

Introduction

Kentucky Advances in the 21st Century

Kentucky's, and the nation's, prosperity depends on having a reliable supply of clean, sustainable energy now and far into the future. Addressing energy needs and energy conservation is not new. Many remember the issues we faced in the 1970s when the oil embargo crippled our state and the nation. Those issues are heightened today and affect our economic and energy security. Rising oil and natural gas prices have startled consumers, who are actively seeking solutions.

What differentiates the national mood of the 1970s from today are four key issues, all of which are addressed throughout this strategic document.

- Global warming is a known and must be addressed.
- In a global economy, the United States alone controls neither energy prices, nor supply and demand.
- Kentucky's electricity energy infrastructure requires major rebuilding over the next 20 years.
- National security is directly tied to how energy independent we can become.

As stated in a 2007 report by the World Resources Institute, "It now seems certain that climate change and energy security are two of the greatest challenges the global community faces in the 21st century. Energy policies designed to address one of these challenges alone can have unintended and often negative consequences on the other" (World Resources Institute, 2007).

Climate Change Dictates New Best Practices

Today, few still debate the primary cause of climate change. The debate continues, however, about how to implement effective policies designed to help us reduce the cause of climate change. Climate change is already affecting U.S. water and land resources, agriculture, and biological diversity, necessitating corrective actions and the utilization of new resources.

As a major coal-producing state that relies on coal to generate more than 90 percent of its electricity, addressing these two paramount issues, energy security and climate change, is problematic. Kentucky's long-standing support of an industry that provides more than 17,000 high-wage jobs and that brings in more than \$3 billion from out-of-state sales is increasingly being questioned by some who argue that coal is a 20th century energy source. Thus, while we are blessed with abundant coal resources, we must also contend with the implications of using these resources in a world of likely limitations on the emissions of carbon dioxide, a primary greenhouse gas (GHG). Nationwide, coal provides slightly more than 50 percent of the electricity needs, while coal-fired generation accounts for 81 percent of GHG emissions.

Federal legislation imposing limits on GHG emissions did not make it out of the 110th session of Congress; however, most observers agree that such legislation is a matter of when, not if. America's proposed Climate Security Act of 2007, known as the Lieberman-Warner bill, would have cut GHG emissions by two-thirds by the year 2050, largely by means of a cap-and-trade system. The cap would have covered 87 percent of U.S. GHG emissions from the electric power, transportation, and industrial sectors (including natural gas processors and importers and petroleum processors and refiners). Whatever federal legislation is ultimately enacted, we can anticipate that it will have GHG reduction goals similar to the Lieberman-Warner proposal.

Financial Markets Respond to Climate Risks

With GHG legislation a near certainty in the future, Wall Street banks have announced that GHG emissions will factor into their willingness to loan money for building power plants. In February 2008, three of the world's leading financial institutions announced the formation of The Carbon Principles — guidelines on climate change for advisors and lenders to power companies in the United States. The institutions created the Principles as a result of the risks faced by the power industry as utilities, independent producers, regulators, lenders and investors deal with the uncertainties around regional and national climate change policy. If high carbon dioxide-emitting technologies are selected by power companies, the signatory banks have agreed to factor these risks and potential mitigation strategies into the final financing decision.

Kentucky Acknowledges Climate Change's Impact on Coal-Fired Electricity Generation

Kentucky is the third largest coal-producing state (Wyoming is first and West Virginia second). Kentucky accounts for roughly one-tenth of total U.S. coal production and nearly one-fourth of U.S. coal production east of the Mississippi River. With Kentucky's historic reliance on coal-fired base load generation, the state has enjoyed some of the lowest electricity rates in the country. Our low rates have allowed energy-intensive industries to flourish in the state. Our low rates have also encouraged Kentuckians to become some of the greatest consumers of electricity in the country. Kentucky's per capita consumption of residential electricity is among the highest in the United States (Energy Information Administration, 2006).

Kentucky's electric power industry emitted more than 93 million metric tons of carbon dioxide in 2006, and the state was ranked seventh in the United States in per capita emissions and 13th in overall carbon dioxide emissions (3.8 percent of the U.S. total). In May 2008, a Brookings Institute report identified Lexington as having the highest per capita carbon footprint in the United States, and Louisville as one of the top five emitters. The Brookings report primarily implicated coal-fired electricity generation for the high carbon footprint of these two cities.

