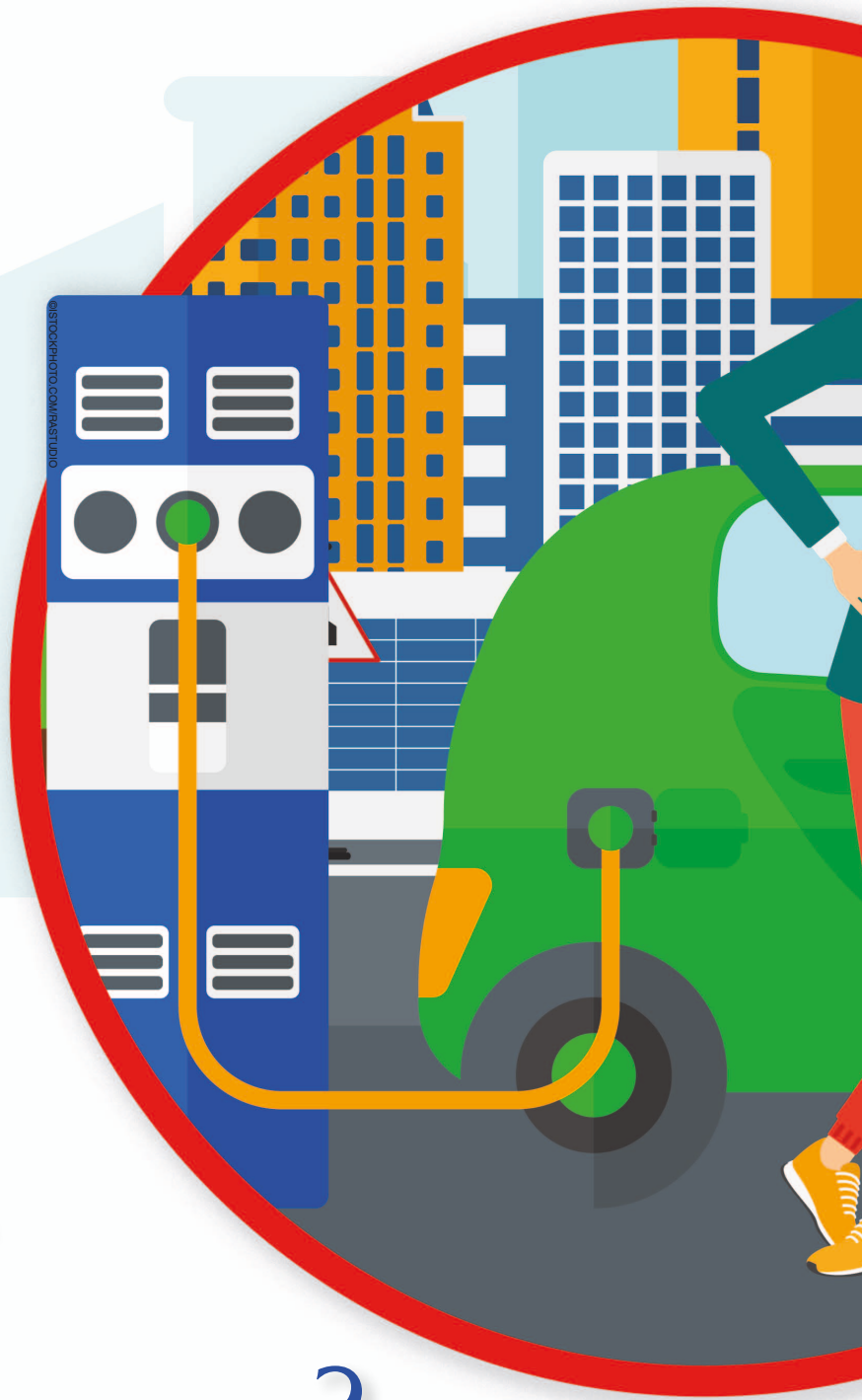


# *What Drives Energy Consumers?*

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## Engaging People in a Sustainable Energy Transition

PROVIDING CLEAN, SAFE, RELIABLE, AND AFFORDABLE energy for people everywhere will require converting to an energy system in which the use of fossil fuels is minimal. A sustainable energy transition means substantial changes in technology and the engagement of the engineering community. But it will also mean changes in behavior and policies and, thus, will require the engagement of the social science community. The choices, preferences, and behaviors of individuals and households are major direct influences on energy demand, and they also shape the acceptability and effectiveness of technologies, strategies, and policies to bring about a sustainable energy transition. A successful transition to a more sustainable energy system will require a wide range of sustainable actions by diverse people across the globe.

