

CITIZENS DISCUSSION REPORT

# THE FUTURE OF ENERGY

DENNIS BOYER AND ADOLF GUNDERSEN, EDITORS

JULY 2011



## The IF Report Process

**TYPICALLY, IF REPORTS** result from a series of discussions that unfold over the course of a year and half. They are organized and conducted by a single IF Fellow, who also edits and collects the material in the form of a report. In this case, an IF discussion project produced an initial set of possibilities, which were then re-drafted and tested in three additional discussion series during the fall of 2011. In all, six discussion panels (meeting in four regions of the country) and seven IF facilitators had a hand in this report.

Generally, participants in IF projects are selected for their ability to think creatively and constructively about the chosen area of concern. Discussion panelists are then divided into two groups: one of expert-specialists; the other of citizen-generalists. The advantage of having two groups is that the resulting discussion report will draw on different and complementary skills. The expert-specialists contribute professional or special knowledge; the citizen-generalists contribute their life experiences and general insight. When they come together at the end of a project, each group's thinking enriches the other's.

Another important feature of the IF process is that IF panels meet "in sanctuary," meaning panelists are guaranteed confidentiality from start to finish. This way, they are not expected or obligated to assert their authority, defend a particular constituency or organization, or avoid probing questions or mistakes. They are free to think and speak openly and creatively. This also means that those who discuss IF reports are free to focus on the ideas presented rather than the personalities or backgrounds of the authors.

In other IF projects, discussion panels are free in another important sense: They make selections or decisions through a deliberate process of exploration and convergence rather than consensus or compromise. Panels can take their time exploring and developing a wide range of possibilities. Convergence occurs as panelists agree on a range of possibilities that they believe are worthy of public discussion rather than ones they personally or collectively endorse. In addition, throughout the sanctuary discussion process, any single panelist can keep alive a particular possibility simply by asking that it be preserved. This procedure helps ensure that the panels achieve their goal of developing a series of contrasting possibilities, rather than a single set of recommendations or conclusions.

If you are interested in further information about the process used to develop IF reports or IF's work in general, we invite you to consult our Website at [interactivityfoundation.org](http://interactivityfoundation.org).



## INTERACTIVITY FOUNDATION REPORTS: A Way to Start Discussions, Not Settle Arguments

	TYPICAL POLICY REPORTS	IF CITIZEN DISCUSSION REPORTS
WHY	<ul style="list-style-type: none"> <li>▶ To make or influence immediate decisions</li> </ul>	<ul style="list-style-type: none"> <li>▶ To provide a starting point for exploratory discussions</li> </ul>
WHAT	<ul style="list-style-type: none"> <li>▶ Analysis of a problem</li> <li>▶ Recommendations for solutions</li> </ul>	<ul style="list-style-type: none"> <li>▶ Areas of concern</li> <li>▶ Diverging possibilities</li> <li>▶ Possible outcomes</li> </ul>
WHO	<ul style="list-style-type: none"> <li>▶ Experts and representatives of interest groups</li> </ul>	<ul style="list-style-type: none"> <li>▶ Expert-specialists and citizen-generalists</li> </ul>
HOW	<ul style="list-style-type: none"> <li>▶ Public discussions</li> <li>▶ Decisions made by compromise or consensus</li> </ul>	<ul style="list-style-type: none"> <li>▶ In "sanctuary"</li> <li>▶ Freedom to speak openly</li> <li>▶ Focusing on ideas, not personalities or participants' interests</li> <li>▶ Decisions made through convergence, while preserving contrasts</li> </ul>

- ▶ This report is a product of the [Interactivity Foundation \(IF\)](#), a nonpartisan public-interest foundation that was established to promote citizen discussions like the one you are about to have. One of IF's roles is to produce discussion materials like this report.