According to a 2007 U.S. Energy Information Administration (EIA) report, electric utilities will account for the vast majority of emissions reductions under any Congressional GHG legislation. The EIA reports that power plants will account for between 80 and 90 percent of such reductions by 2030. According to the report, the decline in power-plant emissions would reflect reduced reliance on coal, with usage as much as 62 percent to 89 percent below what would otherwise be the case by 2030.

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The report also predicts that many existing coal-fired plants will likely be retired because it will not be practical to retrofit the facilities with capture-and-storage technology. At the same time, Kentucky's demand for electricity is projected to increase. The Kentucky Public Service Commission estimates an additional 7,000 megawatts of generating capacity will be needed by 2025, or an overall annual growth rate of 1.7 percent. The average age of Kentucky's electric generating fleet is 35 years, and therefore will lead to major changes in Kentucky's electrical energy portfolio

over the next two decades. The EIA indicates that most power companies will likely increase their use of nuclear power, renewable fuels, and natural gas as a result of these pressures.

Energy Independence Means Energy Security

The United States Imports 60 percent of its Oil and Natural Gas

The United States currently imports approximately 60 percent of its petroleum, more than half of which comes from insecure or unstable regions of the world.

The EIA predicts that our dependence on imports will grow to more than 70 percent by 2025, unless the United States takes aggressive steps to develop domestic energy supplies. In its 2008 Annual Energy Outlook, the EIA also projects that worldwide demand for oil will remain high, despite very high prices for gasoline.

Many energy experts point out the normal demand response to high prices is not occurring at the international level. The demand for gasoline in the United States has relented somewhat since 2007, due to high prices, but

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worldwide, demand for oil and energy is strong and growing as countries are developing economically and therefore requiring larger percentages of energy inputs. This is not a short-term trend.

The International Energy Agency (IEA) estimates that global energy demand will increase 55 percent by 2030, with nearly 75 percent of that demand coming from developing countries.

Compounding this challenge, oil and gas in the ground is becoming more costly to extract. Given the crude oil price volatility we have witnessed in the past year and given that most experts expect prices to go up again once the worldwide economy rebounds, the strategies and options of the last few decades can no longer be counted upon to mitigate the economic impacts caused by sustained volatile or high oil prices.

Thus, economic and energy security needs have created an overarching demand for greater energy independence, with a decided shift towards domestically available resources.

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Kentucky Plans Multilayered Strategies to Resolve Energy Issues

There is no single solution to our energy challenges. We must focus on strategies that employ all existing and emerging technologies and practices that work for Kentucky, finding new ways to utilize existing resources with the objectives of high efficiency, energy independence and the reduction of our carbon footprint. This document is not intended to be exhaustive. We do not, and cannot, address all possible actions that the commonwealth must take over the next two decades, and there will be additional important issues that require action. We have, however, attempted to address the major overarching and far-reaching actions that are crucial to Kentucky's future.

We must remain open to the timely incorporation of future technologies as they emerge with exhibited capabilities of greater efficiency and environmental friendliness. For example, to combat the risks inherent in our increasing dependence on imported oil and the escalating costs associated with growing worldwide demand for all energy resources, the United States, including Kentucky, has available a potentially large alternative liquid fuels resource base in the forms of coal and biomass to substitute for conventional oil imports. The development of alternative fuels from our domestic resources can move us toward transportation fuel independence, while at the same time creating high-value jobs and reducing trade and budget deficits. Additionally, this strategy provides a long-term market for Kentucky coal.

Kentucky has been responding to its energy challenges in a number of ways. Within the past two years the Kentucky General Assembly enacted House Bill 299, House Bill 1 and House Bill 2. These bills established mechanisms to promote renewable energy projects and energy efficiency technologies within the state as well as development of alternative transportation fuels from our coal and biomass resources. See Appendix A for a detailed list of Kentucky legislation related to energy during the last decade.

In 2007, Kentucky's General Assembly also took an important step in addressing issues of carbon dioxide unique to Kentucky. It directed a collaborative report on carbon management related to existing and new electricity-generating units, and provided funding for research on carbon capture and sequestration (CCS) from existing power plants; carbon storage in geologic formations; and enhanced oil and gas recovery through carbon dioxide injection. As a result of this funding, important industry-public sector-university collaborations have developed.

