Job Jolt

Clean Energy Development is Already Good Business for Indiana:

Repowering the Midwest presents a 20-year plan for moving Indiana to a cleaner energy future. Many Indiana businesses and thousands of workers are already part of the growing clean energy business sector, including:

Indiana Businesses

Company	Location	Business Product
Cummins	*Seymour*	*Co-generation Systems*
Davis Homes	*Indianapolis*	*Energy Star® Home Construction*
Minkus Construction	*Indianapolis*	*Energy Star® Home Construction*
Water Furnace	*Fort Wayne*	*Geothermal Heating Systems*
Weil - McClain	*Michigan City*	*Radiant Floor Heating*
Whirlpool	*Evansville*	*Energy Star® Refrigerators*

In addition, thousands of Indiana businesses have already invested in modern energy efficiency technologies ranging from new industrial motors and HVAC systems to efficient commercial lighting. Among Indiana companies making significant investments in energy efficiency are Cummins and Eli Lilly. Countless homeowners and renters have also installed energy efficient appliances and compact fluorescent lighting.

Minkus Homes
Indianapolis, Indiana

Energy Efficient Construction

Minkus Homes is an Indianapolis homebuilder specializing in energy efficient construction.The extra cost for the energy efficient construction materials which they use—including quality windows, ample insulation, and efficient heating and cooling—typically is recaptured in energy savings within 18 months. Homeowners then continue to enjoy these energy savings for years to come.

WaterFurnace
Fort Wayne, Indiana

Geothermal Heating and Cooling Systems

WaterFurnace, based in Fort Wayne, is one of the world's leading producers of geothermal heating and cooling systems for commercial, institutional and residential applications. These systems use the constant temperatures below the earth's surface to provide warm air to buildings in winter and cool air in summer, cutting down both on natural gas and electricity consumption. For every unit of electricity the system uses, it provides four units of heating/cooling energy, giving a geothermal system a 400 percent efficiency rating on average and lowering utility bills by 30-60 percent over conventional systems. WaterFurnace employs close to 200 people in Fort Wayne.

Environmental Law and Policy Center

The Environmental Law and Policy Center is the Midwest's leading environmental legal advocacy and eco-business innovation organization. We believe that environmental progress and economic development can be achieved together, and we put that principle into practice through clean energy development and other initiatives to protect natural resources and improve environmental quality. For more information, please contact the Environmental Law and Policy Center at 312-673-6500 or www.repowermidwest.org.

Regional Economics Applications Laboratory

The Regional Economics Applications Laboratory (REAL) was formed in 1989 to provide analytical capability to a range of policy and decision makers in the Midwest through the construction and application of economic models of urban, metropolitan and state economies. Applications have ranged from impacts of cultural events to the role and impact of international trade on interstate trade among the Midwestern state economies.

Repowering the Midwest – The Clean Energy Development Plan for the Heartland

Capturing 21st Century Opportunities for Clean Energy

Repowering the Midwest, issued by the Environmental Law and Policy Center in 2001, presents a strategic clean energy development plan that implements smart policies and practices to capture readily achievable environmental, public health and economic development benefits. This sustainable development strategy is good for both the economy and our environment. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying the regional power supply which relies too heavily on old highly polluting coal plants and nuclear plants, Midwest and Great Plains states can reduce pollution, improve electricity reliability, create new manufacturing and installation jobs, and provide "clean energy cash crops" for farmers. **In Indiana alone, implementing the Clean Energy Development Plan will produce as many as 22,000 net new jobs and $1.8 billion in increased economic output by 2020.**

The Clean Energy Development Plan

Indiana should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost. Moreover, investing in energy efficiency and renewable energy will diversify the region's electricity portfolio, thereby improving reliability.