---

---

---

---

---

---

---

---

---

---

# Summary of Possibilities

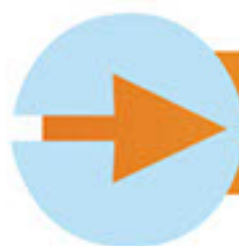
POSSIBILITY	MOTIVE		RESPONSE
	Concern(s)	Goal(s)	
<b>A. NATIONAL PLANNING</b>	<ul style="list-style-type: none"> <li>▶ Reactive policies</li> <li>▶ Poor policy execution</li> <li>▶ Instability</li> </ul>	<ul style="list-style-type: none"> <li>▶ Integrate energy, economic goal</li> <li>▶ Resilience, adaptability</li> </ul>	<ul style="list-style-type: none"> <li>▶ National energy administration</li> <li>▶ Long-term planning</li> <li>▶ Strong market regulation</li> </ul>
<b>B. LOCAL CONTROL</b>	<ul style="list-style-type: none"> <li>▶ Distrust of markets, big government</li> <li>▶ Vulnerability of centralized networks</li> </ul>	<ul style="list-style-type: none"> <li>▶ Weakened corporations</li> <li>▶ More dependable supplies</li> </ul>	<ul style="list-style-type: none"> <li>▶ Local control of planning &amp; production</li> <li>▶ R&amp;D of small-scale technologies</li> <li>▶ Incentives for local production</li> </ul>
<b>C. ENERGY DECLARATION OF INDEPENDENCE</b>	<ul style="list-style-type: none"> <li>▶ Maintain living standards</li> <li>▶ Climate change</li> <li>▶ Terrorism</li> </ul>	<ul style="list-style-type: none"> <li>▶ Energy diversification</li> <li>▶ Improved safety</li> </ul>	<ul style="list-style-type: none"> <li>▶ R&amp;D</li> <li>▶ Smart grid</li> <li>▶ Expand nuclear; deal with nuclear waste</li> <li>▶ Anti-terrorism efforts</li> <li>▶ Expand alternatives</li> <li>▶ Incentives for setups</li> </ul>
<b>D. A PENNY SAVED=A PENNY EARNED</b>	<ul style="list-style-type: none"> <li>▶ Focus on greatest possible short-term efficiency</li> </ul>	<ul style="list-style-type: none"> <li>▶ Encourage commercial, residential, transportation conservation</li> </ul>	<ul style="list-style-type: none"> <li>▶ Zoning</li> <li>▶ Public transportation</li> <li>▶ Change rate structures</li> <li>▶ Incentives and rebates for conservation</li> </ul>
<b>E. ENERGY IS SECURITY</b>	<ul style="list-style-type: none"> <li>▶ U.S.'s role in world affairs</li> <li>▶ Dependence of national security on fossil fuels</li> <li>▶ Military use of fossil fuels</li> </ul>	<ul style="list-style-type: none"> <li>▶ Coordination of energy and national security policies</li> </ul>	<ul style="list-style-type: none"> <li>▶ Use hard &amp; soft power in service of energy policy</li> <li>▶ Conservation</li> <li>▶ Support alternative energy</li> <li>▶ Support economic diversification</li> </ul>



**THIS PROJECT DIFFERS** from the typical sanctuary project panels that the Interactivity Foundation uses to generate its discussion reports. This project started informally among initial online panels (one regional in the Upper Midwest of citizen-generalists and one nationwide of specialist-experts) that were organized among those in the general deliberative community. It was co-facilitated with IF staff and other facilitators playing equal roles in guiding development. It did, however, follow IF's process for exploration and development of contrasting policy possibilities. This preliminary deliberative work was completed in 2010.

This project also differed in that the possibilities were further developed in series of independent citizen discussions organized and facilitated by the editors. Our colleagues made numerous suggestions that influenced the final form of this report, with Jeff Prudhomme providing assistance in improving the framing of several possibilities.

[illegible]



## Area of Concern

**THE PRODUCTION AND** distribution of energy, whether for consumer or commercial use, is an obvious area of concern in the United States. Just as concerning are the troubling difficulties in developing a clear and coherent energy policy when there are deep conflicts among various stakeholders involved in energy discussions. Energy discussions overlap a wide range of other key issues of our time: the roles of science and technology in society, how we plan and live in our communities, how we prepare for the economy of the future, how we distribute societal resources and goods, and how we act as stewards of natural resources. For the purposes of the discussions that served as the basis of this report, energy policy was described as the governance structure for the provision of energy resources for public and private purposes, whether that energy is used to light our communities, power our manufacturing, or propel our transportation systems.



