

# ENERGIZING KENTUCKY CONFERENCE II REPORT

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## Introduction

In 2008, Kentucky finds itself in an energy and resource dilemma. It sits atop vast coal reserves, and uses this resource to generate some of the cheapest electricity in the nation. This inexpensive electricity has brought much industry and economic growth to Kentucky, and residents have come to expect low-priced power—90 percent of which is produced by burning coal. Kentuckians have also built towns and metropolitan areas characterized by typical American sprawl, where families depend upon automobiles to connect homes, workplaces, schools, shopping malls, and entertainment centers.

But this way of life is being threatened as energy prices rise to previously unseen levels. Crude oil cost increases—the result of heightened global demand and instability in the Middle East—have led to record gasoline prices, which disrupts our automobile-based society. Coal, the source of our low-cost electricity, contributes heavily to greenhouse gases in the atmosphere, and so will become much more expensive as the nation moves to restrict carbon emissions. In short, the prospect of increasing energy costs poses a dramatic challenge to the Commonwealth.

In an effort to help leaders from the energy, business, government, academic, and nonprofit sectors discuss options for the future, four prominent university or college presidents—Jim Ramsey from the University of Louisville, John Roush of Centre College, Larry Shinn from Berea College, and Lee Todd from the University of Kentucky—are sponsoring a series of "Energizing Kentucky" conferences. The first, held in early June of 2008, focused on the energy issues of Kentucky's business community. The second conference, held September 18-19 with a focus on public policy, is the object of this report. The third and final conference will be held April 15-16, 2009 in Lexington, and will focus on the role of Kentucky's K-12 and postsecondary education institutions in tackling this problem. The goal of the three events, as articulated so far, is for Kentucky's "... business, educational, and public policy communities to create a comprehensive energy policy that will (a) develop new and enduring business opportunities, (b) energize science and technology education, and (c) protect the beautiful natural resources of Kentucky ... " 1

## Energizing Kentucky Conference, Session 2: Public Policy

The mid-September 2008 meeting, held at the Henry Clay building in Louisville focused on federal, state, and local policy options for adapting to new energy conditions. Accordingly, the speakers invited to the conference shared a policy orientation around energy and environmental issues. The flow of conference attention moved from a global, national-federal view of energy challenges to a state-level view, and ultimately to a community-level view. Plenary sessions highlighted energy challenges at the national and state levels, smaller breakout sessions focused on local community initiatives, and a plenary session concluded the meeting.

The keynote address launched the conference on Thursday evening with a big picture presentation by *New York Times* columnist Thomas Friedman, author of *The World is Flat* and more recently, *Hot, Flat, and Crowded*. This new volume lays out our energy and environmental dilemmas and argues for mobilizing the nation's technological and scientific resources to wean us from our dependence on fossil fuels for energy production.

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1 Jim Ramsey, John Roush, Larry Shinn, and Lee Todd, "Energizing Kentucky: A job for all of us—Conference will focus on ways Kentucky can go "greener." Louisville *Courier-Journal*, September 14, 2008, p. H 2-3.

The second day of the conference featured a state policy discussion led by Utah Governor Jon Huntsman and Kentucky Governor Steve Beshear. Following this plenary session, conference participants attended concurrent panel discussions by energy policy experts and others involved in state and community-level discussions of energy problems. In an interesting innovation, one of the concurrent sessions was a meeting of the Joint Special Subcommittee on Energy of the Kentucky Legislature. Conference participants concluded the day with a late lunch and closing remarks by Berea College President Larry Shinn.

The report that follows summarizes the remarks of the speakers and panelists and the discussions prompted by the sessions, essentially in the order in which they were presented. We conclude the report with a series of suggested next steps, ideas which may not be found in the "comprehensive policy" document that emerges from the Energizing Kentucky series, but that might nevertheless be useful for leaders and communities across our state

### **Keynote Address: Thomas Friedman**

Thomas Friedman's keynote address was based on his latest book (2008) *Hot, Flat, and Crowded: Why We Need a Green Revolution-and How It Can Renew America*. Friedman's argument is that America has a problem and the world has a problem. America's problem is that we have "lost our groove" in terms of being a world leader politically and economically. The world's problem is that it is hot, flat, and crowded. Friedman asserts that America can get its groove back by taking leadership in energy technology (ET), which will require bold moves by government officials.

Hot, flat, and crowded. Friedman asserts that the world is in the middle of a perfect storm of global warming, global flattening, and global crowding-"three flames that have come together to form a huge, raging fire."

*Hot* refers to the fact that the earth is getting warmer by a scientifically measurable amount each year. While global average temperatures have experienced natural shifts throughout human history, scientists agree that natural variability cannot account for what is happening now. The new factor is the greatly increased emission of carbon dioxide and other greenhouse gasses from the burning of fossil fuels such as coal and oil. In the words of CNN founder Ted Turner, "Too many people are using too much stuff."

