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**A Clean Energy
Strategy Could Bring
New Life to the Illinois
Economy**

**Vision 20-20:
Developing a Regional
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**The Benefits of Eating
Local In Illinois**

Illinois Labor Market Review

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A Clean Energy Strategy Could Bring New Life to the Illinois Economy

by Dave Bieneman, Ph.D.

The doubling of oil prices over the last 18 months has contributed to the slowdown in the national economy during this period. Due to the country's dependence on foreign oil, hundreds of billions of dollars are sent out of the country each year in exchange for the commodity that drives our economy. Petroleum products accounted for less than 9% of the import bill in 2002, but this proportion jumped to more than 20% by the first quarter of 2008. Imports of petroleum products increased more than 220% between 2002 and 2007, while imports of nonpetroleum products grew roughly 54%. The long term trend of heavy import flows has weakened the foreign exchange of the dollar, which recorded a 26.5% drop against major currencies between 2002 and 2007. According to the Energy Information Administration (EIA), over 40% of the United States' total energy consumption in 2005 was petroleum-based and almost 86% was derived from fossil fuels. Moreover, the use of oil and other fossil-based fuels as the nation's main energy source has adversely impacted the environment.

One benefit that has come from the economic pain suffered by the country in the last few years is that the nation is being forced to reassess plans for the future of its energy industry. People have come to the realization that continued dependence on foreign oil leaves the country vulnerable. The potential growth of the economy is constrained by the cost and availability of energy resources; consequently the level of success the nation has in dealing with the future of energy will

determine the scale of long-term economic growth as well as the economy's wealth. If all parties cooperate, the U.S. has an opportunity to bring positive change to the economy.

Illinois is currently a net importer of energy resources but the state has potential to eventually become a net exporter under the right circumstances. A strategy could be developed and implemented that modifies the composition of energy resources that are utilized to ensure a bright economic future. A host of clean energy related projects are already underway in the Midwest that should be given careful consideration individually and as a whole. It is possible that the integration of these pieces in the planning stage and their eventual implementation could bring about structural changes to the Illinois economy while modifying its role in the national economy. New industries with many good-paying jobs could evolve as a result.

Clean energy sources such as ethanol, biodiesel, wind, geothermal and solar could be used as a replacement for power currently produced by more traditional means. Clean-coal methods exist that would allow for a greater use of Illinois coal in power generation while still lessening negative impact on the environment. Nuclear energy is considered a clean energy source albeit with some safety concerns and a dangerous waste product. All of these sources are included in the list of possible solutions to address the nation's dependence on foreign oil and environmental problems associated with carbon emissions.

Potential Sources of Energy

The main objectives of a statewide energy strategy are to reduce carbon-based emissions, decrease the dependence on foreign oil, and determine those industries that would have the most success creating jobs for the Illinois labor force. The following is a brief explanation of energy sources that could replace some portion of the power currently generated by traditional fossil-fuel technologies.

Ethanol – Illinois ranks #2 among all states in corn-based ethanol production. However, the views on ethanol remain divided. Detractors argue that the carbon-based energy used to produce corn-based ethanol and the large amount of water required negates its environmental benefits. Another concern is that some believe using corn to manufacture ethanol has led to price increases of food commodities including corn, other grains, and related products. Advocates for corn-based ethanol argue that these price increases are due to rising transportation costs. In addition, they argue that ethanol's use reduces total emissions by about 20%.

Many view corn-based ethanol as a first-generation technology. However, advancements in technology have allowed continued improvements in production methods. Ethanol made from sugar cane has an energy ratio approximately 6 times as great as corn ethanol (energy ratio defined

as energy released from burning the fuel relative to energy used to create the fuel). Brazil produces large quantities of sugar cane ethanol but faces tariffs if it wants to sell that product in the United States. Sugar beets may be grown in this country as a substitute for sugar cane. The latest research revealed that cellulosic ethanol could have an even higher energy ratio than sugar cane ethanol. This product is made from corn-harvest leftovers, inedible parts of other plants, and non-food plants such as switchgrass and miscanthus. With these local resources, Illinois should continue to be a leader in the ethanol industry.