**WE FOUND THAT** some predictable things happen in a discussion of energy policy visions. Many discussants arrive with energy visions that reflect their political predispositions. Others become overly concerned with the technical sides of energy questions and lose sight of goals entirely. The exploration and development of energy policy led to the framing of this report's possibilities as "starting points" for discussion. It is a purposely compact list of possibilities that allows room for discussion of other possibilities, whether obvious or novel. For example, many discussions of this topic will naturally include the possibility that the market could be allowed to operate more or less in a "free" fashion or might include the possibility that sweeping policy is politically difficult and that energy problems might be better tackled by breaking them into subsets of problems and solutions.








## Social and Cultural Concerns

- ▶ What energy concerns seem especially urgent?
- ▶ How might energy policy affect who gets what in society?
- ▶ What are some of the ways to address energy access issues?
- ▶ What affect might energy policy have on where people choose to live—or can live?
- ▶ What affect might energy policy have on public health?
- ▶ What is the proper environmental-protection focus of future energy policies: global climate, the oceans, wilderness, plants and animals, or some combination of these?
- ▶ What role should global climate change play in energy policy?
- ▶ How might population levels affect energy policy?
- ▶ How might energy policy best take into account future generations?
- ▶ To what extent should energy policy try to maintain current standards of living?
- ▶ Are we willing to fight over energy? How far would we take the “hard power” approach?
- ▶ How might energy policy affect land use?
- ▶ What is the role of education in energy policy? Is it stimulating new thinking? Overcoming sentimentalism? Dealing with fear? Or focusing on the technical and governance aspects of energy policy?
- ▶ How might society change if technological breakthroughs created truly cheap and abundant energy?

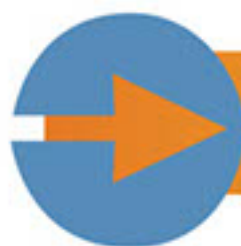




## Economic Concerns

- ▶ What are the likely affects of different energy futures on economic growth?
  - ▶ What does "sustainability" mean in the energy area?
  - ▶ Who owns energy breakthroughs?
  - ▶ How might an "open source" approach work in energy technology?
  - ▶ What are the likely affects of different levels of economic growth on energy policy?
  - ▶ How can energy and economic policy be better integrated?
  - ▶ How might energy policy affect job creation, government revenues, and the competitive positioning of the U.S. economy?
  - ▶ What training and workplace issues might be affected by energy policy?
  - ▶ Who owns the energy breakthroughs? Concern for open-source solutions?
- 
- A man wearing a yellow hard hat and a green polo shirt is standing on a large, blue solar panel array. He is holding a large, yellow, rectangular block. The background is a vast field of solar panels stretching towards the horizon under a clear sky.

[illegible]



## Political Concerns

- ▶ How can energy policy best make up for the shortcomings of market mechanisms—that is, the combined results of individuals' and firms' decisions in the marketplace?
- ▶ How might we sort out issues of centralization v. decentralization, both in government and among corporations?
- ▶ Is it possible to have a coherent energy policy without an overall economic plan? Can one area be planned without the others also being planned?
- ▶ Is energy policy a matter of many small things or a few big things or both?
- ▶ In what way(s) can citizens most effectively influence future energy policy? By impacting the energy policy agenda? By pressing officials for action? Or by holding officials accountable?
- ▶ What might be the proper role of energy workers in energy policy?
- ▶ How might energy corporations be encouraged to play a positive role in our energy future?
- ▶ What should future energy policy be based on: legitimate science, "the will of the people," or some combination of these?
- ▶ In what ways does NIMBYism (people organizing around the call: "Not In My Back Yard!") get in the way of energy alternatives?
- ▶ Might future energy policy require changes in the basic features of the U.S. political system such as federalism, the Electoral College, and the winner-take-all voting system?
- ▶ How might future energy policy be made self-correcting?
- ▶ What political constraints and opportunities might future energy policy face?





