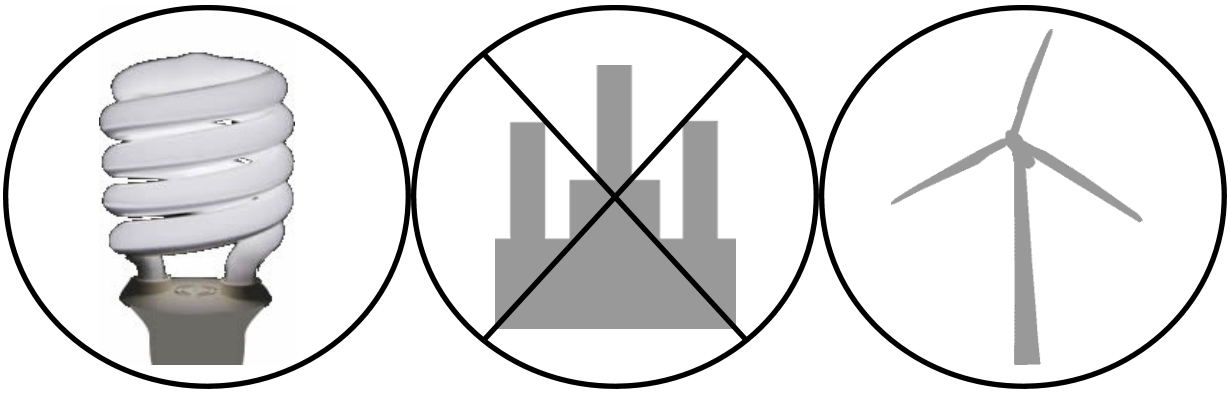

Indiana's Choice is Clear:

Energy Efficiency and Renewable Resources Should Come First

Citizens Action Coalition of Indiana
5420 North College Avenue #100, Indianapolis, Indiana 46220
Phone: (317) 205-3535 • Fax: (317) 205-3599 • www.citact.org

Table of Contents

Schedule and List of Intervenors

for the IURC Case Regarding Vectren/Duke's Joint Petition and Application to Build an IGCC Coal-Fired Power Plant in Edwardsport, Indiana.

Schedule

12/15/2006	Duke/Vectren file updated testimony
04/02/2007	Duke/Vectren to file their front end engineering and design ("FEED") study
05/01/2007	Intervenors file testimony
05/15/2007	Duke/Vectren rebuttal and Intervenors file cross-answering testimony on each other
06/18-22/2007	Evidentiary hearing

Intervenors

Organizations: Citizens Action Coalition of Indiana
Save the Valley
Valley Watch
Sierra Club Hoosier Chapter

Represented by: Jerry Polk
Polk, Hyman & Associates, LLC

Position:
The above organizations include among their members numerous individuals and families who are retail residential customers of PSI or Vectren and have a substantial interest in this proceeding. They pay PSI or Vectren rates and charges for retail residential customers which will be impacted by this proceeding. They are also dependent upon PSI or Vectren facilities, equipment and personnel for the reliability of their electric service. In addition, many of the organizations' members who are PSI or Vectren customers also reside in areas affected by emissions from their generating facilities. The organizations' members will therefore be affected by any preapprovals of costs to be deferred or recovered. In addition, the organizations' members will be impacted (for better or worse) by any Commission findings that have an impact on PSI's and for Vectren's ongoing resource planning and acquisition process or that impact future resource choices. Finally, the organizations' members will be affected (for better or worse) by any changes to PSI's or Vectren's resource planning that impact future environmental compliance planning.

The above organizations intend to present evidence to demonstrate the following:

- Coal is expensive
- Vectren and Duke's needs for energy can be met through energy efficiency, renewable energy, and distributed power alternatives
- Efficiency, renewables, and distributed power will more effectively reduce global warming emissions at a lower cost to ratepayers

Organization: Indiana Industrial Group

Represented by: Bette J. Dodd
Timothy L. Stewart
Lewis & Kappes, P.C.

Position:
Members of the Industrial Group consume substantial amounts of electricity from Petitioners and rely upon consistent, reliable and reasonably priced utility service to support the members' respective operations. As a consequence, the members of the Industrial Group have a substantial interest in the subject matter of this proceeding.

Organization: Nucor Steel

Represented by: Richard E. Aikrnan, Jr.
Anne E. Becker
Stewart & Irwin, P.C.

Position:
As a major end user of electric power and energy supplied by Duke Energy Indiana, Nucor has a substantial interest in the outcome of this proceeding. Decisions made in this proceeding may impact Nucor's electric rates andlor service and thus its competitive position in an industry in which electricity is one of the largest costs of production. No other party can adequately represent those interests.

Organization: Indiana Wildlife Federation
Clean Air Task Force

Represented by: Robert L. Hartley
Locke Reynolds LLP

Position:
CATF and IWF are environmental groups that support the more costly IGCC technology over traditional coal-fired generation because it has lower air emissions and may have a greater potential to address carbon emissions than pulverized coal generation.

Organization: Indiana Coal Council

Represented by: David T. McGimpsey
Bingham McHale LLP

Position:
The Coal Council is a trade association for the coal industry in Indiana. The Coal Council was formed to foster, promote and defend the interests of Indiana's coal producers, coal reserve holders and other business entities related to the coal industry. The proposed IGCC Project would use coal produced by the Coal Council's members. Accordingly, the Coal Council has a substantial interest in the subject matter of these proceedings.

Turning On
Citizen Power

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WHICH TYPE OF POWER MAKES ENE IN INDIANA?

RENEWABLES AND ENERGY EFFICIENCY...

The Benefits of Solar and Wind:

- According to the Department of Energy, Indiana has enough wind capacity to produce two and a half times more electricity than we are currently producing by burning coal
- The cost of wind is cheaper than the cost of burning coal on a per kW and per kWh basis because there are no fuel costs for wind and the operations and maintenance costs for wind turbines is far less than that of a coal burning power plant
- Solar panels on the roofs of public buildings can help meet peak demand on the hottest (and sunniest) days of the year when everyone is running their air conditioners and using more electricity
- No emissions

If Indiana set the goal of producing 10% of its electricity from renewables by 2017, it would bring investment dollars and jobs to the state:

- As much as **$6 to $8 billion** investment dollars
- **6,000** construction jobs
- **12,000** contractor and retail jobs
- **1,200** additional contractor and retail jobs to fulfill the need for long-term maintenance of wind turbines
- **600** permanent maintenance jobs

The Benefits of Energy Efficiency:

- Implementing efficiency costs half of what it costs to build a new power plant
- Reduces demand for electricity
- Saves ratepayers **billions of dollars**
- Reduces pollution

Reducing the demand for electricity by 1.5% per year will have a broader impact on Indiana's economy by:

- Creating over **800 net jobs per year** in the construction, manufacturing, retail and services sectors
- After 15 years, saving ratepayers **$1.4 billion a year** on utility bills
- Bringing down the wholesale price of natural gas

Annual Health Detriment to Hoosiers due to Coal Pollution:

- **887** deaths
- **1,491** heart attacks
- **114** lung cancer deaths
- **21,532** asthma attacks
- **845** hospital admissions
- **618** cases of chronic bronchitis
- **1,274** asthma ER visits
- **7%** of women of childbearing age have blood mercury levels that are higher than what the EPA considers safe to protect the developing nervous system of a fetus.

Environmental Damage Caused by Coal:

- Global Warming
- Forest and crop damage
- Mercury contamination of the fish in **ALL** of Indiana's rivers and lakes
- Acid Rain - the average pH of rain in Indiana is 4.5, which is **ten times more acidic than normal rain** (normal rain has a pH of 5.5)
- Emissions of carbon dioxide, carbon monoxide, nitrogen oxides, particulate matter, sulfur dioxide, volatile organic compounds, sulfur dioxide, lead, beryllium, mercury, and fluorides, to name a few

The Hidden Costs of Coal Not Included in Your Bill:

- **$5 billion each year** is spent in Indiana on health care costs related to fine particle pollution
- **$13 million a year** in tourism revenue is lost each year at Indiana's National Parks because of smog and haze due to power plant pollution
- **$87 million a year** is lost in farm revenue due to crop losses caused by ground level ozone (smog created by nitrogen oxides emitted from coal-fired power plants) which reduces plant growth and yield
- Acid rain causes damage to buildings, historical monuments and even cars

...OR COSTLY, DIRTY COAL-FIRED POWER PLANTS?

