Idaho Public Utilities Commission
Office of the Secretary
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Boise, Idaho

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE PETITION OF IDAHO POWER COMPANY FOR AN ORDER TEMPORARIL Y SUSPENDING IDAHO POWER' S PURP A OBLIGATION TO ENTER INTO CONTRACTS TO PURCHASE ENERGY GENERATED BY WIND-POWERED SMALL POWER PRODUCTION FACILITIES.	))))))))	**CASE NO. IPC-E-05-22**

ENERGY VISION LLC

DIRECT TESTIMONY

OF

GLENN IKEMOTO

Q. Please state your name and business address.

A. My name is Glenn Ikemoto and my address is 672 Blair Avenue, Piedmont, CA.

Q. By whom are you employed?

A. I am a Principal of Energy Vision LLC.

Q. Describe your educational background.

A. I have a Bachelors of Science degree in Electrical Engineering from the University of California at Berkeley and a Masters of Business Administration from Stanford University.

Q. Please describe your work experience.

A. I joined Kenetech Windpower, Inc. (formerly U.S. Windpower) in 1982, at the beginning of my second year of graduate school. Prior to graduation, I negotiated a 120 MW non-standard wind contract with Southern California Edison. After graduation, I represented Kenetech in the negotiation of California's Standard Offer 4. I then progressed through a series of finance and development positions, ultimately becoming Vice President - Business Development in 1989. In that position, I was responsible for all sales, marketing, product development, project acquisition and project development activities of the world's largest wind energy company.

In 1991, I became head of Kenetech International, Ltd. with headquarters in Chester, England, UK. As Managing Director, I led the company's entry into Europe and oversaw development activities in wind, biomass, industrial cogeneration and demand side management. We successfully developed green-field wind projects in 4 countries, won a major competitive bid in the UK and negotiated power contracts and joint ventures with major international utilities.

After leaving Kenetech in 1995, I continued to work primarily in Europe until the end of 2004. My partners on the Idaho projects and I have had executive, leading and/or

financing responsibility for over 600 MW of wind projects in eight countries and raised over $1 billion in renewable energy financing.

Q. Do you have any other relevant work experience?

A. Yes, prior to Business School, I worked for four years in the Generation Planning Department of the Pacific Gas and Electric Company (PG&E). As a Senior Resource Planner, I directed the unit responsible for the economic analyses of generation alternatives, evaluation of marginal (avoided) cost methodologies and the calculation of avoided costs. I was a member of the California Marginal Cost Pricing Project, negotiated the first long term renewable energy power purchase agreement in the country and obtained CPUC approval of that contract, designed the pricing provisions of PG&E's Standard Offers 1, 2 and 3, built the generation production simulation module used in the company's Corporate Planning Model, participated heavily in the Company's load forecasting and resource planning processes and helped develop the company's PURPA policy (which it supported).

Q. Have you previously testified in hearings such as this?

A. Yes, I have served as an expert witness for PG&E on issues related to utility economics, resource planning, power contracts and marginal cost methodologies in hearings before the CPUC and the California Legislature.

Q. What is the purpose of your testimony?

A. I oppose the suspension of PURPA contracts on the grounds that it is economically harmful to customers, bad public policy and bad regulatory procedure. In my testimony, I will counter all of Idaho Power's unsubstantiated economic and reliability assertions. Contrary to Idaho Power's position, current Posted Prices are a bargain for customers. With the luck of timing, the current prices were set before much of the massive run-up in energy prices. The issues Idaho Power raises are trivial compared to the spread between Posted

Prices and current market prices. The Commission should encourage signing QF's under the present prices before they have to be updated.

I'm sure the Commission's primary concern is determining what is in the public interest. Idaho Power pointed to the extension of the Production Tax Credit (PTC) and the recently enacted state sales tax exemption for wind energy as problems. I see these as the clearest indication of the public interest. Both of these decisions were made by our elected representatives. They are the people most responsible for determining what is in the public interest. As recently as April of this year, Idaho's legislature and administration spoke strongly in favor of developing wind energy in Idaho by enacting the sales tax exemption.

At the federal level, the PTC debate expanded beyond the environmental benefits of wind energy to include substantial consideration of the need for wind energy to bolster our national energy security. Absent any economic justification, a suspension of the PURPA wind contracts would be contrary to both state and federal energy policy.

As for regulatory procedure, I'm sure others will make a better case than me. I would just like to point out that the Commission is being asked to set aside the results of an extensive, formal multi-party procedure by a claim of "new" issues. Idaho Power has not provided studies, analyses or other meaningful evidence to support its claim. The intermittent nature of wind deliveries was certainly a major consideration in Case IPC-E-04-10 and resulted tin the 90/110 Performance Band. The only real new fact is that a meager 27 aMW of wind contracts have been signed. So there was a formal procedure, all parties had the right to make their case, there was a period for reconsideration and then a final decision. How is it appropriate for one party to now introduce new information. Idaho Power is really just appealing a final decision. Isn't the correct avenue for an appeal the courts? Doing it simply with a new IPUC petition is a terrible precedent.

