

CLEAN POWER IN 2020

INTRODUCTION

The present scenarios, major problem faced by the international society are Fuel & Power deficiency & Global Warming. The problem will be solved only by increasing clean power production. So I suggest some plans to enhance clean power production

The 21st Century: Opportunities for Clean Energy

World 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, It 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.

Commercially available non-fossil energy resources are:

Energy Source Technology :	
Falling water	Hydroelectricity
Atomic	Nuclear
Sunlight	Solar
Wind	Wind
Earth	Geothermal
Vegetation	Biomass

In the future, the people will have –

- More energy from the sun, wind, and the Earth.
- Less energy from coal, oil and natural gas.

The Clean Energy Development Plan

We 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:

Aggressively implements the newest, as well as "tried and true," energy efficiency technologies.

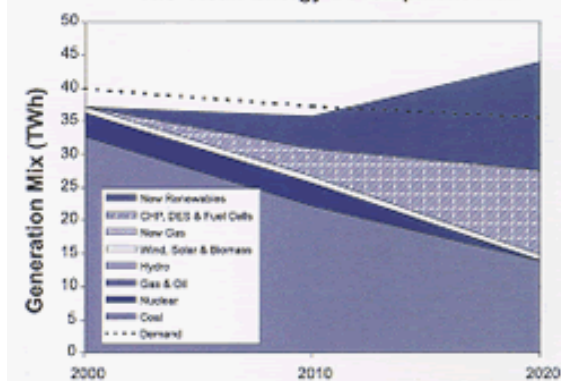
Develops and implements renewable energy technologies - wind, biomass and solar power - so that they provide eight percent of the region's electricity generation by 2010, and 22 percent by 2020.

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.

Retires selected older, less efficient and highly polluting coal plants.

Applies sustainable development strategies to aggressively link environmental improvement policies to economic development.

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.

As Figure 1 shows, implementing the Clean Energy Development Plan: Energy efficiency measures reduce electricity demand, and therefore the need for generation.

Generation from renewable resources and efficient natural gas increases.

Generation from older, less efficient and highly polluting coal plants decreases.

Dramatic improvements in environmental quality by 2020, compared to business-as-usual practices, by reducing: sulfur dioxide (SO₂) pollution, which causes acid rain, by 61 percent; nitrogen oxide (NO_x) pollution, which causes smog, by 65 percent; and carbon dioxide (CO₂) pollution, which causes global warming, by 56 percent.

Improved electricity reliability thanks to a diversified power portfolio.

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.

Reaping Energy Efficiency Opportunities

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

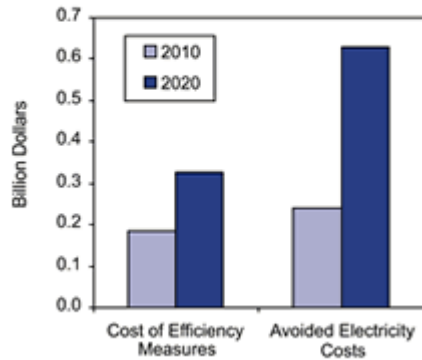
Reduces net electricity costs by \$304 million by 2020.

Saves 13,895 GWh of electricity - equal to about five large power plants - by 2020.

Reduces electricity demand by 17 percent in 2010 and 28 percent by 2020.

Costs less - at an average cost of 2.5¢/kWh - than generating, transmitting and distributing electricity from power plants.

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



Deploying Renewable Resources and Efficient Generation

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. We can also develop efficient generators, such as CHP, using natural gas. Together, the opportunities shown in Figure 3 could supply 22 percent of 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. It would increase overall electricity costs by about 1.5 percent in 2010, and 3.4 percent in 2020.

21st Century Policies for Model Technologies

Smart policies can overcome the many market and regulatory barriers that energy efficiency and renewable resources face. 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:

Establish an Energy Efficiency Investment Fund to support energy efficiency initiatives with a non-bypassable charge of 0.3¢/kWh.

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.

Evaluate and update efficiency standards and building codes. Establish or reinforce monitoring and enforcement practices.

Increase Iowa's Renewables Portfolio Standard, so that the percentage requirement reaches eight percent by 2010, and 20 percent by 2020. Policymakers 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 requirement were to be set at 10 percent for new renewable by 2010 (instead of eight percent), the costs of the Clean Energy Development Plan would increase from \$40 million to \$48 million.

Establish a Renewable Energy Investment Fund to support emerging renewable technologies, with a non-bypassable charge of at least 0.1¢/kWh.

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 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.

CONCLUSION:

Working together, we can limit global warming & Will Rescue over Earth

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