*Flat* is Friedman's metaphor for a more level playing field across the globe as more and more people are able to live like middle-class Americans. This has occurred through the introduction of computers, the Internet, and software technologies that enable more people to participate in market economies. While this "flattening" has lifted millions of people from poverty, it has also created more demand for and use of "things" such as cell phones, appliances, and cars that devour energy and emit climate-changing greenhouse gasses. Friedman asserts that the world was not designed for this many "Americans," and if we don't redefine what it means to live like an American, we will "eat up the planet."

*Crowded* refers to population growth. Friedman estimates that the world's population could triple within his lifetime. Much of the anticipated population increase will occur in countries that lack water and energy resources and governing institutions to sustain this growth. If people's basic freedoms and needs are not met, they could be attracted to violence and extremism.

**Five global megatrends.** According to Friedman, the convergence of hot, flat, and crowded is driving five global megatrends past their tipping points: (1) energy and natural resources supply and demand; (2) petrodicatorship; (3) climate change; (4) energy poverty; and (5) biodiversity loss.

*Energy and natural resource supply and demand:* The world was not designed to have so many people living an American lifestyle. In his travels around the world, Friedman has seen cities such as Doha, Qatar and Dalian, China grow into "Manhattans" in just three years. This sort of growth creates a huge demand for energy and natural resources. Friedman illustrates the problem using a unit of measure created by environmentalist Tom Burke: the Americum. The Americum is any

group of 350 million people living like an American. Since the 1950s, the number of Americans on the planet has grown from 2.5 to 9.

*Petrodictatorship* refers to the relationships between oil and power. As hundreds of billions of dollars per year are transferred from energy-consuming countries to energy-producing countries, it is typically non-democratic leaders in oil-producing countries who benefit. Friedman mapped the average global price of crude oil from 1979 to 2006 against the "freedom indexes" of countries dependent on petroleum.<sup>2</sup> He found an inverse relationship between the pace of freedom and the price of oil: as the price of oil increases, the pace of freedom decreases. Thus, the world's dependence on oil contributes to dictatorial governments.

*Climate change*: Friedman says that the first thing to know about climate change is that it will not be global warming, but "global weirding:" hots will get hotter, colds will get colder, wets will get wetter, and dries will get drier. He addresses two important questions on this topic: "Who made it hot?" and "Doesn't Al Gore owe us all an apology?" While natural disasters were once attributed to acts of God, we have increasingly become aware that human activity is a contributing factor. As Friedman states, "We are now playing lead electric guitar in Mother Nature's symphony orchestra." Al Gore owes us an apology for underestimating the speed of climate change. The models presented by Gore in his documentary *An Inconvenient Truth* have proven to be very conservative; the melting of sea ice is occurring at a much more rapid pace than Gore predicted.

*Energy poverty* refers to the fact that 1.6 billion people in the world are not "on the grid," and thus do not have the benefits that electricity provides. This means that they cannot compete locally, much less globally. Now more than ever, economic growth depends on electricity; those without the on-off switch are deprived of a great deal of knowledge and potential.

*Biodiversity loss* is an outcome of the world being hot, flat and crowded as we engage in commerce, road building, overfishing, and urban sprawl. The planet is in the middle of a phase of mass extinction of plants and animals. We are losing one new species every 20 minutes. As a result, we are the first generation of humans who will have to think like Noah to try to save the last two pairs of more and more species.

**The promise of Energy Technology (ET).** Friedman believes that the five problems identified above all have the same solution: a system that will stimulate massive amounts of innovation and deployment of abundant, clean, reliable, and cheap electrons. The company, community, or country that develops such a system will own the next great global industry: energy technology (ET). Friedman believes that country should be the United States.

In order to move toward ET in the United States, a new image of Green must be generated. Rather than being associated with such negative images as "tree-hugger," Green must be thought of as capitalistic and patriotic-the new red, white and blue.

Friedman characterizes the current situation in the U. S. as a "Green Party" rather than a "Green Revolution." Companies and organizations change their logos or present environmentally-friendly images, but fundamental change in our energy infrastructure is not happening. He asks, "Have you ever been to a revolution where no one gets hurt?" He notes that a revolution will not be easy; in fact, it will take the greatest industrial project mankind has undertaken to revolutionize energy production and consumption.

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<sup>2</sup> The freedom indexes are generated by Freedom House, a non-profit organization dedicated to promoting democratic values and opposing dictatorships worldwide.

**How we get there.** Friedman believes that we cannot regulate our way out of the Energy-Climate era. We can only innovate our way out by mobilizing the most effective system for innovation ever created: the U. S. marketplace. In Friedman's words, "There is only one thing bigger than Mother Nature and that is Father Profit, and we have not even begun to enlist him in this struggle." He does not advocate a program like the Manhattan project-the government-led initiative to create a nuclear weapon. He believes that only the free market can generate and allocate enough capital fast enough and efficiently enough to do this work on the timeline and at the scale needed.

But the market will not currently develop ET on its own because the system favors energy from cheap, dirty fuels-primarily coal, oil, and natural gas-creating few incentives for industry to invest in alternative energy sources. To encourage energy innovation will require a re-design of the U. S. marketplace-"an intelligently-designed *system* of policies, tax incentives and disincentives, and regulations" that will fuel the development of alternative energy sources. Examples include a carbon tax, gasoline tax increase, renewable energy mandate, and a cap-and-trade system that indirectly taxes carbon emitters. Without these kinds of price signals from the government, the marketplace cannot take energy innovation to scale because it cannot compete with cheap fossil fuels.

