REPOWERING THE MIDWEST:

THE CLEAN ENERGY DEVELOPMENT PLAN FOR THE HEARTLAND

ILLINOIS

THE 21ST CENTURY OPPORTUNITIES FOR CLEAN ENERGY

Illinois needs 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 the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying a power supply that has relied on old, highly polluting coal and nuclear plants, Illinois will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

THE CLEAN ENERGY DEVELOPMENT PLAN

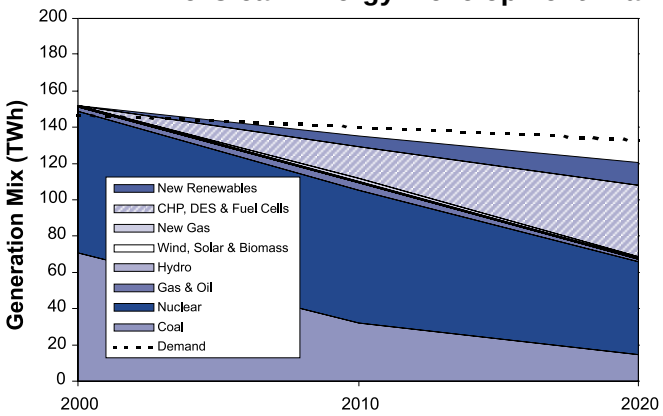
Illinois should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost. Moreover,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

As Figure 1 shows, implementing the Clean Energy Development Plan in Illinois means:

1. Energy efficiency measures reduce electricity demand, and therefore the need for generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



The state's electricity demand is shown with a dashed line: when the dashed line is below generation, the state is a net exporter, and when above, the state is a net importer.

IMPLEMENTING THE CLEAN ENERGY DEVELOPMENT PLAN IN ILLINOIS WILL ALSO PRODUCE:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO_2) pollution, which causes acid rain, by 87 percent; nitrogen oxide (NO_x) pollution, which causes smog, by 82 percent; and carbon dioxide (CO_2) pollution, which causes global warming, by 71 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind and biomass power "cash crops" for farmers, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

Help Repower Illinois!

For more information and resources to develop Illinois' clean energy options, visit **www.repowermidwest.org** or contact Environmental Law & Policy Center of the Midwest, 35 East Wacker Drive, Suite 1300, Chicago, IL 60601, tel: 312-673-6500.

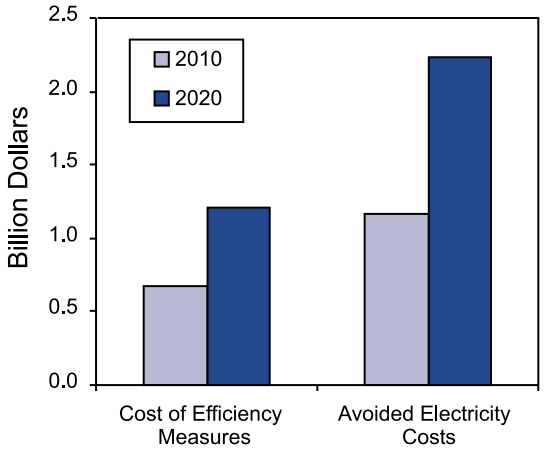
Harnessing clean energy improves the environment and spurs economic growth.

ILLINOIS

Reaping Energy Efficiency Opportunities

Illinois has tremendous opportunities to invest in energy efficiency technologies that will reduce pollution, save money, and create jobs. This will produce the benefits summarized below.

Figure 2. Benefits from Energy Efficiency Investments: the Clean Energy Development Plan



1. Reduces net electricity costs by $1 billion by 2020.
2. Saves 50,761 GWh of electricity – equal to about 18 large power plants – by 2020.
3. Reduces electricity demand by 16 percent in 2010 and 28 percent by 2020.
4. Costs less – at an average investment of 2.4¢/kWh – than generating, transmitting and distributing electricity from power plants.

Deploying Renewable Resources and Efficient Generation

Illinois has strong opportunities to develop wind, biomass and solar power, which provide environmental benefits, improved reliability, and economic development in the growing renewable energy business sector. Furthermore, Illinois can develop new efficient CHP using natural gas. Together, the opportunities shown in Figure 3 can provide 10 percent of Illinois' generation capacity by 2010, and 22 percent by 2020.

The Clean Energy Development Plan's benefits can be achieved at a modest cost, as energy efficiency savings offset the cost of new generation. In Illinois, it would increase overall electricity costs by about 1.5 percent in 2010, and 3.4 percent in 2020.

21st Century Policies for Modern Technologies

Smart policies can overcome the market and regulatory barriers that energy efficiency and renewable resources face. Illinois has already adopted some policies to promote clean power options, but more must be done to succeed. The key policies for achieving the Clean Energy Development Plan are to:

1. Increase the Illinois Energy Efficiency Investment Fund by investing 0.3¢/kWh.
2. Evaluate and update Illinois' efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
3. Establish an Illinois Renewables Portfolio Standard that requires all retail electricity suppliers to provide eight percent of their power from renewable resources by 2010, and 20 percent by 2020.
4. Increase the Illinois Renewable Energy Investment Fund investment to 0.1¢/kWh.
5. Ensure that transmission pricing policies and power pooling practices treat renewable resources fairly and account for their intermittent nature, remote locations, or smaller scale.
6. Remove barriers to clean distributed generation by: (1) expanding Commonwealth Edison's net metering program to be offered statewide by all utilities; (2) establishing standard business and interconnection terms; (3) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (4) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies, and discouraging highly polluting diesel generators.

Figure 3: New Generation Resources in the Clean Energy Development Plan

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	423	1,519
CHP – Biomass	488	992
Biomass - Co-Firing	496	650
Photovoltaics	80	200
Biomass Gasification	0	0
Eff. Natural Gas Gen.*	2,162	4,997
Total	**3,649**	**8,358**

*Includes CHP (natural gas), district energy systems, and fuel cells.

REPOWERING THE MIDWEST:

THE CLEAN ENERGY DEVELOPMENT PLAN FOR THE HEARTLAND

INDIANA

THE 21ST CENTURY OPPORTUNITIES FOR CLEAN ENERGY

Indiana needs 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 the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying a power supply that has relied on old, highly polluting coal and nuclear plants, Indiana will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

THE CLEAN ENERGY DEVELOPMENT PLAN

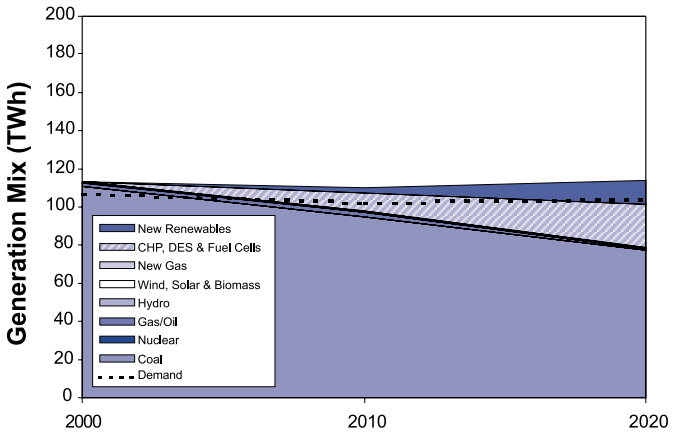
Indiana should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost. Moreover,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

As Figure 1 shows, implementing the Clean Energy Development Plan in Indiana means:

1. Energy efficiency measures reduce electricity demand, and therefore the need for generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



The state's electricity demand is shown with a dashed line: when the dashed line is below generation, the state is a net exporter, and when above, the state is a net importer.