NO MATTER WHICH WAY YOU CUT IT, COAL IS DIRTY. IT HURTS OUR HEALTH, IT HURTS OUR ENVIRONMENT, AND IT HURTS OUR WALLETS.

Duke Energy wants to build a 630 MW coal gasification (Integrated Gasification Combined-Cycle, or IGCC) power plant in Edwardsport, Indiana to replace two old coal-fired power plants built in the 1950's that are only capable of producing 160 MW and only run about 30% of the time.

Duke says...	*The reality is...*
Duke expects their customers' demand for electricity to grow by about 0.4% per year, and they want to build this gasified coal power plant to meet the expected demand.	Duke has not seriously considered energy efficiency as an alternative. Efficiency could be deployed much more quickly than a new power plant can be built, and can reduce demand by about 1% per year, which would meet or exceed Duke's needs. Efficiency is by far the cheapest form of energy at 3¢ per kilowatt hour.
Duke has stated that wind energy is not yet economically attractive on a utility scale within the Duke Energy Indiana territory.	The cost of electricity produced from wind turbines averages at about 5¢ per kilowatt hour and continues to drop. Conversely, IGCC technology is still in the developmental phase of its existence, and costs continue to rise.
Duke claims that an IGCC power plant will reduce emissions compared to the plants that will be shut down.	While the IGCC technology will reduce some emissions, it will increase others because it will be operating much more frequently than the power plants that will be shut down. • **Lead emissions** will increase by **14,555%** • **Carbon dioxide emissions** will increase by **785%** • Carbon monoxide emissions will increase by 1,480% • Particulate matter emissions will increase by 297% • Volatile organic compounds emissions will increase by 678%
Duke claims that the IGCC power plant will have the potential to capture carbon dioxide.	Potential is a far cry from reality. While Duke is touting the ability to capture carbon, they are proposing to build the plant without it. They state that they will add carbon capture equipment later when changes occur in the federal regulations governing carbon dioxide emissions. Even then, they will only add the carbon capture equipment if it proves to be less expensive than simply paying for carbon dioxide allowances, defeating the stated purpose of reducing carbon emissions. What they are not saying is that the cost of carbon dioxide capture will increase the cost of the plant by 37% and reduce the efficiency of the plant by 20%!

DOLLARS AND ENE:

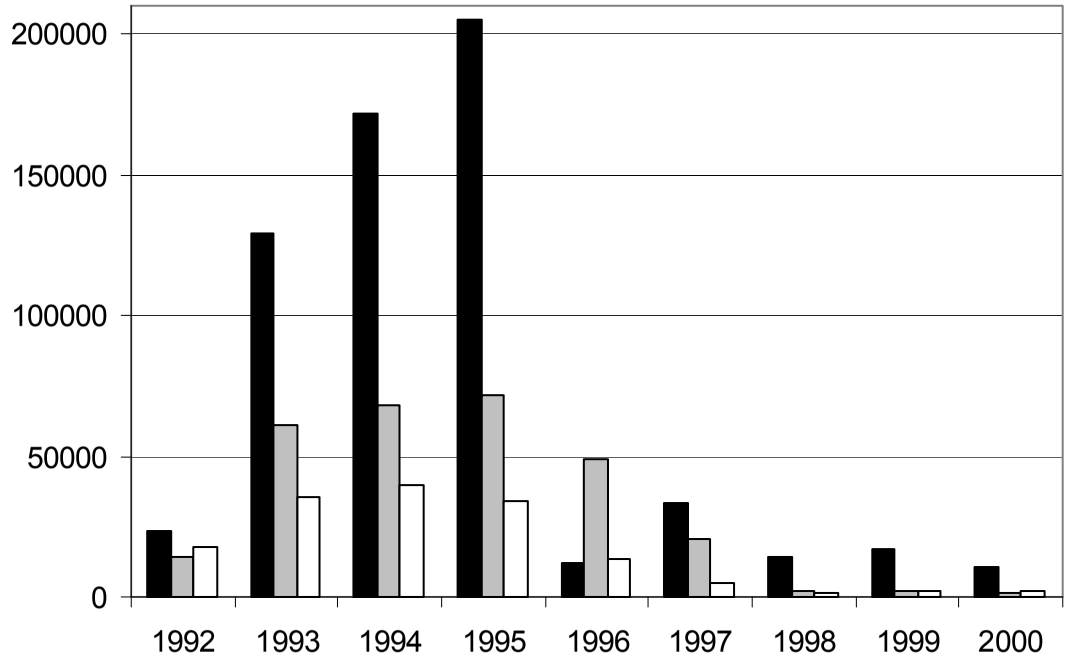
Ed Simcox, the head of the Indiana Energy Association, says that the IGCC coal-burning power plant that Duke is proposing is an **"enormously expensive"** proposition. It will cost a minimum of $2.1 billion to construct and an additional $105 million per year in operations costs. In contrast, energy efficiency measures to meet Duke's expected electricity demand will only cost $42 million per year, and will save ratepayers money on monthly electricity bills.

BOTTOM LINE:

Duke, as a regulated electric utility, gets a guaranteed "reasonable rate of return" for their investments. This rate of return usually averages out to about 11%, depending on the type of investment, the risk, etc. The point here is that the more money Duke spends, the more money they earn. Therefore, because new coal plants cost more than wind, they choose coal because it earns them more profit. They have an incentive to pollute. Clearly regulators should reject Duke's request and require them to take a least cost, common sense approach focused on efficiency and renewables.

PSI DSM Savings and Investments, 1992-2000

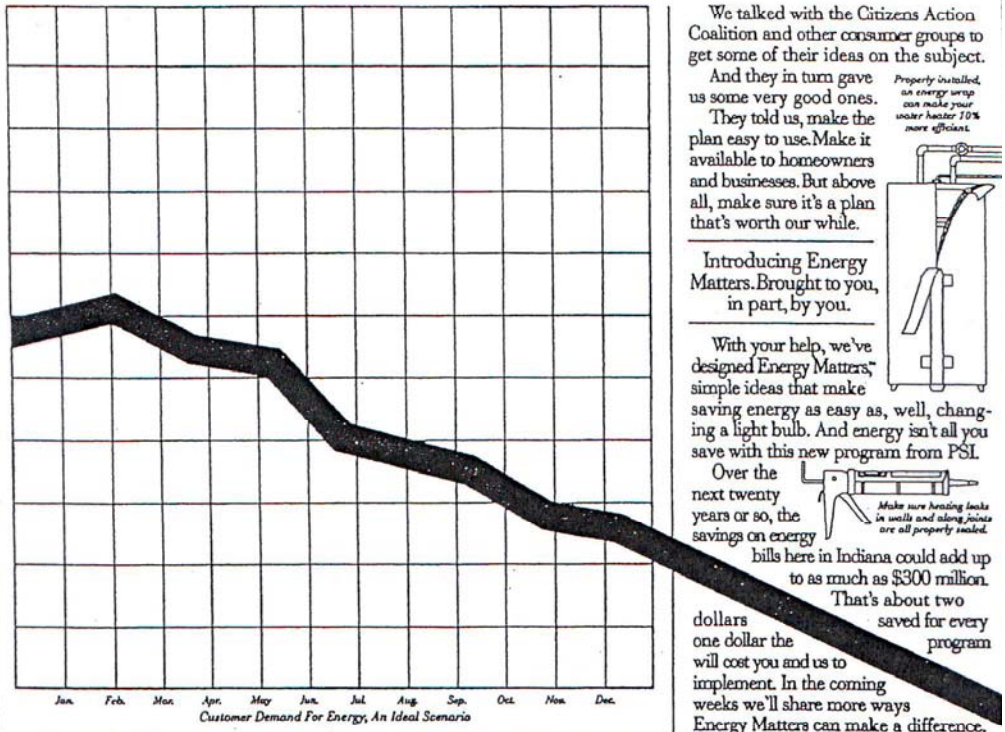
The chart below demonstrates the effectiveness of energy efficiency. As can be seen, when PSI (now Duke) was investing in demand-side management (DSM) for their customers, the amount of energy saved was astronomical, especially when compared with the modest amount of investment put into the program. Then, as the amount of money put into DSM dropped off, the amount of energy saved obviously followed suit. If PSI had continued funding their DSM programs at the level they agreed to, they could not argue for the need to build additional coal-fired base unit power plants.



