographics, the groups were significantly diverse on various metrics.

A more intense two-day statewide DOP with 152 participants was held after the workshops. Participants were carefully chosen to reflect Vermont’s population and incentivized to attend to ensure that even individuals not particularly interested in energy issues were represented. DOP participants were given a 70-page briefing document in advance, which was designed to present a variety of arguments and data from various, and sometimes competing, sources. While more intense, the issues covered at the event were generally the same as those addressed in the regional workshops, and the briefing document was also made available to workshop participants.

In most areas, the DOP yielded similar findings to the regional workshops, including broad support for wind farms and for minimizing air pollution. Both shifted participants’ views on some issues, including increased support for continuing to purchase from Hydro Quebec and increased support for renewables over conventional energy sources. One issue on which there was a difference between the regional workshops and the DOP was the question of nuclear power. Although people were very polarized on this issue in both venues, the regional workshop participants were more anti-nuclear on average. While participants were more informed and cognizant of the tradeoffs after the DOP and positive about the process, the significant costs and lack of substantial differences compared to the outcomes from the regional workshops does raise questions of value and necessity.

The Vermont Energy Future project was legitimate and widely supported by both the general public and key stakeholders for a few key reasons. First, the state demonstrated that it was taking the process seriously and genuinely interested in listening to citizens. The project was authorized by the legislature, endorsed by the governor, and the Joint Energy Committee, and key public servants attended every event. Second, representatives from various constituencies were directly engaged in crafting the process and providing substantive input. A steering committee comprised of the full range of energy-related stakeholder groups spent months developing the 70-page background document and polling questions. This reassured participants that the information they were getting was balanced. Third, neutral facilitators with significant process experience were engaged, with both the steering committee and the workshops and DOP event including Raab Associates Ltd., the CBI, the Center for Deliberative Opinion Research at the University of Texas at Austin, and the Center for Deliberative Democracy at Stanford University.

Reflections and Conclusions

Public workshops, DOP, and CBA are three of the various alternative means of engaging wider groups in decision making around energy infrastructure. There are tradeoffs, and the appropriate approach should be selected based on the goals of the planning process. Sometimes giving everyone the opportunity to participate is most important. Workshops are designed to collect the range of opinions from those who want to share them. For better or worse, it is mainly those who already have strong opinions that attend. At other times, engaging a carefully selected group that mirrors the wider public is key to legitimacy. DOP is designed to understand how the general public might opine if they had the opportunity to engage thoroughly with an issue. The CBA is most appropriate when it is important to get the key stakeholders together to represent their various interests. Ideal processes engage various groups in different ways, but this comes at a cost.

Both DOP and CBA can face problems when the deliberations lead to outcomes that those not at the table—whether the general public or stakeholder constituencies—are not ready to accept, raising questions of representation. Their legitimacy is not always clear. The CBA is premised on the notion that everyone is divisible into stakeholder groups, which is sometimes questionable. “Neighbors” in a wind turbine dispute are, for example, typically a heterogeneous group. In contrast, DOP largely disregards the existence of stakeholder groups, assuming that deliberation can lead to the best outcomes. This may not be realistic given the strong, divergent, and organized interests often at stake. In reality, certain interests are likely to have more of a bearing on the outcomes of any process than others, and it may be disadvantageous to ignore this.

There are often asymmetries in who participates in public hearings and open processes around energy infrastructure conflicts. Those opposed are often louder and more committed than the passively supportive, whether they be protesting
a nuclear plant or a wind turbine. On the other hand, those developing energy projects are typically equipped with better technical information and access to regulators. The CBA aims to mitigate these asymmetries by choosing representatives from various perspectives and engaging them in joint research via JFF. However, these processes are quite time intensive for participants. In practice, those with the strongest interests and greatest resources, including project developers, are often more able and likely to participate compared to those with diffuse interests.

CBA processes are explicitly designed to look for options that have broad support among stakeholders and thus may be most effective at engendering solutions that are implementable and face less opposition. In contrast, DOP and public workshops are more appropriate for educating and collecting opinions and feedback from participants. As such, each may be appropriate at different stages in a process. Workshops are useful early on, when government agencies or project proponents want to present concepts and get an idea of public opinion. CBA is useful when the parameters of a concrete project or policy are being devised. In Falmouth, a workshop-type event in the form of deliberation and a subsequent vote at a town meeting is likely to follow the extensive JFF. In this case, the JFF laid the groundwork for a meeting that will engage a much larger proportion of the community. While certainly not always the case, these different approaches are sometimes more or less suitable at different scales; CBA is often practiced at the project level, while DOP at the wider policy level.

In general, renewable energy infrastructure projects are likely to be more successful if communities are engaged before they are built. Once people begin to experience noise from nearby turbines or worry about a transmission line’s impact on their home prices, the damage is already done. People are unlikely to change their minds about the technology, regardless of the integrity of the engagement process. If community members do not feel that the early stages of the process were fair or just, they are unlikely to be assuaged by the use of JFF, CBA, or any other means of engagement at a later stage. Project proponents and governments with ambitious renewable energy policies will likely pay a high price if they do not provide information in advance, particularly given that negative experiences in one community can spill over into other nearby infrastructure projects. Research on wind energy acceptance in France and Germany confirms this, finding that integrating key stakeholders into the process early on is important for success.

One problem with any of these processes that cannot be ignored is their significant cost in terms of money, time, and other resources. CBA and DOP processes can be particularly expensive and all the more so when elements like JFF are introduced. However, in the long term, their use can actually yield savings if protracted battles are avoided. It may be challenging to find the resources to fund collaborative efforts in the first place.

There are ultimately limits to what any engagement process can offer. Improved decision making must be complemented by other efforts to bring communities on board with new energy infrastructure. With renewables, community-owned projects may generate support because they capitalize on the existing networks of trust and the benefits are shared. Site selection also has a significant bearing: a project on an abandoned brownfield site is less likely to garner opposition than one in a residential neighborhood. These other factors must also be considered to ensure that renewable energy infrastructure development is successful.

Acknowledgments
The authors wish to thank Patrick Field, Jonathan Raab, Stacie Smith, and Lawrence Susskind for their invaluable assistance and feedback on this article.

For Further Reading


Biographies
Todd Schenk is with the Massachusetts Institute of Technology, Cambridge.

Leah C. Stokes is with the Massachusetts Institute of Technology, Cambridge.