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BEFORE THE IOWA UTILITIES BOARD  
DEPARTMENT OF COMMERCE  
STATE OF IOWA

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IN RE:	)	DOCKET NO. GCU-07-01
	)	
INTERSTATE	)	JOINT INTERVENORS' POST-
POWER AND LIGHT	)	HEARING BRIEF
COMPANY	)	

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**PUBLIC VERSION**

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## **I. STATEMENT OF ISSUES**

Pursuant to the Joint Statement of Issues filed by the parties on December 13, 2007, the Coalition submits this brief for consideration by the Board on the following issues:

Has IPL demonstrated the necessary decision criteria for the Board to issue a certificate for the construction of Sutherland Generating Station Unit 4, enumerated in Iowa Code § 476A.6, and explained as follows:

1. The services and operations resulting from the construction of the facility are consistent with legislative intent as expressed in Iowa Code § 476.53 and the economic development policy of the state as expressed in Title I, subtitle 5, and will not be detrimental to the provision of adequate and reliable electric service. Iowa Code § 476.53(1) reflects the legislative intent to attract the development of electric power generating and transmission facilities within the state in sufficient quantity to ensure reliable electric service to Iowa consumers and provide economic benefits to the state. Iowa Code § 476.53(2) reflects the legislative intent that (1) should be implemented in a manner that is cost-effective and compatible with the environmental policies of the state, as expressed in Title XI.
2. The applicant is willing to construct, maintain, and operate the facility pursuant to the provisions of the certificate and this subchapter.
3. The construction, maintenance, and operation of the facility will be consistent with reasonable land use and environmental policies and consonant with reasonable utilization of air, land, and water resources, considering available technology and the economics of available alternatives.

## II. SUMMARY OF ARGUMENT

All evidence and argument submitted by the Coalition in this docket supports the central statutory argument: Applicants have failed to show that the proposed coal-fired electrical generation unit (“Sutherland 4”) is cost-effective, compatible with Iowa environmental policies, consistent with reasonable land use and environmental policies, and consonant with reasonable utilization of air, land, and water resources, considering available technology and the economics of available alternatives, as required by Iowa Code 476A.6.

Applicants have constantly asserted that the Coalition bases its arguments on issues beyond the scope of the Board’s jurisdiction. This is not so. To the contrary, Applicants propose such a narrow interpretation of applicable law that, if the Board were to accept it, there would be no electrical generating facility, no matter how unnecessary, unreasonable, and generally ill-conceived, that could be refused. Applicants are perilously close to suggesting that this Board lacks the power to reject any complete application for construction of a new coal plant that comes through the door. The Coalition contends that there is such a thing as a coal plant that is bad enough for Iowa that this Board can and should reject it. Sutherland 4 is that coal plant.

At a time when the United States and the global community are working fervently toward a post-carbon energy economy, Applicants propose a coal-fired unit based on technology patented by James Watt in 1784. The proposition that IPL offers Iowa consumers with Sutherland 4 is akin to what the sub-prime mortgage industry offered: a deceptively attractive buy-in to a deal with exorbitant future costs and liabilities. Expert testimony offered by separate parties has consistently demonstrated the dramatic downside to this proposal, and the many superior alternatives. Applicants have failed to offer credible rebuttal to the central elements of the Coalition’s critique of the Application. Instead, Applicants seek to convince the Board that it has

no authority to consider the powerful and relevant evidence brought by the Coalition and the Office of the Consumer Advocate (OCA).

This brief summarizes the many reasons why the Board should reject this application for a generating certificate. While the Board cannot exercise management authority over IPL, the Board does have the authority to bar regulated utilities from taking steps that will harm ratepayers. A happy side effect may be that IPL will then choose to turn to the better solutions endorsed by the State of Iowa's own experts, agencies and commissions.

No matter what slight of hand Applicants perform to try to make a new coal plant look like a way to reduce greenhouse gases, the hard fact remains that Applicants seek this generating certificate as part of a resource plan that will increase IPL's system-wide greenhouse gas emissions from 15.7 million tons in 2007 to 18.9 million tons in 2022, a jump of over 22 percent. Applicants are a subsidiary of a Wisconsin corporation, Alliant Energy, that seeks to build another 330MW coal plant at Cassville, Wisconsin, on the Iowa border. In addition, Applicants project another coal plant of similar size to Sutherland 4 to go online around 2018.

Applicants are joined in their application by two intervenors: Corn Belt Power Cooperative (Corn Belt) and Central Iowa Power Cooperative (CIPCO), that have submitted only the most superficial assertions as to the nature and extent of their need for additional electricity, without supporting evidence or modeling, in spite of the fact that each recently purchased a share of MidAmerican's Council Bluffs Unit 4 coal plant (71MW and 42MW respectively). Application Vol. 1 at 102-104.

Applicants and their supporting intervenors do not say exactly how many coal plants they will need to build to reverse global warming.

If built, Sutherland 4 will emit over 5.7 million tons of carbon dioxide (CO<sub>2</sub>) annually into

the Earth's atmosphere. CO<sub>2</sub> is a heat-trapping gas that is a major contributor to global warming. Applicants propose to build Sutherland 4 at a time when scientists, policymakers, and businesses are making historical efforts to reign in greenhouse gas emissions, reduce energy consumption, and switch to climate-friendly energy sources.

Applicants fail to support their contentions of need. IPL changes course in rebuttal testimony to argue that they are not required to prove need, but only after IPL's load forecasting in the Application was condemned unanimously and convincingly by adverse experts. Kitchen Rebuttal at 10. Rather than providing a convincing rebuttal regarding need, IPL chose the fall-back position of arguing that a *direct* showing of need is not required by statute. This is not the same as arguing that a showing of need is irrelevant to the success of the Application. To the contrary, Applicants' arguments of economic benefit rely directly on a successful showing of need that they are unable to make.

Finally, Applicants argue vehemently that this Board has only the most limited authority to consider environmental and social impacts, including global warming and mercury contamination, in spite of plain statutory language to the contrary. This is an easy conclusion for IPL. Applicants' calculations assume that consumers will bear the entire cost of carbon regulations, not to mention increased public health costs, to safeguard shareholder earnings against these massive liabilities. The only rational explanation for this Application is that Applicants want their poor planning subsidized with the largest possible carbon allowances when carbon regulation becomes law. The economic, environmental and social cost of Sutherland 4 to Iowans and the global community is simply too great to allow this to happen. Applicants have not met their burden of proof under Iowa law. The Application defies science, economics, common sense, and at some points basic arithmetic. The Application should be denied.

**III. THE APPLICATION IS INCONSISTENT WITH LEGISLATIVE INTENT ON ENVIRONMENTAL AND ECONOMIC DEVELOPMENT POLICY AS EXPRESSED AT IOWA CODE 476.53 AND TITLE I, SUBTITLE 5.**

Iowa Administrative Code 199-24.10(2)(a) states that in rendering its decision on a generating certificate, the Board shall consider “[w]hether the service and operations resulting from the construction of the facility are consistent with the legislative intent as expressed in Iowa Code section 476.53”. This section of the Iowa Code provides in part:

1. It is the intent of the general assembly to attract the development of electric power generating and transmission facilities within the state in sufficient quantity to ensure reliable electric service to Iowa consumers and provide economic benefits to the state.
2. The general assembly's intent with regard to the development of electric power generating and transmission facilities, as provided in subsection 1, shall be implemented in a manner that is cost-effective and compatible with the environmental policies of the state, as expressed in Title XI.

The environmental policies referenced here include the whole of the Natural Resources portion of the Iowa Code, including all energy policy language. Relevant portions include Iowa Code § 469.4(4), mandating an Iowa Energy Independence Plan to accomplish goals including the following:

- a.* Maximize use of emerging technologies and practices to enhance energy efficiency and conservation and develop alternative and renewable energy sources.  
...
- e.* Promote sustainable land use, soil conservation, clean air, sustainable water supply, and clean water practices.
- f.* Reduce greenhouse gas emissions, both on an aggregate and per capita basis.  
...
- i.* Identify strategies to increase affordability of energy for individuals, families, organizations, and businesses, including low-income persons.

In turn, the Office of Energy Independence has produced the first Iowa Energy Independence Plan, which includes the following recommendations ratified by the Iowa Power Fund Board:

- Set numeric goals to promote and achieve all cost-effective energy efficiency measures, including attention to affordability issues.

- Direct energy providers to increase energy efficiency efforts, including education.
- Incent and require energy providers to increase the use and supply of renewable energy.
- Include greenhouse gas emissions as a criterion for the DNR to issue air permits.