IMPLEMENTING THE CLEAN ENERGY DEVELOPMENT PLAN IN INDIANA WILL ALSO PRODUCE:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO_2) pollution, which causes acid rain, by 50 percent; nitrogen oxide (NO_x) pollution, which causes smog, by 69 percent; and carbon dioxide (CO_2) pollution, which causes global warming, by 39 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind and biomass power "cash crops" for farmers, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

Help Repower Indiana!

For more information and resources to develop Indiana's clean energy options, visit **www.repowermidwest.org** or contact Environmental Law & Policy Center of the Midwest, 35 East Wacker Drive, Suite 1300, Chicago, IL 60601, tel: 312-673-6500.

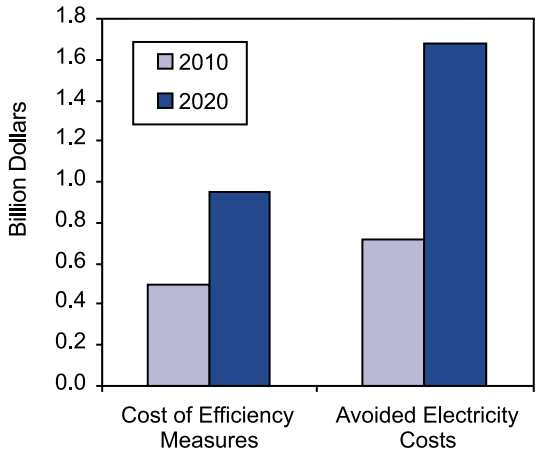
Harnessing clean energy improves the environment and spurs economic growth.

INDIANA

Reaping Energy Efficiency Opportunities

Indiana has tremendous opportunities to invest in energy efficiency technologies that will reduce pollution, save money, and create jobs. This will produce the benefits summarized below.

Figure 2. Benefits from Energy Efficiency Investments: The Clean Energy Development Plan



1. Reduces net electricity costs by $731 million by 2020.
2. Saves 41,752 GWh of electricity – equal to about 15 large power plants – by 2020.
3. Reduces electricity demand 17 percent by 2010, and 29 percent by 2020.
4. Costs less – at an average cost of 2.4¢/kWh – than generating, transmitting and distributing electricity.

Deploying Renewable Resources and Efficient Generation

Indiana has the opportunity to develop wind, biomass and solar power, which provide environmental benefits, improved reliability, and economic development in the growing renewable energy business sector. Furthermore, Indiana can develop new efficient generators, such as CHP, using natural gas. Together, the opportunities shown in Figure 3 could provide eight percent of Indiana's generation capacity by 2010, and 23 percent by 2020.

The Clean Energy Development Plan's benfits can be achieved at a modest cost, as energy efficiency savings offset the cost of new generation. In Indiana, it would increase overall electricity costs by about 1.5 percent in 2010, and 3.4 percent in 2020.

21st Century Policies for Modern Technologies

Smart policies can overcome the many market and regulatory barriers that energy efficiency and renewable resources face. To achieve the Clean Energy Development Plan in Indiana, the key policy actions are to:

1. Establish an Energy Efficiency Investment Fund to support energy efficiency initiatives with a non-bypassable charge of 0.3¢/kWh.
2. Manage the Indiana Energy Efficiency Investment Fund by an independent third-party administrator overseen by a board composed of regulators, state energy offices, and consumer, efficiency and environmental advocates.
3. Evaluate and update Indiana's efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
4. Establish an Indiana Renewables Portfolio Standard that requires all retail electricity sellers to provide eight percent of their electricity from renewable resources by 2010, and 20 percent by 2020.
5. Establish a Renewable Energy Investment Fund to support emerging renewable technologies, with a non-bypassable charge of at least 0.1¢/kWh.
6. Ensure that transmission pricing policies and power pooling practices treat renewable resources fairly and account for their intermittent nature, remote locations, or smaller scale.
7. Remove barriers to clean distributed generation by: (1) expanding Indianapolis Power and Light's net metering policy to include wind, and to be offered by utilities statewide; (2) establishing standard business and interconnection terms; (3) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (4) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies, and discouraging highly polluting diesel generators.

Figure 3: New Generation Resources in the Clean Energy Development Plan

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	148	544
CHP – Biomass	209	432
Biomass - Co-Firing	139	1,255
Photovoltaics	14	47
Biomass Gasification	0	0
Eff. Natural Gas Gen.*	1,173	2,800
Total	**1,683**	**5,078**

*Includes CHP (natural gas), district energy systems, and fuel cells.

REPOWERING THE MIDWEST:

THE CLEAN ENERGY DEVELOPMENT PLAN FOR THE HEARTLAND

IOWA

THE 21ST CENTURY OPPORTUNITIES FOR CLEAN ENERGY

Iowa needs 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 the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying its power supply, Iowa will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

THE CLEAN ENERGY DEVELOPMENT PLAN

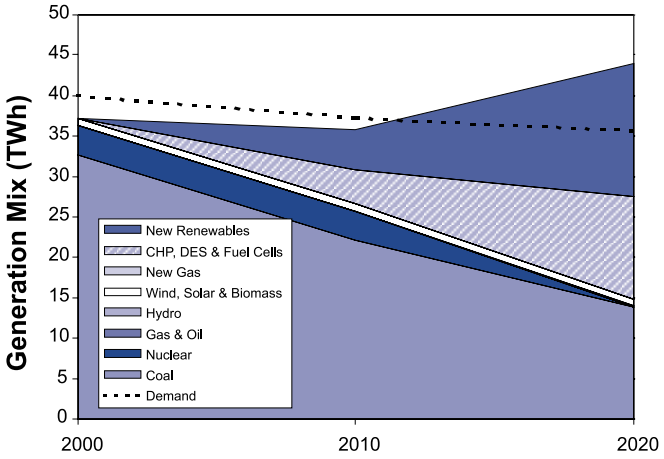
Iowa should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies, and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost. Moreover,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

As Figure 1 shows, implementing the Clean Energy Development Plan in Iowa means:

1. Energy efficiency measures reduce electricity demand, and therefore the need for generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



The state's electricity demand is shown with a dashed line: when the dashed line is below generation, the state is a net exporter, and when above, the state is a net importer.

IMPLEMENTING THE CLEAN ENERGY DEVELOPMENT PLAN IN IOWA WILL ALSO PRODUCE:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO_2) pollution, which causes acid rain, by 61 percent; nitrogen oxide (NO_x) pollution, which causes smog, by 65 percent; and carbon dioxide (CO_2) pollution, which causes global warming, by 56 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind power "cash crops" for farmers, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

Harnessing clean energy improves the environment and spurs economic growth.

Help Repower Iowa!

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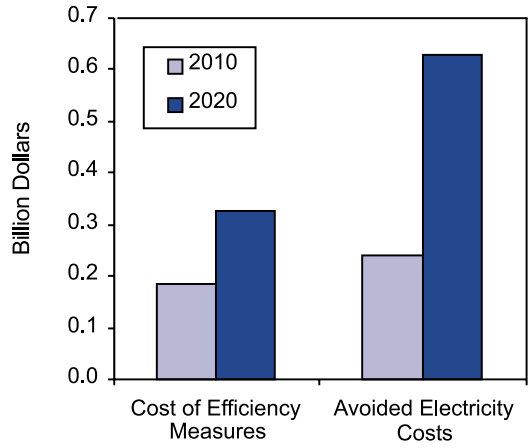
IOWA

Reaping Energy Efficiency Opportunities

Iowa has an opportunity to use energy in smarter, more efficient ways, thereby reducing pollution, saving money, and creating jobs. This will produce the benefits summarized below.