Friedman acknowledges the challenge of moving the American government to take leadership in ET. He suggests that we might move forward if we could be China for a day. While not supportive of China's form of government, he notes that when the Chinese government decides to make a change, it happens almost overnight. For instance, in late 2007 the Chinese State Council-in order to discourage use of petroleum-based products-announced that beginning June 1, 2008, all supermarkets and stores would be prohibited from giving out free plastic bags. Just like that, over one billion people will theoretically stop using thin plastic bags. In contrast, it can take years to implement new policies in the United States, particularly when those policies threaten established systems and behaviors.

Friedman concludes that the United States is either going to be a democratic China or a banana republic. In this case, banana refers to "build absolutely nothing anywhere near anything," reflecting the American mentality of not wanting any energy waste or unsightly energy sources in their communities. If we are to push forward with ET, it will take a courageous American president "to claim, democratically, the authority to forge a more integrated national energy system from the patchwork we now have."

### **Plenary Speaker: Utah Governor Jon M. Huntsman, Jr.**

Republican Governor Jon Huntsman, elected in 2004, had been a leader in energy policy. Huntsman's speech was a call for state and local action on creating sustainable energy policies and programs. He noted that every president since Richard Nixon has made half-hearted attempts to solve the energy problem, but the efforts always fall victim to the lure of cheap fossil fuels. Impatient with these federal attempts, the western states have begun to take steps on their own. Governor Huntsman prefaced his remarks by describing a moment in history that changed the world and created an addiction to oil. He then described the steps Utah has taken toward reducing its dependence on fossil fuels. Governor Huntsman concluded by outlining key components of a national energy policy.

**A moment in history.** Winston Churchill made a short-term strategic decision that had long-term, oil-dependent implications. In 1907, Churchill was serving as first Lord of the Admiralty. He struck up a relationship with John Fischer, an Admiral and "technology czar" for the Royal Navy. Churchill recognized the need to convert the Royal fleet from coal to oil. This was a revolutionary idea at that time, but developed in response to the fact that coal was hard to transport and refuel. Oil, on the other hand, burned less smoke and was easier to store, transport, and refuel. Everyone thought the transition from coal to oil would be impossible, but Churchill converted the Royal Navy Fleet to oil-and the world was forever changed.

**Utah takes leadership.** Governor Huntsman believes a framework is needed for an energy policy, but he is convinced the work will happen at the local level. The federal government will ultimately follow suit, learning from what local governments have done. Utah has taken leadership in a number of ways:

1. *Joined the Western Climate Initiative (WCI)*, a collaboration of seven U. S. governors and four Canadian premiers launched in February 2007. The purpose of the WCI is to collectively identify and implement ways to reduce

greenhouse gas emissions in the region, focusing on a market-based cap-and-trade system. Through participation in the WCI, Utah has set a goal to reduce greenhouse gas emissions to 2005 levels by 2020.

2. *Became a founding member of the U. S. Climate Register*, a nonprofit organization that establishes consistent standards throughout North America for businesses and governments to calculate and report their carbon footprints in a single, unified registry. Huntsman believes that unless you are willing to measure reductions in greenhouse gas emissions, you will not make progress. Through participation in the Climate Register, Utah can calculate its precise carbon footprint.
3. *Created the Governor's Blue Ribbon Advisory Council on Climate Change*. Established in 2006, the Council provided a forum where government, industry, environment, and community representatives could identify proactive measures Utah might take to mitigate the impacts of greenhouse gasses. The approach was inclusive-every stakeholder group involved in climate change and the energy efficiency debate was represented. The Council found that the views of the various stakeholders were more aligned when everyone was in the same room working toward common goals. The state has developed 70 major policy options through this Council, which are now being implemented.
4. *Helped create the Western Renewable Energy Zones (WREZ)*, a joint initiative of the Western Governors' Association and the U. S. Department of Energy. The central goal of the WREZ project is to utilize those areas in the West with vast renewable resources to expedite the development and delivery of clean and renewable energy.
5. *Developed an energy efficiency plan in state government*: To improve its own energy efficiency, state government converted from a five-day work week to four days by lengthening business hours. This saves energy in buildings, and allows the public access to state services earlier in the morning and later in the evening. With so many services now available on-line, there is less need to have offices in operation five days per week.

**Toward a national energy policy.** Governor Huntsman pointed out three issues that the federal government must address to change the national energy policy: (1) *Affordability*: If the days of cheap energy are over, public officials must message that properly; if not, we must get smart about finding the cheap sources. (2) *Energy independence*: We must consider whether we really want to rely on unfriendly countries as our major sources of energy. (3) *Long-term sustainability*: We must recognize that climate change is occurring and develop an energy policy that will reduce climate change and be sustainable over the long term.