	1992	1993	1994	1995	1996	1997	1998	1999	2000
Incremental Energy Savings (MWh)	23161	129274	172003	205097	12229	33155	14113	16996	10678
Incremental Peak Demand Savings (kW)	14475	60829	68190	71984	49053	20229	1872	2365	1161
Total Utility Cost ($000)	18012	35399	39712	34370	13356	5259	1440	1871	1898

This chart was prepared by Synapse Energy for Citizens Action Coalition and was presented to the Indiana Utility Regulatory Commission during PSI's 2003 rate case hearing. The information in the chart comes from the Energy Information Administration.

Another Banner Year.



Customer Demand For Energy, An Ideal Scenario

No, we don't have this chart turned the wrong way. This, in reality, is the direction we'd like to see your electricity usage head next year. And the year after that. And the year after that. Wait a minute. Why would any company that makes electricity want to sell you less electricity?


Energy Matters offers companies financial incentives to install more efficient equipment.

Because in the long run, it'll be a lot cheaper for us. And a lot cheaper for you too.

It comes down to power plants. The more we build, the more it costs.

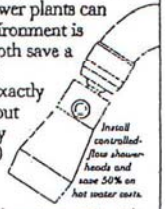
The faster the demand for electricity goes up, the more power plants we'll have to build. Now as you most likely know, power plants are not cheap. Building just one power plant costs millions of dollars. And that not only costs us money. It also costs you money in what you have to pay each month for electricity.


Faucet aerators on kitchen and bathroom sinks cut hot water usage by half.

But there's a smarter way to handle the growing demand for electricity. Namely, make it grow slower. That way, construction of major new power plants can be delayed. The environment is better off. And we both save a great deal of money.

The question is, exactly how does one go about managing the energy demands of 600,000 customers? Well, if you're PSI Energy," you figure the best place to start is with the people you're selling electricity to.


Compact fluorescent bulbs give the same warm light as ordinary bulbs but use 75% less electricity.


Install controlled-flow shower heads and save 50% on hot water costs.

We talked with the Citizens Action Coalition and other consumer groups to get some of their ideas on the subject.

And they in turn gave us some very good ones.

They told us, make the plan easy to use. Make it available to homeowners and businesses. But above all, make sure it's a plan that's worth our while.

Properly installed, an energy wrap can make your water heater 10% more efficient.

Introducing Energy Matters. Brought to you, in part, by you.

With your help, we've designed Energy Matters," simple ideas that make saving energy as easy as, well, changing a light bulb. And energy isn't all you save with this new program from PSI.

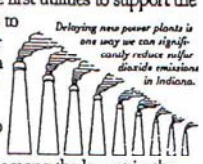
Over the next twenty years or so, the savings on energy bills here in Indiana could add up to as much as $300 million.

Make sure heating ducts in walls and along joists are all properly sealed.

That's about two dollars saved for every one dollar the program will cost you and us to implement. In the coming weeks we'll share more ways Energy Matters can make a difference.

Believe it or not, we want you to use less electricity.

We're an Indiana company that wants you to use less of its product. PSI Energy was one of the first utilities to support the amendments to the Clean Air Act. We're an electric company that's committed to keeping our electric rates among the lowest in the nation and that listens to its customers.


Delaying new power plants is one way we can significantly reduce sulfur dioxide emissions in Indiana.

As you may have gathered, for a utility, PSI Energy is a little unusual, to say the least. After all, just take a look at our idea of a good-looking sales chart.

PSIEnergy

This ad was run by PSI Energy in the Indianapolis Star in 1992. In PSI's own words, "it comes down to power plants. The more we build, the more it costs." They also state that energy efficiency saves about two dollars for every one dollar spent which creates a situation where "construction of major new power plants can be delayed."

As can be seen from the chart on the previous page, these words proved true when PSI was at the peak of investing in energy efficiency programs for their customers in 1995. Beginning in 1996 however, they began to cut their investments in demand side management programs. Had they continued funding the programs at 1995 levels, they could not argue for a new base-load power plant right now.

Duke/Vectren Proposed Integrated Gasification Combined-Cycle Power Plant: Poor Energy Planning for Indiana

March, 2007

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Executive Summary

On September 7, 2006, Duke Energy Indiana and Vectren filed a petition with the Indiana Utility Regulatory Commission requesting permission to build a two-turbine 630 megawatt (MW) Integrated Gasification Combined-Cycle (IGCC) power plant in Edwardsport, Indiana. Duke currently owns a power plant at this location which started operation in 1918 and that currently operates units built in 1944 and 1951. It consists of 3 coal-fired boilers and 1 oil boiler, is capable of producing 160 megawatts of electricity, and operates only about 30% of the time. The proposal is to demolish the currently operating plant and replace it with the proposed IGCC plant. The new plant operations would include pulverizing and gasifying coal, and using the resulting "syngas" as fuel to run the power plant. In the event that syngas is not used as the primary fuel source, the plant is also capable of using natural gas as a fuel. The IURC's decision will most likely be made within the next six months.

Citizens Action Coalition is opposing the construction of this power plant and, instead, urging the IURC to direct Vectren and Duke Energy to begin investing in cleaner, more economic energy efficiency and renewable power alternatives.

There are many reasons to reject Duke's proposal. Economically speaking, the IURC's decision in this matter will have a direct impact on all of the ratepayers in Vectren and Duke Energy's service territories, in terms of significant increases in electric bills. These ratepayers include citizens and businesses as well as cities and towns. The construction of the power plant will cost a minimum of $2.1 billion, which will have to be shouldered by ratepayers. Operating and maintenance costs will be at least $104 million annually.

In contrast, ramping up energy efficiency programs to meet Duke's projected demand for electricity will only cost $42 million per year, and will save ratepayers money. And, even if energy efficiency was not enough, the same amount of electricity can be generated by wind turbines placed in northern Indiana for the same construction cost, but for only $39 million per year in operations and maintenance costs. In other words, diversifying the energy mix is cheaper than building the plant and can also meet electric energy demand in Duke/PSI territory.

In terms of the environment, while Vectren and Duke Energy are presenting this power plant as "clean coal technology" with the ability to capture carbon dioxide and reduce global warming emissions, they are not proposing to actually build the plant with the technology necessary to carry out this aim. The plant will be built without carbon dioxide capture equipment, and it will be added later only when federal regulations governing carbon dioxide change, and then only if it is cheaper to do so than to pay for the carbon dioxide emissions. It is important to note that if carbon capture equipment is ever added to this power plant, it will increase the cost of the project by at least 37%, while decreasing the electricity output of the plant by at least 20%. Furthermore, carbon sequestration on the commercial scale necessary has never been demonstrated or accomplished. Even if carbon capture and sequestration were viable, which has yet to be proven, retrofitting the plant with such technology would increase electric bills even more and substantially reduce the efficiency of the plant.