Figure 1: Economic Impacts of the Clean Energy Plan for Indiana

Clean Energy	Employment Impacts (# of net new jobs created)		Economic Output Impacts (2001$)	
	2010	2020	2010	2020
Energy Efficiency	*8,795*	*15,513*	*$690 Million*	*$1.24 Billion*
Renewable Energy	*3,450*	*6,540*	*$292 Million*	*$553 Million*
Total-Net	**12,245**	**22,053**	**$982 Million**	**$1.79 Billion**

The Clean Energy Development Plan:

1. Aggressively implements the newest, as well as "tried and true," energy efficiency technologies.
2. Develops and implements renewable energy technologies—wind, biomass and solar power—so that they provide 8 percent of the region's electricity generation by 2010, and 22 percent by 2020.
3. Develops and implements efficient natural gas uses in appropriate locations, especially combined heat and power (CHP), district energy systems and fuel cells, so that they provide 10 percent of the region's electricity generation by 2010, and 25 percent by 2020.
4. Retires selected older, less efficient and highly polluting coal plants.
5. Applies sustainable development strategies to aggressively link environmental improvement policies to economic development.

"Job Jolt": The Economic Impacts of Repowering the Midwest

The Regional Economics Applications Laboratory (REAL) of the University of Illinois, a research group involved in urban and regional economic forecasting, evaluated the economic impacts of the Clean Energy Development Plan. Using sophisticated econometric modeling and the data and assumptions contained within *Repowering the Midwest*, REAL quantified the net new jobs and increased economic output that would be created in each state within the region. For Indiana, these economic benefits include:

- New Jobs: 12,000 net new jobs by 2010 and 22,000 by 2020, in almost every sector of the state's economy.
- Economic Growth: $1 billion of increased economic output by 2010 and $1.8 billion by 2020.
- Energy Cost Savings: $700 million in annual net electricity cost savings by 2020 from energy efficiency which will be spent by businesses and residential consumers to bolster Indiana's economy.

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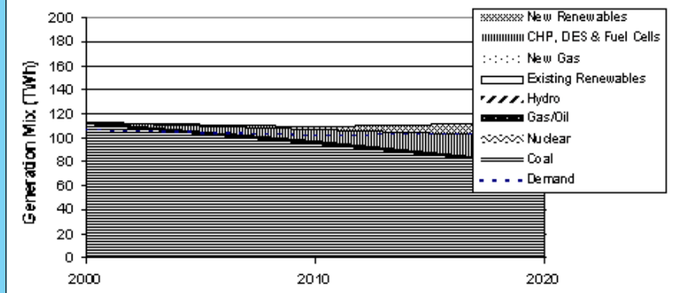
Figure 2: Clean Energy Development Plan for Indiana



Source: Repowering the Midwest

The Clean Energy Development Plan in Indiana:

As Figure 2 shows, implementing the Clean Energy Development Plan in Indiana means:

- Energy efficiency measures flatten out electricity demand, and therefore the need for new generation. By 2010, electricity demand will be 16 percent lower than a "business as usual" baseline and by 2020, demand will be 28 percent lower—avoiding the construction of 15 new power plants to meet this demand.
- Generation from renewable energy resources and efficient natural gas increases. By 2010, these sources will be 11 percent of Indiana's electricity generation, and by 2020 they will be 31 percent.
- Generation from coal plants decreases from 98 percent of Indiana's power mix today to 68 percent by 2020.

Economic Benefits of Investing in Modern Energy Efficiency Technologies

Indiana has a strong manufacturing base, and local companies now produce many energy efficiency products that are sold throughout the region and nation. As these industries grow, new jobs will be created not only in manufacturing, but also installing and maintaining these efficiency products ranging from industrial motors to advanced commercial lighting. In addition, businesses investing in energy efficiency measures will re-channel some of their energy cost savings into capital investment and increased payroll. Household energy cost savings from using efficient lighting, air conditioners, and appliances will also be re-spent on the Main Streets of Indiana's cities and towns.