Governor Huntsman suggested six areas of focus for a national energy policy:

1. *Conservation*: We need to get smarter about public and private behavior around energy, including developing public transportation and fuel efficient vehicles, improving building design, and engaging in such simple behaviors as replacing incandescent bulbs with compact fluorescent bulbs.
2. *A regulatory infrastructure* must be created that moves the country toward renewable energy sources, including price incentives.
3. *Enhanced transmission capabilities*: We can't have renewables until we have transmission capabilities.
4. *Increased government investment in energy research and development*.
5. *Place a value on carbon*, such as a carbon tax; the economic world must value carbon.
6. *International implications*: There is a distinct and profound international component to the energy problem. China and India are adding new cars and power plants daily. We must be proactive in engaging these countries in the conversation.

**Lessons learned from Churchill and Fischer.** Governor Huntsman believes that we are at a similar crossroads in human history as that confronted by Churchill and Fischer. Oil has become a source of instability and conflict in the world, and we must transition to a new energy world. The technology to make the transition already exists and is being used to some extent, but is greatly underutilized. There are naysayers who believe the transition will be too difficult and expensive, but as happened with oil, there is a dire need for political leadership around this issue. Governor Huntsman believes we have everything we need to move forward; the only thing missing is basic political leadership. We have to dispense with partisanship and rally around the areas for which we have basic agreement.

## Plenary Speaker: Kentucky Governor Steve Beshear

Governor Steve Beshear addressed the energy crisis from the Kentucky perspective, focusing on unique challenges we face because of our dependence on coal. In spite of these challenges, the Governor believes we have the knowledge to make a change, and that it is time to act:

*We are smart enough to fix this situation. What we lack, collectively, is an appreciation of the urgency -and the will to be bold ... Even more so now than 35 years ago, it is incumbent upon us to act immediately, decisively and strategically to change the way this country produces and consumes energy.*

**Kentucky's challenge.** Governor Beshear noted that the challenge for the entire nation is to develop clean, reliable, affordable energy sources that improve our energy security, reduce carbon dioxide emissions and provide economic prosperity. In Kentucky, that mission is especially challenging because of our historic reliance on coal for both energy and jobs. Kentucky accounts for one-tenth of total U.S. coal production. Coal provides more than 90 percent of our electricity, 17,000 high-wage jobs, more than \$1 billion in direct wages and more than \$3 billion in out-of-state sales. While our coal-fired plants offer Kentuckians some of the lowest electricity rates in the country and attract energy-intensive industries, they leave a huge carbon footprint. Kentucky's electric power industry emitted more than 93 million metric tons of carbon dioxide in 2006. The state was ranked seventh in per capita emissions and 13 in overall carbon dioxide emissions.

**Kentucky's emerging energy plan.** Governor Beshear has set a goal for Kentucky to become the Energy Capital of the World. He has charged Secretary of Energy and Environment, Dr. Len Peters, with writing a comprehensive energy plan to help the Commonwealth achieve energy security. The goals of the plan are to:

- Conserve and use energy more efficiently;
- Achieve energy independence for transportation fuels;
- Use coal more cleanly and efficiently;
- Diversify electricity generation;
- Reduce emissions of greenhouse gases;
- Ensure strong economic growth in the state; and,
- Establish state government as a leader in green practices.

In developing the plan, nine key principles have emerged:

1. The solution will be multi-pronged; there is no single answer to our energy challenges.
2. There are and will be no quick, easy fixes. Sustainable change requires difficult decisions that take a long time to implement.
3. Renewable energies will have limited applications, primarily because of Kentucky's geography. Kentucky currently obtains about three percent of its energy from solar, wind and hydro-electric.
4. Conservation and efficiency will be critical. Because energy here is inexpensive, Kentuckians consume too much of it, leaving much room for greater efficiency.
5. An energy transformation will require a more developed sense of personal responsibility. We've become a nation of gas-guzzlers, electric toothbrushes and huge homes. Attitudes must change.
6. You can't separate ecology and economy. We cannot and should not rely on low-cost electricity as a sole driver for economic development.
7. We must always remain mindful of the social, environmental and health costs of our energy decisions.
8. Kentucky will not and cannot abandon coal. It is too important economically. But we will and must improve and enhance the way we're extracting it and using it to reduce impact on land and the air.
9. Nuclear power has to be part of the discussion.

Reasons for optimism. In spite of the challenges Kentucky faces, the Governor is inspired by cutting-edge research and pilot projects in the Commonwealth, as well as by the caliber of people involved in moving Kentucky's energy policy forward. For example, Alltech is designing a rural biorefinery integrating feed, food and fuel production. Kentucky is a partner in two consortiums looking at carbon issues. Several synthetic natural gas and coal-to-liquid plants are in various stages of planning. Seven native companies have received grants from the Kentucky New Energy Ventures program to

study promising technologies ranging from biodiesel to wind to flue gas purification. Farmers near Maysville are growing switchgrass in a pilot project creating ethanol and electricity. And Kentucky's universities are furthering our understanding and use of bold energy ideas. High-caliber people in the state are at the forefront of a movement to change our energy policies and activities, including Energy Secretary Len Peters, the presidents of the four institutions sponsoring this conference, environmentalists like Tom Fitzgerald and Judith Peterson, and innovators like Pearse Lyons and Kris Kimel.