- ▶ What is the role of energy policy in reducing carbon dioxide and other greenhouse gases?
- ▶ Does it make sense to attempt to deal with the energy side of emissions apart from climate change controversies?
- ▶ Are green technologies at the tipping point? If not, what would get them there?
- ▶ Is sustainability a model that capitalism can live with or are we addicted to growth?

This image shows a blank sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.



- 

12



## Technical Concerns

- ▶ What is the proper role of conservation in future energy policy? Efficiency? Innovation? How might each be encouraged?
- ▶ How do we encourage the needed technical breakthroughs?
- ▶ How large a role should engineers and scientists play in determining energy policy?
- ▶ Do particular economic sectors, such as agriculture or transportation, deserve particular emphasis in future energy policy?
- ▶ What questions does future energy policy raise in terms of transitions between energy sources?

This image shows a full page of blank, lined paper. It features approximately 20 horizontal blue lines spaced evenly across the page, typical of notebook or legal stationery. The lines are thin and light blue, set against a plain white background. There is no handwriting, printed text, or other markings on the page.

## Possibility A: National Planning

**THIS POSSIBILITY IS** most concerned with a vision of energy-policy making that preserves the status and role of the United States in the global economy. It is a holistic approach that can be compared to ecosystem thinking. It is based on the idea that leaving energy decisions to “the free market” has not been successful in achieving broader strategic goals in the past. The myth of cheap energy has in reality only benefited the largest producers and users of energy while ignoring the costs of high rates of energy use. This possibility calls on the federal government to plan our energy future in a way that would carefully integrate society’s long-term economic and energy goals to ensure that private decisions serve public goals. To be successful, planning would need to be adaptable, not rigid.



Adaptable planning would stress being able to change with changing circumstances and building backup systems. It would rely on smart technology and smart administration. Smart technology would mean greatly expanding R&D, innovation, and technology sharing—things this country is already good at and that government can help do even better. Smart administration means that government would need to set clear and bold priorities focusing on long-term problem solving rather than short-term profits or vested interests. Both would require basing energy-policy making on good science. For this reason, it would be necessary to develop ways of keeping politics out of energy decisions, with independent bodies of experts having the greatest influence.







## Notes

### Specifics

- ▶ Develop a strategic vision of energy and an economy that prioritizes energy issues
- ▶ Include energy footprint/impact statements in all federal policy making and regulation
- ▶ Look for areas to spur economic growth with wise energy use
- ▶ Vigorous regulation that drives needed change and structures a rational market
- ▶ Provide education to citizens on energy technology and regulation
- ▶ Fair solutions to tough choices about locating energy facilities to overcome NIMBYism
- ▶ Diversity of approaches, including hi- and low-tech and local/regional/national solutions

### Possible Outcomes

- ▶ Sense of shared purpose, national mission, optimism
- ▶ Economic growth (new businesses, spin-offs, jobs)
- ▶ Strong environmental protection and response to climate change
- ▶ Clean-energy leadership role for the United States
- ▶ Anticipates difficulty of integrating many components currently administered separately
- ▶ Bureaucracy may become rigid and fail to adapt and/or respond to citizens
- ▶ Might be open to manipulation by the politically powerful
- ▶ Might lull us into thinking the problem is "solved" and dampen innovation over time
- ▶ Creates space for new arrangements that are not constrained by jurisdictional lines or existing industry practices.

## Possibility B: Local Control

**MANY OF OUR** energy problems are caused by a top-down, centralized production system. Massive scale contributes to environmental damage; conflict; declining property values; forced movement of people; and vulnerability to disruption, accidents, and terrorism. Massive scale also tends to require complicated and expensive grid investments. According to this possibility then our best bet is to create more local energy-production capacity and subject it to more democratic control. Businesses and structures can become "energy-positive" locations rather than passive consumers. To achieve this, energy policy would encourage production by small entrepreneurs, local governments, and neighborhood cooperatives. The goal of downsizing energy production would be a locally based energy economy that supplements and, in some cases, replaces traditional large-scale energy production.