Also part of Title XI is the statute creating and empowering the Iowa Climate Change Advisory Council with the following mandate at Iowa Code § 455B.851(7):

After consideration of a full range of policies and strategies, including the cost-effectiveness of the strategies, the council shall develop multiple scenarios designed to reduce statewide greenhouse gas emissions including one scenario that would reduce such emissions by fifty percent by 2050. The council shall also develop short-term, medium-term, and long-term scenarios designed to reduce statewide greenhouse gas emissions and shall consider the cost-effectiveness of the scenarios.

These explicit legislative policy statements endorsing statewide greenhouse gas reductions constitute relevant state environmental policy and legislative intent that must be considered when evaluating the Sutherland 4 proposal. The legislative intent expressed repeatedly is that Iowa *reduce* greenhouse gas emissions, not merely reduce the rate of increase of these emissions, which is what IPL proposes.

**A. Construction of Sutherland 4 is Inconsistent with Legislative Intent and Actions Taken by State Agencies and Commissions to Establish Relevant Environmental Policies on Greenhouse Gases and Energy Development.**

The State of Iowa has devoted significant resources, including the \$100 million Power Fund, toward reducing greenhouse gas emissions and increasing reliance on renewable energy. IPL indicates that Sutherland 4 would increase company-wide greenhouse gas emissions and increase the reliance on coal in IPL's owned percent of coal-fired generation from 64% to 67%. OCA Exhibit RMF-1, Schedule A, at 71, 74, 77; Kitchen Direct Testimony at 7. Both results are in direct contradiction of legislative intent and state policy (quoted *supra*) included in the Iowa Code, mandated by the Legislature, and endorsed by the Office of Energy Independence, the Power Fund Board, and the Climate Change Advisory Council. Achieving these legislative policy goals will become more difficult and costly if Sutherland 4 is constructed. Issuing a

generation certificate for a project that is not “consistent with the legislative intent” in these matters is a violation of this Board’s mandate and the Iowa Code.

**B. The Sutherland 4 Proposal Is Classic Rent Seeking and Does Not Represent Sound Economic Development Policy for Iowa.**

A large volume of evidence indicates that Sutherland 4 is an inferior economic development mechanism for Marshalltown and Iowa. IAC 199-24.10(2)(a) mandates a showing of “economic benefits” and compliance with “the economic development policy of the state as expressed in Iowa Code Title I, Subtitle 5”. It is not clear precisely what part of this lengthy subtitle or what test of economic benefits might be properly applied to deliberations on a generating certificate, but the Coalition would highlight the following unrebutted key points made by Coalition witness Dr. Neil Harl<sup>1</sup> in this docket:

- Present and future economic uncertainties in the biofuels sector call into question the alleged demand growth for IPL from existing and proposed biofuels facilities.
- The future viability of ethanol and biodiesel facilities in IPL’s service area is highly uncertain in the face of short-term market adjustments and competing fuel sources and technologies.
- IPL’s application to construct the proposed SGS-4 electric generating facility does not take into account all the relevant cost externalities that result from this type of electric generation. (Harl Direct Testimony at 4).

Dr. Harl concludes that the current supply-demand imbalance in the biofuels sector could erase a large proportion of the anticipated demand cited by Applicants as justification for Sutherland 4. An overbuild of electrical capacity of this magnitude would have significant impacts on the state’s economy by locking in reliance on a capital-intensive source of electricity with rising fuel costs, heavy health and environmental externalities, and a massive predicted regulatory burden.

The testimony offered by IPL witness Otto constitutes neither a qualitative nor quantitative rebuttal to Dr. Harl’s analysis. It is little more than a repetition of Applicants’

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<sup>1</sup> Iowa State University Charles D. Curtiss Distinguished Professor in Agriculture and Emeritus Professor of Economics.

assertions regarding economic development, supported by a report authored by Dr. Otto that takes IPL's load forecasting statistics at face value without any independent analysis. Applicants' Ex. DMO-1, Schedule B. The Center for Agricultural and Rural Development report submitted by Dr. Otto in support of his argument that the biofuel sector will continue to grow is not an analysis of the long-term outlook for biofuels. It is in fact an analysis of the *hypothetical* potential growth of biofuels done for the purpose of modeling the potential effects on U.S. grain, oilseed, and livestock markets. Applicants' Ex. DMO-1, Schedule C at 2. The study is based on *assumptions* that government biofuel subsidies will remain in place, oil prices will continue to rise, and various other hypothetical scenarios. The study in fact recognizes the economic imbalances in the biofuels sector cited by Dr. Harl, given current supply cost increases for ethanol facilities. This study reinforces rather than rebuts Dr. Harl's economic forecasts for the biofuels sector. Its inclusion as a rebuttal exhibit and citations to it are misleading.

Coalition witness Tom Sanzillo notes serious flaws in Applicants' demand and cost projections, as well as their financing model, including:

- Applicants' reliance, without benefit of signed contracts, on outdated construction costs based on February 2007 figures, while current costs are 28% higher and rising, exposing ratepayers to rocketing costs by the time Applicants sign contracts (Sanzillo Direct Testimony at 5);
- Reliance on national growth and energy demand figures in spite of the fact that Iowa's growth trends are significantly less robust (*Id.* at 4-5);
- Failure to present a complete and transparent load forecast including such input data as reliable economic growth forecasts, population and employment trends, retail sales, conservation programs, surveys, historical data and actual electrical usage (*Id.* at 7).
- Failure to implement or even discuss IPL's market and demand side management planning and incorporate those practices into the load forecast (*Id.* at 8);
- Lack of a clear, integrated statement of projected load for IPL, Corn Belt and CIPCO that demonstrates a need for new generation from Sutherland 4 and a lack of viable alternatives (*Id.* at 10-11).

Sanzillo's critique of Applicants' inputs and transparency is based on his background as First Deputy Comptroller for the State of New York, an office of 2400 employees whose

responsibilities include state procurement, audits, and management of the state's \$150 billion retirement fund. Sanzillo Direct Testimony at 1-2. In Sanzillo's analysis, IPL's forecast estimates are "not credible" and Sutherland 4 is "not necessary." Sanzillo Direct Testimony at 3-4. From a ratepayer's economic perspective, it is no minor error to build an unnecessary [REDACTED] coal plant with high lifelong embedded regulatory costs.

Because of the economic risks associated with new coal-fired power plants, municipalities, states and utilities are rejecting these units in ever-increasing numbers. The economics as well as the environmental impacts, they conclude, are simply too risky. An incomplete list of coal plant proposals scuttled, existing plants shut down, or coal plant investors pulling out *in the last year alone* includes:

- Arizona: 600MW coal gasification plant withdrawn by developer (Coalition Exhibit TS-1, Schedule P);
- Colorado: Xcel Energy announces plans to close coal-fired Arapahoe and Cameo Generating Stations while doubling its renewable energy capacity by 2015;
- Florida: Glades 1960MW plant rejected by FL PSC (Schlissel Direct Testimony at 12);
- Florida: Seminole 750MW plant rejected by FL Dept. of Env't'l Protection (Coalition Exhibit TS-1, Schedule U);
- Florida: Taylor 800MW withdrawn by developers because of greenhouse gas concerns (Coalition Ex. TS-1, Schedule Q);
- Idaho: Idaho Power cancels plans for two new coal-fired plants by 2013 after state of Idaho declines to enter mercury trading program, meaning no new mercury emissions can be permitted in Idaho;
- Illinois: FutureGen "clean coal" plant cancelled after loss of federal support;
- Kansas: 1400MW Holcomb plant air quality permits denied by state agency, citing global warming concerns;
- Kansas: Westar defers plans for 600MW coal plant due to construction cost increases;
- Kentucky: 1500MW Thoroughbred plant rejected by Circuit Court (Coalition Ex. TS-1,

Schedule T);

- Maine: Town of Wiscasset votes down ordinance change that would have allowed a 700MW coal gasification proposal to go forward.
- Minnesota: Great River Energy and Minnesota Municipal Power Agency pulled out of their 27 percent partnership in the proposed Big Stone II plant in eastern SD;
- Nebraska: Tenaska Energy withdraws coal plant proposal of unannounced size due to rising cost of steel (Coalition Ex. TS-1, Schedule S);
- North Carolina: NC Utilities Commission rejects 800MW of 1600MW Duke Energy coal plant proposal and requires retirement of old coal and increased energy efficiency;
- North Dakota: Gascoyne 175MW construction permit allowed to lapse by developer;
- Oklahoma: OK Corporation Commission rejects rate recovery for 950MW Red Rock plant and developers scrap plans (Coalition Ex. TS-1, Schedule R);
- Oklahoma: Tenaska scraps plans for 660-880MW Sallisaw plant for economic reasons;
- Oregon: OR PUC rejects plans by MidAmerican subsidiary PacifiCorp for 1109MW in new coal-fired generation, citing insufficient need;
- Texas: Eight of eleven proposed coal plants cancelled by TXU;
- Wyoming: MidAmerican subsidiary PacifiCorp dropped plans for a coal gasification plant of unspecified size due to high anticipated costs and regulatory uncertainty.
- Wyoming: PacifiCorp also scraps plans for 527MW Jim Bridger coal plant due to uncertainty surrounding climate regulation.