In the Commission's Notice of Petition in this case, we were all notified that Idaho Power's Petition "alone provides insufficient basis to grant the temporary suspension" and directed Idaho Power to submit additional testimony and exhibits. They responded by reformatting their petition into testimony and adding no new significant information. This cavalier approach has led many to question whether the outcome of this proceeding hasn't been pre-determined. This certainly isn't good for the credibility of Idaho's regulatory process.

My testimony will also address options the Commission may wish to consider to rationalize the PURPA Contracting process. These suggestions avoid a suspension of PURPA Contracts.

Should the Commission find that a suspension is in the public interest, we urge you to limit the damage. First, any moratorium should not to apply it to Avista or Pacificorp. The other utilities have not yet executed any PURPA Contracts. Idaho Power has raised issues which focus primarily on the percentage of wind generation on their system (penetration). Ancillary costs are a function of penetration. In Avista's case, there is very little wind resource in their Idaho service territory, so there is no penetration issue. In Pacificorp's case, they have a large generating base, so again, penetration is not an issue. Including the other utilities in a moratorium would be rewarding them for slower implementation. Second, any new proceeding should not re-litigate closed issues. It should focus solely on the impact of operating uncertainty, the 90/110 Performance Band and accounting for uncertainty in avoided costs.

FEAR, UNCERTAINTY AND DOUBT (FUD)

Q. What is your general view of Idaho Power's filings?

A. In the days when IBM completely controlled the computer industry, it's competitors created a term for the marketing strategy of a monopolist. FUD is the fear, uncertainty and doubt a monopolist attempts to create in the minds of customers (or their representatives) when they consider new alternatives. It was applied to IBM during the initial years of "IBM compatible" mainframes and then the era of PCs, as they replaced mainframes. Today it is often applied to Microsoft. It also describes the strategy of many regulated companies, such as airlines, as they faced deregulation. Idaho Power's filings are classic examples of FUD. However, the changes that drove the other industries will also drive the utility industry. In the 1950's, economies of scale in power generation propelled today's utility model. With new technologies in power generation and finance, those economies no longer exist. Just as IBM's mainframes gave way to distributed computing, utilities will ultimately yield to distributed generation.

Q. In Mr. Gale's testimony, he states that it became "evident" that the availability of PURPA prices influenced the RFP process. Do you agree?

A. No, "evident" is a great FUD word. It implies the existence of evidence, which was seriously lacking in Idaho Power's filings. They simply point to the Judith Gap project's 32 $/MWh price to demonstrate that wind projects should be far cheaper than prices they received in the RFP. They provided no side-by-side analysis and possibly didn't even check on how the contract was structured (which isn't standard). Rather than bid gaming, all we have here is a simple case of greed and gravity.

Wind developers, right now, are digesting the most severe increases in turbine prices in the history of the industry. This has been caused by huge increases in the cost of steel and other raw materials and a lack of turbine supply due to poor federal policies and the high value of the Euro (increasing the dollar price of European turbines). Manufacturers

are taking advantage of this to push through previously unimaginable price increases for 2006 deliveries.

Much of the sticker shock from Idaho Power's RFP is caused by bad timing. To my knowledge, it is the first RFP in the country based on the new turbine prices. The only other announced project based on 2006 prices is the Los Angeles Department of Water and Power's 120 MW Pine Tree Wind Farm. According to their May 2005 budget documents, the project was originally planned for $167 million and must absorb a $37 million increase in wind turbine costs. Since turbines represent approximately 75% of project cost (based on old prices), this implies an approximately 30% increase in turbine prices since 2004. They project a power cost of 53 $/MWh (levelized) using lower cost public financing.

As for gravity, air, like everything else, is subject to it. It is common knowledge in the wind industry that you want to locate a project on the downwind side of a hill. On the upwind side, wind speeds slow down as the air is pushed uphill. On the downwind side, it's a sleigh ride, as gravity pulls the air downhill. When the hill is the Rocky Mountains, there is going to be a BIG increase in wind speeds. The difference between the average RFP price and the Judith Gap price can be entirely explained by the differences in energy production, turbine prices and property taxes (which are not included in Judith Gap's price), as demonstrated in Exhibit 1 of my testimony. I should note that some news articles state that the capacity factor of Judith Gap is 37%. Actually the Montana PSC filings only state that the capacity factor will be <u>at least</u> 37%. Developers are very protective of their energy estimates. They often use lower numbers or minimums in public documents. Based on my experience, I believe the actual capacity factor is expected to be significantly higher.