Biodiesel – Biodiesel is another energy field in which Illinois has become a national leader. Multiple biodiesel plants are currently operating in Illinois. Illinois has large quantities of organic matter (biomass) that are available on a renewable basis. Examples include agricultural products and byproducts, wood, sewage and others wastes. The emphasis for biofuel production has moved from using commodities that have other purposes to waste products and residues that would actually relieve stress on the economy and society as a whole. Advancement in technology could eventually lead to the utilization of algae as the primary source of cellulosic biofuels. Algae can grow at much faster rates (algae can double their weight several times each day) than agricultural products typically grown for food. They can be grown and harvested

“Illinois had the first privately-built commercial nuclear power plant and ranks first among all states in nuclear power capacity (2005).”

continuously while agricultural products would be typically harvested once each year. One other advantage is that carbon dioxide and solid wastes can be used as a feedstock to increase the yield rates of the algae. Once harvested, the algae produce oil, which in turn can be processed into fuel. Algae can also be grown in locations that are not necessarily suitable for agriculture.

Wind – Although coastal and western states offer the best locations for wind farms, Illinois does have enough good locations to generate electricity via this technology. The most promising locations appear to be

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in northern and central Illinois. The towers for wind generation are massive. Although the electricity produced is clean, some people consider the towers unsightly and a source of noise pollution. In addition they are problematic for birds flying near them. Fortunately, they tend to be located away from population centers where few people have to look at and listen to them. These locations can also generate supplemental income for farmers. An old converted manufacturing plant in Clinton builds these massive towers. Since the towers are large and difficult to transport it is likely that tower manufacturers will have to be located somewhere close to the final destination. As a result, jobs will be created to replace those manufacturing jobs lost in Illinois in the past decade. The supply of wind turbines cannot keep up with demand at this time. Wind power generating companies are actively seeking manufacturers and siting facilities in the state and region that can supply parts for production to help remedy that situation.

Solar – The western and southwestern United States have an advantage over Illinois when it comes to producing power on a large scale via solar technology. However the solar industry

still has a place in the state. There are times of the year when little sun is available to be harvested, but investment in solar panels by homeowners could pay off by reducing power bills. Solar panels are also being installed on the roofs of commercial retailers and office buildings to help lower their energy costs. If a smart-grid system is built in Illinois, then surplus electricity could be used by the grid for additional credit to the owner of the solar-generated power source. Currently, a company is planning to build a photovoltaic solar panel assembly plant near Rockford. Another business in central Illinois has developed an inverter that converts direct current (DC) from solar panels to the alternating current (AC) that is typically used by products requiring electricity.

Clean Coal – Illinois has among the largest coal reserves of any state in the country, but it imports much of the coal it uses for energy production from Wyoming. Illinois bituminous coal has higher sulfur content than the Wyoming coal and so many coal-burning power plants with older technology utilize the Wyoming coal. Bituminous coal does have a higher energy value than the Wyoming coal and Illinois' coal reserves have more total energy value than the oil reserves of Saudi Arabia and Kuwait combined. Integrated Gasification Combined-Cycle (IGCC) technology is a process that allows a power plant to convert Illinois coal into a synthetic gas while isolating other chemical components such as hydrogen, carbon dioxide, nitrous oxides and sulfur. The synthetic gas would be burned in gas turbines that generate electricity. The waste heat would be used to drive steam turbines that also generate electricity. The hydrogen could be utilized by fuel cell technology that motor vehicles may someday use instead of gasoline. The carbon dioxide created from power generation would be harnessed and then stored underground below rock level. Another possibility would be to use the carbon dioxide as a feedstock for biofuels.

Nuclear – Illinois has a long history with nuclear power. Illinois had the first privately-built commercial nuclear power plant and ranks first among all states in nuclear power capacity (2005). Safety factors, real or perceived, appear to be the primary reason behind the stagnation of this industry. The biggest concerns are radiation leaks and nuclear waste disposal. Current technology allows for safety improvements in the operation of nuclear plants and the reprocessing of nuclear waste. Costs of plant construction and maintenance are high because containment areas and reliable operation control systems must be included as safety features. Technology has advanced so that the waste can be reprocessed with a large reduction in the amount that would need to be safely stored. Nuclear power should be included as an alternative option in Illinois' energy future since it has the capacity to generate large amounts of electricity, the production of which is free from carbon dioxide emissions. New scientific developments could reduce concerns about nuclear as an energy option in the future.