In this article, we discuss how to promote the active engagement of people in a sustainable energy transition. We propose that efforts to encourage sustainable energy behavior change will be more effective when they target important drivers of relevant behaviors and remove significant barriers to behavioral change. In addition, it is essential to examine how behavior and lifestyle changes impact individuals' quality of life. We first discuss different types of behavior that can promote a

sustainable energy transition, with a focus on direct energy consumption in the home. Then we elaborate on factors that influence the likelihood that individuals and households will engage in sustainable energy behaviors. We next discuss different types of policies to promote sustainable energy behaviors; the acceptability of such policies will be discussed by Perlaviciute et al. (this issue). We will conclude with how changes in energy behaviors may affect quality of life



**figure 1.** The adoption of renewable energy sources: solar panels [By Pujanak (own work, in the public domain), from Wikimedia Commons.]



**figure 2.** The adoption of sustainable technologies: electric vehicles (Pixabay.)



**figure 3.** Energy-saving behavior: drying clothes outdoors on the line. (Pixabay.)

## Behaviors That Contribute to a Sustainable Energy Transition

A sustainable energy transition is characterized by a system that uses less energy overall and is made up of an increasing proportion of renewable energy. This is a technological problem, but it is also a behavioral problem since it requires the adoption of a wide range of sustainable energy behaviors. Such behaviors include the adoption of renewable resources, e.g., solar power (Figure 1); the implementation of resource-efficiency measures in buildings, such as insulation; the use of more sustainable technologies both large (electric vehicles, as in Figure 2) and small (energy-efficient domestic appliances or low-flow shower heads); technology maintenance, such as changing heating, ventilation, and air-conditioning (HVAC) air filters; and energy-saving behaviors, such as reducing room and water temperatures and line-drying laundry (Figure 3) and walking, cycling, or using public transportation rather than driving (Figure 4). To have maximum impact, policies and programs could first target those behaviors with a substantial potential for reducing fossil energy use. Identifying such high potential targets requires considering both the elasticity of the change (i.e., how much reduction in emissions will occur if the change happens) and the plasticity of the behavior (i.e., likelihood that the targeted behavior will be adopted). As Table 1 demonstrates, sometimes behaviors that could have large impacts if adopted may not be the best starting points for policy because they are hard to change. Even as the low-hanging fruit of behaviors with high plasticity and elasticity are targeted, policies and institutions can be developed that promote and facilitate further changes in behavior required to enhance the sustainability of energy systems.

The adoption of sustainable and resource-efficient technology typically results in higher reductions in energy use and greenhouse gas emissions than changes in daily user behavior, even though daily behaviors may seem easier to change. Moves toward more efficient technology have the



**figure 4.** Energy-saving behavior: taking the train instead of driving. (MaxPixel.)



added advantage of demonstrating to consumers that their efforts are rather effective, at least when savings are visible to the adopter. Although initial financial investments may be needed, technology adoption requires little additional effort or inconvenience once put in place. This is in contrast to changing daily user behavior, such as lowering the thermostat or taking shorter showers, that have to be undertaken repetitively and can be perceived as inconvenient. The general point is that different types of behaviors, such as adopting new equipment, maintenance, and changes in daily actions, can have different drivers and obstacles.

The timescales of behavior changes matter. Some changes may be implemented immediately, such as taking shorter showers, unplugging appliances, and cycling or walking short distances. Other changes require more time. Replacing technology or household retrofits require planning and substantial investment in time and money and may be most readily accomplished at certain critical transition periods, such as when a building is sold. Decisions on household energy retrofits are more likely made when people buy a house because, at that time, other work is usually being done, the costs of energy investments seem relatively small compared to other expenses, and there is often a period when the dwelling is unoccupied, making it easier to do intrusive work.