“Coal is a low-cost, per BTU, mainstay of both the developed and developing world, and its use is projected to increase. Because of coal’s high carbon content, increasing use will exacerbate the problem of climate change unless coal plants are deployed with very high efficiency and large scale CCS is implemented. CCS is the critical enabling technology because it allows significant reduction in carbon dioxide emissions while allowing coal to meet future energy needs.”

MIT, The Future of Coal

These significant pieces of legislation have established a foundation upon which to build an effective, comprehensive statewide energy strategy and have provided funding for the state to initiate key energy-related projects.

In June 2008, Governor Steve Beshear announced the state’s partnership with the newly formed Western Kentucky Carbon Storage Foundation. With four key energy industry leaders – Peabody Energy, ConocoPhillips, E.ON U.S. and TVA – and with the Kentucky Geological Survey, the Foundation will test a western Kentucky site for geological sequestration and help to advance the science and ultimate deployment of long-term carbon storage opportunities in the state.

Moreover, Kentucky’s Public Services Commission (PSC) announced in October 2008 that it has encouraged the major investor-owned utilities to invest \$7.8 million into established carbon capture and

sequestration (CCS) research programs. The two research entities are the Carbon Management Research Group (CMRG), which is a partnership of the private sector and the University of Kentucky Center for Applied Energy Research (CAER); and the Kentucky Consortium for Carbon Storage (KCCS), which was created by the Kentucky Geological Survey and the Kentucky Department for Energy Development and Independence. KCCS is conducting the test of underground carbon storage in western Kentucky.

According to the World Resources Institute (WRI), "Interest in CCS has grown in recent years since it would significantly reduce emissions from fossil fuels, which are expected to continue to meet the world's energy needs for decades to come, due to their widespread availability and low cost. Challenging economic, technical, social, and institutional hurdles remain, however, before CCS can contribute significantly to a larger climate solution" (WRI, 2007). Among these challenges are legal and regulatory issues associated with CCS.

Thus, Kentucky's challenge is also a challenge at the national and international level. While we must diversify our energy mix, we must also find ways to utilize our coal resources in a carbon-constrained world.

Clean coal technology and technology to capture and sequester carbon dioxide are crucial to Kentucky's continued use of our coal resources; however, considerable development and demonstration work remains to be completed to ensure economically viable systems can be installed at the scale needed.

Many state and regional initiatives across the country are helping to frame the debate on climate change and determine the policy outcome regarding GHG emissions. In fact, in the United States, most of the actions toward addressing climate change are taking place at the state and regional level.

Kentucky is a participant in many of these regional activities, and has recently joined the Climate Registry, a nonprofit organization governed by a board of directors of state, tribal, and provincial representatives that provides a mechanism to measure GHG emissions across industry sectors and borders.

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"Non-Renewables" Dominate Kentucky's Energy Production and Use Today

World events, climate change, uncertain supplies, and an ever-growing global demand for fossil fuels have converged to place our collective energy future in jeopardy. We can no longer count on a limitless supply of inexpensive fossil fuel to meet our future energy needs. Before discussing the energy plan's seven strategies and how they can guide us in the following decades, an overview of Kentucky's current production and use is provided on the next page.

Today, coal, natural gas, and petroleum account for 97 percent of Kentucky's total energy consumption. (See Figure 1.) The other three percent of the energy consumed in Kentucky comes primarily from hydroelectric and other renewable sources.

Petroleum

Kentucky receives petroleum products by pipeline and river barge. The state's total petroleum consumption is high (133,524 thousand barrels per year in 2005) relative to its population. Until October 2008, diesel prices increased almost 70 percent (\$2.72 to \$4.61 per gallon) in the last year; gasoline prices increased over 31 percent (\$3.08 to \$4.04 per gallon) in the same period. Petroleum prices decreased toward the end of 2008 as a result of decreased worldwide demand due to the economic downturn.