Regarding the health of Hoosiers, Vectren and Duke Energy are also emphasizing that IGCC technology is cleaner in terms of emissions in nitrogen oxides, sulfur dioxide, sulfuric acid, beryllium, mercury, and fluoride than traditional coal generation. However, the proposed power plant is much larger than what currently exists at Edwardsport, and will be operating more often, resulting in a 785% increase in carbon dioxide emissions, a 1,480% increase in carbon monoxide emissions, a 297% increase in particulate matter emissions, a 678% increase in volatile organic compounds, and an alarming 14,555% increase in lead emissions. Of particular concern are the increases in lead, which is especially harmful to fetuses, infants, and young children, and is known to harm the intellectual development, behavior, size and hearing of infants, at low levels of exposure. The increases in particulate matter are also alarming because of the known health impacts. The EPA's own consultants estimate that 887 deaths, 1,491 heart attacks, 114 lung cancer deaths, 21,532 asthma attacks, 845 hospital admissions, 618 cases of chronic bronchitis, and 1,274 asthma ER visits occur annually due to particulate matter emissions from coal-burning power plants in Indiana (Clear the Air, 2004).

If this IGCC power plant is built in Edwardsport, Indiana, it will have an enormous negative impact on the finances, health, and well-being of citizens across Indiana. There are much cheaper alternatives that are also cleaner and will actually save ratepayers money, such as energy efficiency and renewable sources of electricity, that Vectren and Duke Energy have not fully explored nor exploited. Citizens Action Coalition is urging the Indiana Utility Regulatory Commission to reject Vectren and Duke's request and require them to take a least cost, common sense approach focused on efficiency and renewables.

Duke/Vectren Proposed Integrated Gasification Combined-Cycle Power Plant: Poor Energy Planning for Indiana

On September 7, 2006, Duke Energy Indiana and Vectren filed a petition with the Indiana Utility Regulatory Commission requesting permission to build a two-turbine 630 megawatt (MW) Integrated Gasification Combined-Cycle (IGCC) power plant in Edwardsport, Indiana (Duke, September 2006). Duke currently owns a power plant at this location which was built in the 1940's or 50's, consists of 3 coal-fired boilers and 1 oil boiler, is capable of producing 160 megawatts of electricity, and operates about 30% of the time (Duke, October, 2006). The proposal is to demolish the currently operating plant and replace it with the proposed IGCC plant. The new plant operations would include pulverizing and gasifying coal, and using the resulting "syngas" as fuel to run the power plant. In the event that syngas is not used as the primary fuel source, the plant is also capable of using natural gas as a fuel. Duke and Vectren are proclaiming that the proposed IGCC plant will have less of an impact to the environment because the process of gasifying the coal will allow them to capture emissions at the beginning of the process rather than as they are emitted from a smokestack (Duke, August, 2006). However, the proposed power plant is much larger and will operate much more often than the plant that is currently operating at Edwardsport, and therefore will emit more pollutants. Below is a table illustrating the amount of pollutants that will be emitted and how they compare to what is currently being emitted.

Comparison of Air Emissions for Currently Operating Power Plant at Edwardsport and Proposed IGCC Plant (tons/year)[1]

	Average Emissions of Currently Operating Plant (tons/year)	Projected Emissions of Proposed IGCC Plant (tons/year)	Increase or Decrease (tons/year)	Percent Increase or Decrease
Carbon Dioxide (CO_2)	440,393	3.9 million	+3.5 million	+785%
Carbon Monoxide (CO)	69.50	1,098.18	+1,028.68	+1,480%
Nitrogen Oxides (NO_X)	2,384.00	1,554.75	-829.25	-34%
Particulate Matter (PM)	302.80	1,202.35	+899.54	+297%
Sulfur Dioxide (SO_2)	10,299.10	431.70	-9,867.40	-95%
Volatile Organic Compounds (VOC)	8.30	64.58	56.28	+678%
Sulfuric Acid (H_2SO_4)	515.00	47.95	-467.05	-90%
Lead	0.00058	0.085	+0.008442	+14,555%
Beryllium	0.0029	0.00276523	-0.00013477	-4%
Mercury	0.008	0.0063462	-0.0016538	-20%
Fluorides	20.67	0.00	-20.67	-100%

As can be seen from this table, nitrogen oxides, sulfur dioxide, sulfuric acid, beryllium, mercury, and fluoride emissions will all decrease. On the other hand, carbon dioxide, carbon monoxide, particulate matter, volatile organic compounds, and lead emissions will all skyrocket. The proposed IGCC technology presents its own set of problems - both environmentally and economically - and there are other, better alternatives such as renewable energy and energy efficiency, which should be made a priority by the IURC and the utilities.

[1]See Appendix (Table 1 and Carbon Dioxide Calculations) for sources and calculations

"Clean Coal" vs. Wind Energy

Duke and Vectren are emphasizing the reduction in sulfur dioxide (SO_2), nitrogen oxides (NO_X), mercury (Hg) and sulfuric acid (H_2SO_4) emissions that the IGCC technology would create. While this is true, the proposed plant would still emit these hazardous pollutants. At the present time, Duke and Vectren are proposing an IGCC plant that does not capture carbon dioxide (CO_2), with the potential to add the carbon capture equipment down the road when carbon dioxide becomes a regulated emission (Duke, October, 2006). Carbon capture will decrease the output of the power plant by about 20% as extra energy is required to operate the carbon capture equipment (IPCC, 2006). Additionally, the cost of capturing carbon dioxide will significantly increase the costs of construction and the costs to operate and maintain the plant. On the other hand, a windfarm that would produce the same amount of electricity as the proposed IGCC plant would cost about the same to build and install, but would have a significantly smaller annual operations and maintenance cost, no fuel cost, and would not produce emissions. Below is a table comparing the energy output and the costs of Duke and Vectren's proposed IGCC plant with and without carbon capture, and the costs of a windfarm sized to generate the same amount of energy as an IGCC plant at 85% capacity factor.

Cost Comparison for an IGCC Power Plant and a Comparably Sized Wind Farm[2]

	IGCC	IGCC w/ Carbon Capture	Wind
Net Electricity Production	4.7 million MWh/yr	3.8 million MWh/yr	4.7 million MWh/yr
Construction & Installation Cost	$2.1 billion	$2.8 billion	$2.5 billion
Annual Costs of Electricity Production			
	IGCC	**IGCC w/ Carbon Capture**	**Wind**
Operations & Maintenance (including cost to capture, transport, and store carbon)	$28.6 million/yr	$120.3 million/yr	$38.2 million/yr
Fuel	$74.5 million/yr	$74.5 million/yr	$0
SO_2 emissions	$225,973/yr	$225,973/yr	$0
NO_X emissions	$1.6 million/yr	$1.6 million/yr	$0
Total Annual Costs:	$104.9 million/yr	$196.6 million/yr	$38.2 million/yr
Cost of Electricity to Ratepayers			
	IGCC	**IGCC w/ Carbon Capture**	**Wind**
Cost of Electricity	$0.05/kWh	$0.07/kWh	$0.05/kWh

As can be seen, the annual costs of an IGCC plant without carbon capture are more than double that of a windfarm sized to produce the same amount of electricity, and with carbon capture, the costs are over quadruple the costs of the windfarm. In the future, the differences will become even more dramatic. Although the costs of emissions allowances is currently dropping, as the U.S. Congress examines the possibility of tightening SO_2 and NO_X regulations, the costs of the allowances for these emissions is expected to rise dramatically (EIA, 2001). Also, although there currently is no mercury allowance trading, the market is already beginning to take shape (Ammirato, 2006). The table below reflects the current and projected allowance costs for the Duke/Vectren proposed IGCC plant.

[2]See Appendix for calculations

Projected Future Allowance Costs for Duke/Vectren Proposed IGCC Plant

	IGCC Power Plant			Wind Farm		
	Current Costs	**2010**	**2020**	**Current Costs**	**2010**	**2020**
SO_2	$225,973/yr	$98,658/yr	$337,786/yr	$0	$0	$0
NO_X	$1,600,000/yr	$2,146,386/yr	$1,968,705/yr	$0	$0	$0
Mercury	N/A	$213,889/yr	$312,561/yr	N/A	$0	$0
Total	$1.8 million/yr	$2.45 million/yr	$2.61 million/yr	$0	$0	$0

It is important to note that carbon dioxide emissions will be regulated in the future, and there will most likely be allowance costs for CO_2 as well. Even with carbon capture equipment, the IGCC plant will only a capture at most about 86% of the carbon dioxide created by the plant, (IPCC, 2006) and Duke will most likely be able to choose how much carbon dioxide they want to capture up to that amount. In order for carbon capture technology to be economically used in power plants, the price of carbon dioxide reductions would have to exceed $25 – $30 per ton of CO_2. (IPCC, 2006) If future CO_2 allowances are structured to be below this threshold, it may end up being cheaper for Duke to simply pay for the CO_2 they are emitting instead of adding the carbon capture equipment they are proposing. If this ends up being the case, the carbon dioxide emitted by the proposed IGCC plant will not decrease at all.