In addition to timescales, it is also important to consider whose behavior is most influential in making particular decisions that affect fossil energy use. For example, water heaters are typically replaced when the old one begins leaking, and, generally, the replacement is what the plumber brings. So it is the decisions of plumbers and plumbing wholesalers that have the most effect on water heater efficiency as consumers tend to rely on their expertise. Real estate agents can also provide information and shape expectations around efficient and green energy technologies in the housing market.

In addition to being consumers, individuals can also take actions in their role as citizens and as members of organizations. In both of these roles, individual behaviors can have a substantial impact on fossil energy use. Political behaviors can influence the adoption of specific policies. In addition, the public can have strong reactions to both technologies and the siting of energy facilities, which may inhibit their implementation (Figure 5; see also Perlaviciute et al., this issue, for a discussion on public acceptability). Sustainable energy behaviors in organizations, including businesses, governments, and nonprofits, can have a long-lasting and significant impact on reductions in fossil energy use as well, not only by affecting direct fossil energy use within the organization but also via the energy efficiency of products and services offered to their customers and clients.

A sustainable energy system will require the wide-scale adoption of many kinds of behaviors, including resource-efficient technology. Therefore, it is important to consider how changes in different types of sustainable energy behaviors influence one another. It is possible to have positive spillover effects, in which a few initial steps lead to a further commitment

**table 1. Examples of elasticity and plasticity of sustainable energy behavior changes.**

Sustainable Energy Behavior	Elasticity (Potential Emissions Reductions with 100% Adoption, in MtC <sup>1</sup> )	Plasticity (Estimated Adoption Percentage from Effective Programs, in MtC)
Car pooling and trip chaining	36.1	15
Weatherization	25.2	90
Changing HVAC air filters	8.7	30
Low-rolling resistance tires	7.4	80
Water heater temperature	2.9	35
Low-flow shower heads	1.4	80

Note: <sup>1</sup> Metric tons of carbon. Data from Dietz et al. (2009), for U.S. households. More detailed information can be found in Dietz et al. (2009).



**figure 5.** The public can have strong reactions to the siting of energy facilities. (By Mark Dixon from Pittsburgh, PA (CleanEnergyMarch-5-1470215) [CC BY 2.0 (<http://creativecommons.org/licenses/by/2.0>)], via Wikimedia Commons.)

to sustainable behaviors. Positive spillover effects may come from learning that such actions are easy, feeling efficacious, feeling satisfied with having taken the initial steps, or developing an identity as someone who engages in such behaviors. It is also possible to have negative spillover effects, in which undertaking a few sustainable behaviors discourages further actions. Negative spillover may happen when people feel licensed to not act sustainably because they already did their bit or when they use financial savings realized in ways that are fossil fuel intensive; the latter is known as the “rebound effect” (see van der Werff et al., this issue).

A successful transition to a more sustainable energy system will require a wide range of sustainable actions by diverse people across the globe.

## Factors Influencing Sustainable Energy Behavior

Efforts to encourage sustainable energy behaviors will be more successful when they target important drivers of such behaviors. These include both individual factors, such as values, identity, beliefs, and norms, and features of the contexts in which individuals act, such as access to information, financial circumstances, and social network connections. Understanding these influences on behavior is essential to designing successful sustainable energy programs and policies.

### Individual Factors

A first step for any change toward more sustainable energy behavior is that individuals must be aware of how they use energy and what changes may lead toward greater sustainability. Energy use is rather invisible, and people have only a limited understanding of the impact of their actions. Most people underestimate the effect of changes that have large impacts and overestimate the effect of changes that have small impacts because of a well-understood phenomena: judgments are made relative to a reference point (say the energy used by an incandescent lightbulb), and people tend to underestimate the difference between the reference and other energy uses. This is one of many simple heuristics used to assess energy use, and such heuristics are not always accurate. So people may lack the information to behave effectively.