Schlissel Direct Testimony at 11-12.

In this hostile environment for coal, it is easy to see why an investor-owned utility would hope to construct a coal plant in the waning days before carbon regulation, hoping to cash in with claims for as big a carbon allowance as possible. If this strategy fails, ratepayers will be left holding the bag for the expense. The profit incentives are obvious. From a regulatory perspective, though, this kind of “rent seeking” strategy is an excellent reason to deny a generating certificate for any large coal plant until the U.S. has carbon regulations in place.

Rent seeking is a well-established economic theory, developed by Gordon Tullock and Anne Krueger over 30 years ago. According to the theory, rent seekers attempt to maximize profits by manipulating the economic or legal environment rather than by making a profit through trade or the production of wealth. A “rent” in this case is a value created by the government that would not otherwise exist. Rent seeking implies extraction of value from others without any corresponding contribution to productivity by the “rent seeker”. Rent seeking also imposes high transaction costs on the economy. These costs are often cited as a reason why developing economies with corrupt regulatory systems are unable to maximize their growth potential.

In the context of carbon regulation, the significance of rent seeking behavior is clear. As soon as the prospect of regulation emerges in a free market system, private interests such as investor-owned utilities will attempt to position themselves as the recipients of any market unit the regulatory system creates: in this case, carbon allowances. IPL’s proposal for Sutherland 4 is entirely predictable rent seeking behavior. The corporation seeks to establish its claim for the largest carbon allowance possible by increasing its carbon footprint at a time when regulations are likely to restrict economy-wide carbon emissions in the near future. Even IPL’s proposals for CO<sub>2</sub> mitigation fit the rent seeking pattern: most mitigation measures are only proposed for *after* Sutherland 4 would come on line in 2013. By this time, carbon allowances will likely have been distributed according to existing greenhouse gas stationary sources. IPL would therefore receive the maximum reward for its rent seeking.

The appropriate response by regulators to rent seeking is also clear. Regulators must seek to minimize opportunities and rewards for rent seeking. To reject a generating certificate at this time will serve the public good by: (1) increasing the pressure on Congress to pass

comprehensive climate legislation, to restore regulatory certainty; (2) protecting ratepayers from an investment in coal-fired generation based not on sound load forecasting but on rent seeking; and (3) protecting ratepayers from paying the price for a failed rent seeking strategy if Applicants are not rewarded with the generous carbon allowance they seek as a taxpayer subsidy for their failure to control greenhouse gas emissions earlier.

Finally, a major economic impact to consider is the fact that the global economic cost of allowing global climate change to advance essentially unchecked is likely to be staggering. The *Stern Review on the Economics of Climate Change* (“Stern Review”), referenced with a URL by Dr. Hausman at page 31 of his direct testimony, was commissioned by the U.K. Chancellor of the Exchequer and released in October 2006. Its conclusions, cited by Dr. Hausman, are stark:

Using the results from formal economic models, the Review estimates that if we don’t act, the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year, now and forever. If a wider range of risks and impacts is taken into account, the estimates of damage could rise to 20% of GDP or more.

Hausman Direct Testimony at 31. Building Sutherland 4 at this time harms Iowa at a microeconomic and macroeconomic level. Even if there is some short-term economic boost provided by the construction process, the plant will displace other, better investment options that would serve Marshalltown and the state of Iowa better in the long run. Worse, unabated increases in greenhouse gases, as well as other harmful criteria pollutants, are damaging the global economic and environmental fabric into which we are all woven. It is woefully naïve to imagine that Iowa will not pay its share of that price, whether in GDP or in things we hold even more precious than money.

**IV. THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF THE PROPOSED FACILITY ARE NEITHER CONSISTENT WITH REASONABLE LAND USE AND ENVIRONMENTAL POLICIES, NOR CONSONANT WITH REASONABLE UTILIZATION OF AIR, LAND, AND WATER RESOURCES, CONSIDERING AVAILABLE TECHNOLOGY AND THE ECONOMICS OF AVAILABLE ALTERNATIVES.**

IAC 24.10(2)(b) requires the Board to consider “[w]hether the construction, maintenance, and operation of the proposed facility will be consistent with reasonable land use and environmental policies”. This consideration is separate from the criteria related to legislative intent at IAC 199-24.10(2)(a), indicating that this “reasonability” analysis goes beyond stated legislative intent. This language authorizes the Board to make a basic common sense decision about whether this proposal makes sense.

Applicants’ response to this required showing of reasonability is to document compliance with environmental regulations. However, IAC 24.10(2)(b) is not a simple check-off procedure in which this Board notes compliance with IDNR permitting standards. It is something more, according to the canon of statutory construction. Under Iowa law, a court (or here, the Board) must avoid a construction of the law that renders part of a statute superfluous, and it is presumed that the legislature intended a purpose for every part of a statute. *State v. Luppess*, App. 1984, 358 N.W.2d 322. It would be superfluous for this Board to be assigned a review of “reasonable land use and environmental policies” that consisted solely of a referral to IDNR for permitting. For this statute and its implementing regulations to avoid superfluousness, the Board’s analysis must have an independent purpose.

The question then becomes what the Board’s standard should be for a showing of reasonable land use and environmental policies. The three subsections of IAC 199-24.10(2)(b) provide some guidance as to what the standard should include, but they are not exhaustive (“[s]uch determination shall include:”). The ultimate determination of what reasonable land use and

environmental policies are for the siting of an electrical generation facility rests with this Board. The seriousness of this decision is illustrated by the attention paid to appointment of Board members by the Governor's office and the conditions on Board membership and make-up created by the Legislature. This cup – the tough decision that must be made to reject this Application – cannot be passed to any other agency.

IAC 199-24.10(2)(b) expands the Board's analysis to include consideration of whether "the construction, maintenance, and operation of the proposed facility will be ... consonant with reasonable utilization of air, land, and water resources, considering available technology and the economics of available alternatives." Again, the answer is plainly no.

Applicants would have the Board dispense with any consideration of what "reasonable utilization" might be, in favor of total deference to the Department of Natural Resources' (IDNR) permitting processes. However, IDNR does not perform a "reasonable utilization" analysis. IDNR applies the precise language of the Clean Air and Water Acts in its permitting processes. The only state agency with the authority to conduct a "reasonable utilization" analysis is this Board. The Board must therefore conduct this analysis itself as part of the generating certificate approval process, not pass the responsibility to another agency that does not conduct the analysis required by the Iowa Administrative Code. To put it another way, the consideration of reasonable utilization of air, land, and water resources by the Board is not redundant. If the Board does not do it, the analysis will not be done.

**A. Adverse Impacts Attendant to the Construction, Maintenance and Operation of the Facility Have Not Been Reduced to a Reasonably Acceptable Level.**

Applicants assert that there will be absolutely no negative permanent impacts from the construction of a coal-fired generating unit more than four times the size of the existing Sutherland Station. Byers Direct Testimony at 4. The impacts analysis offered by witness Byers

includes no discussion of the thousands of tons per year of criteria pollutant emissions that Sutherland 4 will produce, nor of greenhouse gas impacts. Rather than attempting to reduce acknowledged adverse impacts, Applicants choose to deny in the formal record in this docket that any adverse impacts will exist.

**1. The record establishes that global warming poses a threat of serious adverse impacts.**

IPL acknowledges that construction of Sutherland 4 will contribute to a net increase in IPL's system-wide CO<sub>2</sub> emissions of more than 22%. OCA Exhibit RMF-1, Schedule A, at 71-74. OCA and the Coalition have offered expert testimony demonstrating the adverse impacts that will result from increasing atmospheric CO<sub>2</sub>. In the words of Coalition witness Dr. James Hansen,

[t]he only practical way to prevent CO<sub>2</sub> levels from going far into the dangerous range, with disastrous effects for humanity and other inhabitants of the planet, is to phase out use of coal except at power plants where the CO<sub>2</sub> is captured and sequestered.