Governor Beshear concluded that it is time to act-Kentucky's prosperity depends on a reliable supply of clean sustainable energy. If we fail, future generations will look back and wonder: Where was the will, the foresight and the courage?

### **Panel A: Choices of Consequence and Consequences of Choice.**

Moderator: Al Smith, long-time host of KET's *Comment on Kentucky Panelists*: Susan Zinga (Applied Energy Group), Ivan Urlaub (North Carolina Sustainable Energy Association), Steve Austin (Legacy Center, Blue Grass Community Foundation).

This panel brought together three experts with remarkably different backgrounds to discuss energy choices and the consequences of such choices for the future of Kentucky. Susan Zinga focused on efficient use of electricity, Ivan Urlaub focused on conservation by individuals, and Steve Austin focused on reorganizing communities for energy efficiency.

**Susan Zinga: Efficient use of electricity.** Susan Zing is an energy policy analyst with the Applied Energy Group, and has spent over 25 years as a researcher and energy regulations specialist in the U.S., Europe, and Asia. In her remarks, Zinga focused on the importance of improving our efficiency to resolve our energy dependency problems. To do this, she strongly implied, Americans will need to become better-informed about electricity and other energy sources-at present we simply take these for granted. For example, Zinga reminded the audience that electricity must be generated at the time it is needed and cannot be stored-this has significant implications for how we attack energy consumption problems. Though our energy production system provides electricity to us 24/7, we tend to have demand problems periodically because customers typically draw the largest amounts of electricity for their homes and businesses at the same time, such as exceptionally hot days in the summer. As our society and economy grow, Zinga suggested, these power demand problems will only worsen. She anticipates several factors that could limit expansion of energy production capacity, at least in the near term. New plant construction costs will be passed on to consumers, for example, which will increase energy costs. Also, finding acceptable locations for power plants will continue to be a problem.

Rather than expecting production of new power generation plants to resolve our problems, Zinga discussed better "demand side management." Increasing the number of highly efficient appliances in homes, for example, could cut power consumption substantially-this could be encouraged through fiscal incentives of one sort or another. Zinga strongly encouraged the increased use of "price signals" to help manage electricity demands. If power companies charge lower rates for electricity use at off-peak hours, for example, customers may be persuaded to shift their electrical use in ways that will both save them money and help utilities better manage overall electricity consumption without substantially expanding energy production capacity. Such changes can occur, Zinga implied, but only if power companies and their customers work together to modify our electricity use habits, and if we develop much clearer mechanisms for sensitizing customers the costs of their activities. In a state like Kentucky, moderate conservation efforts such as a 15 percent increase in energy efficiency could save the state nearly a half billion dollars of expenditures.

**Ivan Urlaub: Energy measurement and conservation by individuals.** Ivan Urlaub directs the North Carolina Sustainable Energy Association, and also serves on the North Carolina Legislative Commission on Global Climate Change. In his presentation, Urlaub considered the thought processes and policy steps that might move us out of our currently complacency toward energy production and use. The energy arena, he said, has been especially polarized, particularly around matters of electrical production. One group, who might be thought of as conventionalists, argue strongly to meet energy demand by building more traditional power plants that rely on fossil fuels. These are proven technologies, but will contribute heavily toward more carbon emissions. Another group, for example those who favor plants that would use

renewable energy resources, argues strongly against the conventionalists. These technologies are less certain and possibly more expensive, but their proponents insist that they are the only legitimate way forward in energy production. The result is often political gridlock, as both sides fail to achieve a consensus with the public or politicians about their preferred approach, and the public continues to be disengaged from our looming energy and environmental problems.

Urlaub suggested that a series of sensible small steps can position Kentucky and other states to move in a new direction over time, even if such steps will not satisfy those on either extreme in this debate. One example of this is the adoption of "net metering," a step which Kentucky recently took. This is a mechanism that essentially rewards people for engaging in their own energy production. Say that a customer installs solar panels--on days when that customer produces more energy than needed, the meter moves backward and the customer's bill actually goes down rather than up. Though only small numbers of customers may take advantage of this at first, others will see the benefits and eventually the idea will take off and make a dramatic difference in energy use and production statewide. The potential roadblock, ironically, are the power companies, whose revenues could be threatened by such a system. But the political system can negotiate this problem over time. For Urlaub, an absolutely essential feature of energy policy will be the *measurement* of use. If citizens can see the amount and costs of their energy use, the vast majority of them will practice efficiency in ways that we cannot even imagine at the moment. States like Kentucky would do well, urged Urlaub, to develop independent entities to provide accurate information to the public about energy use and energy policy.

**Steve Austin: Reorganizing communities for energy efficiency.** Long-time Kentucky resident Steve Austin is director of the Legacy Center at the Blue Grass Community Foundation in Lexington, a foundation-funded entity committed to create a lasting legacy of the World Equestrian Games, scheduled to take place in Lexington in 2010. His remarks verged on the realm of social philosophy. Kentucky, like many other heavily rural states, is automobile dependent; we have constructed our cities around auto transportation. As a result, he said, we are addicted to oil, which places us at the mercy of developments in global oil markets. With demand for petroleum increasing in China, India, and other countries, there is little prospect that oil prices will decline to the levels assumed when we built our infrastructure. Our only hope for long-term stability for cities and communities, he suggested, is rethinking the way we organize and live our lives.