### Specifics

- ▶ Break up energy monopolies
- ▶ Eliminate subsidies for centralized energy forms
- ▶ Encourage and support local entrepreneurs in energy businesses, especially those that use "clean" technologies
- ▶ Create incentives for municipal and cooperative utilities, especially in areas not likely to be served by market forces
- ▶ Federal government would have two roles, mainly during a transition phase:
  - A crash program of R&D for small-scale energy production
  - Helping businesses and localities access "best available" small-scale technology







- ▶ Reduces economic and political power of large energy interests
- ▶ Enlarges choices (for consumers and businesses about where to locate)
- ▶ Protects consumers from poor business decisions made by energy companies currently allowed to invest in other sectors
- ▶ Likely to reduce conflicts *within* localities over site selection, environmental protection, waste issues, disaster response, reclamation of abandoned sites
- ▶ May increase conflicts *between* localities over these same issues
- ▶ Positive impact of energy spending in local economies (growth, jobs)
- ▶ Fewer energy-related disasters harming people and/or the environment
- ▶ Reduced use of fossil fuels, making it easier for energy-supplying nations to adjust
- ▶ Loss of "economies of scale" (efficiencies resulting from large-scale operations)
- ▶ Major industries, like consumers, would need to find local alternatives to current energy supplies
- ▶ Considerable confusion and uncertainty during transition
- ▶ Might be risky and hard to recover from if it fails
- ▶ Learning from experiments in developed and developing nations

[illegible]

## Possibility C: ENERGY DECLARATION OF INDEPENDENCE

**THIS POSSIBILITY SHIFTS** the focus from how energy policy is made to the choice of energy supply. The basic policy goal is a United States that charts its own energy policy and lessens dependence on foreign oil and other fuels. This vision of a self-sufficient “energy island” does not rule out any technologies that serve this goal. A balanced energy portfolio may include more nuclear energy, development of clean-coal technology, effective utilization of domestic oil and gas reserves, and transitioning to alternative green-energy sources. This possibility aims above all to preserve Americans’ standard of living from two major energy-related threats: global warming and reliance on imported oil. The only reasonable path open now to our urgent need for energy independence and climate stability while continuing to maintain economic growth may be to radically expand our domestic energy capacity and transition to the lowest carbon options. This will require policies to effectively mobilize government and industry and deal openly and honestly with pollution and waste issues.



### Specifics

- ▶ Greatly expand R&D on safe nuclear-energy production, nuclear-waste disposal, clean-coal technologies, safe extraction of domestic reserves, and transitional alternatives
- ▶ Review expanded nuclear activities and consider nationalization of the nuclear industry
- ▶ Create government and business energy partnerships on a national scale
- ▶ Greater investment in domestic refining capacity and domestic biofuels
- ▶ Create greater incentives for conversion to alternatives
- ▶ Consider use of more emission targets and carbon taxes as methods to reach environmental goals and fund alternative technologies
- ▶ Partner with Canada and other neighboring nations to jointly develop technologies and sources





## Notes

**Possible Outcomes**

- ▶ Reduced greenhouse gas emissions
- ▶ Continued economic growth
- ▶ Less unpredictability due to instability in foreign sources
- ▶ Gains to nuclear energy industry and other domestic sources that can solve carbon problems
- ▶ Increased reliance on scientists and other experts for R&D and planning; less citizen access to energy making
- ▶ Decreased dependence on oil-producing states
- ▶ Increase in environmental conflicts over nuclear siting, increased drilling, increased mining, and the creation of multiple alternative-energy facilities.





## Possibility D: A PENNY SAVED=A PENNY EARNED

**LIKE ENERGY INDEPENDENCE**, this possibility focuses not on the making of energy policy but on where energy policy should start. Rather than focusing on a particular kind of technology, this possibility sees immediate gains being made by emphasizing pieces of the energy puzzle that seem to fall more easily into place: transportation and conservation. Cutting energy demands and intensity will reduce costs in many segments of the economy. Transportation is one of the most intensive and wasteful economic sectors and is currently responsible for a wide range of land use, community planning, and environmental problems. Many other energy usage areas, from private residential to commercial and manufacturing, represent "low-hanging fruit" for conservation methods that are already available or which can be anticipated. Better planning and regulation at all levels of government might help move people and goods more efficiently and by spurring the best technologies and practices available in other economic sectors. This possibility plays to the United States' strength in developing technology and spurring innovation. And none of this would run the environmental and security risks associated with increased reliance on nuclear power, expanding coal-generating capacity, or spurring oil and gas drilling in environmentally sensitive areas.