Hansen Direct Testimony at 3. Dr. Hansen goes on to explain why the emissions from Sutherland 4 are significant at a planetary level, and why the decision by the Board in this matter may constitute a tipping point in the fight against global warming:

Because of the danger of passing the ice sheet tipping point, even the emissions from one Iowa coal plant, with emissions of 5,900,000 tons of CO<sub>2</sub> per year and 297,000,000 over 50 years could be important as “the straw on the camel’s back”. ... If the rate of warming continues to accelerate, the cumulative effect this century may result in the loss of a majority of existing species....

Hansen at 7. Dr. Hansen describes the 21<sup>st</sup> century as a “bottleneck” for at-risk species, during which many are likely not to survive an ongoing fossil fuel economy. The significance of Sutherland 4 becomes clear:

If the United States and the rest of the world continue with “business-as-usual” increases in CO<sub>2</sub> emissions, a large fraction of the millions of species on Earth will be lost and it will be fair to assign a handful of those to Sutherland Generating Station Unit 4, even

though we cannot assign responsibility for specific species.

Hansen at 8-9. If the loss of a handful of species is a reasonably acceptable level of adverse impact, then the term has no meaning.

Bolstering the testimony of Dr. Hansen, OCA witness Dr. Ezra Hausman cites the most significant long-term anticipated adverse impacts of global climate change identified by the Intergovernmental Panel on Climate Change (IPCC):

- rising sea levels, exposing coastal areas to increased risk of inundation and storm damage;
- damage to or loss of natural ecosystems, such as prairie wetlands and alpine;
- migration of habitats, leading to species extinctions and expansion of disease vectors and pests;
- heat waves leading to higher human morbidity and mortality from heat stress;
- more intense precipitation events resulting in increased floods, mudslides, and soil erosion; and
- increased summer drying in most continental interiors resulting in more droughts; reduced crop yields, reduced water availability and quality.

Hausman Direct Testimony at 19-20.

Coalition witness Dr. Kristen Welker-Hood confirms the anticipated adverse impacts on human health, noting that the Centers for Disease Control and Prevention (CDC) has recognized climate change as a serious public health concern. Welker-Hood Direct Testimony at 7. Specific effects anticipated in this century include:

- More frequent and intense heat waves;
- Increasingly intense floods, droughts and hurricanes;
- Rising incidences of pest and waterborne diseases.

Coalition Ex. KWH-1, Schedule D. Iowa's extreme heat days (those above 90° F) are projected to increase two to five-fold, totaling 30-60 extreme heat days annually, by 2080-2100. Welker-Hood Direct Testimony at 5-6. Attendant health care cost increases for illnesses triggered by global warming and diminished air quality will offset any economic benefits realized by coal plant construction. Coalition Ex. KWH-1, Schedule K.

## **2. Sutherland 4 Would Be a Major Source of Global Warming Pollution**

Applicants argue that their use of supercritical combustion temperatures and biomass and alleged intention to retrofit Sutherland 4 for carbon capture and storage are a sufficient counterbalance to the more than 5.7 million tons of annual CO<sub>2</sub> that the plant will emit. None of these marginal (or theoretical) mitigation practices change the fact that Sutherland 4 will increase, not decrease, Applicants' total corporate emissions and add to an upward statewide trend in Iowa's CO<sub>2</sub> emissions. Applicants argue that IPL's greenhouse gas emissions will not increase incrementally by the amounts identified in the Application, because "the proposed SGS Unit 4 is being built to serve new load and displace power purchased from other generating facilities." Arnold Direct Testimony at 17. However, in response to data requests and under cross examination, IPL witnesses were unwilling to make any commitment to retire a single older plant, and unable to explain how Sutherland 4 can serve the alleged increase in demand while displacing existing sources of supply. *See, e.g.*, OCA Data Requests 126, 134, 190, and 191 and Hearing Transcript at 423-424, 478, 528-29, 1662-63, 1762-64, 1819-20. Based on the record, the Coalition has no reason to believe that displacing other generation is anything more than an empty promise on IPL's part.

### ***a. Sutherland 4 would cause irreversible adverse impacts that will remain beyond the operating lifetime of the facility.***

Although Applicants fail to analyze or even acknowledge the long-term adverse impacts of Sutherland 4, OCA witness Dr. Ezra Hausman has provided a thorough statement of anticipated impacts from the local to planetary level, beginning with the observation that: "The most significant environmental impact of this combined project ... would be its contribution to atmospheric CO<sub>2</sub>, the greenhouse effect and global climate change." Hausman Direct Testimony at 3. As discussed below at subpart (3), global warming is not the only long-standing adverse

impact that Iowans and those beyond the state's borders will suffer from Sutherland 4.

***b. The Board must consider the cumulative and synergistic impacts of Sutherland 4's emissions along with those of thousands of other plants.***

IAC 199-24.10 does not restrict the Board's consideration of reasonable land use and environmental policies and adverse impacts to the local, state, or even national level. Indeed, relevant policies exist at the international level, where the most devastating impacts of global warming are already being felt. This Board is empowered by IAC 199-24.10 to consider, for example, policies articulated by the Intergovernmental Panel on Climate Change ("IPCC"). Construction of Sutherland 4 is clearly contrary to the urgent directives of the IPCC for major greenhouse gas producing nations to cease construction of major new sources.

**3. Sutherland 4's global warming emissions would cause enormous adverse impacts on the environment and human health.**

The World Health Organization's (WHO) quantitative assessment concludes that "even the modest degree of climate change that has occurred since the mid 1970s may already have been causing over 150,000 excess deaths annually by the year 2000." Coalition Ex. KWH-1, Schedule K at 2. These impacts are greatest among "populations living in small-island developing states, mountain regions, water-stressed regions, mega cities in developing countries ... and those that are poor, and poorly protected by health services." *Id.* WHO's independent analysis is the basis for its *Global Framework on Health Protection from Climate Change*, released in 2007.

The U.S. and Iowa populations will also suffer direct adverse impacts as a result of the aggravated effects of climate change due in some measurable part to Sutherland 4. Impacts include "increasing infectious disease and other health risks ... potential geopolitical instability arising from increased risks of conflict over dwindling natural resources, and increased numbers

of refugees displaced by drought or flooding.” *Id.* Iowa-specific adverse impacts include a shift in summer climate to one more similar to that of northwest Mississippi by the end of the 21<sup>st</sup> century. Coalition Ex. KWH-1, Schedule F at 3. Although some benefits may accrue in terms of milder winters and a longer growing season, the net effect will include an increase in human, animal and agricultural diseases that thrive in warmer climates, more intense and damaging heat and storm events, and a decrease in available water. *Id.* at 4-9.

**4. Sutherland 4’s mercury and other emissions and discharges will cause additional unreasonable adverse impacts, particularly in the siting area.**

Applicants anticipate the *fully lawful* release of up to 0.24 tons per year of mercury from Sutherland 4, or approximately 408 pounds. Application Vol. 1, Table 1.6.4-1. Under the Clean Air Mercury Rule<sup>2</sup>, EPA has assigned the state of Iowa an annual mercury budget of 0.727 tons for the years 2010-2017, and 0.287 tons annually from 2018 onward.<sup>3</sup> If Sutherland 4 emits the maximum anticipated amount of mercury beginning in 2013 as anticipated, within 5 years, mercury emissions from Sutherland 4 will represent over 83 percent of Iowa’s annual mercury budget. This enormous source of mercury will be not only a public health hazard, but a cap on any further development of mercury-emitting sources in Iowa and therefore a barrier to some forms of development that may have greater benefits to Iowa than Sutherland 4.

Applicants’ only response to evidence of the risk posed by lawful mercury emissions is to reiterate that IPL will obey environmental laws. Arnold Rebuttal Testimony at 4-6. This may be true, but it is not responsive to evidence that mercury, among other pollutants, will pose a grave human health risk even in amounts that Sutherland 4 may emit legally.

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<sup>2</sup> The Clean Air Mercury Rule was struck down as unlawful and unprotective in a February 8, 2008 decision by the U.S. Court of Appeals for the D.C. Circuit in *New Jersey v. EPA*, No. 05-1097, available at <http://pacer.cadc.uscourts.gov/docs/common/opinions/200802/05-1097a.pdf>. The future of mercury regulation is therefore uncertain.

<sup>3</sup> [http://www.epa.gov/ttn/atw/utility/state\\_indiancountry\\_emissionbudgets\\_oar-2002-0056-6154.pdf](http://www.epa.gov/ttn/atw/utility/state_indiancountry_emissionbudgets_oar-2002-0056-6154.pdf) at Table 3.