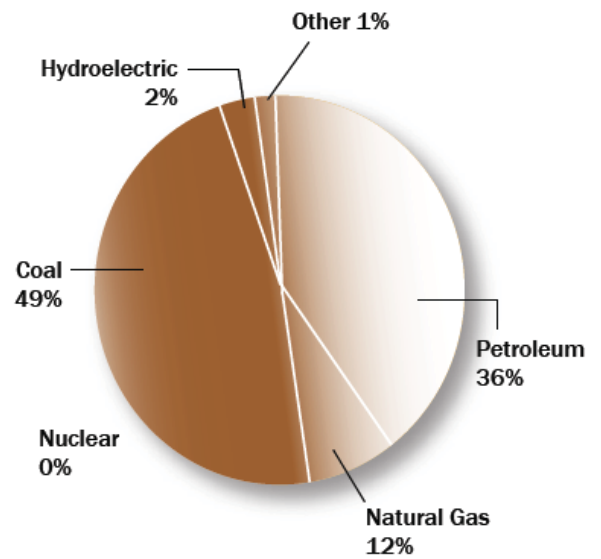
Natural Gas

Kentucky's natural gas production, most of which comes from the Big Sandy field in Eastern Kentucky, typically accounts for less than one percent of total annual U.S. natural gas production. The majority of Kentucky's natural gas demand is supplied by pipelines from the Gulf Coast. Industry is Kentucky's largest natural gas-consuming sector, accounting for about one-half of total natural gas consumption. More than two-fifths of Kentucky households use natural gas for home heating.

Natural gas prices have increased over 13 percent (\$10.71 to \$12.13 per thousand cubic feet) in the last year.

Coal

As noted previously, Kentucky is the third largest coal-producing state. It accounts for roughly one-tenth of all U.S. coal production and nearly one-fourth of U.S. coal production east of the Mississippi River. In addition, almost one-third of all the coal mines in the country are found in Kentucky, more than in any other state. With both surface and underground coal mines, large volumes of coal move in and out of Kentucky by railcar and river barge to more than two dozen states, most of which are on the East Coast and in the Midwest. In Kentucky, about three-fifths



Source: Energy Information Administration.

Figure 1: Kentucky's Energy Consumption by Source-2005

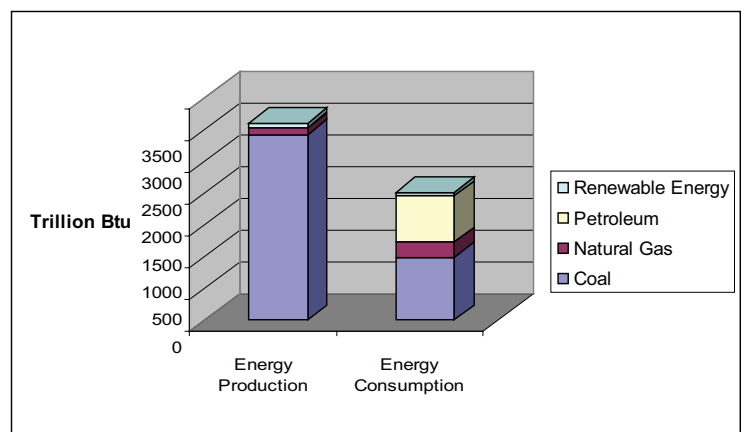


Figure 2: Comparison of Kentucky's Energy Production and Energy Consumption in 2005 by Source (all sectors)

of the coal supply is used for electricity generation, and most of the remainder is used in industrial plants. Kentucky exports nearly two-thirds of its coal mined each year to other states. (See Figure 2.)

Coal-fired power plants typically account for more than 90 percent of the electricity produced within Kentucky, making it one of the most coal-dependent states in the nation.

The price of Central Appalachia coal has doubled (\$57.70 to \$117.60 per ton) in the last year. Electricity prices, although increasing, have not yet begun to reflect this price run-up. If coal prices remain at these high levels, electricity prices will also spike.

Several hydroelectric power plants account for most of the state's remaining electricity generation. Kentucky is currently the fifth largest hydroelectric power producing state east of the Mississippi River.

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Kentucky Envisions the Future

The commonwealth already enjoys many comparative advantages in energy production, including a strong natural resource base, a highly skilled workforce with a strong work ethic, a highly qualified community of educators and researchers, and the commitment of its state government and legislature to achieve energy independence and reduce its carbon footprint. Building on these advantages, while encouraging innovation and ingenuity, will help Kentucky move forward to a secure energy future.

Responding effectively to the world's new energy realities is one of our most urgent and important challenges. We must identify and pursue aggressive, yet achievable, solutions to meet our energy needs. The following seven strategies presented in this action plan will make Kentucky a leader in the nation's efforts to attain energy independence and will provide environmental and economic benefits to the citizens of the state.