Carbon storage also adds an environmental impact component to "clean coal". The technology that is being developed is called Carbon Capture and Storage (CCS). CCS begins with separating the carbon dioxide from the coal (in an IGCC plant, at the beginning of the gasification process rather than as an emission at the end of the process). Next, the carbon dioxide is stored and transported as necessary. The process ends with storing the carbon dioxide long term one of two ways: either deep underground in oil and gas fields, unminable coal seams, or deep saline formations; or at the bottom of the ocean. Since this technology has never been used on a large scale there will also be environmental consequences to consider when it begins to be used.[3]

"Clean Coal" vs. Energy Efficiency

Energy Efficiency Resource Standards (EERS)

According to Nadel's report entitled *Energy Efficiency Resource Standards: Experience and Recommendations* (2006), the "U.S. Department of Energy's national laboratories estimate that increasing energy efficiency throughout the economy could cut national energy use by about 20% in 2020." (2006, p. 2, citing Interlaboratory Working Group, 2000) "Unlike other resources such as renewable energy and coal, energy-saving opportunities are distributed throughout the 50 states." (p. 1)

Efficiency can be deployed much more quickly than new power plants can be built. As an example, in the summer of 2001, as a response to the energy crisis, "California homeowners and businesses reduced energy use by 6.7% relative to the year before (after adjusting for economic growth and weather)." (2006, p. 2-3, citing CEC, 2001) "The energy savings averaged a cost of about 3 cents per kWh, far less than the typical retail or wholesale cost of electricity." (2006, p. 3, citing Global Energy Partners, 2003)

Many states have conducted energy efficiency studies and have found that efficiency can be used in a cost-effective way to reduce energy use by 10% or more over a 10-year period and 20% or more over a 20-year period. In order to achieve this, states can introduce energy efficiency policies that create targets to reduce energy use by 1% a year. "In order to provide more certainty for resource planners and power providers, the policy targets should extend for at least ten years, with periodic reviews and the option to make refinements." (p. 31)

[3]Should the sequestered CO_2 leak, the side effects could be disastrous. According to the Intergovernmental Panel on Climate Change (2006), in underground geologic storage, the effects "could include lethal effects on plants and subsoil animals and the contamination of groundwater" and "could lead to local high CO_2 concentrations in the air that could harm animals or people. Pressure build-up caused by CO_2 injection could trigger small seismic events." (p. 12) On the ocean floor, CO_2 will alter the local chemical environment by increasing the acidity, causing the mortality of ocean organisms, and altering the ecosystem. Long term effects of either type of CO_2 storage have not yet been studied and are not fully understood.

An energy efficiency resource standard could be created on a state-wide level (or even a national level) that would affect 3 classes of measures. The first class is comprised of "end-use efficiency measures at customer facilities" (ranging "from efficient residential appliances to efficient commercial lighting systems to more efficient industrial processes"). (p. 27) These measures will save customers money, reduce the demand for electricity, reduce the electric load on transmission and distribution lines, and reduce the amount of emissions created by burning coal to generate electricity.

The second class is comprised of "transmission and distribution improvements that improve efficiency, such as superconducting transmission technology and high-efficiency transformers." (p. 27) This will reduce the amount of electricity lost in the course of transporting electricity to the end users, and thus reduce the amount of electricity needing to be generated.

The third class is "distributed generation efficiency measures at end-user sites, such as fuel cells, combined heat and power, and recycled energy technologies." (p. 27) Many industrial customers have the potential to use waste heat to generate electricity to either be used at their own facilities, or to be returned to the grid, thus reducing the amount of electricity needing to be generated by electric utilities.

Many states (including Texas, Hawaii, Nevada, Connecticut, California, Vermont, Pennsylvania, Illinois, New Jersey, and Colorado) have implemented or begun to implement energy efficiency resource standards and programs. Each state has a different program, providing policymakers with a variety of options in creating a program that works for a specific area.

Energy Efficiency and its Impact on Natural Gas

According to the Kushler, Witte, and York study entitled *Examining the Potential for Energy Efficiency To Help Address the Natural Gas Crisis in the Midwest* (2005), because the Midwest region is so reliant on imported natural gas, end-use energy efficiency would not only help consumers to save money on their electric bills and natural gas bills, it would also help to bring down the wholesale price of natural gas. The study states that if the Midwest works to achieve "a 5% reduction in both electricity and natural gas customer use over 5 years" (p. iii), by 2010 customers could be saving $2 billion annually on electric bills, another $2 billion annually on natural gas bills, as well as producing over 30,000 net new jobs and $750 million in worker wages. Over 15 years, those results increase to over 66,000 net new jobs and nearly $1.8 billion in worker wages.

Kushler, Witte, and York indicate that if the Midwest region were to spend $310 million annually for natural gas energy efficiency and $800 million annually for electricity energy efficiency, of which Indiana's portion would be $35 million annually for natural gas efficiency and $113 million annually for electricity efficiency, the cost savings for Indiana would be staggering. These results are illustrated in the table below:

Savings for Indiana in Each Individual Year due to Energy Efficiency Implementation (p. 24 – 30)

	2006	2010	2015	2020
Projected Net Natural Gas Customer Dollar Savings	$77 million	$122 million	$182 million	$303 million
Projected Net Electricity Customer Dollar Savings	$98 million	$223 million	$398 million	$596 million
Dollar Savings Impacts of Natural Gas Price Reduction	$62 million	$164 million	$346 million	$380 million
Dollar Savings Impacts of Natural Gas Price Reduction for Power Generation	$7 million	$10 million	$124 million	$138 million
Total Savings	$244 million	$518 million	$1,051 million	$1,417 million

Even if the entire Midwest region does not invest in energy efficiency at the same time that Indiana does, though the cost savings may not be as dramatic as the projected savings above, they would still be significant. These savings could be achieved through a mix of efficiency programs including a "utility and/or public benefits fund supported energy efficiency programs; building energy codes; equipment standards" for manufacturers; etc. (p. 34). "A portfolio of electric energy efficiency programs can save electricity at a cost of 3 cents per kWh, and a portfolio of natural gas efficiency programs can save natural gas at a cost of $1.50 per Mcf." (2005, citing Elliott et al, 2003, p. 32)

Conclusion

According to Duke's testimony submitted to the IURC on October 24, 2006, they expect their demand for electricity to grow by about 0.4% per year. Even if Indiana does not create a policy to implement energy efficiency state-wide, Duke can begin implementing efficiency measures that would completely offset their customer load growth and reduce or eliminate the need for new generation at a third of the cost of new generation. If new generation is needed, Indiana has more than enough wind capacity to begin building windfarms (NREL, 2006) and meeting the needed demand for electricity at a fraction of the cost of a new coal-burning power plant and with little or no impact to the environment. The bottom line here is that if ratepayers and utilities have to spend money, it should be spent on measures such as renewable energy and energy efficiency that will be economical and sustainable in both the short- and long-term rather than measures such as new baseload coal-burning power plants that will produce more electricity in the short-term and further damage ratepayers, public health, and the environment in the long-term.