Regardless of how much mercury from Sutherland 4 ultimately reaches Iowa's food chain by settling into water and accumulating in fish stocks, Iowans will have no warning against the risk. Under current regulations, Iowans are utterly unprotected against the potential contamination of the state's waters by toxic methylmercury, which is formed when mercury settles out of the air into water. IDNR does not monitor mercury levels and therefore cannot issue public advisories where levels are dangerously high. In contrast, the state of Illinois does monitor and as a result has issued mercury advisories on 100% of its waters.

When mercury, a highly toxic heavy metal, exits the smokestacks at Sutherland 4, it settles onto surrounding land and water. In water, mercury converts to methylmercury, an organic form of the metal, that accumulates in fish. Fetal exposure to mercury via maternal consumption at any point, not just during pregnancy, can cause mental retardation and brain damage. Continued exposure during early childhood, including through breast-feeding, can result in learning disabilities and attention deficit disorders. It is insufficient for Applicants to claim that their observance of relevant environmental laws will protect Iowans from mercury contamination, as those laws allow emission levels sufficient to contaminate vast bodies of water.

Human health impacts from mercury have been detected at levels below 10 *micrograms* ( $10^{-6}$ ) per liter in the bloodstream. Coalition Ex. KWH-1, Schedule W at 4. At 5 liters of blood in the average adult male, the 408 pounds of annual mercury pouring out of Sutherland 4 equal over 60 *milligrams* ( $10^{-3}$ ) for each man, woman and child in Iowa. By contrast, the U.S. Environmental Protection Agency's maximum contaminant level for drinking water is 0.002 milligrams per liter.<sup>4</sup> Because mercury does not distribute evenly, nor do all mercury emissions become part of the human food chain, individual Iowans and those beyond our borders will get

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<sup>4</sup> [http://www.epa.gov/ogwdw/contaminants/dw\\_contamfs/mercury.html](http://www.epa.gov/ogwdw/contaminants/dw_contamfs/mercury.html)

higher and lower doses depending on their locations and habits. The important thing to remember is that mercury emissions from Sutherland 4 alone are enough to cause acute mercury poisoning in all 3 million Iowans if consumed directly. When these mercury emissions are added to those from the many other regional coal plants and allowed to bioaccumulate in our environment, entirely legally, over generations, the results may be tragic.

**B. The Location of the Proposed Facility at the Proposed Site Is Not Reasonably Justified from an Economic, Technical, and Social Standpoint.**

Applicants have offered very little testimony to justify the choice of this facility at this site that go beyond the initial engineering and land use evaluations necessary to construction of any new facility. However, the statutory language requires justification of *this* facility at *this* site. Not only have Applicants failed to make such a justification, there is a great deal of evidence that this facility at this site will result in severe adverse impacts that Applicants have left completely unanalyzed, and in many cases unacknowledged.

**1. Applicants claimed environmental, social, and economic advantages from siting in a “brownfield,” when the site is in fact a greenfield currently in agricultural production and adjacent to bald eagle nesting habitat.**

In pre-filed direct testimony, IPL witness Kevin Vesperman states that “significant benefits including environmental, social, and economic advantages” flow from siting a new generation facility at a “brownfield” site. Vesperman Direct Testimony at 3. Vesperman, an environmental engineering graduate of the University of Wisconsin, goes on to describe the infrastructure advantages of a “brownfield” site such as Sutherland Station. *Id.* at 4. However, as Vesperman acknowledged under cross-examination, the common technical use of the term brownfield refers to a site “with some form of environmental contamination that has to be mitigated before redevelopment can take place”. Transcript at 524-25. The environmental,

social, and economic advantages that flow from redeveloping brownfields have to do with preserving green space and restoring contaminated, unusable sites that had been a liability to the community. The proposed site of Sutherland 4 is in fact a *greenfield* in every sense of the word.

The Application describes the site as follows:

The area selected for the proposed site location is primarily used for the production of row crops. A total of 680 acres of agricultural land has been annexed and rezoned to M-2 industrial for the facility. Approximately 630 acres of the overall 1,087-acre site will be located inside of the rail loop where all of the heavy industrial/power generation activities will occur.... The areas along the Iowa River will be preserved in their natural conditions. Minimal impact is expected to agricultural land surrounding the proposed facility.

Application Vol. 1 at 79. If there is minimal impact on agricultural land, it would have to be agricultural land *other than* the 680 acres of row crops rezoned industrial for the purpose of building a 630MW coal plant.

As to the “areas along the Iowa River”, neither the Application nor Vesperman give specifics about what exactly will be preserved, although annotated aerial photographs of the site indicate that the new rail loop will pass within approximately 1000 feet of the Iowa River.

Applicants’ Ex. KDV-1, Schedule A at 23-24. The assertion that bald eagles nesting along the Iowa River will not be affected by 100-car coal trains running daily within a quarter mile of their habitat and mercury emissions up to 8 times current levels is neither credible on its face nor supported by evidence. OCA witness Powers also provides evidence that IPL has not adequately considered impacts on aquatic life on the Iowa River, including potential technological alternatives, such as air cooling, that would provide greater protections for water quality and aquatic life. Powers Testimony at 4-6.

**2. Although Applicants claim that they will one day retrofit Sutherland 4 to capture and store greenhouse gases, they have failed to give genuine consideration to currently available technology and failed to show any genuine likelihood of economic retrofit.**

Applicants defend their proposal for new coal-fired generation in part by stating an intention to retrofit Sutherland 4 with carbon capture and storage technology. The Black & Veatch study offered in support of IPL's contention that IGCC is not a viable technology for Sutherland 4 does not analyze this specific site. Applicants' Ex. KDV-1, Schedule C. OCA witness Bill Powers describes the ways in which Black & Veatch has molded its IGCC studies to suit the desires of various clients. Powers Testimony at 4. In IPL's case, Black & Veatch ignored the possibility of ultra-supercritical technology, which IPL had already rejected, and made a case against IGCC in favor of a supercritical boiler. *Id.* In Powers' analysis, the study's failure to analyze the "one gasification technology that is demonstrably appropriate for the situation at hand" strongly suggests that the study is "an obligatory technical submittal to justify a predetermined position that IGCC will not be used." *Id.* IPL did not provide a witness from Black & Veatch for cross-examination.

**3. The proposed site is adjacent to one of the state's largest Hispanic communities and may affect prehistoric sites that have not yet been fully evaluated by the State Archaeologist or State Historic Preservation Office.**

Marshalltown is home to one of Iowa's largest Latino communities, constituting 8-9% of the total municipal population, compared to 2% statewide.<sup>5</sup> Residents within 30 miles of coal-fired power plants suffer the worst of the public health impacts of hazardous air pollutants, including cardiac and respiratory ailments. Coalition Ex. KWH-1, Schedule V. The fact that both the proposed Marshalltown and Waterloo plants are sited adjacent to large concentrations of

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<sup>5</sup> [http://www.seta.iastate.edu/census/vitalstats.aspx?group\\_id=4&cntct=3&state=IA&fips=19000](http://www.seta.iastate.edu/census/vitalstats.aspx?group_id=4&cntct=3&state=IA&fips=19000)

people of color in a state where the general population is 93% white is a serious social justice concern entirely ignored by Applicants.

IPL witness Andrew Byers testifies that “there will be no significant impacts to cultural resources or historic landmarks from construction and operation” of Sutherland 4. Byers Direct Testimony at 13. However, a letter dated April 19, 2007 from State Archaeologist Daniel Higginbottom indicates that no formal review has been conducted by state agencies because federal involvement in the project would be necessary to trigger the requirements of Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. §§ 470 *et seq.*). Application Vol. 1, Figure 3.7-1. According to this letter, “there has been no formal effort to identify archaeological properties within the property boundary.” Higginbottom notes that the site is “judged to possess high potential for the presence of prehistoric archaeological deposits and features in surface exposed, near surface, or deeply buried contexts.” He therefore recommends that “a reconnaissance-level and intensive level archaeological investigation take place” according to “currently accepted survey strategies and sampling procedures that are best suited to the identification and evaluation of historic and prehistoric archaeological resources.”

None of the more in-depth evaluation recommended by the State Archaeologist has been conducted. Applicants also acknowledge that they have made no attempt to contact the dozen or more out-of-state tribes with prehistoric roots in Iowa that might have an interest in prehistoric archaeological deposits at the site. IPL has contacted only the Meskwaki tribe, which does not have prehistoric roots in the area but came to Iowa much later. Applicants’ cultural resources study is therefore insufficient evidence to support their assertions that there will be no significant impacts to cultural and historical resources.