Yet while knowledge is important, it is seldom sufficient. Motivational factors play a key role. Of particular interest are general motivational factors that can affect a wide range of behaviors, making them an important target for promoting consistent sustainable energy behavior. Values are among the most important general motivational factors influencing energy behaviors. Values are defined as the general goals that people strive for in their lives, and there are four types most relevant to understanding sustainable energy behavior. Hedonic values make people focus on what makes them feel good and on ways to reduce effort, while egoistic values make them focus on how to increase their resources (e.g., money or status). People focus on ways to benefit others in altruistic values, while biospheric values make them focus on consequences for nature and the environment. People around the world endorse all four types of values to some extent. Yet people prioritize these values differently, resulting in different perceptions, preferences, and actions. In general, strong hedonic and egoistic values inhibit sustainable energy behaviors that are often

perceived to be somewhat personally costly, inconvenient, or burdensome. In contrast, strong altruistic and particularly biospheric values generally encourage sustainable energy behaviors. While values are a powerful force motivating sustainability behavior, they are hard to change. The extent to which different values are activated in a particular context may change more readily, which affects the extent to which the relevant values influence choices. We come back to this issue later on.

Personal identity, another general motivational factor, may be especially important in promoting consistent engagement in sustainable energy behaviors because of the positive spillover effects referred to previously. When people realize that they engaged in sustainable energy behavior, they are more likely to see themselves as a person who acts pro-environmentally (i.e., to have a strong environmental self-identity), which motivates them to act sustainably again since people are motivated to be consistent and act in line with how they see themselves. Such a positive feedback process is likely to be very important in the transition to a sustainable energy system.

There are many factors in addition to values and identity that influence sustainable energy behaviors. Of course, prices affect energy behaviors. For example, the low price of energy and the market's inadequate integration of environmental costs is one reason people do not conserve energy or switch to renewables, while relatively high prices of sustainable energy innovations can inhibit their adoption.

However, prices are not always as influential as many assume. Many factors motivate people to reduce the use of fossil energy that often predict sustainable energy behavior more strongly than the perceived financial costs and benefits of actions. These include environmental and moral considerations: people may act sustainably because they are motivated to protect the environment and the quality of life of current and future generations. They may engage in sustainable energy behaviors because doing so makes them feel good, either because it is pleasurable or they feel good by being virtuous when engaging in behavior that benefits others and the environment. They may engage in sustainable energy behavior for symbolic reasons: doing so may enhance their social status or fit with how they would like to see themselves. Furthermore, they may act sustainably because of social norms: they think others expect them to do so, or they think most others would do so as well.

It is particularly important to enhance intrinsic motivation so that people voluntarily engage in sustainable energy behavior over and again, without external pressure.

It is useful to differentiate intrinsic from extrinsic motivation. Intrinsic motivation comes from within the individual (e.g., rooted in values and identity) and is driven by internal rewards, satisfaction, or fulfillment. Intrinsically motivated people behave without being coerced and without receiving external rewards because acting morally and doing good makes them feel good and thus yields intrinsic rewards. Intrinsic motivation can be long lasting and self-sustaining. Alternatively, motivation can be extrinsic, done for the sake of some external outcome, such as social pressure or financial consequences. Generally, extrinsic motivation is not a stable source of sustainable energy behavior.

When behavior is motivated by social norms or rules, people may only engage in the relevant behavior when there is a high chance of being socially rewarded or sanctioned. Highly visible behaviors like driving an electric vehicle or installing residential solar can be socially rewarding, but less visible behaviors like installing an efficient air-conditioner or curbing its use would be less visible and less likely to be socially rewarded. Therefore, it is particularly important to enhance intrinsic motivation so that people voluntarily engage in sustainable energy behavior over and again, without external pressure. It may be possible to design programs and policies that engage both intrinsic and extrinsic motivation, for example, by clearly linking an extrinsic incentive to an environmental goal, but care must be taken that the latter does not drive out the former.

Research shows that people do not always carefully consider the costs and benefits of their actions. People can act habitually, without making a conscious decision. They can follow quick cognitive shortcuts in making decisions rather than thinking through the implications of their actions. Habits and decision-making shortcuts are functional, as individuals cannot possibly consider all the costs and benefits of every action. Furthermore, individuals face the same choices repeatedly, so it would not be efficient to reconsider every time they must act. Once habits are formed, change requires making people aware of the consequences of their habits and undeliberated choices by employing strategies that create the opportunity for reflection and encourage an active decision.