Figure 2. Benefits from Energy Efficiency Investments: The Clean Energy Development Plan



1. Reduces net electricity costs by $304 million by 2020.
2. Saves 13,895 GWh of electricity – equal to about five large power plants – by 2020.
3. Reduces electricity demand 17 percent by 2010 and 28 percent by 2020.
4. Costs less – at an average cost of 2.5¢/kWh – than generating, transmitting and distributing electricity.

Deploying Renewable Resources and Efficient Generation

Iowa has a tremendous opportunity to harness abundant renewable resources – especially wind – that provide environmental benefits, improved reliability, and economic development in the growing renewable energy business sector. Iowa can also develop efficient generators, such as CHP, using natural gas. Together, the opportunities shown in Figure 3 could supply 22 percent of Iowa's generation capacity by 2010, and 48 percent by 2020.

The Clean Energy Development Plan's benefits can be achieved at a modest cost, as energy efficiency savings offset the cost of new generation. In Iowa, it would increase overall electricity costs by only 1.5 percent in 2010, and 3.4 percent in 2020.

21st Century Policies for Modern Technologies

Smart policies can overcome the many market and regulatory barriers that energy efficiency and renewable resources face. Iowa has already adopted some policies to promote clean power options, but more must be done to succeed. The key policy actions for achieving the Clean Energy Development Plan are to:

1. Establish an Energy Efficiency Investment Fund to support energy efficiency initiatives with a non-bypassable charge of 0.3¢/kWh.
2. Manage the Energy Efficiency Investment Fund by an independent third-party administrator overseen by a board composed of regulators, state energy offices, and consumer, efficiency and environmental advocates.
3. Evaluate and update Iowa's efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
4. Increase Iowa's Renewables Portfolio Standard, so that the percentage requirement reaches eight percent by 2010, and 20 percent by 2020. Policymakers in Iowa may wish to adopt an RPS requirement that is higher than those in neighboring states, due to Iowa's abundance of wind resources. If the Iowa RPS requirement were to be set at 10 percent for new renewables by 2010 (instead of eight percent), the costs of the Clean Energy Development Plan in 2010 would increase from $40 million to $48 million.
5. Establish a Renewable Energy Investment Fund to support emerging renewable technologies with a non-bypassable charge of at least 0.1¢/kWh.
6. Ensure that transmission pricing policies and power pooling practices treat renewable resources fairly, and account for their intermittent nature, remote locations, or smaller scale.
7. Remove the barriers to clean distributed generation by: (1) establishing standard business and interconnection terms; (2) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (3) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies, and discouraging highly polluting diesel generators.

Figure 3: New Generation Resources in the Clean Energy Development Plan

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	1,021	3,817
CHP – Biomass	107	222
Biomass - Co-Firing	325	325
Photovoltaics	5	19
Biomass Gasification	0	100
Eff. Natural Gas Gen.*	526	1,588
Total	**1,984**	**6,071**

*Includes CHP (natural gas), district energy systems, and fuel cells.

Repowering the Midwest:

The Clean Energy Development Plan for the Heartland

MICHIGAN

The 21st Century Opportunities for Clean Energy

Michigan needs 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 the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying a power supply that has relied on old, highly polluting coal and nuclear plants, Michigan will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

The Clean Energy Development Plan

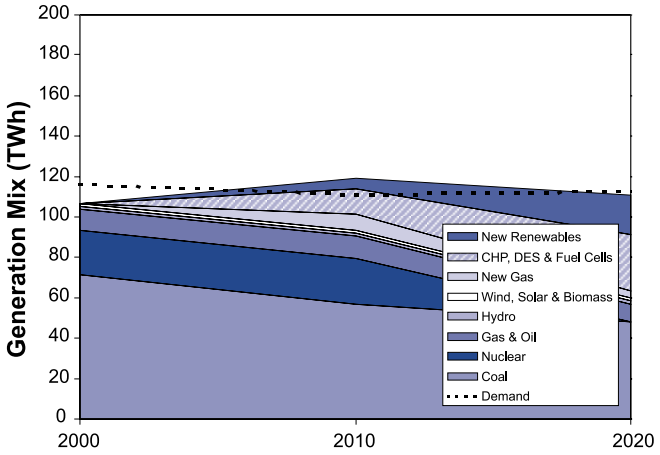
Michigan should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost. Moreover,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

As Figure 1 shows, implementing the Clean Energy Development Plan in Michigan means:

1. Energy efficiency measures reduce electricity demand, and therefore the need for generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



The state's electricity demand is shown with a dashed line: when the dashed line is below generation, the state is a net exporter, and when above, the state is a net importer.

Implementing the Clean Energy Development Plan in Michigan Will Also Produce:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO_2) pollution, which causes acid rain, by 41 percent; nitrogen oxide (NO_x) pollution, which causes smog, by 77 percent; and carbon dioxide (CO_2) pollution, which causes global warming, by 47 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind and biomass power "cash crops" for farmers, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

Help Repower Michigan!

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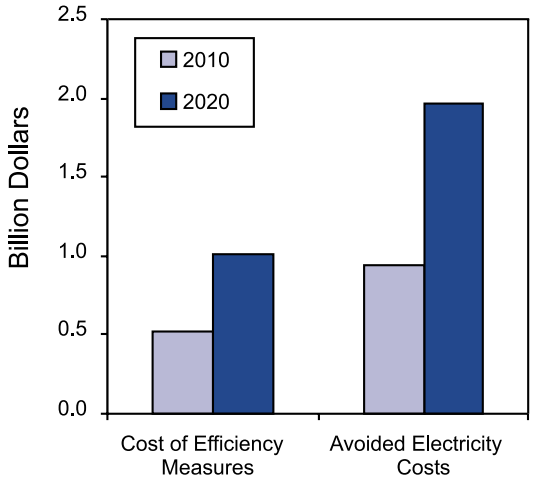
MICHIGAN

Harnessing clean energy improves the environment and spurs economic growth.

Reaping Energy Efficiency Opportunities

Michigan has tremendous opportunities to invest in energy efficiency technologies that will reduce pollution, save money and create jobs. This will produce the benefits summarized below.

Figure 2. Benefits from Energy Efficiency Investments: The Clean Energy Development Plan



1. Reduces net electricity costs by $968 million by 2020.
2. Saves 45,246 GWh of electricity – equal to about 16 large power plants – by 2020.
3. Reduces electricity demand 17 percent by 2010 and 29 percent by 2020.
4. Costs less – at an average cost of 2.2¢/kWh – than generating, transmitting and distributing electricity

Deploying Renewable Resources and Efficient Generation

Michigan has strong opportunities to develop wind, biomass and solar power, which provide environmental benefits, improved reliability, and economic development in the growing renewable energy business sector. Furthermore, Michigan can develop new efficient generation, such as CHP, using natural gas. Together, the opportunities shown in Figure 3 could supply nine percent of Michigan's generation capacity by 2010 and 29 percent by 2020.

The Clean Energy Development Plan can be realized at a modest cost, as energy efficiency savings offset the cost of new generation. In Michigan, it would increase overall electricity costs by only 1.5 percent in 2010, and 3.4 percent in 2020.