1. Improve the energy efficiency of Kentucky's homes, buildings, industries and transportation fleet.
2. Increase Kentucky's use of renewable energy.
3. Sustainably grow Kentucky's production of biofuels.
4. Develop a Coal-to-Liquids (CTL) industry in Kentucky to replace petroleum-based liquids.
5. Implement a major and comprehensive effort to increase gas supplies, including coal-to-gas in Kentucky.
6. Initiate aggressive carbon capture/sequestration projects for coal-generated electricity in Kentucky.
7. Examine the use of nuclear power for electricity generation in Kentucky.

We shall become an energy producing state for our nation while at the same time achieving efficiency in our personal energy use. This will lead us to a position of leadership in the United States and to strong economic development, as we mitigate GHG emissions, and provide revolutionary positive changes in Kentucky by 2025.

Kentucky Must Act Now

Kentucky's energy use is projected to grow by slightly more than 40 percent between now and 2025 under a Business-As-Usual scenario. This energy growth encompasses all sectors, including electricity generation, natural gas use, and transportation fuels. Reliable estimates show an annual growth in electricity generation alone of close to two percent. As noted, between now and 2025, according to estimates from the Kentucky Public Service Commission, Kentucky will need an additional 7,000 megawatts of electricity generation. The anticipated additional generation does not even account for the retirement of existing coal-fired plants, whose average age in Kentucky is already more than 35 years.

This plan, *Intelligent Energy Choices for Kentucky's Future*, will substantially reduce energy demand such that per capita energy use in Kentucky will remain at current levels.

Implementing these strategies will also lead to a much more diversified energy portfolio for the commonwealth, while we expand economic development opportunities in all energy sectors. Figure 3a shows the current energy utilization, what it will look like in the BAU scenario, and how this plan will provide a much more flexible and effective energy portfolio. Diversifying Kentucky's energy portfolio provides enormous economic, environmental and energy security benefits, and will be key to the state's prosperity in the future. If we rely on the same model we have today, we will be increasingly vulnerable to these threats and our citizens, businesses, and industries will all be negatively affected.

For example, today, we rely on coal for more than 90 percent of our electricity. Our industrial sector has flourished as a result of low-priced coal-fired generation. In the future, primarily relying on one source of power for electricity