Appendix

Table 1 - Proposed Duke/Vectren IGCC Plant[1]
Summary of Net Emission Increase of Regulated Criteria Air Emissions - Syngas Operation

Proposed Edwardsport IGCC Project Data (Duke, August 2006)												
	Potential to Emit Air Emission Rates (tons/year)											
	CO	**NO_X**	**PM**	**PM_{10}**	**$PM_{2.5}$**	**SO_2**	**VOC**	**H_2SO_4**	**Lead**	**Beryllium**	**Mercury**	**Fluorides**
Two combustion turbines on syngas[1] (Table 2-7a)	692.50	1254.34	291.12	291.12	291.12	215.90	24.57	47.65	0.085	0.002754	0.006103	-
Natural gas fired gasification pre-heaters (Table 2-11)	0.60	1.00	0.40	0.40	0.40	0.00	0.20	-	-	0.00000223	0.0000482	-
Flare pilot (Table 2-9)	0.18	0.21	0.02	0.02	0.02	0.001	0.01	-	-	-	-	-
Thermal oxidizer (Table 2-10)	1.40	1.70	0.10	0.10	0.10	87.00	0.10	-	-	-	-	-
Startup and shutdown emissions (Tables 2-8a and 2-8b)	338.00	180.10	9.80	9.80	9.80	127.80	35.00	0.30	-	-	-	-
Auxiliary boiler (Table 2-12)	61.80	102.90	5.60	5.60	5.60	0.60	4.00	-	-	0.000009	0.000195	-
Emergency generator (Table 2-13)	3.00	7.20	0.40	0.40	0.40	0.20	0.40	-	-	-	-	-
Emergency fire pump (Table 2-14)	0.70	3.30	0.20	0.20	0.20	0.20	0.30	-	-	-	-	-
Cooling tower (Table 2-15)	-	-	28.00	28.00	28.00	-	0.00	-	-	-	-	-
Fugitive emissions (Tables 2-3, 2-4a, 2-4b, 2-5a, 2-5b, 2-6a, 2-6b, 2-6c, and 2-6d)	-	-	77.40	59.00	59.00	-	-	-	-	-	-	-
Total Projected Emissions	1098.18	1554.75	413.04	394.64	394.64	431.70	64.58	47.95	0.085	0.00276523	0.0063462	0.00
Current Average Emissions[3] (Tables 2-2 and 2-2a)	69.50	2384.00	207.40	47.70	47.70	10299.10	8.30	515.00	0.00058	0.0029	0.008	20.67
Increase or Decrease in Emissions	+1028.68	-829.25	+257.02	+398.32	+398.32	-9867.40	+56.28	-467.05	+0.08442	-0.0001347	-0.001653	-20.67
Percent Increase or Decrease	+1,480%	-34%	+124%	+835%	+835%	-95%	678%	-90%	+14,555%	-4%	-20%	-100%

[1] The data in this table comes from Table 2-7a in Duke's Significant Source Modification Filing with the Indiana Department of Environmental Management, August 2006.

[2] Duke's data regarding the projected air emissions data for the proposed IGCC plant was derived with the assumption that the plant will be running 8,760 hours per year (which is 24 hours a day, 365 days a year, or 100% capacity). Since in reality the plant is expected to be operating at 85% capacity, the data for the "Two combustion turbines on syngas" are derived by multiplying the numbers in Duke's Table 2-7a by .85

[3] Duke's data regarding the current average air emissions was derived by recording the emissions from the currently operating coal-fired power plant for a two year period from June 2002 through May 2004.

Calculations

A base assumption for all of these calculations is that the proposed IGCC plant will operate 85% of the time (Blankinship, 2006)

- 365 days/yr X 24 hrs/day = 8760 hrs/yr
- 85% of the time = 8760 hrs/yr X .85 = 7446 hrs/yr

Kilowatt Hours per year

- 630 MW X 7446 hrs/yr = 4,690,980 MWh/yr X 1000 kWh/MWh = 4,690,980,000 kWh/yr

Carbon Dioxide Calculations

Projected Carbon Dioxide Emissions for Proposed Duke/Vectren IGCC Plant

- The average emission rate of carbon dioxide for an IGCC power plant without carbon capture is .773 $kgCO_2/kWh$ (IPCC, 2006, p 25)
- 4,690,980,000 kWh/yr X .773 $kgCO_2/kWh$ = 3,626,127,540 $kgCO_2/yr$
- 3,626,127,540 $kgCO_2/yr$ X 2.2 lbs/kg = 7,977,480,588 $lbsCO_2/yr$
- 7,977,480,588 $lbsCO_2/yr$ X 1 ton / 2000 lbs = 3,988,740 $tonsCO_2/yr$ = 3.9 million tons CO_2/yr

- The average emission rate of carbon dioxide for an IGCC power plant with carbon capture is .108 $kgCO_2/kWh$ (ibid., p 25)
- 4,690,980,000 kWh/yr X .108 $kgCO_2/kWh$ = 506,625,840 $kgCO_2/yr$
- 506,625,840 $kgCO_2/yr$ X 2.2 lbs/kg = 1,114,576,848 $lbsCO_2/yr$
- 1,114,576,848 $lbsCO_2/yr$ X 1 ton/2000 lbs = 557,288 tons CO_2/yr

- If used to its maximum potential, carbon capture reduces CO_2 emissions by an average of 3.4 million tons/yr (3.9 million tons CO_2/yr – 557,288 tons CO_2/yr), which is about an 86% reduction.

Costs of Carbon Capture

- Carbon capture would require about a 20% increase input in energy (IPCC, 2006, p 25) – or a 20% drain on plant energy output. This would take the proposed Duke IGCC plant from a 630MW plant to a 504MW plant. In other words, it would go from 4.6 million MWh/yr to 3.8 million MWh/yr.
- The capitol required for carbon capture would increase by 37% (ibid., p 25). That would take the capitol required to build the proposed IGCC plant from $2.1 billion to about $2.8 billion.
- The average cost of captured carbon dioxide for an IGCC plant is $23 per ton of CO_2 (ibid., p 25).
- Taking this average cost, the cost per year for carbon capture for the proposed Duke IGCC power plant would be: $23/$tCO_2$ X 3,988,740 $tonsCO_2/yr$ = $91,741,020/yr = $91.7 million/yr

Costs of the proposed IGCC plant

Fuel Costs

- The December, 2006 spot market price for Illinois Basin coal was $34/ton (EIA, 2006)
- 2.19 million tons of coal per year will be purchased for the proposed IGCC plant (Duke, August 2006)
- 2.19 million tons/yr X $34/ton = $74.5 million per year in fuel (coal) costs

Operations & Maintenance Costs

- O&M costs for an IGCC plant will range from 7.9 mills/kWh in 2000 to 6.1 mills/kWh in 2012 (David, 2000)
- 6.1 mills/kWh = $.0061/kWh = $6.1/MWh à $6.1/MWh X 4,690,980 MWh/yr = $28,614,978/yr O&M costs
- O&M for an IGCC plant with carbon capture would be $28,614,978/yr + $91,741,020/yr = $120,355,998/yr

Costs of SO_2 and NO_X emissions

According to Evolution Markets, Inc (2006), the average cost of SO_2 and NO_X trading allowances dropped over the course of 2006. SO_2 allowances began 2006 at about $1,600 and at the end of the year the monthly average cost of SO_2 allowances for December, 2006 was $481. NO_X vintage 2007 allowances began 2006 at about $2,400 and at the end of the year the average monthly cost for December was $926. Assuming the December prices for SO_2 and NO_X allowances, and using Duke's emission numbers from Table 2-16a in their *Significant Source Modification* filing with IDEM on August 18, 2006 for SO_2 (469.8 tons/yr) and NO_X (1776.81 tons/yr), the allowance costs for the proposed IGCC plant would be as follows:

- SO_2 allowances: $481/ton X 469.8 tons/yr = $225,973/yr
- NO_X allowances: $926/ton X 1776.81 tons/yr = $1,645,326/yr or $1.6 million/yr

Although the cost of SO_2 and NO_X allowances continues to drop, according to the Energy Information Administration's *Reducing Emissions of Sulfur Dioxide, Nitrogen Oxides, and Mercury from Electric Power Plants* (2001) report, emission allowance costs are projected to increase as the caps of NO_X, SO_2, and mercury (Hg) are tightened. The report analyzes 3 scenarios:

- Scenario 1: Reduce NOx by 75% below 1997 levels, SO_2 emissions by 75% below full implementation of Title IV of the Clean Air Act Amendment of 1990, and Hg emissions by 75% below 1999 levels by 2012, with half the reductions for each of the emissions occurring by 2007.
- Scenario 2: Reduce NOx by 65% below 1997 levels, SO_2 emissions by 65% below full implementation of Title IV of the Clean Air Act Amendment of 1990, and Hg emissions by 65% below 1999 levels by 2012, with half the reductions for each of the emissions occurring by 2007.
- Scenario 3: Reduce NOx by 50% below 1997 levels, SO_2 emissions by 50% below full implementation of Title IV of the Clean Air Act Amendment of 1990, and Hg emissions by 50% below 1999 levels by 2012, with half the reductions for each of the emissions occurring by 2007.