21st Century Policies for Modern Technologies

Smart policies can overcome the many market and regulatory barriers that energy efficiency and renewable resources face. The most important policy actions for achieving the Clean Energy Development Plan in Michigan are to:

1. Establish an Energy Efficiency Investment Fund to support energy efficiency initiatives with a non-bypassable charge of 0.3¢/kWh.
2. Manage the Energy Efficiency Investment Fund by an independent third-party administrator overseen by a board composed of regulators, state energy offices, and consumer, efficiency and environmental advocates.
3. Evaluate and modernize Michigan's efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
4. Establish a Michigan Renewables Portfolio Standard requiring all retail electricity sellers to provide eight percent of their electricity from renewable resources by 2010 and 20 percent by 2020.
5. Establish a Renewable Energy Investment Fund to support emerging renewable technologies, with a non-bypassable charge of at least 0.1¢/kWh.
6. Ensure that transmission pricing policies and power pooling practices treat renewable resources fairly and account for their intermittent nature, remote locations, or smaller scale.
7. Remove the barriers to clean distributed generation by: (1) applying net metering policies to all wind and photovoltaics; (2) establishing standard business and interconnection terms; (3) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (4) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies and discouraging highly polluting diesel generators.

Figure 3: New Generation Resources in the Clean Energy Development Plan

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	304	2,552
CHP – Biomass	338	702
Biomass - Co-Firing	94	521
Photovoltaics	15	52
Biomass Gasification	0	100
Eff. Natural Gas Gen.*	1,504	3,510
Total	**2,255**	**7,437**

*Includes CHP (natural gas), district energy systems, and fuel cells.

MINNESOTA

REPOWERING THE MIDWEST:

THE CLEAN ENERGY DEVELOPMENT PLAN FOR THE HEARTLAND

THE 21ST CENTURY OPPORTUNITIES FOR CLEAN ENERGY

Minnesota needs 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 the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying its power supply, Minnesota will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

THE CLEAN ENERGY DEVELOPMENT PLAN

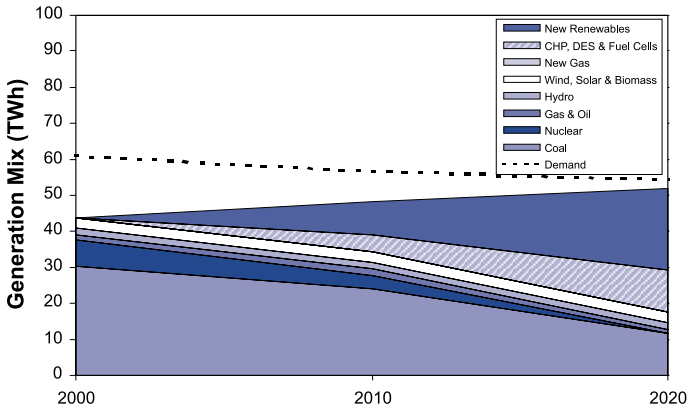
Minnesota should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost. Moreover,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

As Figure 1 shows, implementing the Clean Energy Development Plan in Minnesota means:

1. Energy efficiency measures reduce electricity demand, and therefore the need for generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



The state's electricity demand is shown with a dashed line: when the dashed line is below generation, the state is a net exporter, and when above, the state is a net importer.

IMPLEMENTING THE CLEAN ENERGY DEVELOPMENT PLAN IN MINNESOTA WILL ALSO PRODUCE:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO_2) pollution, which causes acid rain, by 71 percent; nitrogen oxide (NO_x) pollution, which causes smog, by 71 percent; and carbon dioxide (CO_2) pollution, which causes global warming, by 67 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind power "cash crops" for farmers, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

Help Repower Minnesota!

For more information and resources to develop Minnesota's clean energy options, visit **www.repowermidwest.org** or contact Environmental Law & Policy Center of the Midwest, 35 East Wacker Drive, Suite 1300, Chicago, IL 60601; tel: 312-673-6500.

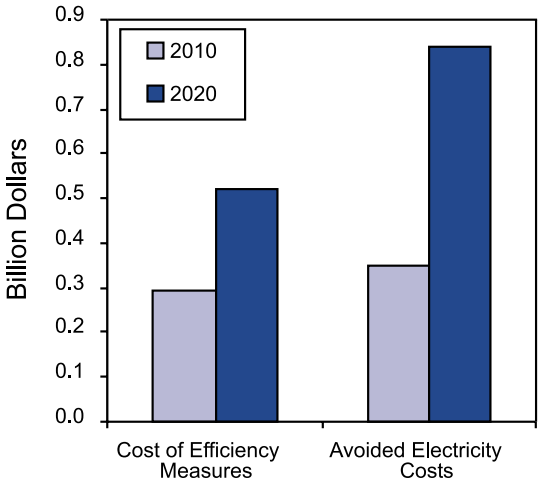
Harnessing clean energy improves the environment and spurs economic growth

MINNESOTA

Reaping Energy Efficiency Opportunities

Minnesota has an opportunity to use energy in smarter, more efficient ways, thereby reducing pollution, saving money, and creating jobs. This will produce the benefits summarized below.

Figure 2. Benefits from Energy Efficiency Investments: The Clean Energy Development Plan



1. Reduces net electricity costs by $321 million by 2020.
2. Saves 21,152 GWh of electricity – equal to about 7 large power plants –by 2020.
3. Reduces electricity demand 17 percent by 2010, and 28 percent by 2020.
4. Costs less – at an average cost of 2.6¢/kWh – than generating, transmitting and distributing electricity.

Deploying Renewable Resources and Efficient Generation

Minnesota has the opportunity to harness abundant renewable resources – especially wind – that provide environmental benefits, improved reliability, and economic development in the growing renewable energy business sector. Minnesota can also develop efficient generators, such as CHP, using natural gas. Together, the opportunities shown in Figure 3 could supply 24 percent of Minnesota's generation capacity by 2010, and 48 percent by 2020.

The Clean Energy Development Plan can be realized at a modest cost, as energy efficiency savings offset the cost of new generation. In Minnesota, it would increase overall electricity costs by only 1.5 percent in 2010, and 3.4 percent in 2020.

21st Century Policies for Modern Technologies

Smart policies can overcome the many market and regulatory barriers that energy efficiency and renewable resources face. Minnesota has already adopted some policies to promote clean power options, but more must be done to succeed.The key policies for achieving the Clean Energy Development Plan are to:

1. Increase Minnesota's Energy Efficiency Investment Fund by investing 0.3¢/kWh.
2. Manage the Energy Efficiency Investment Fund by an independent third-party administrator overseen by a board composed of regulators, state energy offices, and consumer, efficiency and environmental advocates.
3. Evaluate and update Minnesota's efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
4. Increase Minnesota's Renewables Portfolio Standard, so that the percentage requirement reaches 8 percent by 2010, and 20 percent by 2020. Policymakers in Minnesota may wish to adopt an RPS requirement that is higher than those in neighboring states, due to Minnesota's abundance of wind resources. If the Minnesota RPS requirement were to be set at 11.5 percent for new renewables by 2010 (instead of 8 percent), the costs of the Clean Energy Development Plan in 2010 would increase from $61 million to roughly $83 million.
5. Establish a Renewable Energy Investment Fund to support emerging renewable technologies, with a non-bypassable charge of at least 0.1¢/kWh.
6. Ensure that transmission pricing policies and power pooling practices treat renewable resources fairly, and account for their intermittent nature, remote locations, or smaller scale.
7. Remove barriers to clean distributed generation by: (1) establishing standard business and interconnection terms; (2) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (3) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies, and discouraging highly polluting diesel generators.

Figure 3: New Generation Resources in the Clean Energy Development Plan

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	1,586	4,474
CHP – Biomass	412	729
Biomass - Co-Firing	15	282
Photovoltaics	8	29
Biomass Gasification	75	175
Eff. Natural Gas Gen.*	603	1,471
Total	**2,699**	**7,160**

*Includes CHP (natural gas), district energy systems, and fuel cells.