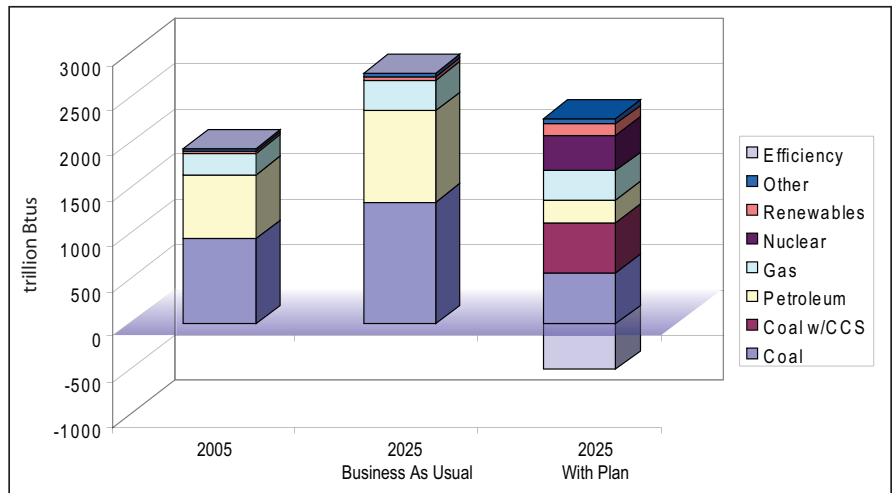


Figure 3a: Kentucky's Total Energy Use

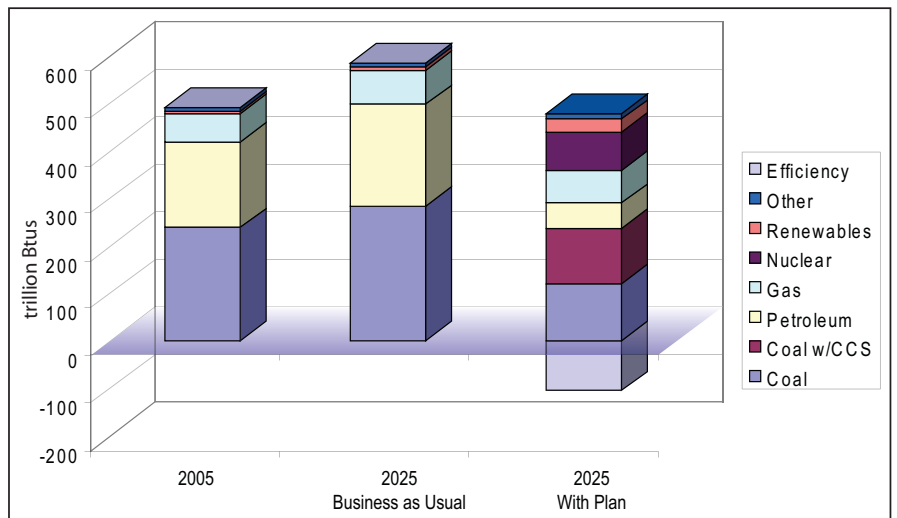


Figure 3b: Kentucky's Per Capita Energy Use

generation will not be prudent in the face of imminent climate change legislation at the federal level. While we anticipate retrofits of existing power plants for carbon dioxide capture, we must diversify our electricity generation to include renewables and other sources such as nuclear power.

At the same time, relying on coal-fired power generation in the state will not be sufficient to support Kentucky's coal industry. If other states cease purchase of Kentucky coal, our coal industry and the resulting severance taxes will be diminished considerably. By moving some of our coal production into transportation fuels and synthetic natural gas, we support our efforts to become less vulnerable to imports and ensure a continued market for Kentucky coal, sustaining the 17,000 plus jobs in the coal industry, as well as the industry's other effects.

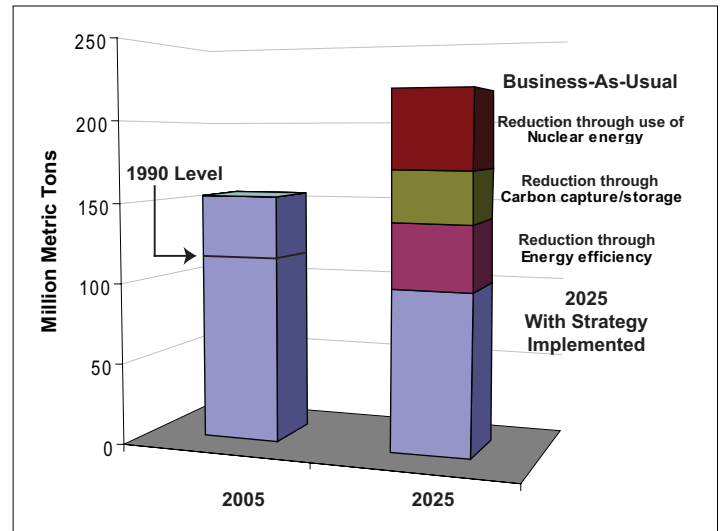


Figure 4: Reductions In Carbon Dioxide Emissions

We cannot predict with certainty the technological advances that will occur over the next two decades, but we can develop flexibility in our energy portfolio that enables us to take timely advantage of those advances. For example, if cellulosic biofuels develop rapidly, we will have in place the basic industry to readily adapt to these technological advances. If much more efficient and economical solar or wind technologies are developed, we will be able to exploit those without delay. If nuclear power takes hold more rapidly at the national level, which indications are it will, our utilities could already be moving in that direction. A diverse portfolio gives us the flexibility to effectively utilize lower carbon-emitting technologies and fundamentally much more environmentally benign energy solutions.

Just as we will experience growth in our demand for energy, our GHG emissions will continue to escalate under a Business-As-Usual scenario. With such a high reliance on fossil fuels, our projected GHG emissions will be more than 40 percent higher than they are today if we do not take action (See Figure 4). With implementation of these proposed strategies, however, our GHG emissions could be more than 50 percent lower in 2025 than they would otherwise be. More significantly, if we implement the strategies presented in this plan, GHG emissions in Kentucky could actually be 20 percent lower in 2025 than our 1990 emissions.