Geothermal – This energy source taps into sources of heat in the earth's core. California has made good use of this alternative source of energy as it has good access to geothermal reservoirs, generally in areas near its earthquake faults. Several power generating plants of this type are near the Salton Sea area (located in the desert east of San Diego). A smaller scale example in Illinois is the heat exchange system used in the construction of Elgin's new Sherman Hospital. Pipelines run through the hospital to a 15-acre lake built outside of the hospital. The pipes contain water and a non-toxic antifreeze that are used to carry heat out of the hospital in warm weather and carry heat into the hospital during cold weather. Heat pumps operate inside the hospital to exchange heat with the pipeline fluids as the season requires. Illinois can use geothermal energy on a smaller scale



for buildings like hospitals, but it appears to work better on a large scale in the west where they are capable of generating larger amounts of power.

Hydroelectric – These types of power plants are generally built in connection with dams on rivers with large elevation drops. The water from the upstream side of the river enters through an intake valve and as it drops to the downstream side it turns a turbine, which then generates electricity. The main environmental impact on the area comes from changes to the surrounding environment of backing up water behind the dam. This source is not widely used in Illinois. Quincy is currently investigating the possibility of building a hydroelectric facility that would utilize the Mississippi River to generate electricity.

Production and Consumption of Energy

Note: All energy numbers used in this paper have been converted to BTUs (British Thermal Units) in order to simplify comparisons between energy sources.

Current levels of energy production and consumption in Illinois and the United States reveal some interesting information. Table 1 shows data on the amount of energy resources produced by various sources for Illinois and the U.S. In 2005, 727.4 trillion BTUs of coal were mined in Illinois.

The numbers show that coal and nuclear plants account for more than 90% of the energy produced by Illinois. These same two resources account for 45% of the nation's

“Clean energy technologies are likely to increase in usage over time but investing more heavily in them now could bring higher returns to the state.”

Table 1- Production Estimates for Energy Resources in Illinois and the U.S., by Source

Energy Source	Illinois Production (Trillion BTUs)	% of Illinois Total	U.S. Production (Quadrillion BTUs)	% of U.S. Total
Coal	727.4	39.4%	23.185	33.3%
Natural Gas (Dry)	0.2	0.0%	18.574	26.7%
Crude Oil	59.2	3.2%	10.963	15.7%
NGPL*	-	-	2.334	3.4%
Fossil Fuel, Total	786.8	42.6%	55.056	79.1%
Nuclear Electric, Total	971.9	52.7%	8.160	11.7%
Hydroelectric	-	-	2.703	3.9%
Geothermal	-	-	0.343	0.5%
Solar/Photovoltaic	-	-	0.066	0.1%
Wind	-	-	0.176	0.3%
Biomass	-	-	3.141	4.5%
Renewable Energy, Total	87.1	4.7%	6.431	9.2%
Total	1,845.7	100.0%	69.647	100.0%

*Natural Gas Plant Liquids

Source: Energy Information Administration

Table 2 – Consumption Estimates for Energy Resources in Illinois and the U.S., by Source (2005)

Energy Source	Illinois Consumption (Trillion BTUs)	% of Illinois Total	U.S. Consumption (Quadrillion BTUs)	% of U.S. Total
Coal	1,047.5	25.4%	22.795	22.7%
Imports of Coal Coke	-	-	0.044	0.0%
Natural Gas	984.2	23.9%	22.645	22.6%
Petroleum	1,486.1	36.1%	40.733	40.6%
Fossil Fuel, Total	3,517.8	85.4%	86.173	85.9%
Nuclear Electric	971.9	23.6%	8.149	8.1%
Hydroelectric	1.3	0.0%	2.703	2.7%
Biomass	44.4	1.1%	2.631	2.6%
Other	2.9	0.1%	0.669	0.7%
Net Interstate Flow of Electricity/Losses	-416.8	-10.1%	-	-
Total	4,121.5	100.0%	100.369	100.0%

Source: Energy Information Administration

energy resource production. The major difference between Illinois and U.S. production is that the majority of the crude oil and natural gas extracted in the U.S. is done outside of Illinois. Illinois has almost 25% of the nation's bituminous coal reserves and was one of the first states in the country to build nuclear power plants. A large percentage (11.9%) of the nation's nuclear power is generated in Illinois.

The data in Table 2 provide information on the amount of energy consumed, by source, for

Illinois and the nation. It shows that Illinois consumes more petroleum for energy than any other resource. Most of this consumption takes place in the transportation sector. Coal, natural gas, and nuclear generated electricity are consumed at roughly two-thirds the rate of petroleum. In 2005, 1,047.5 trillion BTUs of coal were used for power generation.