Implementing modern new cost-effective energy efficiency technologies — commercial and residential lighting, heating, ventilation and cooling (HVAC), industrial motors, and refrigerators and other appliances — will flatten out Indiana's electricity demand over the next two decades as shown in Figure 2. That will save 42,000 gigawatt-hours of electricity by 2020 – equal to about 15 powerplants, and reduce electricity demand by 16 percent in 2010 and 28 percent in 2020. Figure 4 identifies the projected economic impacts of implementing *Repowering the Midwest's* Energy Efficiency Plan in Indiana.

Investments in cost-effective energy efficiency will produce $700 million in net electricity cost savings for both business and residential consumers. As the benefits from energy efficiency are spread across the Indiana economy, the decline of jobs in the utility sector due to flattened demand for electricity is greatly offset by the large numbers of new jobs created in other business sectors, particularly manufacturing, trade and services.

Figure 4: Indiana Economic Impacts of Investing in Energy Efficiency

Employment Sector	Employment Impacts (# of net new jobs created) 2010	2020	Economic Output Impacts (Additional economic activity in 2001$) 2010	2020
Agriculture/Mining	*535*	*1,341*	*$5 Million*	*$22 Million*
Construction/Manufacturing	*2,899*	*5,039*	*$804 Million*	*$1.4 Billion*
Utilities/Transport/Communications	*-3,082*	*-6,523*	*-$535 Million*	*-$952 Million*
Wholesale/Retail Trade	*5,993*	*11,307*	*$249 Million*	*$437 Million*
Services/Government	*2,450*	*4,349*	*$167 Million*	*$290 Million*
Total - Net	***8,795***	***15,513***	***$690 Million***	***$1.24 Billion***

Source: Regional Economics Applications Laboratory.

Economic Benefits of Developing Clean Renewable Energy and Efficient Generation

Under the Clean Energy Development Plan, renewable energy — especially from biomass — and clean efficient uses of natural gas focused on combined heat and power applications (CHP) will represent 11 percent of Indiana's generation mix by 2010 and 31 percent by 2020.

This clean energy development will generate thousands of new jobs and significant economic growth benefits in both urban and rural areas. The winners will be businesses engaged in: manufacturing, installing and servicing renewable and clean energy equipment; farmers who lease their land for wind turbines or grow and harvest biomass energy crops; businesses engaged in related services; and all of the communities with renewable and clean energy projects that gain from this increased economic activity. Figure 5 identifies the projected economic impacts of implementing *Repowering the Midwest's* Clean Energy Generation Plan in Indiana.

Figure 3: Indiana's Clean Energy Development Plan-MegaWatts of New Clean Generation

Generation Type	Employment Impacts (# of net new jobs created) 2010	Economic Output Impacts (Additional economic activity in 2001$) 2020
Wind Power	*148 megawatts*	*544 megawatts*
Biomass Energy	*348 megawatts*	*1,687 megawatts*
Efficient Natural Gas, CHP	*1,173 megawatts*	*2,800 megawatts*
Photovoltaics	*14 megawatts*	*47 megawatts*
Total	***1,683 megawatts***	***5,078 megawatts***

Source: Regional Economics Applications Laboratory.

Figure 5: Indiana Economic Impacts of Investing in Clean Energy Generation

Employment Sector	Employment Impacts (# of net new jobs created) 2010	2020	Economic Output Impacts (Additional economic activity in 2001$) 2010	2020
Agriculture/Mining/Forestry	*390*	*620*	*$8 Million*	*$16 Million*
Construction/Manufacturing	*1,130*	*1,890*	*$162 Million*	*$278 Million*
Utilities/Transp/Communications	*250*	*740*	*$38 Million*	*$98 Million*
Wholesale/Retail Trade	*260*	*490*	*$12 Million*	*$22 Million*
Service/Government	*1,420*	*2,800*	*$72 Million*	*$139 Million*
Total-Net	**3,450**	**6,540**	**$292 Million**	**$553 Million**

Source: Regional Economics Applications Laboratory.

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