A Renewable and Efficiency Portfolio Standard Will Be Established

We must launch our efforts by first focusing on improving energy efficiency in all sectors of Kentucky's economy and adopting practical cost-effective conservation practices. Initiatives to improve energy efficiency have little cost compared with the economic and environmental benefits to be gained. A Renewable and Efficiency Portfolio Standard (REPS) is proposed whereby 25 percent of Kentucky's energy needs in 2025 will be met by reductions through energy efficiency and conservation and through use of renewable resources. Energy efficiency alone will offset at least 18 percent of Kentucky's projected 2025 energy demand. This would allow us to meet 60

percent of our projected 2025 energy requirements through energy efficiency, before any new generation.

As part of the REPS, we will also significantly increase utilization of renewable energy resources within the commonwealth. Today, renewable energy accounts for only about three percent of Kentucky's entire energy portfolio (this includes biofuels such as ethanol and biodiesel and renewable energy used to generate electricity). We will develop our renewable energy resources by encouraging greater generation of electricity from such sources as wind, hydro, and solar, and by providing incentives for biomass production. Through the REPS, we will increase Kentucky's renewable resources to more than triple our current use by 2025. We will achieve this growth by relying on our domestic renewable resources, thereby growing jobs both within the "green collar" manufacturing sector and within our home-based agricultural sector

Strategy 1 of this plan details how and what is required for us to achieve a reduction of 18 percent in our projected energy needs by 2025. These actions target energy efficiency and conservation in homes, offices, government buildings, industries, and the transportation sector. As an integral part of the proposed REPS, *Strategy 1*, with its emphasis on energy efficiency and conservation, will be one of the key components of the state's actions to reduce greenhouse gases. See Figure 4, which illustrates the 39 million metric tons of reduced GHG emissions that will result from implementation of this strategy.

Strategy 2 strengthens the greenhouse gas reduction efforts, and is another element of the REPS. By targeting to the fullest extent development of Kentucky's renewable resources, including solar, wind, hydro, and biomass, Kentucky's energy portfolio will begin to take on more breadth and offer new economic and environmental opportunities.

The proposed REPS is designed to allow the commonwealth the opportunity to maximize our renewable energy resources within the state without forcing our utilities to purchase higher-priced out-of-state renewable energy. But even with this aggressive REPS, Kentucky will still need to look at our traditional energy source – coal – and other options such as nuclear.

An Alternative Transportation Fuels Standard Will Be Established

To transition away from dependence on foreign petroleum, Kentucky and the nation can turn to domestic resources. By implementing the strategies presented in this plan, Kentucky can displace 60 percent of its reliance on foreign petroleum by utilizing fuels derived from biomass and coal, and by plug-in hybrid vehicles. We can do this using existing infrastructure in such a way that we do not increase our net carbon dioxide emissions. As we have witnessed dramatic fluctuations in the price of oil during 2008, we should be reminded of our economic and energy security vulnerability that results from our growing dependence on imported oil. Our businesses, citizens, and government agencies cannot even plan adequate budgets in the face of such uncertainty over prices. The fact that lower prices in the latter part of 2008 were a reflection of worldwide recession should not bring a sense of relief.

In *Strategy 3*, which will be included in the REPS and the ATFS, we will develop Kentucky's biomass resources in a sustainable, environmentally sound and economically beneficial manner. While building on the state's successes with corn-based ethanol production and soy-based biodiesel, the state will be

positioned to take advantage of existing technologies that expand our options for producing environmentally friendly bio-based fuels from cellulosic biomass.

Even with aggressive energy efficiency and renewable energy efforts, the commonwealth will need other resources to meet growing energy demand. If we hope to reduce our dependence on foreign oil, we must turn to our domestic fossil fuel resources, especially our coal resources, by deploying advanced cleaner coal technologies. The reduction in carbon dioxide emissions by 2025, can occur despite the fact that we continue to utilize our coal resources (see Figure 4). We can do this by capturing and storing carbon dioxide emissions from existing coal-fired electric generating units and from newly developed coal-conversion industries that help meet our domestic transportation fuel and natural gas needs.

As another component of the ATFS, *Strategy 4* further develops the goals and objectives to establish a vibrant coal-derived liquid transportation fuels industry. These objectives have been clearly articulated by Kentucky's elected officials, and the action items in *Strategy 4* will help to ensure this industry has a viable future in the commonwealth. The resulting energy security and economic development opportunities are significant, and the coal-to-liquids industry will be key to the continued employment of coal miners within the commonwealth.