NEBRASKA

REPOWERING THE MIDWEST:

THE CLEAN ENERGY DEVELOPMENT PLAN FOR THE HEARTLAND

THE 21ST CENTURY OPPORTUNITIES FOR CLEAN ENERGY

Nebraska needs 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 the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying its power supply, Nebraska will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

THE CLEAN ENERGY DEVELOPMENT PLAN

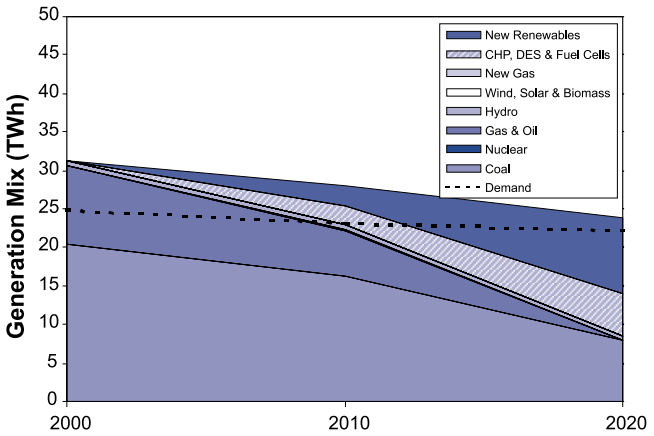
Nebraska should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost. Moreover,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

As Figure 1 shows, implementing the Clean Energy Development Plan in Nebraska means:

1. Energy efficiency measures reduce electricity demand, and therefore generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



The state's electricity demand is shown with a dashed line: when the dashed line is below generation, the state is a net exporter, and when above, the state is a net importer.

IMPLEMENTING THE CLEAN ENERGY DEVELOPMENT PLAN IN NEBRASKA WILL ALSO PRODUCE:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO_2) pollution, which causes acid rain, by 63 percent; nitrogen oxide (NO_x) pollution, which causes smog, by 60 percent; and carbon dioxide (CO_2) pollution, which causes global warming, by 61 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind power "cash crops" for farmers and clean energy exports, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

Harnessing clean energy improves the environment and spurs economic growth.

HELP REPOWER NEBRASKA!

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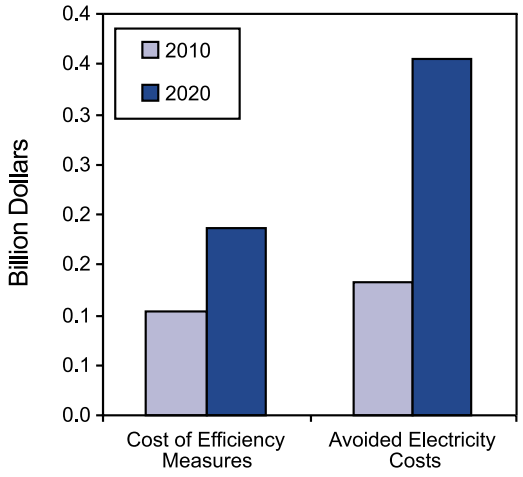
NEBRASKA

REAPING ENERGY EFFICIENCY OPPORTUNITIES

Nebraska has an opportunity to use energy in smarter, more efficient ways, thereby reducing pollution, saving money, and creating jobs. This will produce the benefits summarized below.

Figure 2. Benefits from Energy Efficiency Investments: The Clean Energy Development Plan



1. Reduces net electricity costs by $169 million by 2020.
2. Saves 8,628 GWh of electricity – equal to about three large power plants – by 2020.
3. Reduces electricity demand 17 percent by 2010 and 28 percent by 2020.
4. Costs less – at an average cost of 2.2¢/kWh – than generating, transmitting and distributing electricity.

DEPLOYING RENEWABLE RESOURCES AND EFFICIENT GENERATION

Nebraska has a tremendous opportunity to harness its abundant wind resources, which offer environmental benefits, improved reliability, and economic development in the growing renewable energy business sector. Nebraska can also develop efficient generators, such as CHP, using natural gas. Together, the opportunities shown in Figure 3 could supply 21 percent of Nebraska's generation capacity by 2010, and 47 percent by 2020.

The Clean Energy Development Plan can be realized at a modest cost, as energy efficiency savings offset the cost of new generation. In Nebraska, it would increase overall electricity costs by only 1.5 percent in 2010, and 3.4 percent in 2020.

21ST CENTURY POLICIES FOR MODERN TECHNOLOGIES

Smart policies can overcome the many market and regulatory barriers that energy efficiency and renewable resources face. The key policy actions for achieving the Clean Energy Development Plan in Nebraska are to:

1. Establish an Energy Efficiency Investment Fund to support energy efficiency initiatives with a non-bypassable charge of 0.3¢/kWh.
2. Manage the Energy Efficiency Investment Fund by an independent third-party administrator overseen by a board composed of regulators, state energy offices, and consumer, efficiency and environmental advocates.
3. Evaluate and update Nebraska's efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
4. Establish a Nebraska Renewables Portfolio Standard requiring all retail electricity sellers to provide eight percent of their electricity from renewable resources by 2010, and 20 percent by 2020.
5. Establish a Renewable Energy Investment Fund to support emerging renewable technologies with a non-bypassable charge of at least 0.1¢/kWh.
6. Ensure that transmission pricing policies and power pooling practices treat renewable resources fairly, and account for their intermittent nature, remote locations, or smaller scale.
7. Remove the barriers to clean distributed generation by: (1) applying net metering policies to all wind and photovoltaics; (2) establishing standard business and interconnection terms; (3) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (4) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies, and discouraging highly polluting diesel generators.

Figure 3: New Generation Resources in the Clean Energy Development Plan

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	850	2,446
CHP – Biomass	19	48
Biomass - Co-Firing	72	208
Photovoltaics	4	12
Biomass Gasification	0	0
Eff. Natural Gas Gen.*	303	710
Total	**1,248**	**3,424**

*Includes CHP (natural gas), district energy systems, and fuel cells.

NORTH DAKOTA

REPOWERING THE MIDWEST:

THE CLEAN ENERGY DEVELOPMENT PLAN FOR THE HEARTLAND

THE 21ST CENTURY OPPORTUNITIES FOR CLEAN ENERGY

North Dakota needs 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 the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying its power supply, North Dakota will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

THE CLEAN ENERGY DEVELOPMENT PLAN

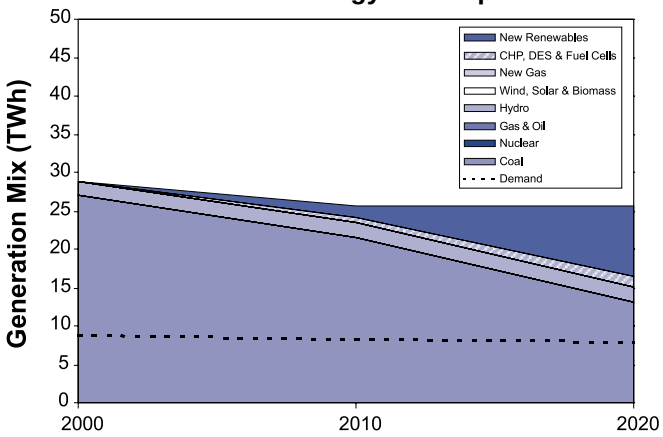
North Dakota should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost.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

As Figure 1 shows, implementing the Clean Energy Development Plan in North Dakota means:

1. Energy efficiency measures reduce electricity demand, and therefore the need for generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



The state's electricity demand is shown with a dashed line: when the dashed line is below generation, the state is a net exporter, and when above, the state is a net importer.