### Specifics

- ▶ Determine energy footprint of all shipped commodities and personal trips
- ▶ Determine the likely savings generated by implementation of readily available conservation methods
- ▶ Tax transportation energy consumption to account for all costs of infrastructure and to fund efficient alternatives
- ▶ Provide carrots and sticks for utilization of best technologies and practices
- ▶ Encourage living close to places of employment and shopping areas and discourage commuting
- ▶ Provide investment incentives for energy-efficient innovations
- ▶ Planning and investment to optimize connections between modes of transportation
- ▶ End subsidies and utility rate discounts for large energy consumers that serve as disincentives for conservation and innovation
- ▶ Encourage more localized food production to reduce transportation needs





Notes

### Possible Outcomes

- ▶ Reinforces many lifestyle changes consumers are already starting to make
- ▶ Will increase the energy costs to large, "favored" industrial energy consumers who are unmindful of conservation
- ▶ Runs smack into other personal habits that are thought to be freedoms
- ▶ Will tend to focus too much on technical detail and not needed "change of heart"
- ▶ Would likely lead to immediate and concrete benefits
- ▶ Lends itself more readily to policy transitions and gradual changes than possibilities that represent wholesale changes in approach—though it may require deeper crises to drive change
- ▶ May press citizens/consumers to be more mindful and involved than other options
- ▶ Will be resisted by many powerful transportation and industrial interests



## Possibility E: ENERGY IS NATIONAL SECURITY

**LIKE THE PREVIOUS** two possibilities, National Security is a special focus. Our national security now depends on a military that consumes a vast amount of energy and a foreign policy, with considerable focus on nations that produce, transport, and refine energy. There may even come a time when energy shortages threaten our super-power status or, worse, turn into out-and-out resource wars. An energy-conscious national security approach would make more explicit the national security implications of energy policy, carefully coordinate energy and security interests, and prompt a honest citizen dialogue about costs and better informed democratic decision making. We could begin by lessening our reliance on foreign-energy supplies and the military needed to protect those supplies. We would also adjust military technology and its considerable R&D influence on more energy-efficient defense technologies that offer the potential to free military operations from burdensome supply-and-logistical constraints. These steps might do more than other options to lessen the need to use military force and provide economic and efficient ways to project power.



### Specifics

- ▶ Serious conservation efforts to lessen the need for military protection of energy-supplying regions
- ▶ Stop using foreign policy to prop up oppressive energy-producing regimes
- ▶ Stop using the military to protect corporate interests
- ▶ Either stop using the military to protect other nations' energy supplies or charge the nations a fee for the service
- ▶ Develop military technologies that do not rely on carbon energies
- ▶ Use savings for energy R&D
- ▶ Share technology with developing nations in ways that foster clean energy and stabilize their economies
- ▶ Help energy-producing nations diversify their economies
- ▶ Provide energy-production assistance as a key part of disaster relief





## Notes

### Possible Outcomes

- ▶ Greater international financial stability
- ▶ Creates an "eyes-wide-open" policy environment where real reasons for use of hard power are more transparent
- ▶ Reduce conflict and environmental problems from offshore fossil fuel fields
- ▶ Public support of modest "America-first" policy goals
- ▶ May slip into overly nationalistic, aggressive policy
- ▶ Encourages democratic reform in developing nations dominated by "oil dictators"
- ▶ Encourages conservation, further development of energy alternatives
- ▶ Protecting U.S. businesses might slow innovation, new technology
- ▶ Developing countries might benefit less from U.S. investment and support



The background is a vibrant yellow-orange gradient. It features several concentric circles and arrows. A large, solid blue arrow points from the right towards the left, passing behind the text. Several other arrows, outlined in orange, curve in a clockwise direction around the central area. The overall design is dynamic and circular.

**DENNIS BOYER AND ADOLF GUNDERSEN, EDITORS**  
**CHANA GARCIA, COPY CHIEF**  
**CALIDA GARCIA RAWLES, ART DIRECTOR**