The report was prepared in 2001 and uses 1999 dollars for the following projected costs of allowances (EIA, 2001):

	2010 Projected Allowance Costs			2020 Projected Allowance Costs		
	50% reduction	65% reduction	75% reduction	50% reduction	65% reduction	75% reduction
SO_2	$210/ton	$415/ton	$296/ton	$719/ton	$1,390/ton	$1,737/ton
NO_X	$1,208/ton	$1,491/ton	$2,072/ton	$1,108/ton	$1,457/ton	$2,825/ton
Hg	$14,452/lb	$20,124/lb	$31,923/lb	$21,119/lb	$41,190/lb	$85,225/lb

Although there currently is no mercury allowance trading, the market is already beginning to take shape and the above table reflects the projected costs for mercury emissions. Assuming a 50% reduction scenario, assuming the above prices, and again using numbers from Duke's *Significant Source Modification* filing with IDEM on August 18, 2006 for SO_2 (469.8 tons/yr) and NO_X (1776.81 tons/yr), and mercury (.0074 tons, which equals 14.8 pounds), the 2010 projected allowance costs of the proposed IGCC power plant would be as follows:

- SO_2: $210/ton X 469.8 tons/yr = $98,658/yr
- NO_X: $1,208/ton X 1776.81 tons/yr = $2,146,386/yr or $2.1 million/yr
- Mercury: $14,452/lb X 14.8 lbs/yr = $213,889/yr

And the projected allowance costs for 2020 would be as follows:

- SO_2: $719/ton X 469.8 tons/yr = $337,786/yr
- NO_X: $1,108/ton X 1776.81 tons/yr = $1,968,705/yr or $1.9 million/yr
- Mercury: $21,119/lb X 14.8 lbs/yr = $312,561/yr

Cost of Energy for Ratepayers

The figures below are taken from the Intergovernmental Panel on Climate Change (2006):

- The cost of electricity for an IGCC plant without carbon capture ranges from $0.041/kWh to $0.061/kWh. The average is $0.051/kWh
- The cost of electricity for an IGCC plant with carbon capture and geologic storage ranges from $0.055/kWh to $0.091/kWh. The average is $0.073/kWh.

Costs of a Wind Project

In order to calculate how many windmills it would take to equal a 630MW power plant, there are some factors that have to be taken into account. The figures below regarding the cost of wind power were taken from the Northwest Power & Conservation Council (July, 2006):

- The proposed Duke IGCC plant would operate about 85% of the time, therefore its output can be adjusted to 535.5 MW
- A windmill will produce electricity about 30% of the time. Therefore, 1,674 MW of capacity would be needed to produce 535.5 MW of energy.
- An average wind turbine is rated to produce about 1.5 MW of electricity. It would take 1190 wind turbines at 1.5 MW to create 1785 MW of electric capacity.
- The capital required for building a wind project is assumed to average $1,500/kW. This includes project development, owner's costs, and typical transmission interconnection costs.
- For a 1,674 MW (1,674,000 kW) wind project, the capital cost would be 1,674,000 kW X $1,500/kW = $2,511,000,000, or $2.5 billion.
- Fixed operations & maintenance (O&M) costs are $20/kWh/yr. $20/kWh/yr X 1,674,000 kW = $33,480,000/yr = $33.5 million/yr
- Variable O&M costs are $1.00/MWh. 4,690,980,000 kWh/yr X 1MW/1000kW = 4,690,980 MWh/yr. So, for a 1,674 MW wind project, variable O&M costs would be $1.00/MW X 4,690,980 MWh/yr = $4,690,980/yr = $4.7 million per year
- Total O&M costs (fixed + variable) for a 1,674 MW wind project would be $33,480,000/yr + $4,690,980/yr = $38,170,980/yr = $38.2 million/yr
- According to the American Wind Energy Association, the cost of electricity from wind power is about $0.04 - $0.06 per kilowatt hour. The average is $0.05/kWh. (AWEA, 2005)
- There are no fuel or emissions costs associated with wind power

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Quotes from Jim Rogers, CEO of Duke Energy, Regarding Building New Coal-Fired Power Plants

Getting Ahead of the Curve: Corporate Strategies That Address Climate Change
Andrew J. Hoffman, The University of Michigan, October 2006
http://www.pewclimate.org/docUploads/PEW%5FCorpStrategies%2Epdf

"The greatest risk we face is '*stroke of the pen*' risk, the risk that a regulator or congressman signing a law can change the value of our assets overnight," says Rogers. "If there is a high probability that there will be regulation, you try to position yourself to influence the outcome."

The Institute for Southern Studies, Jan 25, 2007
http://southernstudies.org/facingsouth/2007/01/hypocrisy-of-coal-power.asp

"Rogers testified last week at a public hearing convened by the N.C. Utilities Commission on Duke's proposal to build two new coal-fired units at its existing Cliffside facility in Rutherford County, N.C. The commission's initial hearings, held last summer, were reopened after Duke realized its original $2 billion cost estimate for the project was too low. It's now estimated that the project -- which employs old-fashioned, heavily polluting technology -- will cost more than $3 billion and as much as $4 billion, with the expense borne by ratepayers.

And though Rogers is calling on the federal government to impose new pollution limits nationally, he has said he wants his existing plants -- as well as the new Cliffside units -- exempted from those limits. He's already successfully lobbied the state to create special loopholes for his company: The N.C. General Assembly last summer agreed to exempt Duke's proposed units from a rule under the state's Clean Smokestacks Act that prevents utilities from getting air pollution credits for improvements paid by consumers."

Testimony of James E. Rogers, On behalf of the Edison Electric Institute
Chairman, CEO and President Duke Energy
Subcommittee on Energy - Senate Committee on Energy and Natural Resources
Monday, February 12, 2007
http://energy.senate.gov/public/_files/RogerstestimonyFINAL21207.doc

"Energy efficiency should be considered a fuel choice – the 'fifth fuel' if you will in addition to traditional generation resources of coal, nuclear, natural gas and renewables.

Efficiency programs can deliver at a lower cost than new power plants, we can deploy them faster than new power plants and they can provide savings over relatively short periods of one to three years, as well as over the longer term.

From an environmental perspective, we should view energy efficiency as a basic building block in reducing the industry's emissions profile. In 2004 alone, efficiency programs in place saved more than 29 million metric tons of carbon equivalent greenhouse gas emissions.

From a state's perspective, energy efficiency can be a key to economic development activities. Greater efficiency investments can build jobs and improve state economies. These programs can also create long lasting infrastructure changes to buildings, and property improvement delivering long-term economic value.

And finally, energy efficiency brings with it its own energy security benefits. Again, according to the NAPEE report, by reducing the level of U.S. per capita energy consumption, we also decrease the vulnerability to the economy and individual consumers from potential energy price disruptions erupting from natural disasters or escalating prices of imported fuel. The less electricity used, the less impacted consumers are by fuel cost increases. And despite the fact that natural gas for the most part is a domestic resource, it increasingly is tied to the cost of foreign oil and will be supplemented in the future by imports of liquefied natural gas."