**C. Environmentally safe renewable energy, energy efficiency and conservation alternatives can provide needed power at lower cost to ratepayers.**

Applicants have given short shrift to the very real alternatives presented by expanded energy efficiency, demand side management, and renewables. IPL's attitude with regard to energy efficiency and renewables is summed up in a statement by IPL spokesman Ryan Stensland on Friday, February 8, 2008: "Simply changing a light bulb and putting up a wind turbine is not going to meet Iowa's energy needs, now or into the future," Radio Iowa quoted Stensland as saying.<sup>6</sup> This dismissive remark is in keeping with testimony and evidence offered by IPL with regard to consideration of cleaner alternatives to Sutherland 4.

OCA witness Robert Fagan testifies that IPL analytically misrepresents wind's ability to meet energy needs economically by:

- Using an unrealistic "base" case that excludes carbon dioxide cost impacts;
- Underestimating the capacity value of wind;
- Artificially and unnecessarily constraining the EGEAS resource planning model from choosing economic wind power options as resource alternatives; and
- Capping the availability of new wind resources at 800MW over the planning period, far below the level of wind that can be accommodated on the regional power network.

Fagan Testimony at 3. In Fagan's analysis, these errors cause IPL to miss up to 1039MW of economic wind power available for installation from 2007-2022. *Id.*

IPL's rebuttal to this conclusion is in part that installing 1000MW by 2022 may not be "technically possible" due to equipment supply and transmission limitations. Friedman Rebuttal at 9. With this testimony, IPL contradicts its own briefing to this Board in Docket SPU-07-11. When it suited them, IPL's counsel argued that the sale of transmission assets would "reduce congestion, mitigate market power, expand opportunities for new energy resources, and optimize

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<sup>6</sup> <http://www.radioiowa.com/gestalt/go.cfm?objectid=FA8F2B94-0EE4-7951-6B08417EEA48663B>



[REDACTED] Friedman offers no explanation for the disproportionately higher projected costs for wind transmission facilities.

Kitchen's concern that wind equipment will become even scarcer if demand increases is rebutted by a report by the Renewable Energy Policy Project submitted by IPL witness Otto:

If wind were to become a large industry, for example as the result of a federal renewable portfolio standard, the economic impact would spread far beyond the 90 active firms identified in the previous sections of this Report. Companies currently engaged in manufacturing processes similar to the manufacturing of wind turbine components could potentially transfer some of their capabilities to this new market. For example, a company that rolls steel for water towers could potentially begin rolling steel towers for wind turbines; a roller bearing company could begin making wind turbine main shaft bearings. In order to take a look at the size and location of this potential market, REPP uses an approach based on the North American Industrial Classification System, or NAICS, which the U.S. Census Bureau adopted in 1997. The results of this study indicate that 16,163 firms, located across all 50 states, operate in industries similar to the manufacturing of wind turbine components.

Applicants' Ex. DHO-1, Schedule D at 56. The REPP report precisely addresses one of the phenomena cited by Friedman as prohibitive for wind development: the fact that "worldwide production for wind generating equipment is fully subscribed for up to two years into the future." Friedman Rebuttal at 6. Yet Friedman's point relies on the irrational assumption that no additional investment in manufacturing facilities for wind equipment will occur. *Id.* Not only is that investment extremely likely in a carbon-regulated economy, the REPP report submitted by IPL itself presents powerful evidence that the manufacturing sector is prepared to respond to a surge in demand caused by CO<sub>2</sub> regulation. Indeed, federal CO<sub>2</sub> regulation would remove the uncertainty caused by a Production Tax Credit that must be renewed over and over, giving investors the motivation they need to ramp up manufacturing to meet demand.

**1. Even If 630MW of Baseload Were Needed, the Record Shows that Renewables and Efficiency Can Reliably Meet the Need.**

The Coalition denies that IPL has demonstrated a need for 630MW additional baseload generation within its service territory. However, even if IPL had made such a showing, there would be no justification for meeting that need with a coal-fired generating station. Applicants have failed to discredit evidence and testimony filed by the Coalition and OCA arguments that renewables and efficiency can adequately meet such a need.

Coalition witness Sanzillo identified unsupported assertions, incorrect assumptions, flawed modeling, and lack of transparency in IPL's load forecasts. IPL's rebuttal to the Sanzillo testimony consisted primarily of assertions that Sanzillo had not understood IPL's filings. IPL never offered any direct response to Sanzillo's central critique: that Applicants' load forecasting is fatally flawed. The numbers speak for themselves. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

At this point, Applicants fall back on their argument that the generating certificate statute does not require them to prove that there is any need for their 630MW coal plant and its 5.7 million tons of annual CO<sub>2</sub> emissions. The statute does, however, require IPL to show that locating the proposed facility at the proposed site is "justified from an economic ... standpoint." Here's the rub: a coal plant of this size creates tremendous opportunity costs in the energy sector,

displaces other forms of energy (including renewables), creates environmental and public health costs, and exposes ratepayers to significant risk. If there is not a genuine necessity for the electricity to be produced at Sutherland 4, then the bar is much, much higher for showing that the facility is justified from an economic standpoint. Applicants have not met that high standard. That is why need is relevant.

## **2. Wind Power and Efficiency Would Cost Ratepayers Significantly Less than Sutherland 4 in the Predicted Carbon-Constrained Economy.**

Direct testimony by OCA witness Michael Drusic demonstrates the flaws in IPL's modeling that led to the choice of Sutherland 4.

Because of the artificial constraints that IPL placed on the EGEAS model the model was not able to identify a true least cost capacity expansion plan... By correcting for just one inappropriate constraint that IPL placed on the EGEAS model, Dr. Shi was able to generate lower cost plans than the Company's preferred plan that includes the addition of SGS Unit 4 in 2013.

Drusic Direct Testimony at 4. Correcting these flaws allows for more economic choices that will ultimately benefit Iowa ratepayers. The most direct rebuttal to the Drusic analysis made by IPL witness Brent Kitchen is that wind and natural gas prices are likely to rise even more quickly than the cost of coal-fired generation in the event that federal CO<sub>2</sub> regulations are enacted, so IPL's choice of Sutherland 4 is justified. Kitchen Rebuttal at 24-26; Friedman Rebuttal, Schedules A and F.

Friedman's supporting exhibits, however, do not support the 10 and 20 percent natural gas price adders assumed by IPL. The percentage increases in the cost of natural gas cited by Friedman actually include the cost of CO<sub>2</sub> emissions allowances. One study cited by Friedman, and apparently funded by Exxon-Mobil, specifically notes that when the cost of what it calls the "permit price" is netted out, the price increases for gas and other fossil fuels are much lower. Applicants' Ex. REF-1, Schedule A, at 33. Nowhere in its analyses does IPL model the same

price for CO<sub>2</sub> emitted from Sutherland 4 that Friedman and Kitchen attach to natural gas in their failed attempts to rebut Drunsic's argument. It is also not true that the Synapse witnesses did not consider higher wind and natural gas prices in their modeling. They did, and still found that renewables and efficiency constitute lower cost options than Sutherland 4 for at least the next decade. Schlissel Testimony, Tables 6 and 7.

IPL's assumption, unsupported by any evidence, is therefore that federal CO<sub>2</sub> regulation will have a powerful effect directly opposite what is intended, by further advantaging greenhouse gas intensive power sources over cleaner sources. Kitchen Rebuttal at 22. Studies submitted by IPL itself undermine the testimony of their witnesses on this subject by projecting far lower natural gas increases than Kitchen and Friedman endorse. Friedman Rebuttal, Schedules A and F. IPL further assumes that the economic laws of supply and demand, by which increased demand inevitably increases supply until prices begin to drop to a level at which demand is satisfied, will not function in the case of carbon regulation. IPL wants the Board simultaneously to accept low projections for CO<sub>2</sub> prices and IPL's very high projected increases in natural gas prices, which are based on far higher CO<sub>2</sub> costs than IPL has otherwise assumed. One is reminded of IPL's similarly illogical argument that Sutherland 4 will displace dirtier sources of power while simultaneously serving new demand.

IPL's attempt to attach high future CO<sub>2</sub> prices to natural gas while attaching none to Sutherland 4 is a desperate (and unsuccessful) bid to counter overwhelming evidence that renewables and efficiency are superior to Sutherland 4 as long-term alternatives.

***a. Federal climate regulations are coming in the near term and Applicants will pass the cost directly to consumers.***

OCA witness David Schlissel presents a comprehensive analysis of the likelihood and cost of various forms of carbon regulation currently under consideration at the federal level.

Schlissel Testimony at 14-54. Schlissel concludes that “the most significant uncertainties and risks associated with the proposed Sutherland Generating Station Unit 4 project are the potential for future federal restrictions on CO<sub>2</sub> emissions and further increases in the project’s capital cost. *Id.* at 3-4. Schlissel points out in particular the fact that IPL’s base Integrated Resource Plan that includes Sutherland 4 “was developed through modeling that assumed no greenhouse gas regulation costs.... an extremely unrealistic and imprudent assumption.”