IMPLEMENTING THE CLEAN ENERGY DEVELOPMENT PLAN IN NORTH DAKOTA WILL ALSO PRODUCE:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO_2) pollution, which causes acid rain, by 53 percent; nitrogen oxide (NO_X) pollution, which causes smog, by 53 percent; and carbon dioxide (CO_2) pollution, which causes global warming, by 48 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind power "cash crops" for farmers and clean energy exports, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

REAPING ENERGY EFFICIENCY OPPORTUNITIES

North Dakota has an opportunity to use energy in smarter, more efficient ways, thereby reducing pollution, saving money and creating jobs. This will produce the benefits summarized below.

Harnessing clean energy improves the environment and spurs economic growth.

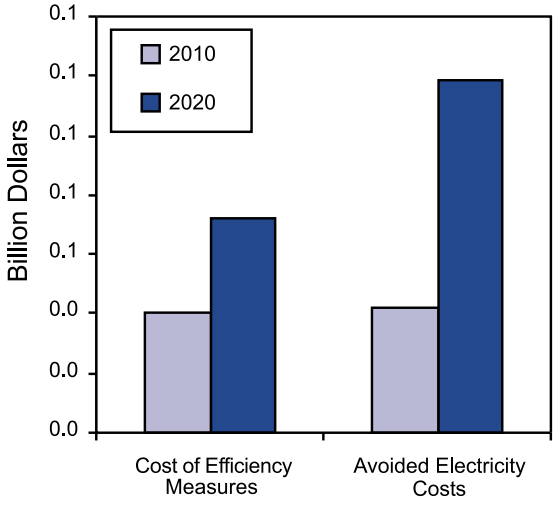
Help Repower North Dakota!

For more information and resources to develop North Dakota's clean energy options, visit **www.repowermidwest.org** or contact Environmental Law & Policy Center of the Midwest, 35 East Wacker Drive, Suite 1300, Chicago, IL 60601, tel: 312-673-6500.

NORTH DAKOTA

1. Reduces net electricity costs by $46 million by 2020.
2. Saves 3,064 GWh of electricity – equal to about one large power plant – by 2020.
3. Reduces electricity demand 17 percent by 2010, and 28 percent by 2020.
4. Costs less – at an average cost of 2.4¢/kWh – than generating, transmitting and distributing electricity.

Figure 2. Benefits from Energy Efficiency Investments: The Clean Energy Development Plan



Deploying Renewable Resources and Efficient Generation

North Dakota has a tremendous opportunity to harness its abundant wind resources, which offer environmental benefits, improved reliability, and economic development in the growing renewable energy business sector. North Dakota can also develop efficient generators, such as CHP and district energy systems. Together, the opportunities shown in Figure 3 could supply 14 percent of North Dakota's generation capacity by 2010, and 35 percent by 2020.

The Clean Energy Development Plan's benefits can be achieved at a modest cost, as energy efficiency savings offset the cost of new generation. In North Dakota, it would increase overall electricity costs by only 1.5 percent in 2010, and 3.4 percent in 2020.

21st Century Policies for Modern Technologies

Smart policies can overcome the many market and regulatory barriers that energy efficiency and renewable resources face. The key policy actions for achieving the Clean Energy Development Plan in North Dakota are to:

1. Establish an Energy Efficiency Investment Fund to support energy efficiency initiatives with a non-bypassable charge of 0.3¢/kWh.
2. Manage the Energy Efficiency Investment Fund by an independent third-party administrator overseen by a board composed of regulators, state energy offices, and consumer, efficiency and environmental advocates.
3. Evaluate and update North Dakota's efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
4. Establish a North Dakota Renewables Portfolio Standard requiring all retail electricity sellers to provide eight percent of their electricity from renewable resources by 2010, and 20 percent by 2020.
5. Establish a Renewable Energy Investment Fund to support emerging renewable technologies with a non-bypassable charge of at least 0.1¢/kWh.
6. Ensure that transmission pricing policies and power pooling practices treat renewable resources fairly and account for their intermittent nature, remote locations, or smaller scale.
7. Remove the barriers to clean distributed generation by: (1) applying net metering policies to all wind and photovoltaics; (2) establishing standard business and interconnection terms; (3) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (4) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies, and discouraging highly polluting diesel generators.

Figure 3: New Generation Resources in the Clean Energy Development Plan

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	750	2,550
CHP – Biomass	0	4
Biomass - Co-Firing	0	0
Photovoltaics	1	4
Biomass Gasification	0	0
Eff. Natural Gas Gen.*	79	180
Total	**830**	**2,738**

*Includes CHP (natural gas), district energy systems, and fuel cells.

REPOWERING THE MIDWEST:

THE CLEAN ENERGY DEVELOPMENT PLAN FOR THE HEARTLAND

OHIO

THE 21ST CENTURY OPPORTUNITIES FOR CLEAN ENERGY

Ohio needs 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 the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying a power supply that has relied on old, highly polluting coal and nuclear plants, Ohio will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

THE CLEAN ENERGY DEVELOPMENT PLAN

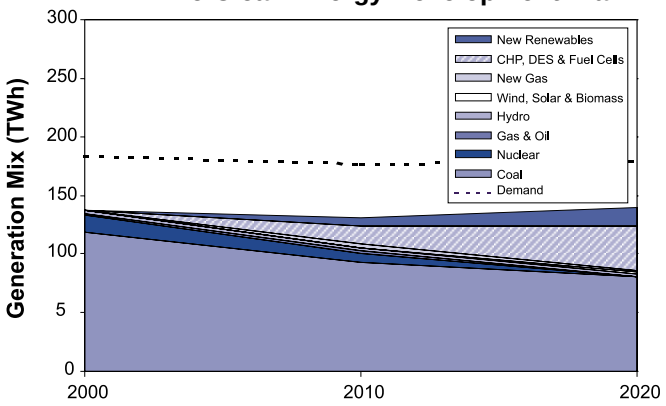
Ohio should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost. Moreover,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

As Figure 1 shows, implementing the Clean Energy Development Plan in Ohio means:

1. Energy efficiency measures reduce electricity demand, and therefore the need for generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



The state's electricity demand is shown with a dashed line: when the dashed line is below generation, the state is a net exporter, and when above, the state is a net importer.

IMPLEMENTING THE CLEAN ENERGY DEVELOPMENT PLAN IN OHIO WILL ALSO PRODUCE:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO_2) pollution, which causes acid rain, by 47 percent; nitrogen oxide (NO_x) pollution, which causes smog, by 69 percent; and carbon dioxide (CO_2) pollution, which causes global warming, by 43 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind and biomass power "cash crops" for farmers, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

Help Repower Ohio!

For more information and resources to develop Ohio's clean energy options, visit **www.repowermidwest.org** or contact Environmental Law & Policy Center of the Midwest, 35 East Wacker Drive, Suite 1300, Chicago, IL 60601, tel: 312-673-6500.

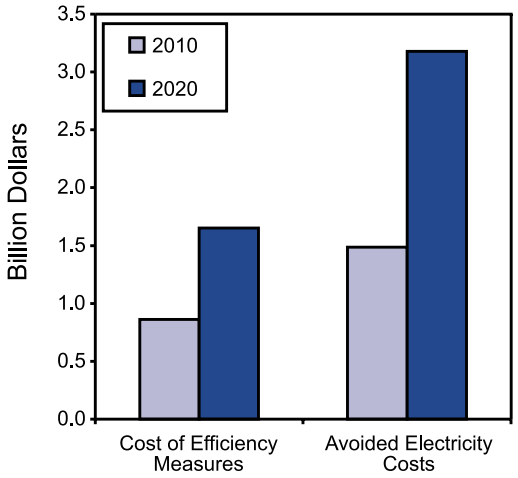
Harnessing clean energy improves the environment and spurs economic growth.