For Austin, we should begin this effort by assessing our zoning policies, which authorize businesses in certain areas and homes in other areas. We need zoning policies, he argued, that allow the places where we work and live to be in close proximity to one another. We also need public transit programs that further reduce the need for people to use cars. In addition, we need to consider a return to smaller neighborhood schools--our consolidation moves of the last halfdecade have created the need for massive bus fleets that consume much energy to deliver children from one end of a county to another. Food also needs to be grown closer to where people consume it. Finally, communities need to plan for disruptions of petroleum supplies, so that work and family life can be minimally hampered if events at home or abroad staunch the flow of gasoline. Austen did not discuss a time frame for how or when such changes could take place--presumably communities would shift their organization over many years. But he left no doubt that communities should begin reconfiguring themselves sooner rather than later.

### **Panel B: Moving Forward-How Do We Get It Done?**

*Moderator:* Tom Prather, Executive Vice President, NewCities Institutes

*Panelists:* Marie Gladziszewski (special projects officer, Juneau, Alaska), Will Cox (Mayor of Madisonville, Kentucky), Tom Kimmerer (Sustainability consultant, Kentucky).

Panel B focused on the experiences of specific local communities in responding to energy concerns. Gladziszewski shared Juneau's experience with energy efficiency, Will Cox discussed community planning, and Tom Kimmerer considered options for Kentucky.

**Maria Gladziszewski: Price signals reduce energy consumption.** Perhaps the most gripping and inspiring story from all the panelists was offered by Maria Gladziszewski--special projects officer for Juneau, Alaska--who has worked extensively on matters of energy, environment, land use, and tourism. Juneau is a city of about 40,000 residents located in southeastern Alaska near an inter-coastal waterway. Juneau has for decades enjoyed cheap electricity, thanks to a large hydro-electric facility located some 40 miles away. But last April a series of avalanches damaged power transmission lines

from the hydro-electric plant, and the local power company switched immediately to diesel generators to supply Juneau's electricity. However, the cost of this electricity skyrocketed from 9.6 cents per kilowatt hour (Kentuckians pay about 8 cents per kilowatt hour) to nearly 50 cent per kilowatt hour. Given power company estimates that transmission lines from the hydro-electric plant would take about three months to repair, the city and its residents almost immediately faced a crisis at the prospect of a four-or five-fold increase in electrical costs. As part of Juneau's city government, Gladziszewski and other officials had to mobilize quickly to provide leadership through the crisis.

Juneau's leadership immediately began to focus residents on reducing energy consumption, and citizens began shutting off everything they could. The city council set of goal of reducing electricity consumption during the crisis by 20 percent. However-and remarkably-the city managed to achieve a 20 percent reduction within three days. Two days later the total reduction reached 30 percent. By the end of three more weeks, as citizens began to find more ways to cut energy consumption, they had reduced electricity use by a total of 40 percent. The vast majority of the shift was due to voluntary attitude and behavior adjustments driven by price signals. When people suddenly became conscious of their electricity use, they discovered ways to conserve. The chief cultural symbol of conservation, said Gladziszewski, was clothes hanging to dry on front porches across town. Residents began comparing their electrical bills and discussing ways to wring out efficiencies. They also began buying compact fluorescent bulbs so that their energy reduction would be permanent. As it turned out, the hydroelectric transmission line was repaired in six weeks. But the community has now been activated to reduce energy consumption and has maintained a 20% reduction in electricity use after the less expensive rates returned.

**Will Cox: Collaborative community planning.** Will Cox has been mayor of Madisonville, Kentucky since 2006, although he served two terms on the City Commission there before being elevated to the top position. He is a lawyer and has participated in a number of civic and state enhancement projects. While Gladziszewski focused on crisis response, Cox shared the results of joint community discussion and planning. Madisonville is a quiet town of almost 20,000 residents, located in western Kentucky about 150 miles from the conference site, and in the heart of the state's western coal belt. The city currently buys electrical power wholesale from nearby Kentucky Utilities coal plants, and then sells it to local residents. Cox assumed the mayoral position in January of 2007, and was joined in governance by a six-member city council, half of whose members were new. The council began looking at two important issues, and wondering how to respond. The first had to do with long range planning, and what the city might look like in 20 years. The second and related issue involved the city's response to the presumption that carbon taxes were coming, which would make coal-produced energy much more expensive. Indeed, Cox noted that the city should begin planning now for the time when coal might even be phased out as an energy source.