Applicants respond to this criticism, based on comprehensive alternative modeling of the impacts of carbon regulation, by making unsupported and misleading speculative statements about the impacts on the cost of wind and natural gas (discussed *supra* at 32-33). Applicants also believe that it is imprudent to postpone a decision about a new generating station until uncertainty surrounding carbon regulation has been resolved. Guelker Rebuttal at 14-15. Yet IPL witness Bennington testifies that IPL itself has decided to wait until carbon regulations are actually enacted into law before responding to them, the strategy that Guelker describes as “not a viable and sustainable regulatory response.” Transcript at 421; Guelker Rebuttal at 15. Once again, Applicants want to have their cake and eat it. They want the generating certificate for Sutherland 4 issued right away because it’s too risky to wait until carbon regulation has been enacted to make new generation choices. And Applicants also want to be allowed to load the full risk of regulatory uncertainty on the ratepayer.

Applicants also argue that CO<sub>2</sub> costs will not have a major impact on the cost of electricity produced at Sutherland 4 because:

currently proposed legislation is likely to become more moderate as these bills progress through the legislative process and legislators and other policy makers become more aware of the limitations of renewable energy sources and demand-side management (DSM) programs in reducing greenhouse gas emissions.

Guelker Rebuttal at 8. Guelkner acknowledges that IPL and Alliant engage in lobbying at the

state and federal level. Transcript at 1732-34. Applicants position is therefore that carbon regulation will not add significantly to the cost of electricity from Sutherland 4 because policy makers and legislators will “become more aware” of the limits to renewables and DSM, when Applicants themselves are the ones who will be lobbying hard for weakened carbon regulations to protect their investment in Sutherland 4.

Applicants would doubtless use the approval of Sutherland 4 as an argument for weaker carbon regulations, arguing that ratepayers will suffer if more stringent regulations are enacted. Ratepayers will indeed suffer if Sutherland 4 is approved and appropriate carbon regulations are enacted, but for IPL to argue that Sutherland 4 should be approved because lobbyists will successfully defeat stringent regulation is the most cynical kind of circular reasoning.

***b. Equivalent wind and efficiency will cost consumers less than Sutherland 4.***

OCA’s EGEAS modeling runs demonstrate that wind is the “cheapest available baseload supply-side energy resource to meet incremental needs in Iowa,” even using IPL’s unrealistically “low” carbon price scenario. Fagan Testimony at 2. The corrected modeling conducted by Drunic and Shi shows that lower cost alternatives to Sutherland 4 are available. Drunic Testimony at 6. When more realistic carbon prices are used, wind becomes an even better bargain for ratepayers. IPL could reliably accommodate up to 25% of its retail energy needs with wind power, at a lower cost, and therefore with greater economic benefits and lower environmental impacts than Sutherland 4. Fagan Testimony at 3.

Expanded energy efficiency and demand side management are an even better deal for ratepayers. IPL reports that it is now securing efficiency at about 0.9 cents per kilowatt hour. Parker Testimony at 34. Nationwide, utility programs are securing reliable energy efficiency at a cost of between 1 and 5 cents per kWh, a price that compares favorably to that of new coal-fired

generation. Parker Testimony at 33. Applicants lack even the most basic sense of the comparative cost of increased energy efficiency versus that of generation at Sutherland 4, and their strategic approach is practically nonexistent. IPL's Corporate Asset Management Consultant, Brent Kitchen, is unable to offer even a general idea of the cost of generation at Sutherland 4 or point to evidence on the topic. Transcript at 653-54.

IPL witness Holmes, a Senior Regulatory Planning Consultant on Demand Side Management, acknowledged that he is unaware of any IPL strategy to evaluate potential for Combined Heat and Power ("CHP", also known as cogeneration) at any of the biofuels facilities IPL serves, in spite of the known cost benefits and efficiencies.<sup>9</sup> Transcript at 1818-19. [REDACTED]

[REDACTED] Holmes maintains that although IPL has not even begun to explore potential cogeneration savings on its system, IPL "has implemented all cost-effective energy efficiency programs that are available and known to IPL." Holmes Rebuttal at 2. IPL also does not anticipate being able to match past performance: corporate projections for future DSM energy savings yields are all below the levels achieved for seven of the last eight years. OCA Ex. SHP-1, Schedule K.

This inability to answer the most basic questions about efficiency and DSM options likely relates to the fact that IPL did not model expanded energy efficiency as a potential alternative to Sutherland 4. Applicants take the position that because they are not required to model DSM as a resource alternative in Iowa, they will not do it. Parker Testimony at 8.

According to IPL's own 2005 Energy Plan:

Because IPL does not explicitly model DSM as a resource to be selected in the IRP modeling, the question remains whether the amount of DSM implemented by IPL is an

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<sup>9</sup> See OCA Ex. SHP-1, Schedule D, "Combined Heat and Power: Capturing Wasted Energy", by Neal Elliott and Mark Spurr of American Council for an Energy Efficient Economy (May 1999).

optimum amount from the resource planning perspective. Since the DSM that IPL implements in Iowa is determined by the Iowa Utilities Board's administration of Iowa statute, any variation would need to be in Minnesota.

2005 ERP, p. 33-18. IPL will undoubtedly seek ratemaking principles that guarantee ratepayers are fully responsible for the power they receive from Sutherland 4. IPL witness Kampling acknowledged that a significant element in financing Sutherland 4 is IPL's ability to pass on the cost of any future carbon regulation to ratepayers. Transcript at 1944. This Board is bound by law to consider "the economics of available alternatives." IAC 199-24.10(2)(b). This analysis is central to the Board's utility regulation mandate, in that it directly affects the electricity bills consumers will pay in the future.

**D. Sutherland 4 Will Be an Unreasonable Obstacle to the Development of Renewable Energy and Improved Energy Efficiency in Iowa.**

IPL's proposed 350 MW share of Sutherland 4 cannot be examined in isolation from the additional 280MW proposed for CIPCO, Corn Belt, and other purchasers. Even by IPL's own calculation, IPL's 350 MW of additional coal-fired capacity from Sutherland 4 will create excess capacity in the IPL system in 2013. Kitchen Direct Testimony at 5. Testimony and exhibits from the Coalition demonstrate that IPL's application significantly understates the amount of excess capacity that Sutherland 4 will create for the IPL system in 2013. Sanzillo Testimony at 13-15. IPL has failed to provide any detailed information demonstrating the purported need for the 200 MW of additional coal-fired capacity that will be utilized by CIPCO and Corn Belt. IPL has provided no information regarding the need for the extra 80 MW of coal-fired capacity that will be sold either to an additional joint owner or through purchased power agreements.

If IPL pours its available resources into this substantial and unnecessary expansion of coal-fired generating capacity in Iowa, significant capital and market share will be drained from wind development, and Iowa will lose the opportunity for the greater and more sustainable levels

of economic development that come from energy efficiency and the renewable energy sector. Furthermore, IUB approval of a permit to construct Sutherland 4 would constitute an unmerited and counterproductive reward for IPL's passive – at times even negative – attitudes toward energy efficiency and renewable energy development in Iowa.

### **1. Sutherland 4 Will Drain Capital and Market Share from Wind.**

The record demonstrates that the capital investment required for Sutherland 4 and the resulting additional 630 MW of coal-fired generating capacity would negatively impact the level of capital resources and market share available for wind power. Coal-fired electric generating capacity represents one of the most expensive available options for meeting Iowa's future energy needs. The costs of construction and operation of coal-fired power plants are steadily increasing even as IPL's siting application is being considered by this Board. Component parts for coal-fired power plants are increasing in price. Sanzillo Testimony at 25-27. Coal is increasing in price and is expected to continue to do so for the foreseeable future. *Id.* at 22-25. The costs of Sutherland 4 will only escalate further with the increasingly likely prospect of carbon regulation and rising financing costs as new coal plants become riskier investment options. (*Id.*, p. 18-21)

In order to cover the capital costs currently associated with Sutherland 4, IPL will need to operate the facility upwards of 90 percent of the time. Regardless of whether other resources constitute the low-cost option for IPL as the costs for Sutherland 4 increase, IPL will have no choice but to operate the facility at close to its full capacity in order to recover the large and increasing capital investment that will be required for Sutherland 4. IPL is chaining itself for a period of decades to an increasingly expensive facility that once built will have to remain a part IPL's resource mix, regardless of relative costs.