OHIO

Reaping Energy Efficiency Opportunities

Ohio has tremendous opportunities to invest in energy efficiency measures that will reduce pollution, save money, and create jobs. This will produce the benefits summarized below.

Figure 2. Benefits from Energy Efficiency Investments: The Clean Energy Development Plan



1. Reduces net electricity costs by $1,527 million by 2020.
2. Saves 72,417 GWh of electricity – equal to about 25 large power plants – by 2020.
3. Reduces electricity demand 17 percent by 2010, and 29 percent by 2020.
4. Costs less – at an average cost of 2.4¢/kWh – than generating, transmitting and distributing electricity.

Deploying Renewable Resources and Efficient Generation

Ohio has strong opportunities to develop wind, biomass and solar power, which provide environmental benefits, improved reliability, and economic development in the growing renewable energy business sector. Furthermore, Ohio can develop new efficient natural gas generation, such as CHP. Together, the opportunities shown in Figure 3 could supply 11 percent of Ohio's generation capacity by 2010, and 24 percent by 2020.

The Clean Energy Development Plan can be realized at a modest cost, as energy efficiency savings offset the cost of new generation. In Ohio, it would increase overall electricity costs by only about 1.5 percent in 2010, and 3.4 percent in 2020.

21st Century Policies for Modern Technologies

Smart policies can overcome the many market and regulatory barriers that energy efficiency and renewable resources face. Ohio has already adopted some important policies to promote clean power options, but more must be done to succeed. The key policy actions to achieve the Clean Energy Development Plan are to:

1. Increase Ohio's Energy Efficiency Investment Fund investment to 0.3¢/kWh.
2. Manage the Energy Efficiency Investment Fund by a third-party administrator overseen by an independent board composed of regulators, state energy offices, and consumer, efficiency and environmental advocates.
3. Evaluate and update Ohio's efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
4. Establish an Ohio Renewables Portfolio Standard that requires all retail electricity sellers to provide eight percent of their electricity from renewable resources by 2010, and 20 percent by 2020.
5. Ensure that transmission pricing policies and power pooling practices treat renewable resources fairly and account for their intermittent nature, remote locations, or smaller scale.
6. Remove barriers to clean distributed generation by: (1) establishing standard business and interconnection terms; (2) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (3) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies, and discouraging highly polluting diesel generators.

Figure 3: New Generation Resources in the Clean Energy Development Plan

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	264	920
CHP – Biomass	460	977
Biomass - Co-Firing	443	1,179
Photovoltaics	23	81
Biomass Gasification	0	100
Eff. Natural Gas Gen.*	1,982	4,710
Total	**3,172**	**7,967**

*Includes CHP (natural gas), district energy systems, and fuel cells.

SOUTH DAKOTA

REPOWERING THE MIDWEST:

THE CLEAN ENERGY DEVELOPMENT PLAN FOR THE HEARTLAND

THE 21ST CENTURY OPPORTUNITIES FOR CLEAN ENERGY

South Dakota needs 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 the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying its power supply, South Dakota will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

THE CLEAN ENERGY DEVELOPMENT PLAN

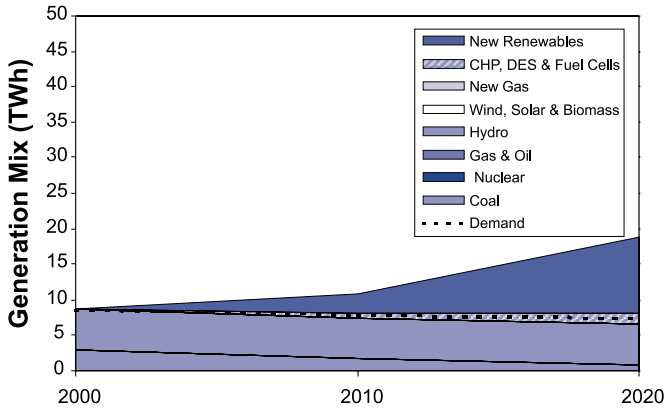
South Dakota should seize the opportunity to develop its clean energy resources: modern energy efficiency technologies and wind, biomass and solar power. The Clean Energy Development Plan achieves large environmental, public health and economic development benefits with only modest increases in cost.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

As Figure 1 shows, implementing the Clean Energy Development Plan in South Dakota means:

1. Energy efficiency measures reduce electricity demand, and therefore the need for generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



The state's electricity demand is shown with a dashed line: when the dashed line is below generation, the state is a net exporter, and when above, the state is a net importer.

IMPLEMENTING THE CLEAN ENERGY DEVELOPMENT PLAN IN SOUTH DAKOTA WILL ALSO PRODUCE:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO_2) pollution, which causes acid rain, by 50 percent; nitrogen oxide (NO_x) pollution, which causes smog, by 75 percent; and carbon dioxide (CO_2) pollution, which causes global warming, by 38 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind power "cash crops" for farmers and clean energy exports, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

Harnessing clean energy improves the environment and spurs economic growth.

Help Repower South Dakota!

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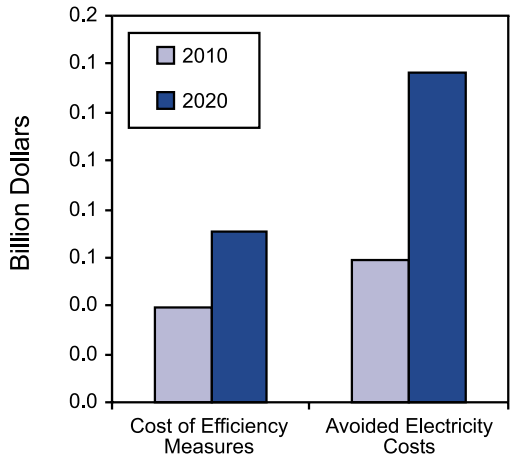
SOUTH DAKOTA

Reaping Energy Efficiency Opportunities

South Dakota has an opportunity to use energy in smarter, more efficient ways, thereby reducing pollution, saving money, and creating jobs. This will produce the benefits summarized below.

Figure 2. Benefits from Energy Efficiency Investments: The Clean Energy Development Plan



1. Reduces net electricity costs by $66 million by 2020.
2. Saves 2,917 GWh of electricity – equal to about one large power plant – by 2020.
3. Reduces electricity demand 17 percent by 2010, and 28 percent by 2020.
4. Costs less – at an average cost of 2.5¢/kWh – than generating, transmitting and distributing electricity.

Deploying Renewable Resources and Efficient Generation

South Dakota also has a tremendous opportunity to harness its abundant wind resources, which offer environmental benefits, improved reliability, and economic development in the growing renewable energy business sector. South Dakota can also develop efficient generators, such as CHP and district energy systems, using natural gas. Together, these opportunities, shown in Figure 3, could supply 28 percent of South Dakota's generation capacity by 2010, and 53 percent by 2020.

The Clean Energy Development Plan's benefits can be achieved at a modest cost, as energy efficiency savings offset the cost of new generation. In South Dakota, it would increase overall electricity costs by only 1.5 percent in 2010, and 3.4 percent in 2020.

