power to the people?
what it means to the changing energy landscape

IS IT TRUE THAT THE SHIFT TO cleaner, more sustainable forms of energy is “empowering” energy consumers, putting them at the center of the new, greener energy system of the future? Is power really seeping away from the giant energy behemoths of the past to the nimble, green-energy producers and cooperatives of the future?

In the face of today’s energy landscape, still dominated by relatively few large, centrally structured energy utilities and system operators, these claims may seem overblown. But the energy landscape is changing, and this has major implications for energy research: the transition to a decentralized, low-carbon energy system powered mainly by renewables—which has only just begun—really does open new horizons for energy consumers and energy citizens alike (an important distinction to which I will return). As they come to grips with these changes, energy researchers must not lose sight of the profoundly disempowering effects of energy poverty and a lack of alternatives for carbon-intensive regions, which can prolong the inevitable exit from the dirty fossil fuels of the past.

Just what does empowering consumers mean? For the European Commission, it means essentially three things: 1) giving consumers more information about their energy bills and greater freedom in choosing their energy service providers, 2) enabling consumers to manage their energy consumption via novel digital technologies (such as smart meters and demand-response systems) and to become less dependent on the grid by producing and selling energy themselves, and 3) ensuring the protection of consumer privacy and sensitive data while providing safeguards against catastrophic system failure, a growing concern as the digitization of the energy sector is blurring the borders to other sectors such as home comfort, entertainment, and even health.

“Providing a fair deal to consumers” is a key theme running through the Energy Union “winter package” (see http://ec.europa.eu/energy/en/news/commission-proposes-new-rules-consumer-centred-clean-energy-transition) that the European Commission tabled in November 2016. It spells out how innovation and changes to regulation and market design will give consumers a greater say and more control over their energy choices (along with supplementary measures to protect vulnerable consumers and tackle energy poverty). For example, consumers will be able to access certified online price-comparison tools to find the best suppliers, adjust their energy consumption using smart meters that support variable pricing, and store or sell electricity they have produced themselves using a variety of small-scale generation techniques.

This is an important agenda that will strengthen the position of individual consumers, households, or (small and large) businesses in their dealings with energy service providers. But not only that: it has the potential to fundamentally alter the relations between energy consumers on the one hand and the institutional and governance structures surrounding them on the other. Put differently, aside from turning formerly passive energy consumers into more active and informed ones, empowering consumers can also help to make them act as energy citizens.

Why is this distinction important? Because whether you look at people as consumers or as citizens matters: conceptually, when trying to understand energy-related choices and behavior, practically, when designing policies to address people’s concerns, and of course politically, when people get involved and become active participants in energy-related policy making themselves.

Take, for instance, the case of energy cooperatives. One could argue that these are nothing but groups of individual consumers banding together to get a better deal, say, when purchasing (continued on p. 71)
generating equipment or selling power back to the grid. There is power in numbers, and energy consumers have much to gain by joining forces. But at the same time, such a utilitarian view would be overlooking the idealistic, pro-green and pro-environmental motivations driving at least some energy cooperative members, or, by contrast, the desire to disengage, even become autarchic from society that may be motivating some others. Clearly, there are collective action dimensions at work here that cannot be adequately captured by the notion of energy consumers alone.

Collective action dynamics can also influence the relations between local energy associations on the one hand and energy providers and municipal governments on the other. The falling cost and greater accessibility of renewable energy technologies—solar photovoltaics in particular—has put these associations into a position where they can bargain not just over the price of the energy they consume but also the way in which this energy is produced. For example, the inhabitants of a given city, or even specific city neighborhoods, may decide to produce some or all of the energy they need by installing solar panels on their roofs.

This would obviously affect the way in which they relate to local energy providers—they may no longer need as much gas to heat their homes, for instance, but they may instead have a greater need for energy-related services (e.g., for installing and maintaining solar photovoltaic panels). What they expect from local decision makers—council members, mayors, municipal administrations—may also change, certainly when it comes to the impact of local energy choices on residents’ tax bills, but possibly also with regard to the climate friendliness of broader local energy or transport policies.