### **Contextual Factors**

Contextual factors include spatial and infrastructural, economic, and cultural factors; institutional arrangements; and access to technology, products, services, and information. On the one hand, such contextual factors may affect behav-

ior directly by influencing the opportunities and constraints people face and defining the cost and benefits of different actions. For example, solar panels are easy to install on some houses but may not be very feasible for others. Contextual factors also define the financial costs, time and effort, convenience, and the social approval and disapproval of behaviors. These factors can vary across social groups and affect the equity effects of sustainability policies. For example, income tax rebates for energy efficiency may provide little benefit to low-income households that do not have sufficient funds to make the initial investments and then wait for rebates. Renters can change immediate consumption by adjusting thermostats and water temperatures, but they are not in a position to buy a more energy-efficient furnace or water heater.

In addition to making behaviors harder or easier to carry out, context can encourage individuals to focus on particular consequences of choices. Advertising and product labeling help frame decisions by reminding people of their values and the relationship between those values and particular behaviors. For example, environmental symbols on products may remind people of their biospheric values, making these values more influential in decision making than they might otherwise be. Similarly, materialistic symbols (e.g., price) may remind people of their egoistic values.

### **Strategies to Promote Sustainable Energy Behavior**

Policy to encourage sustainable energy behaviors will be more effective when important drivers of the relevant behavior are targeted and significant barriers to change are removed. As outlined earlier, there are many forms of sustainable energy behaviors, many individual factors that influence them, and a variety of both broad contextual factors and context-specific framings all at play in shaping energy choices. Accordingly, many different strategies can be followed to encourage sustainable behaviors of different groups, targeting relevant individual and contextual factors. We will discuss key strategies later. Policy can be aimed at rewarding or facilitating sustainable energy behavior (pull measures or carrots) or punishing or inhibiting undesired behavior (push measures or sticks), and the related behavior change can be more or less voluntary or imposed. Push measures that impose behavior change can be effective but generally meet more public resistance than pull measures and policy motivating voluntary change.

Efforts to encourage sustainable energy behavior change will be more effective when they target important drivers of relevant behaviors and remove significant barriers to behavioral change.

### ***Changing the Context***

A key first step in policy design is identifying what constraints people face and how behavior change can be facilitated. Often designers of a policy or new technology are not aware of the constraints and concerns of people. So careful evidence-based diagnosis is necessary since intuition about barriers to behavioral change may not be correct. This suggests that those designing programs and policies and developing new technologies should directly engage with interested and affected parties and understand which factors influence the relevant behavior. Such direct engagement can help build mutual understanding and trust and lead to more effective policies. As part of this effort, governments and organizations need to be transparent and accountable when implementing energy policy.

External incentives can be useful to motivate and enable people to engage in sustainable energy behavior by lowering the barriers to action. For example, infrastructure changes such as dedicated bicycle lanes, better public transport infrastructure, or closing off areas to private car traffic may promote sustainable transportation. Likewise, the production and sale of energy-saving products can be regulated (e.g., a legally mandated phase out of incandescent lightbulbs or fleet fuel-efficiency standards).

Another common external incentive is pricing policy, including subsidies, rebates, and taxes. The common understanding is that such pricing policies are rather effective to promote sustainable energy behavior because people are strongly motivated to save money. Well-designed financial incentive programs can be effective when they help overcome financial barriers, such as initial costs of investments in energy-efficient technology or retrofits, which is especially important for programs and policies to have a positive impact on the less affluent. Yet responses to pricing policies are often not as great as might be assumed, suggesting care must be used in using prices as a policy instrument. Notably, as indicated earlier, many other motivations affect behavior besides financial costs and benefits. Moreover, in many cases, financial incentives to promote sustainable energy behavior yield small financial gains, partly because energy is rather cheap, making behavior change seem not worth the effort.

The effects of financial incentives strongly depend on nonfinancial factors, such as the ease of participating in a program or marketing efforts. Besides, financial incentives, an extrinsic motivation can crowd out intrinsic motivation to

engage in sustainable energy behavior. It may even give the impression that one can buy the right to pollute; people no longer feel guilty when acting in environmentally unfriendly ways as they have paid for doing so. As a result, financial incentives may even increase the behavior that was intended to be minimized because people think they have “paid for it.” Of course, it is possible to buy “carbon offsets” to compensate for emissions. The concern is that the psychological effects of monetization might increase emissions even when no offsets are actually in place.