The Indianapolis Star
Tuesday, June 28, 2005

Global warming talk not backed by action

MY VIEW

Grant Smith

Jim Rogers, Cinergy CEO, recently testified before a congressional committee calling for the development of new technologies to address global warming. The positive side of his testimony is that utility executives, even those whose companies rely almost exclusively on coal-fired power plants, recognize the reality of global warming. The negative aspect is that Rogers' company is not doing anything productive about it.

Cinergy's recent filing before the Indiana Utility Regulatory Commission to comply with federal air pollution regulations does not even address carbon dioxide, the principal global warming gas. By law, utilities are supposed to plan for such contingencies in a least-cost manner. Cinergy complied with neither mandate in its filing.

Instead, Cinergy chose the highest-cost option. Essentially, it proposes to install pollution control equipment on just about every unit at its coal plants in Indiana. However, 10 of these units are obsolete and should be removed from the rate base. Moreover, the company ignores cheaper, cleaner options that are competitive with their favored approach for the future, coal gasification technology. Cinergy did not consider energy efficiency or renewable energy technology. However, a coal-based plan will increase revenue the most, $1.2 billion by its calculations.

A recent study concluded that almost 30 percent of Indiana's electric demand could be met by installing more efficient lighting, heating and air-conditioning systems, industrial electric motors and appliances in homes and businesses. Energy efficiency means more jobs, cleaner air, significantly reduced carbon dioxide emissions, lower costs for ratepayers, and avoidance of unnecessary, expensive power plant construction.

Cinergy received an 8.5 percent rate increase last year, wants a 17.5 percent rate increase over the next five years for pollution control and is proposing a 600 megawatt, $1 billion coal gasification plant.

Moreover, coal gasification technology is not cheap nor does it reduce carbon dioxide emissions on its own. Add-on technology to deal with carbon dioxide, a speculative option, will significantly increase the cost and reduce the efficiency of plants. This is not economic at all, unless you're a utility company that can shift financial risks and the costs to captive ratepayers.

■ Smith is executive director of Citizens Action Coalition in Indianapolis.

Elkhart Truth
September 18, 2006

Truth Editorial

Powering Indiana by wind

The second of two parts.

Who would've thought wind power was feasible in northern Indiana?

Seriously. It is.

The Indiana Coalition for Renewable Energy and Economic Development, which includes groups such as Citizens Action Coalition and Indiana Farm Bureau (now there's an interesting combination), is asking Gov. Mitch Daniels and the Legislature to consider setting a goal for Indiana on minimum standards for using renewable energy sources, including wind power, as an alternative to building additional coal-fired energy plants.

"I'm not going to sit here and tell you we're going to run solely on wind," said Dave Menzer, utility campaign organizer of CAC. "The public doesn't think of Indiana as windy as it is, especially at 100 meters."

Still, the U.S. Department of Energy estimates that Indiana could generate 40,000 mega-watts of power from wind. The state generates about 21,000 mega-watts in mostly coal-fired plants today. Contractors are seeking approval for the state's first wind farm in Newton and Benton counties in western Indiana that would generate 220 mega-watts of power.

Diversification of power sources is a goal of CAC and the coalition, Menzer said. It's estimated that Indiana will need an additional 3,000 mega-watts of power to meet demand by 2010.

While the coalition gives Gov. Mitch Daniels credit for the recent release of his statewide energy plan, the members are concerned that it focuses too much on clean coal technology and not enough on renewable energy and efficiencies with what we already have. Menzer said that affordability is a concern and efficiency is a better earmark for ratepayer dollars. By decreasing demand on the overall system, ratepayers can avoid the high cost of another power plant, he said.

He suggested the state also should incentivize existing technology through rebates and tax credits. Daniels' plan addresses some of those concerns.

The coalition believes wind power will bring economic benefits to the state, creating economic development opportunities and as much as 6,000 jobs.

So what's the catch? Wind power is not cheap to get up and running in the short-term, but put in the context of how much it will cost ratepayers for companies to generate that additional 3,000 mega-watts of power, there would be a larger rate increase for consumers with coal, Menzer indicated.

Menzer said utilities oppose the plan because they will look at it as a mandate. "I refer to it as a minimum standard," he said.

There's really nothing wrong with setting a renewable energy goal. In fact, 22 states — including Illinois and Wisconsin — have renewable electricity standards as of June 2006. If Indiana joined the mix, we'd be ahead of the curve, exactly where the governor wants us to be.

If you compare what the coalition is asking for with Daniels' strategic energy plan we discussed Sunday, the two are really not far apart ideologically. They reach the same goals as well — alternatives to traditional energy, an increase in jobs, conservation of resources, less dependence on outside sources of energy and lower costs.

We're not totally convinced the governo will be able to abandon a clean coal plant but trying something different won't hurt, either, especially since Indiana is taking the lead in ethanol and biodiesel production and Purdue University is leading research into other types of fuels.

Shelbyville News
December 1, 2006

Watchdog group seeks to block plans for power plant

By RICK CALLAHAN
Associated Press writer

INDIANAPOLIS — A consumer watchdog group is challenging plans by two energy companies for a coal gasification power plant in southwestern Indiana, arguing that its growing cost would saddle consumers with rate hikes.

The Citizens Action Coalition of Indiana and two environmental groups filed a petition Wednesday with state regulators seeking to intervene in the first steps of the plan by Duke Energy Corp. and Vectren Corp. During the process, the utilities must demonstrate the plant is needed.

Grant Smith, the executive director of the Indianapolis-based coalition, said since the two companies announced the 630-megawatt coal gasification plant last year, the cost has risen by $500 million and could go higher.

His group and members of Save the Valley and Valley Watch contend the technology the plant would use has not been commercially proven, which could drive its price even higher. They argue consumers would pick up the tab.

"We don't even know what the cost of the plant is going to be. It's an extremely high risk for ratepayers," Smith said.

The plant, which would be built in Edwardsport about 100 miles southwest of Indianapolis, would use cutting-edge technology to convert coal into a synthesis gas that would be processed to remove sulfur, mercury and ash, the companies say. That gas would then generate power using combustion and steam turbines.

Duke Energy spokeswoman Angeline Protogere said that since the plant was proposed last year, its estimated cost has risen from between $1.3 billion to $1.6 billion to the $1.6 billion to $2.1 billion range due to rising costs for materials and labor.

"The costs of power plant projects in general, whether they are coal gasification or traditional coal plants, have all risen. It's not unique to this technology," she said.

Protogere said Indiana is projected to need more power between 2010-2015, although current levels are more than adequate.

Mary Beth Fisher, a spokeswoman for the Indiana Utility Regulatory Commission, said the groups' petition will be assigned to a commissioner and a judge.

"What we will do is consider the facts as presented in the case and make a decision based on the evidence. But that's a long way down the road," Fisher said.

Protogere said the technology at the plant has been used for years in Europe and is now moving into the commercialization phase in the United States.

She questioned the groups' contention that renewable energy sources, particularly wind power, would be cheaper and have public health and environmental advantages over the new plant.

Wind farms simply don't offer dependable power like coal-fired power plants, she said.

"You cannot always count on the wind, particularly on hot summer days, when you'd need wind the most, there's not much wind at all," Protogere said.

She said Duke, which in September finalized an agreement to buy up to 100 megawatts of electricity from a California company that's building a wind farm in Benton County, views electricity-generating wind turbines as good sources of power.

Duke announced Thursday that the federal government would provide $133 million in tax incentives for the coal plant, if it's built. Protogere those credits and comparable funding promised at the state and local levels "will help reduce costs for consumers."

Lights out

THE CHALLENGE: A consumer watchdog group filed a petition with state regulators challenging plans by two energy companies for a coal gasification power plant in southwestern Indiana.

THE ARGUMENT: The Citizens Action Coalition of Indiana and two environmental groups say since the Duke Corp. and Vectren Corp. announced the 630-megawatt plant last year, the cost has risen by $500 million to between $1.6 billion and $2.1 billion and could go higher. They say consumers would pick up the tab.

WHAT'S NEXT: Indiana Utility Regulatory Commission will assign groups' petition to a commissioner and a judge for an eventual hearing.