Net Interstate Flow of Electricity/Losses shows the amount of electricity generated in Illinois which is exported outside of the state. The national data reveals that almost 86% of

the energy resources consumed in the U.S. are of a fossil fuel base. U.S. consumption of petroleum accounts for over 40% of total consumption while both coal and natural gas have over 22% of the total.

The data in Table 3 show how energy consumption is broken out among end-use sectors. The Industrial sector uses the most energy in both Illinois and the U.S. followed by Transportation, the Residential sector, and lastly the Commercial sector. The four sectors use relatively similar amounts of

Table 3 – Consumption Estimates for Illinois and the U.S., by End-Use Sector (2005)

Sector	Illinois Consumption (Trillion BTUs)	% of Illinois Consumption	U.S. Consumption (Quadrillion BTUs)	% of U.S. Consumption
Residential	1,011.0	24.5%	21.743	21.7%
Commercial	765.4	18.6%	17.950	17.9%
Industrial	1,234.3	29.9%	32.323	32.2%
Transportation	1,110.8	27.0%	28.352	28.2%
Total	4,121.5	100.0%	100.369	100.0%

Source: Energy Information Administration

energy although the gaps are slightly bigger for the nation. The percentage consumed for the Residential sector in Illinois may be a little higher because of temperature extremes reached in the summer and winter, which require more air conditioning and heating than the national average.

Table 4 is a simple comparison of how many standard units of each clean energy resource are needed to produce the same amount of energy. This exercise was done for the sole purpose of determining an approximate number of units of various alternative energy sources that would be needed to meet current energy consumption for Illinois. For this example a nuclear power plant of the size currently in operation in Illinois was used and found to produce the most electricity. It was compared to a modern technology coal

gasification plant and a standard size wind farm to determine approximately how many units of each resource would be needed to produce the same amount of electricity. No concern for the costs of development of these power plants was included in this comparison. Typical ethanol and biodiesel plants of a size operated in Illinois were used to find estimates of the energy produced by a typical production plant for use as fuel for transportation vehicles. Information was gathered for each resource and estimates of power generated for each resource were made.

The comparison shows that a nuclear power plant would generate the most electricity given the assumption of standard unit sizes for the various clean energy resources. It would take approximately 3.8 clean coal plants and 40.1 wind farms (100 towers each) to produce the

same amount of power on an annual basis. Although the ethanol and biodiesel plants used in this study were intended for transportation energy consumption only, the data estimates show that either 8.5 ethanol plants or 8.7 biodiesel plants of a standard size would generate as much energy (in BTUs) as one nuclear plant.

Calculations shown at the bottom of the data table approximate the number of standard units required to match the consumption of energy in Illinois for 2005. An assumption was made that the sum of residential, commercial, and industrial energy consumption was all electric for the first calculation. That amount (3,010.7 Trillion BTUs) is divided by the amount of energy produced by a standard unit size for a nuclear power plant, a clean coal plant, and a wind farm. The results show that 44.1

Table 4 – Units of Clean Energy Resources Needed to Satisfy Current Consumption in Illinois (2005)

Energy Resource	Standard unit size	Energy Produced (Trillion BTUs)	# Units per 1 Nuclear Plant
Nuclear	1 plant with 2 reactors	68.2	1.0
Coal	Modern tech coal gasification plant	18.0	3.8
Wind	1 farm with 100 towers	1.7	40.1
Ethanol	100 million gallons per year	8.0	8.5
Biodiesel	60 million gallons per year	7.8	8.7

Residential + Commercial + Industrial Energy Consumption = 3,010.7 Trillion BTUs

Number of Plants Required to Replace Energy Consumption

Nuclear plants = $(3,010.7/68.2) = 44.1$

Coal plants = $(3,010.7/ 18.0) = 167.3$

Wind farms = $(3,010.7/ 1.7) = 1,771$ (177,100 towers)

Transportation Energy Consumption = 1,110.8 Trillion BTUs

Number of Plants Required to Replace Energy Consumption

Ethanol plants = $(1,110.8/8.0) = 138.9$

Biodiesel plants = $(1,110.8/7.8) = 142.4$

Source of Consumption Data: Energy Information Administration

“One of the most important pieces of the country’s energy future lies in energy conservation and efficiency.”

nuclear plants would be needed to produce enough energy to match electric consumption in Illinois for 2005. 167.3 clean coal plants would be required and 1,771 wind farms would be needed. The second calculation shows that either 138.9 ethanol plants or 142.4 biodiesel plants of the standard unit size would be needed to produce the same amount of energy that was consumed by the transportation sector in Illinois during 2005.