Extrinsic incentives, such as prices and regulations, are often only effective while they are in place. When the incentive is removed or the chance of being caught and sanctioned is seen as low, people may revert to previous behaviors. In some cases, however, extrinsic incentives can result in long-term behavior changes, even after the incentive is removed. Such effects are particularly likely when incentives motivate people to try out the behavior, and they find that the behavior appears to have more beneficial and fewer negative consequences than anticipated, or when new habits have been formed. There is some evidence that incentivizing a behavior for a moderate time period can lead to more positive evaluations and long-term increases in the behavior.

### ***Changing Knowledge and Motivations***

Since many people remain unaware of the links between their energy behavior and critical sustainability issues, it is often useful to provide information about the need for and urgency of a sustainable energy transition and the significance of their actions for sustainability. Such information would enable people to act upon their intrinsic motivation to protect the environment. Information on the environmental impact of different behavior options can often be provided in simple ways, such as via “green” product labeling. Information on costs and benefits of different behaviors will be particularly effective when people start with inaccurate perceptions of such costs and benefits, when such information is from a trusted source and offered at a time and place close to decisions. While information provision is important, it is seldom sufficient since decisions inevitably are based on more than just knowledge. So effective approaches to changing behavior have to avoid the “information deficit” fallacy, assuming that if members of the public had the same information as professionals, their behavior would change.



## Many factors in addition to price and economic self-interest motivate people to engage in sustainable energy behavior.

Yet providing feedback on one's behavior or environmental performance has proven to be effective in encouraging sustainable energy behavior, particularly if it is provided frequently and immediately after or even while the behavior occurs. Comparative feedback, where one's behavior is compared to the behavior of others, also can be effective at encouraging sustainable energy behaviors, especially when people learn that others act more sustainably than they do (as people are motivated to act in line with the norm) and when the comparison group is similar to the receiver (as this provides a more credible reference point).

Strategies can take advantage of the human desire to be consistent, and acting in line with previous statements or actions will strengthen their intrinsic motivation to act sustainably. For example, people are more likely to engage in sustainable energy behavior when they explicitly set the goal to do so, particularly when combined with feedback so that they learn to what extent their goals have been achieved. Commitment strategies, where people make a private or public statement to engage in particular sustainable energy behavior, and implementation intentions, where people additionally indicate how and when they will engage in the relevant behavior and how they will deal with possible barriers, have resulted in long-term behavior changes. Alternatively, people can be made aware of their previous sustainable actions, which will make them realize that they are a person who acts sustainably, thereby strengthening their environmental self-identity. This can provide intrinsic motivation to act in line with this identity in subsequent situations. This also suggests that emphasizing that a person is not yet doing the right thing might weaken his/her environmental self-identity and inhibit consistent sustainable energy behavior.

Behavior modeling, that is, having peers demonstrate sustainable behavior, can also be effective. It both invokes social norms and shows how to carry out a behavior. This suggests that network effects will matter—knowing people similar to you are carrying out a behavior builds on norms and provides information about how to proceed. Community or block-leader approaches, where local volunteers initiate and deliver an intervention program in their neighborhood, build on this logic. Such strategies seem most effective when people have strong ties with their community; people tend to have higher trust in and are more easily persuaded by people who are perceived to be similar to them, such as their neighbors, rather than outsiders.

### ***Tailored Approaches***

It is important to remember that one size does not fit all. Different individual and contextual factors may affect the sustainable energy behaviors of different groups. Thus, tailored approaches are called for, taking into account individual and sociocultural differences and targeting key factors motivating or inhibiting the behavior of the relevant people. As noted, a program targeted toward homeowners may have no impact on renters, and a program based on tax rebates may not be effective for those who cannot bear up-front costs. Information that takes into account the opportunities faced by and the motivations of different individuals appears to be more effective than generic information. For example, information about sustainable energy decisions can be framed in a way that is congruent with values, making it more likely that those who strongly endorse the relevant values will act accordingly.

There is considerable evidence that people are more likely to take up new information that is compatible rather than in conflict with their core values and existing beliefs. So for those who give priority to biospheric values, climate change messages may be effective, while for those who give priority to self-interest, information about financial savings may be more influential. While in mass marketing one would have to include both messages, marketing via social media and other social networks can target specific value implications to specific audiences. Information also can be tailored to the circumstances faced by an individual, so that people only receive information on the most effective options for them, thus insuring salience and reducing information overload. It is crucial to remember that constraints are typically not equitably distributed. Hence, policies have to be attentive to the needs of those who are struggling and empower them to engage in sustainable energy behavior.