The council's response was to have New Cities staff facilitate a local planning process. For the first time in memory, the council held numerous "listening" sessions, and heard citizens of the town and surrounding county discuss where they hoped the community would be in 10 or 20 years, and what types of physical, economic, and educational changes they would like to see take place. At the end of this process, the city developed an innovative long-range plan that addressed numerous problems. The plan included a recycling program to reduce waste and adverse environmental impact. At the heart of the plan, also, was a proposal to move the CSX rail lines that currently cut through the town to skirt the edge of the town. With the rail lines removed, the town would create substantial new green space, and would add sidewalks and walkways for a more livable and healthier community. The community has not yet developed a solution for replacing coal energy but is investigating options, including tapping into nearby methane beds found in abandoned coal mines. Cox noted, as well, a benefit of moving away from coal. While coal has provided cheap electricity and high paying jobs, it has always damaged educational aspirations of citizens, as most coal industry jobs require little formal education.

**Tom Kimmerer: Options for Kentucky.** Tom Kimmerer is a sustainability consultant based in Lexington, and works with area businesses and postsecondary institutions on energy and environmental issues. His academic background is in plant physiology and forestry, and he has served as both a professor at the University of Kentucky and the CEO of a technology company. In his remarks, Kimmerer warned that Kentucky's entire economy will be at risk in coming years as carbon taxes or pollution caps dramatically increase the price of electricity. Not only are Kentucky residents accustomed to some of the lowest electricity prices in the country, but many industrial plants have located in Kentucky precisely because of its cheap electricity-and no one knows how these companies will respond when Kentucky is no longer a haven for low cost energy. It is therefore imperative, he argued, that Kentuckians begin planning now for a future in which the coal based

energy cost and production system looks very different than at present.

Kimmerer addressed most of his remarks to the options for the state. An obvious option, he argued, is to use reduce our electricity use, so this is a conversation that leaders need to initiate. Another alternative involves so-called carbon capture, in which most carbon emissions are not released into the atmosphere but compressed and stored in underground facilities. This technology is problematic, Kimmerer argued, because no one truly knows the costs or scalability of the approach. On the other hand, existing renewable energy technologies, particularly solar, wind, and hydro-electric power, are proven and available, and could be developed more extensively in Kentucky. Geothermal heat is less of an option for the state, he noted, because it is too far underground to be cost-effective here. Though Kentucky is heavily dependent at present on coal, Kimmerer argued, the state is well positioned to be a leader in the future, given its abundant natural resources. He noted that some 52 percent of the state is forested, and trees store more carbon than we had previously imagined. He also noted that an increasingly valuable resource for the future will be water, which Kentucky also has in great supply.

### **Panel C: Meeting of the Joint Special Subcommittee on Energy of the Kentucky Legislature**

The Kentucky General Assembly's Joint Special Subcommittee on Energy of the Kentucky Legislature held one of its regular meetings as part of the Energizing Kentucky conference. Committee members heard presentations by the four university and college presidents hosting this conference. When the minutes of this meeting become available, they can be accessed at <http://www.lrc.ky.gov/ijcomm/energy/>.

### **Summary of Panel Presentations**

The panels described above provided both macro and micro perspectives for conference participants on energy use issues. A common theme was the necessity for all Americans, and particularly Kentuckians, to respond to rising energy costs by becoming much more sophisticated consumers of electricity so that we can reduce our energy use levels. A second theme involved changes in planning and policies at state and especially local levels to begin moving communities away from dependence on coal and gasoline. A third involved the importance of community level conversations and plans around a sustainable, livable, and affordable future.

## **Lessons for Kentucky**

### **The National Picture**

As laid out on the first evening of the conference and sketched at the beginning of this report, the national--indeed, global--energy situation we face is critical but seems distant to Kentucky at the moment. Energy prices have risen substantially but remain moderate, our environment remains stable though our coal plants are a major source of greenhouse gases for the nation, and we continue our dependence on auto travel for our communities to function. But this picture will shift in the coming years as energy prices increase due to demand from nations that are creating infrastructures that consume energy at current American rates. Producing energy for this emerging world in traditional ways--by burning fossil fuels--will push the earth toward an unpredictable and potentially disastrous future.

Though Friedman advocates a market-based, government facilitated national effort to develop clean energy technologies, the U.S. does not seem on the verge of consensus around a broad policy agenda of the sort he favors. This agenda, as articulated in detail in his new book, would use tax policies and fiscal incentives to raise the costs of using fossil fuels and reward development of alternative energy sources. Arguably such a move has already begun, as energy companies seek to invest their recent record profits in new energy sources, and as policy groups explore expansion of wind and solar electricity production facilities. But Friedman argues that such moves could be dramatically accelerated by government policies. Governors Huntsman and Beshear essentially agreed with Friedman's critique of our national energy and environmental picture, and each offered their own suggestions about the future direction of federal energy policy.

A discernible implication of these plenary speakers and the sponsoring postsecondary presidents is that *strong state and community action* can begin our nation's move away from fossil fuels and toward sustainable energy, and can set the stage for an appropriate federal policy response. Indeed, the argument is that *states and communities should take leadership* on energy and environmental reform. As their experiments in policies and behaviors generate successes, it will be more

feasible for federal officials to agree on policies to lead us into a new energy technology era. There are strong precedents for such an approach, we should add. A broad array of existing federal policies in arenas such as workplace rules emerged from state leadership and state measures, rather than vice versa. On the other hand, inasmuch as an important facet of the global energy picture is the role of China, India, and other nations, this is the domain of federal leadership--American states cannot play the lead role here.