Energy Efficiency & Smart Grid

One of the most important pieces of the country’s energy future lies in energy conservation and efficiency. Many sources of alternative energy could be created to provide power for the future, but more would have to be created if that power is not used efficiently. Most of this effort involves the retrofitting of older buildings along with using up-to-date efficiency methods in the construction of new buildings. Energy efficiency involves insulation of walls and ceilings, improved windows and doors, installation of energy efficient appliances, and related items that would cut heating and air conditioning as well as other energy requirements for residential and non-residential buildings. This industry category is important because the savings of energy that could result would reduce the amount of generating capacity required.

Any energy plan for Illinois may want to consider an overhaul of the electrical grid. The system was not designed using modern engineering methods and was not built to meet the demands of electronic devices by contemporary society. The U.S. Department of Energy has developed the “National Transmission Grid Study” in response to issues related to the loss of power to 50 million people in the northeastern U.S. and Canada in August, 2003. A complete review of the current grid was conducted and a plan was developed for the creation of a new national grid structure. The Illinois SMART GRID Initiative, an organization that is open to members of all interested parties, is discussing

how the national model could translate to a plan for the state of Illinois.

One issue under consideration is the conservation of electricity under peak-load conditions, when electricity costs more. The concept being discussed would provide two-way communication between energy producers and energy users. Ideally producers would be able to alert customers at times of peak-load and provide the customers with the option to reduce their electricity. This could be accomplished by having a display in each residential customer’s home that clearly shows times of peak-load. This system is known as Advanced Metering Infrastructure (AMI).

Overhauling the distribution system for electricity is another issue. The grid was originally built for a different kind of economy and would require modification to provide the proper infrastructure for today’s digital economy. This effort would minimize power losses in transmission and outages due to failures, be more secure, and be more connectable to electricity generators of various types and sizes. Individuals and/or businesses would be able to supply surplus capacity to the grid for other customers to use. Commonwealth Edison seems to be making plans to develop a smart grid system in the northern portion of Illinois including the Chicago metropolitan area. Electric companies in the central and southern parts of the state are beginning to making similar plans. There will likely be small increases in electric bills to pay for these changes. However, future bills may be reduced from efficiencies built into a new system.

Conclusion

Illinois may want to consider a clean energy strategy as part of its long-term economic plan. A renovation of its electrical grid provides flexibility and may make it easier to integrate alternative energy sources. This industrial strategy overlaps with a green jobs strategy, where “green jobs” are typically defined as

jobs that make a significant contribution to the environment, require more than a high school education but less than a 4-year college degree, and pay enough to support a family. These jobs could take advantage of workforce development funds while utilizing the Illinois community college system. The state's existing labor force matches up well with the skills required by jobs generated by this strategy.

Any clean energy strategy for Illinois would likely give priority consideration to clean-coal technology. Investment in wind power, subsidized by federal and state governments, would also be a supporting energy source. Solar power may be encouraged more at the smaller user level since it is also dependent on the weather. Geothermal power is perhaps better used on a smaller scale in the state. The import of natural gas from other states may decrease as it could be replaced in part by synthetic gas generated from clean coal technology. Nuclear power may then be used as an option to provide any remaining amount of electric power required. The state's relative strength in clean coal may allow the export of surplus electricity to neighboring states. Both the ethanol and biodiesel industries appear to have bright futures in Illinois and could replace a significant amount of petroleum based products currently used by motor vehicles in the state, most of which is currently imported.

Clean energy technologies are likely to increase in usage in Illinois over time. Jobs for rural Illinois would likely result from investments in the clean coal, ethanol, biodiesel, and wind industries. Improvements such as high speed Internet access for the rural portions of the state may also help improve the economic situation. More jobs would be created in urban areas by emphasizing energy efficiency for office buildings and homes. The economic revitalization driven by a clean energy strategy would make Illinois a better environment for business and a better place to live and work for its citizens.