21st Century Policies for Modern Technologies

Smart policies can overcome the many market and regulatory barriers that energy efficiency and renewable resources face. The key policy actions for achieving the Clean Energy Development Plan in South Dakota are to:

1. Establish an Energy Efficiency Investment Fund to support energy efficiency initiatives with a non-bypassable charge of 0.3¢/kWh.
2. Manage the Energy Efficiency Investment Fund by an independent third-party administrator overseen by a board composed of regulators, state energy offices, and consumer, efficiency and environmental advocates.
3. Evaluate and update South Dakota's efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
4. Establish a South Dakota Renewables Portfolio Standard requiring all retail electricity sellers to provide eight percent of their electricity from renew-able resources by 2010, and 20 percent by 2020.
5. Establish a Renewable Energy Investment Fund to support emerging renewable technologies with a non-bypassable charge of at least 0.1¢/kWh.
6. Ensure transmission pricing policies and power pooling practices that treat renewable resources fairly, and account for their intermittent nature, remote locations, or smaller scale.
7. Remove the barriers to clean distributed generation by: (1) applying net metering policies to all wind and photovoltaics; (2) establishing standard business and interconnection terms; (3) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (4) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies, and discouraging highly polluting diesel generators.

Figure 3: New Generation Resources in the Clean Energy Development Plan

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	940	2,900
CHP – Biomass	0	5
Biomass - Co-Firing	47	47
Photovoltaics	1	4
Biomass Gasification	0	0
Eff. Natural Gas Gen.*	89	200
Total	**1,077**	**3,156**

*Includes CHP (natural gas), district energy systems, and fuel cells.

WISCONSIN

REPOWERING THE MIDWEST:

THE CLEAN ENERGY DEVELOPMENT PLAN FOR THE HEARTLAND

THE 21ST CENTURY OPPORTUNITIES FOR CLEAN ENERGY

Wisconsin needs 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 the environment and the economy. The Clean Energy Development Plan proposes policies to implement underutilized energy efficiency technologies and to aggressively develop renewable energy resources. By diversifying a power supply that has relied on old, highly polluting coal and nuclear plants, Wisconsin will reduce pollution, improve electricity reliability, create new "green" manufacturing and installation jobs, and provide renewable energy "cash crops" for farmers. The Clean Energy Development Plan provides the strategies to achieve these goals.

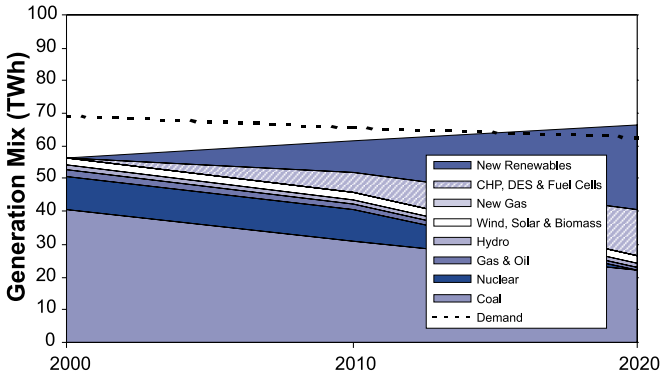
THE CLEAN ENERGY DEVELOPMENT PLAN

Wisconsin can 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. 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 eight 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.

As Figure 1 shows, implementing the Clean Energy Development Plan in Wisconsin means:

Figure 1. Sources of Electricity Generation: The Clean Energy Development Plan



The state's electricity demand is shown with a dashed line: when the dashed line is below generation, the state is a net exporter, and when above, the state is a net importer.

1. Energy efficiency measures reduce electricity demand, and therefore the need for generation.
2. Generation from renewable resources and efficient natural gas increases.
3. Generation from older, less efficient and highly polluting coal plants decreases.

IMPLEMENTING THE CLEAN ENERGY DEVELOPMENT PLAN IN WISCONSIN WILL ALSO PRODUCE:

1. Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO_2) pollution, which causes acid rain, by 55 percent; nitrogen oxide (NO_x) pollution, which causes smog, by 72 percent; and carbon dioxide (CO_2) pollution, which causes global warming, by 53 percent.
2. Improved electricity reliability thanks to a diversified power portfolio.
3. Economic development and job growth through wind and biomass power "cash crops" for farmers, increased business for energy efficiency and renewable energy manufacturers, and new skilled jobs in installation and maintenance of this equipment.

Help Repower Wisconsin!

For more information and resources to develop Wisconsin's clean energy options, visit **www.repowermidwest.org** or contact Environmental Law & Policy Center of the Midwest, 35 East Wacker Drive, Suite 1300, Chicago, IL 60601, tel: 312-673-6500.

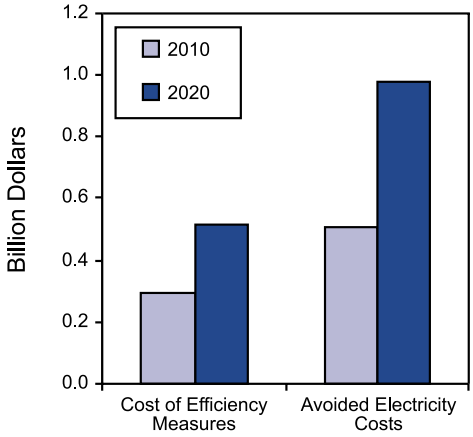
Harnessing clean energy improves the environment and spurs economic growth.

WISCONSIN

Reaping Energy Efficiency Opportunities

Wisconsin has tremendous opportunities to invest in energy efficiency technologies that will reduce pollution, save money, and create jobs. This will produce the benefits summarized below.

Figure 2. Benefits from Energy Efficiency Investments: The Clean Energy Development Plan



1. Reduces net electricity costs by $468 million by 2020.
2. Saves 23,895 GWh of electricity – equal to about eight large power plants – by 2020
3. Reduces electricity demand 16 percent by 2010, and 28 percent by 2020.
4. Costs less – at an average cost of 2.2¢/kWh – than generating, transmitting and distributing electricity.

Deploying Renewable Resources and Efficient Generation

Wisconsin has the opportunity to develop wind, solar and biomass power, which offer environmental benefits, improved reliability, and economic development in the growing renewable energy sector. Furthermore, Wisconsin has great potential to develop new efficient generators such as CHP, using natural gas. Together, the opportunities shown in Figure 3 could provide 17 percent of Wisconsin's generation capacity by 2010, and 41 percent by 2020.

The Clean Energy Development Plan's benefits can be achieved at a modest cost, as energy efficiency savings offset the cost of new generation. In Wisconsin, it would increase overall electricity costs by only 1.5 percent in 2010, and 3.4 percent in 2020.

21st Century Policies for Modern Technologies

Smart policies can overcome the many market and regulatory barriers that energy efficiency and renewable resources face. Wisconsin has already adopted some policies to promote clean power options, but more must be done to succeed. The key policy actions to achieve the Clean Power Plan are to:

- Increase Wisconsin's Energy Efficiency Investment Fund investment to 0.3¢/kWh.
- Evaluate and update Wisconsin's efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.
- Modify Wisconsin's existing Renewables Portfolio Standard so that the percentage requirement reaches eight percent by 2010, and 20 percent by 2020.
- Ensure that transmission pricing policies and power pooling practices treat renewable resources fairly and account for their intermittent nature, remote locations, or smaller scale.
- Remove barriers to clean distributed generation by: (1) establishing uniform business and interconnection terms; and (2) establishing uniform safety and power quality standards to facilitate safe and economic interconnection to the electricity system; and (3) applying clean air standards to small distributed generation sources, thereby promoting clean power technologies, and discouraging highly polluting diesel generators.

Figure 3: New Generation Resources in the Clean Energy Development Plan

Generator Type	2010 New Capacity (MW)	2020 Cumulative New Capacity (MW)
Wind Turbines	412	2,788
CHP – Biomass	916	1,892
Biomass - Co-Firing	219	340
Photovoltaics	9	33
Biomass Gasification	0	100
Eff. Natural Gas Gen.*	734	1767
Total	**2,290**	**6,920**

*Includes CHP (natural gas), district energy systems, and fuel cells.