Similar issues play out at higher levels also, regionally or even nationally, up to and including fundamental decisions on how to confront climate change and build the low-carbon society of the 21st century. But the main point is the same: as energy consumers get empowered, they begin to make choices, some of which will take them beyond utilitarian cost-benefit calculations and turn them into energy citizens (of course, some people become active around energy or climate issues for non-utilitarian reasons to begin with).

Does any of this matter for energy research and innovation? Of course it does. For example, the drivers and motivations behind energy-related choices and behavior, so important for the success or failure of energy-efficiency measures, have been a central concern for behavioralists and public policy specialists for some time. There is still much we don’t know about the way in which individuals—as well as households or businesses—make these choices. Does it matter whether households are headed by women or men? Do groups—housing co-ops, resident associations, etc.—make different choices than individuals? Are businesses different from households, and if so, in what way? How much of these choices can be attributed to simple cost-benefit calculations, and how do values, gender or social roles, even the way people see themselves and would like to be seen by others, come into the picture? Does naming and shaming work? How about nudging?

The interplay between the choices made by individuals (or households or businesses) and the institutional and governance frameworks surrounding them is an even greater puzzle. In principle, these frameworks should be as open and transparent as possible to encourage maximum engagement and involvement by citizens affected by, for example, plans for a new wind park or additional energy transmission lines in their neighborhoods. In practice, however, citizen involvement is often minimal or token; quite frequently, public engagement strategies are used to generate “social acceptance” for measures planned and decided long in advance. Such strategies can easily backfire, fueling social resistance instead of the hoped-for acceptance and adding to already widespread distrust in politicians and the political process.

So much is known, but how do we make citizen engagement better? What are the hallmarks of a citizen engagement strategy that “works,” allowing policy measures that are in the public interest to go ahead—having been properly aired and debated—but taking due account of the interests and...
concerns of affected communities and individuals? This is much less certain. What, for example, is the best way to bring those concerned around the same table, without the process being hijacked by well-organized pressure groups? What mechanisms work best, well-established methods such as surveys and interviews, combined with public dialogues and debates, or new ones based largely on social media? How should consultative mechanisms relate to elected assemblies and political representatives, who will make the final decisions on the measures considered (or should this be done via public referenda)? Finally, how should businesses and private enterprises go about citizen engagement, over and above their customary engagement with customers to improve the quality of services and products?

Most areas of energy research and innovation struggle with these kinds of questions, all the more so when novel technologies and solutions make the leap from laboratory to marketplace and therefore society (which is why Horizon 2020, the EU-sponsored research framework program, treats the social sciences and humanities as a cross-cutting priority). Yet there is a further frontier: that of energy poverty. Indisputably, when living standards fall due to rising energy prices or falling incomes and livelihoods are endangered by shifts from one energy source to another, the effects can be profoundly disempowering for consumers and citizens alike. Although it would be unfair to blame all of this on the clean-energy transition—retooling the current energy system running on dirty, polluting fossil fuels would require almost as much investment as switching to a new, decarbonized one—it is clear that the corrosive effects of energy poverty, on individuals, regions, even national polities, need more attention.

One way to confront energy poverty is to raise social benefits for vulnerable individuals and families (which, in the European Union, is the prerogative of the member states). But this may not be enough to meet the multiple challenges faced by regions still heavily dependent on fossil-fuel-based industries or the extraction of fossil fuels themselves. What these regions need are comprehensive, multistakeholder strategies in which governments, the private sector, and civil society work together to counter the decline of key industries and the corresponding threat to individual and collective livelihoods. Far from preserving economic models that have become obsolete, these strategies need to make the most of the many opportunities inherent in the clean-energy transition, helping to develop new lines of business, raising overall competitiveness, and thus creating new livelihoods.

Devising ways to reach these goals remains a challenge for decision makers and their constituencies but, also and perhaps, especially for researchers. In the absence of well-thought-out strategies, outward migration is set to continue, with the risk of further fueling economic decline but also the spread of populist ideologies, with ill effects on social and political cohesion, even democratic stability. “Empowering” carbon-intensive regions and their citizens therefore isn’t just about livelihoods and economic well-being, much less about “consumption.” It is about demonstrating that modern, democratic states—acting alone or in the context of intergovernmental or supranational organizations—can devise solutions to pressing societal problems that find the backing of broad popular majorities and that they are reaching out to those in need of special support.

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