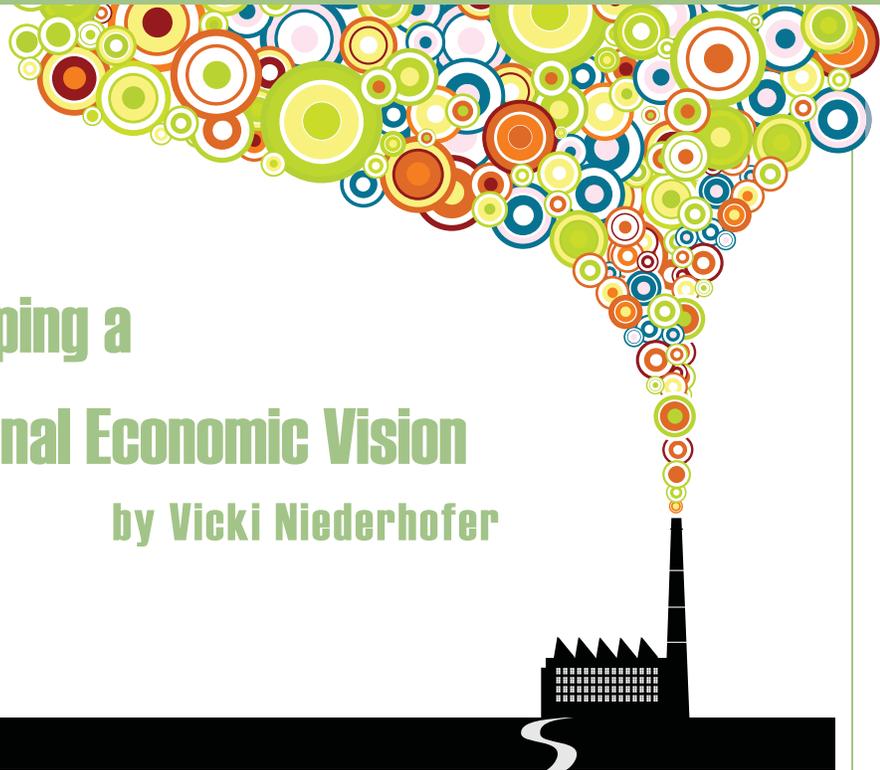
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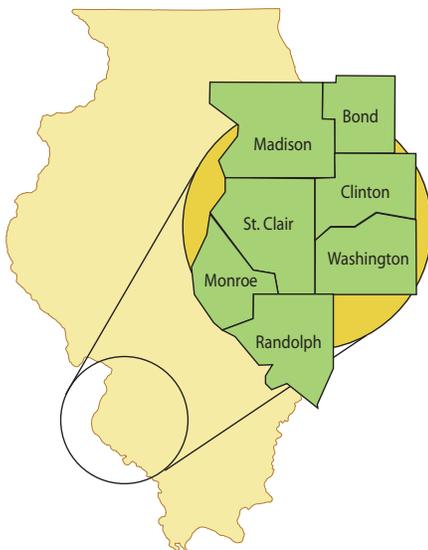
Vision 20-20: Developing a Regional Economic Vision

by Vicki Niederhofer

Vision 20-20 is a collaborative effort to construct a local economic framework for the future. The integration of economic development, workforce development and education is the focus of a Regional Integration Grant proposal submitted to the U. S. Department of Labor in August, 2008 by Madison County on behalf of the seven counties represented by the Madison-Bond and Mid America Local Workforce Investment Boards. Those counties are Madison, Bond,

St. Clair, Clinton, Washington, Monroe and Randolph. This roughly approximates the Illinois Section of the St. Louis Metropolitan Area with the exclusion of Calhoun, Jersey and Macoupin counties and the inclusion of Washington County. The designation of southwestern Illinois will serve to describe the geographic parameters determined by the service area of both local workforce investment boards as they collaborate to determine the challenges facing the local workforce and implement realistic short and long-term strategies to support and transform growth and opportunity in the region.

“Stakeholders in the southwestern region have embraced the challenges and are initiating the process to create a vision for the twenty-first century workforce.”



The Vision 20-20 Steering Group includes leadership from Illinois Department of Commerce and Economic Opportunity; the Leadership Council-Southwestern Illinois and other economic development professionals; the Southwestern Illinois Central Labor Council, AFL-CIO; Conoco Phillips Wood River Refinery, and the Bank of Edwardsville. Education and workforce development stakeholders include Southern Illinois University, Edwardsville; Lewis and Clark Community College, Southwestern Illinois College, Madison and St. Clair counties' board chairmen and regional superintendents

Did You Know?