The opportunity costs of this choice, particularly in foregoing wind and other renewable

energy development, are considerable. Choosing to build such a large and expensive facility, exceeding IPL's capacity needs for 2013 and including an extra 80 MW of coal-fired power that neither IPL nor its joint owners CIPCO or Corn Belt even claim to need, will preclude IPL from achieving significant gains in wind capacity at a time when impending carbon regulations and rising capital costs for coal make wind easily the more sound investment option.

Sutherland 4 would unnecessarily drain capital and market share from wind even setting aside the new plant's excess capacity and sky-rocketing capital costs. Even if every megawatt of generating capacity from Sutherland 4 were necessary – which IPL does not claim – the evidence in the record still does not demonstrate that all that capacity needs to come from a coal-fired generating facility such as Sutherland 4. IPL has not demonstrated that a substantial portion of its projected load growth could not be served by additional wind capacity. The best evidence available demonstrates that wind energy can constitute a substantial portion (25 percent or more) of IPL's system-wide capacity without sacrificing reliability. Fagan Testimony at 28. As greater quantities of wind power become available and more uniformly dispersed, wind power becomes more reliable as an energy source and better able to displace a significant portion of traditional baseload resources in the system. *Id.* at 23-24. The Application flies in the face of this positive trend.

IPL already relies overwhelmingly on coal in its resource portfolio and is unnecessarily expanding that reliance at a time when renewable energy sources should play a proportionally expanding role, not a decreasing one. Schlissel Testimony at 65-66. IPL has not come close to the level of wind capacity that could be included in its resource portfolio without sacrificing system reliability. Fagan Testimony at 13.

With the present application, IPL is simply delaying the day when the company and the

State of Iowa make a serious effort to integrate wind into the state's energy portfolio at the levels allowed for by current technology and reliability estimates for the wind sector. IPL's decision to inject 630 MW of new coal-fired generating capacity into the system rather than deriving capacity from wind, efficiency, DSM or other renewable sources also delays the regional coordination and infrastructure development that would assist further wind development. Fagan Testimony at 23-24. If IPL is correct in its repeated assertions that wind will become a more expensive energy resource with the enactment of carbon regulations, then the appropriate time to invest in wind development is now, before those regulations are enacted.

IPL's failure to plan and invest more vigorously in anticipation of a carbon-constrained economy will directly harm Iowa ratepayers. Coupled with the clear differences in the comparative ecological footprints of wind and coal, Sutherland 4's opportunity costs and ratepayer impacts lead to the firm conclusion that the Application does not constitute a reasonable use of Iowa's resources.

## **2. Wind Power Would Bring More Sustainable and More Substantial Economic Development than Sutherland 4.**

The record demonstrates that the economic benefits of wind development would bring higher and more sustainable levels of economic development to the State of Iowa than would the construction and operation of Sutherland 4. As detailed in the direct testimony of OCA witness Robert Fagan, locally owned wind and energy efficiency measures would produce equal or greater macroeconomic benefits for the State of Iowa than would the construction and operation of Sutherland 4. Fagan Testimony at 18. Evidence offered by multiple OCA witnesses demonstrated that substantially increased wind capacity could be part of a lower cost resource option for IPL than the proposed Sutherland 4. Schlissel Testimony at 77-78. In addition, the economic benefits of aggressive wind and energy efficiency development would be more widely

dispersed across the state and in different sectors of the economy, rather than concentrating in a single facility in a single community, where they will be offset by increased health care costs caused by hazardous air pollutants.

Sutherland 4 would require extensive capital expenditures outside of Iowa and outside of the United States to obtain component parts for the construction of the facility, and once in operation, Sutherland 4 would require coal from the Powder River Basin in Wyoming or some other source of coal outside of Iowa. All of these capital expenditures would necessarily flow out of state and not benefit the economy of Iowa. By contrast, major component parts for wind turbines could be manufactured in Iowa, and the demand for manufacturing would expand as wind development in the state expands. In addition, the fuel source for wind turbines is free and local, and the net profits of locally owned wind would stay in Iowa's communities and benefit economies on the local and state levels.

### **3. Approving Sutherland 4 Rewards and Encourages IPL's Passive Attitude on Energy Efficiency and Negative Attitude on Renewable Energy.**

The record demonstrates that IPL has significant room in its resource portfolio for expanded energy efficiency measures and renewable energy development that would displace all or most of the capacity deficit that form the alleged need for Sutherland 4. IPL's resource modeling disadvantages both energy efficiency and renewable energy resources, and does not adequately take into account the level of demand in the IPL system that could potentially be met through improved and expanded energy efficiency programs and more aggressive renewable energy development.

Energy efficiency is not treated as a co-equal resource in IPL's modeling, on par with new capacity from coal or natural gas or even wind. Parker Testimony at 8. The inputs that IPL uses in its modeling system assume that historic levels of energy efficiency were the maximum

achievable levels and then bases future growth on previous levels of growth. OCA Ex. SHP-1, Schedule A. Trends in other states with more aggressive energy efficiency programs, such as Vermont and Minnesota, demonstrate that there is much room for improvement in the IPL system. OCA Ex. SHP-1, Schedule L.

IPL overestimates the relative costs of wind generation and underestimates the proportion of capacity that wind could reliably contribute to the IPL system. Schlissel Testimony at 69. In addition, IPL's modeling severely underestimates the likely costs of carbon regulation and increasing capital costs for the plant when comparing the relative costs of Sutherland 4 with renewable energy resource options. *Id.* at 70. IPL witness Guelker stated in live testimony that IPL does not intend to account for carbon costs until forced to do so by the actual enactment of carbon regulations – in spite of the fact that IPL's resource plan extends several decades into the future, and carbon regulations are reasonably expected within the next several years. Transcript at 421.

IPL relies on a resource model that unreasonably disadvantages both energy efficiency and wind and gives artificial preference to coal-fired generation such as Sutherland 4. As a result, IPL's most recent resource plan calls for two new coal-fired generating facilities over the next decade, without making any attempt to increase growth rates in energy efficiency or incorporate wind development at the levels dictated by relative cost, impending carbon regulations and the overwhelming environmental benefits of renewable energy. Sutherland 4 is proposed at a time of escalating capital costs and increasing regulatory risks for coal-fired power plants, with a wholly inadequate analysis of alternatives. IPL has taken the position that the costs and financial risks of Sutherland 4 should not be incurred by IPL but by Iowa's ratepayers. Transcript at 1944. This Board should tell IPL that this is unacceptable. Iowa law demands it.

## V. CONCLUSION

Applicants have failed to make the requisite showings for issuance of a generating certificate for Sutherland 4. To grant a generating certificate for this costly, unnecessary facility would be to reward rent seeking behavior by Applicants, to the long-term detriment of Iowa ratepayers and taxpayers. Rent seeking theory answers the nagging question of *why* Applicants would propose a new coal plant that is neither needed nor economic when compared to lower-emission alternatives. As a result, several essential statutory showings have not been met:

1. Applicants have not demonstrated that the facility will be cost-effective and compatible with the environmental policies of the state; and
2. Applicants have not demonstrated that the construction, maintenance, and operation of Sutherland 4 will be consistent with reasonable land use and environmental policies and consonant with reasonable utilization of air, land, and water resources, considering available technology and the economics of available alternatives.

The Coalition also notes that, because the Department of Natural Resources and other relevant regulatory agencies have not yet completed their review of permit applications for Sutherland 4 and therefore are unable to provide their analyses as part of this docket, the Board cannot “conclusively presume that the facility meets the regulatory agency’s permit and licensing requirements....” under Iowa Code § 476A.5(2). In any event, the Board’s statutory mandate cannot be interpreted as redundant and therefore extends beyond rubber-stamping the actions of other agencies.

Much like the subprime mortgage crisis, which benefited few at the expense of many, the current rush to build coal plants poses a tremendous threat to the economy unless enlightened regulators respond appropriately. Fortunately, across the country, IUB’s counterpart agencies are rejecting similarly flawed proposals in ever-increasing numbers. In light of the high level of risk to consumers from an investment of this kind in current market and regulatory conditions, and

Applicants' failure to bear the burden of proof, this Board should deny the Certificate.

Respectfully submitted,

PLAINS JUSTICE

By:



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ATTORNEYS FOR INTERVENORS

CERTIFICATE OF SERVICE

The undersigned hereby certifies that true copies of the foregoing instrument were served upon each of the parties of record to the above entitled cause, or their attorneys of record, by enclosing the same in an envelope addressed to each such party and hand delivered or, with postage fully paid, by depositing said envelope in a United States Post Office depository in Cedar Rapids, Iowa on the 11th day of February, 2007.

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