## **The State Picture**

What could state leadership in energy and environmental policy look like? The Governors helped answer that question, at least in part. Utah under Governor Huntsman has taken an impressive set of steps, including joining in numerous regional climate and energy initiatives; establishing mechanisms for private, public, and non-profit sector collaboration around reducing greenhouse gases; and creating an efficiency plan to reduce state government's consumption of energy. Huntsman also had a wish list for federal policy emphasis that dovetailed neatly with other conference speakers. We need a new national conversation about energy conservation, he suggested, a revamped regulatory infrastructure that privileges renewable energy and penalizes fossil fuels, a rebuilt energy transmission system, and vastly improved research and development around energy and the environment.

Governor Beshear brought the conversation home to Kentucky, with candid remarks about our cheap, coal-based energy and industrial base, and about the state's high pollution footprint that results. His new administration's primary initiative in the energy arena is development of a "comprehensive energy plan" for Kentucky, being created by the Secretary of the Energy and Environment Cabinet. Based on Beshear's remarks and those of other conference speakers, the following implications for Kentucky emerged:

- Kentuckians should prepare for a long and ongoing series of economic and lifestyle adjustments around energy, many of which will be painful. There is no simple quick-fix to extricate us from our reliance on cheap fossil fuels, and we must seek many new energy options to add to coal as the Commonwealth moves forward. Not responding will jeopardize the economic viability of the state.
- Citizens of Kentucky will need to focus as never before on reducing their energy consumption-the state's historically cheap coal-based energy has made it easy for us to be complacent about energy use. This will require changes in personal and cultural attitudes and behaviors, and these changes can be facilitated by new mechanisms for counting and tracking energy use, and also strong price signals.
- The Governor's Energy and Environment Cabinet can develop a plan for the Commonwealth, but the state's political infrastructure-involving both political parties will need to reach some agreement around the plan and collectively mobilize to ensure that the elements of the plan are carried out.
- An important issue going into the future will be to assess decision- making authority around energy between states and localities. In the past, the state has held the primary responsibility for regulating energy production and stabilizing energy prices at low levels. In a new "energy-climate era," to use Friedman's terminology, localities will need to take more responsibility for influencing energy, which will likely require new mechanisms.
- Some group or organization could conduct a broad policy audit, to determine the nature and extent of incentives, disincentives, rules, and regulations that influence energy production and consumption in Kentucky. Such an audit could direct policymakers and interested citizens to the policy arenas that could most usefully be altered to set the state on a course for greater conservation and use of renewable energies.

## **The Local Picture**

Several of the panelists at the conference, as discussed earlier, provided a local perspective on energy issues. Participants accordingly heard about the rapid shift of energy use habits in Juneau, Alaska, the groundwork for conversations about energy that has been laid in Madisonville, Kentucky, and the practical justification for revamping community development approaches for reduced energy consumption in the central part of the Commonwealth. The good

news for communities of all sizes is that they can have a big impact on energy efficiency with a modest effort, and can position themselves for long-term change by beginning conversations sooner rather than later about development and construction policies that fight sprawl and promote integrated homes, businesses, and schools.

There is not currently an extensive catalog of examples of localities that have launched these efforts amidst many different community contexts, conditions, and problems. Some implications of the local discussions include the following:

- Some organization could usefully collect and publish examples of communities from around the country that have made great strides in terms of promoting efficiency-such as Juneau-or of shifting development and zoning policies to produce integrated towns with low energy use and minimal environmental impact. These examples could describe not just what communities have accomplished, but how they have accomplished these changes.
- A list of resources, including energy organizations and community support agencies, available to Kentucky towns and counties could also usefully be produced to facilitate the work of localities.
- Local governments or organizations could reduce energy consumption by measuring their own current consumption and then developing a plan for conserving-and developing a public campaign to help local citizens learn to measure and conserve.

## **Conclusion**

The second Energizing Kentucky conference offered a number of ideas and directions that might guide the work of national, state, and local governments and communities. Specific examples were provided throughout this report. While it might be difficult to hold the specifics in mind, a number of key themes should be kept at the forefront:

*The time to act is now:* Given the rapid industrialization occurring across the planet, demand for fossils fuels will reach record levels and a disastrous environmental impact could be imminent. To paraphrase the words of one conference presenter: "We have exactly enough time if we start now."

*Political will and courage are needed:* Individuals can change their behavior, but to take new energy technology and practices to scale will require leadership from government officials, who will have to be courageous and determined.

*Measurement and increased energy costs lead to conservation:* Conservation can start immediately at virtually any level of the system-and measurement can be a relatively easy and effective motivator for conservation. When individuals, organizations, and governments see the amount and costs of their energy use, they are likely to find ways to conserve.

*The change that is required will take collaboration* among all stakeholders involved. Utah has been able to move forward by joining coalitions with other western states, and by bringing together all stakeholders within its own state. This sort of collaboration around common goals is essential to making the level of change that is needed.

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**Energizing Kentucky Conference II**  
**September 18-19, 2008**  
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**Reference:** <http://www.energizingkentucky.org/>