Illinois is the largest pumpkin producer in the United States. Every year about 12,300 acres are planted and harvested. This adds up to a crop value of around \$10 million.

Illinois is also the largest pumpkin processor in the U.S. According to Bob Reese, a marketing representative for the Illinois Department of Agriculture, an estimated 95 percent of the pumpkins processed in the United States are grown in Illinois.

Source:

IL Dept. of Agriculture, "Illinois Leads Nation in Pumpkin Production," <www.agr.state.il.us/newsrels/r1022041.html>

of schools working in association with professionals serving on the local workforce investment boards.

The process involves six phases: Initiate; Assess; Benchmark; Vision; Mobilize and Track. The local workforce investment boards, partners in business and local leaders in education will collaborate with leaders in state and federal government to meet the demands of the transition to the renewable and cleaner energy economy as the region's "green economy" emerges.

The broad range of industries within the green job initiative emphasizes sustainable processes or "clean" energy. Examples evident in the region include ethanol production, generation of electricity from "clean coal" and reducing emissions in refining processes. Stakeholders in the southwestern region have embraced the challenges and are initiating another step in the creation of a shared vision for the twenty-first century workforce.

The National Corn-to-Ethanol Research Center opened on the Southern Illinois University campus in 2003. The effort to develop alternative, renewable energy resulted in some 49 ethanol plants in Illinois, either already operational, under construction, or being planned since 2000, when only four existed. In September 2008, Governor Rod Blagojevich announced a \$4 million grant to Abengoa Bioenergy for their \$275 million ethanol plant currently under construction in the Tri-City Port Authority. Center Ethanol opened in Sauget April 2008 and will produce up to 54 million gallons of ethanol per year. The Illinois Environmental Protection Agency received an application for a permit from SWI Energy in Alton for a dry-mill ethanol plant that could produce 66 million gallons a year.

Prairie State Energy Campus, the "clean coal" electricity generating station in Washington County currently under construction, is expected to be operational in 2012. According

to Southern Illinois University Carbondale's 2003 Prairie State economic study prepared by Dr. Jim Musumeci, an associate professor of finance in SIUC's College of Business and Administration, the direct and indirect benefit will result in \$2.8 billion injected into the Illinois economy over thirty years.

Over the course of development and operation, the study also shows that Prairie State would:

- Generate more than \$200 million in new taxes for state and local governments;
- Create an average of 1,850 jobs per year while the mine and power plant are under construction;
- Create about 39,600 job-years of employment for Illinois, with each job year representing employment for one person for one year.

ConocoPhillips Wood River Refinery in Madison County was issued an air permit for a new \$2 billion coke oven project in August 2008. Canadian oil sands from Calgary, Alberta will be processed into petrochemical products. The applications will include fuel for aircraft, motor vehicles and a variety of plastics, fibers, coolants and antifreeze. The refinery expansion is expected to take two years, adding 100 new full-time jobs along with up to 2,500 construction jobs. The state-of-the-art pollution control technology will significantly reduce emissions, with a 95 percent reduction in sulfur dioxide and a 25 percent reduction in nitrogen oxides.

Challenges resulting from rising energy costs bring opportunity. Identifying the needed skills, developing appropriate training programs, and training workers for jobs in "green" industries will ultimately require partnerships with all stakeholders. Stakeholders in the southwestern region have embraced the challenges and are initiating the process to create a vision for the twenty-first century workforce.



The Benefits of Eating Local In Illinois

by Rachael Halloran



In this age, technological advancements are occurring almost faster than one can register. It's interesting that, in the midst of this trend, the Oxford Dictionary's 2007 word of the year was *locavore* - a word that embraces a lifestyle humans have embraced for thousands of years: eating local food. Until recently, we were eating locally primarily because there was no other choice. Food could not be preserved long enough and transportation was too slow. However, over the past 100 years food production has been revolutionized. We can, and do, get food from all over the earth.

Food travels, on average, 1,500 miles before it ends up on an Illinois plate. Ninety-five percent of organic foods in Illinois are grown and processed outside of the state. While agriculture is big business within the state, less than 0.2% of food grown in Illinois is sold directly for human consumption. But the recent growth of local farmers' markets, community-supported agriculture, and an increasing consumer interest in local and organic products, places Illinois in a position to take advantage of this current economic trend.