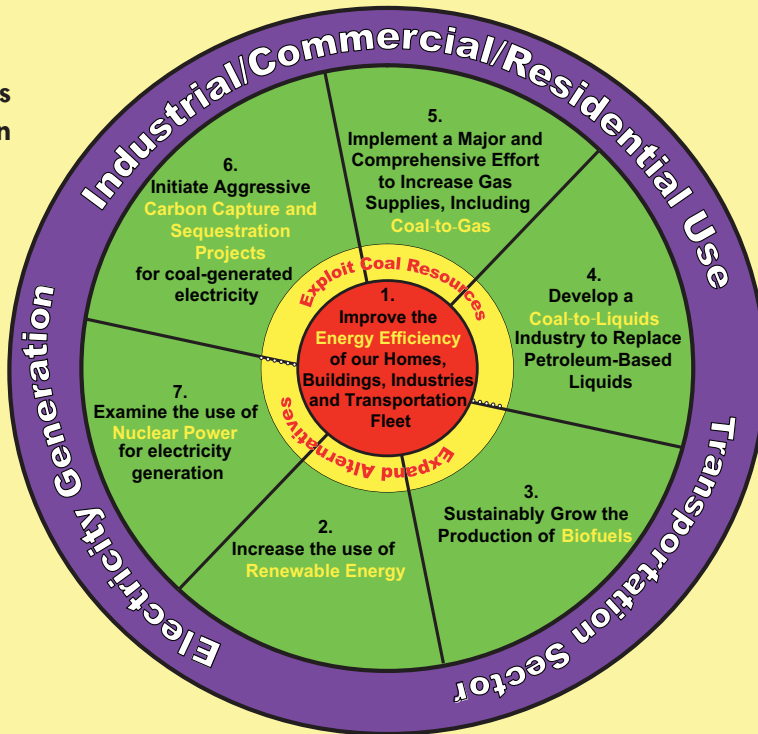
Kentucky Will Rely on New, Cleaner Technologies at Home

Equally important as weaning ourselves from imports of foreign oil is reducing our dependence on imported natural gas. *Strategy 5* establishes an action plan directed toward increased natural gas production in the commonwealth and production of synthetic natural gas from Kentucky's coal resources. Again, this initiative intends to build upon the intent of policymakers within Kentucky in recent years to promote coal-conversion technologies that supply Kentucky with liquid transportation fuels and synthetic natural gas.

For Kentucky to achieve its greenhouse gas reduction goals, deployment of carbon dioxide capture and storage technologies on a large scale is crucial. Kentucky must find ways to reduce carbon dioxide emissions while ensuring that we meet our growing energy needs. The action plan in *Strategy 6* will help Kentucky initiate aggressive carbon capture and storage projects, with a goal by 2025 that 50 percent of Kentucky's coal-based energy facilities will be equipped with carbon management technologies. These reductions, illustrated in Figure 4, also show how a combination of actions and technologies will be necessary to achieve carbon dioxide emissions reductions.

Another key component to reducing Kentucky's carbon dioxide emissions is deploying non-carbon dioxide emitting technologies to meet our baseload electricity generation needs in the future. One option that must be considered is nuclear power. Given the lengthy timeframe for planning and construction of nuclear power plants, it is prudent for Kentucky's citizens and policymakers to launch a serious discussion today of how we should pursue nuclear power. The uncertainty surrounding federal climate legislation, the feasibility of deploying large-scale CCS within the next couple of decades, and Kentucky's and the nation's growing demand for electricity require that we consider seriously our options regarding nuclear power. Figure 4 illustrates the carbon dioxide reductions that would result from effective utilization of nuclear power in Kentucky—approximately 30 percent of Kentucky's estimated demand can be met through nuclear generation by 2030.

The diagram to the right depicts the seven strategies encompassed in this comprehensive plan that addresses issues related to all energy sectors in Kentucky.



Underlying Goals:

- **Energy Security**
 - We will have stable, predictable energy costs and reliable energy supply
 - We will lead the way for coal's future to reduce U.S. dependence on foreign oil
- **Economic Prosperity**
 - Reliable and stably priced energy will provide a competitive advantage for economic development
 - Energy systems will be technology driven
- **Environmental Sustainability**
 - We are committed to reducing green house gases
 - We will maximize the benefits of our reduced carbon emissions
 - We will be viewed as an environmentally conscientious state