It is important to carefully evaluate the effects of strategies to promote sustainable energy behavior. Evaluation programs should not only examine the effects of interventions on energy behavior in the short as well as the long term but also consider why interventions were effective (or not) by studying changes in drivers of behavior. Such insights are important to enhance our understanding of the successes and failures of intervention programs. Furthermore, it is important to compare those who receive an intervention program with a control group who did not participate in the program to be confident that any changes observed were caused by the intervention rather than other factors that may have changed at the same time.



## Sustainable Energy Behavior and Quality of Life

The motivation for moving to a sustainable energy system is driven largely by two concerns. One is to protect the environment and the biosphere. The other is to enhance human well-being. There are inherent ethical reasons for protecting the biosphere, but it is also clear that reducing environmental problems such as anthropogenic climate change is of benefit to humans. However, many perceive that the current fossil-fuel energy system enhances quality of life for the majority of the world's population and presume that behavior changes needed to achieve a sustainable energy transition will threaten rather than enhance human quality of life as such behavior is seen as requiring greater financial expenditures, more time, more hassle, and less comfort. For example, traveling by public transport is seen as less pleasurable than traveling by car, and turning down the heat or air-conditioning can make a home less comfortable. Some of these perceptions are influenced by how society defines social ideals such as "home." If a good home is normatively defined as a roomy stand-alone house in the suburbs, moves toward sustainability, such as living in a smaller attached home closer to the city, will be perceived to entail a lower quality of life.

Various sustainable energy behaviors may enhance an individual's quality of life. For example, most shifts toward higher energy efficiency have substantial economic benefits both to households and nations. Moreover, sustainable technologies, such as light-emitting diode lights or mass transit, can be designed to match hedonic expectations.

More importantly, these examples reflect a limited view of what constitutes a good life. Sustainable behaviors may not only be pleasurable as reflected in the examples above (enhancing hedonic well-being) but also meaningful (enhancing eudaimonic well-being, that is, meaning in life and self-realization). Sustainable energy behaviors are a potent source of eudaimonic well-being; such behavior benefits nature, the environment, and the well-being of others, including future generations. Indeed, acting sustainably is perceived as virtuous behavior, leading to a positive self-image, which yields positive feelings and enhances quality of life. The relationship between energy sustainability and hedonic and eudaimonic well-being deserves more research, especially around ways to design a sustainable energy system that enhances well-being.

### Summary

The current fossil energy system is in transformation. This is not only a technical problem that will challenge engineers but also a problem of human behavior that will challenge social scientists. Interdisciplinary collaborations are required: the technologies that will be most effective at driving the energy system toward sustainability are likely to be those that use knowledge from both engineering and the social sciences. Key elements of design criteria could take into account factors facilitating the adoption and effective use of the new, more sustainable technology. Such design would take

into account not only the elasticity of the technology—the reduced use of fossil fuels that will come with it—but also its plasticity—the features that will assure its support and rapid uptake by the public. Such designs will require new forms of collaboration between engineers and social scientists.

Significant and wide-scale changes in behavior are needed to achieve a sustainable energy transition. People acting as consumers affect the uptake of efficient and renewable energies, technologies, and overall energy use. As citizens, they play an important role in supporting the implementation of policies that aim to encourage sustainable energy behaviors. Efforts to encourage behavior change for a sustainable energy transition will be more effective when they target important individual and contextual factors of relevant behaviors and remove significant barriers to new ones.

We can enable sustainable behaviors by changing the context for actions so that the costs and barriers for action are lowered. At the same time, we can encourage behaviors by targeting individual factors influencing behavior, including knowledge and motivations. Many factors, in addition to price and economic self-interest, motivate people to engage in sustainable energy behavior, including environmental considerations, affect, status and identity considerations, and social norms. The approaches used will be more effective when they are tailored to the motivations and constraints of those being asked to change. Sustainable behavior and lifestyle changes, particularly when such changes are mandated, should enhance rather than degrade individuals' quality of life. Acting sustainably can enhance quality of life as people feel meaningful when engaging in behavior that benefits others and the environment.

### For Further Reading

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