Growth of Farmers' Markets = Growth of Farms

The advantages of local and organic produce are already apparent in Illinois. Since 1999, the number of farmers' markets in the state

has more than doubled to almost 250 markets across the state. The U.S. Department of Agriculture has estimated that sales generated by farmers' markets across the country exceed \$1 billion a year. This growth brings money to small family farms and helps to invigorate a segment of the workforce that has been struggling in recent years.

Farmers' markets also serve to strengthen intrastate bonds between the urban, suburban and rural communities through the direct interaction between food producers and consumers at farmers' markets, community-supported agriculture and farm shares. In addition, a growing number of farms not only grow food to sell, but also host tours, provide classes, and offer on-site workshops. This adds up to tourism dollars from within and without the state. Angelic Organics in Caledonia, IL (www.angelicorganics.com/) is an example of a farm that has branched out in this direction. They offer several workshops and have pioneered community-wide education on the benefits of sustainable agriculture.

Farms, Cities and Communities

Urban farms are also flourishing. They are often direct suppliers of urban farmers' markets and fine dining restaurants who are responding to consumer demand for local, fresh food. But urban farms don't always stop at food production. Non-profit organizations

such as Growing Power (www.growingpower.org), City Farm (www.resourcecenterchicago.org/70thfarm.html) and Growing Home (www.growinghomeinc.org/) have taken the local food movement and combined it with community education. These farms, which are often located in underserved areas, provide a place for participants to learn how to raise and harvest food, as well as gain experience in marketing and sales at farmer's markets and through direct selling. Growing Power in particular has an interesting model. They use their farms as a transitional employment program designed for individuals with barriers to employment. Participants might be homeless, have been incarcerated, or have had substance abuse issues. Working at Growing Home provides skills and job readiness training, as well as a job in the organic agriculture business for several months. Each of these urban agriculture programs is an example of how growing local food can provide community support as well as fresh, healthy food.

Local Food and Public Health

In addition, Illinois participates in the Senior Farmers' Market Nutrition Program and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC). These programs aim to provide fresh fruits, vegetables and herbs from farmers' markets to women, children and seniors who are at nutritional risk. WIC program participants and seniors

are eligible to receive checks that they can redeem for goods from vendors participating in the program. The program is funded through a Federal grant from the USDA's Food and Nutrition Service. More information on Illinois' participation can be found here: www.dhs.state.il.us/page.aspx?item=38054

Schools are also starting to use locally prepared foods. In Chicago, the public schools have started a pilot program that aims to put fresh vegetables and fruit on the lunch menu at 30 schools twice a week. The main food service provider for Chicago Public Schools, Chartwells, cites three reasons they wanted to include fresh local foods in the menu. First, local foods are good for the environment because they reduce carbon emissions that occur during transport. Second, with expensive gasoline prices, local foods make sense economically and save the school district money. Third, the introduction of fresh foods in the lunchroom teaches kids the importance of good nutrition and helps combat the obesity epidemic. Bob Bloomer, the Regional Vice President for Chartwells made this observation, "Many kids had never seen whole fruits before. They got turned off

by the fuzz on peaches and anything with a slight bruise!" Fresh produce as a regular part of student's diet helps familiarize kids with healthy, nutritious foods as an alternative to highly-processed junk food.

Food, Farms and Jobs of the Future

In order that the state take best advantage of the current consumer interest in local and organic food, the Illinois General Assembly passed the Foods, Farms and Jobs Act in August 2007. This act established a task force that, over the period of two years, is charged with developing a plan containing policy and funding recommendations for expanding and supporting state, local and organic food system and for assessing and overcoming obstacles to increasing locally grown, organic and conventional, food production. This plan will cover:

- Land acquisition for local and organic agriculture;
- Expanding current training programs;
- Identifying financial incentives, support, and training for Illinois farmers as they transition to local, organic, and specialty crops;

- Increasing the availability of affordable Illinois-grown foods by creating new food outlets in underserved communities;
- Educating the public on the benefits of a local food system.

Other issues pertaining to the growth of the local and organic food industry will be investigated as well. The task force is due to report its findings on Sept 30, 2008.

¹Jennifer Brandel, "School Lunches go Local," www.wbez.org/Content.aspx?audioID=28902 (16 September 2008).



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