Q. Does this mean that wind energy in Idaho is not economic?

A. No, Idaho Power notes that it's 2004 IRP assumption for wind energy was only 43 $/MWh, and implies that a price of 55 $/MWh would change the plan. That's is just another

FUD technique. If the results don't support your position then pick out an isolated fact that does and skip the results. They are well aware that planning results are based on relative costs, not absolute costs. Although the cost of wind energy has increased 28% from the 2004 IRP assumption, natural gas prices have increased over 50% and coal-fired energy has also certainly increased above it's IRP assumption. To a certain extent, all energy technologies are driven by the cost of oil because of materials and transportation costs. So if we want to reassess the validity of the IRP results in light of new cost information, we have to look at all costs, not just the cost of wind energy. At 55 $/MWh, wind still beats natural gas and it still beats coal. Demand would probably decline a little due to price elasticity, so a new resource plan would just delay the coal plant. I think that's what we all want, isn't it? Wind is still the lowest cost resource, whether by RFP or PURPA Contract.

The 2004 price assumption of 43 $/MWh for wind energy would have been appropriate at the time. This underscores the need to avoid further delay as costs increase. Otherwise, Idaho Power may file a petition in 2007 saying that in 2006 they planned for wind energy at only 55 $/MWh, but now it's 70 $/MWh and that's too expensive.

Q. Can you summarize other areas of unsubstantiated assertions by Idaho Power?

A. Sure, they hit all the classics. We've got a FUD tsunami here, so I'll just cover the highlights. Idaho Power states that the addition of large amounts of wind energy could aversely affect system reliability. That's always FUD number 1 - the system's going to crash! It's an easy thing to say if you don't have to define "large". I would say at a minimum they should be comfortable with the amount of wind energy in their IRP. Those plans are subject to reliability analyses and they can't say they aren't ready for what is already in their plan. Also, there are states with Renewable Portfolio Standards (RPS) targeting 20% of energy production. Much of this is expected to come from wind projects since they are

usually the lowest cost renewable energy option. This implies a far higher percentage of capacity, well beyond what's being considered in Idaho.

Here's another classic, which is typically FUD number 2: from Page 12 of the testimony, line 23, "a 10 MW wind facility may be at full output at one moment and minutes later be at a very low to no output." That could just as easily be the description of any power plant's forced outage. So what is the logic here? If the wind plant loses output because of mechanical failure and stays broken (like a thermal outage) then is that supposed to be better than being able to come right back on line when wind conditions permit? Utilities deal with power plant forced outages, load variability and transmission failures. Wind energy won't be any different.

This one is pretty popular: "PURPA Contracts will lock the customers into high prices". How many times have we heard that one? We've all seen natural gas prices rise and fall. In the past, that was caused by market manipulation by fossil fuel traders. The current run up in prices is being driven by far more permanent conditions. Any ancillary costs associated with wind energy are minor compared to existing fossil fuel increases. As things stand now, the current Posted Prices are a bargain for the customers. They're effectively getting gas at a 50% discount. Lock-ins (fixed prices) work both ways, so given the large increases in all energy costs since the Posted Prices were set, it is far more likely that PURPA Contracts will lock the customers into <u>low</u> prices.

Idaho Power has thrown out a number of 193 MW of potential PURPA wind projects waiting in the wings. Without any documentation, it is impossible to know whether these represent real projects with viable transmission options or just wishful thinking. Absent any meaningful information, this is just a scare tactic.

ANCILLARY COSTS

Q. Do you agree that wind energy projects create ancillary costs for the utility?

A. Surprisingly, yes I do. I think there are three important points: the cost is small, the cost is adequately offset by the 90/110 Performance Band and the avoided cost methodology ignores all uncertainty.

There have been numerous studies of wind related ancillary costs conducted by other utilities. These companies were not necessarily friends of wind energy and the wind energy community has several criticisms of their methodologies. However, at the penetration level in Idaho Power's IRP, they estimate costs of 2.5 $/MWh or less. We predict the 90/110 Performance Band has about the same effect. Compare this to natural gas prices, which are up 14 $/MWh on an SAR basis. Why stop wind energy when, in the worse case, economics have improved 11.5 $/MWh.

Ancillary costs are created by the scheduling uncertainty associated with the wind resource. All uncertainty creates costs. If it appropriate to include operating uncertainty in avoided costs, then it should be equally appropriate to include planning uncertainties. In a case where all uncertainties are included in avoided costs, Posted Prices would be higher.

Q. Do you agree with Idaho Power that issues related to the intermittent nature of wind have not previously been considered by either Idaho Power or the Commission?

A. Absolutely not, as I have mentioned, the intermittent nature of wind was a fundamental part of Case IPC-E-04-10. It was the wind developers' objection to the 90/110 Performance Band that was one of the primary issues in the case. This dealt specifically the operating reliability of wind deliveries. The Commission considered all the evidence that was presented and decided, over the objections of the wind energy community, to leave in a form of the 90/110 Performance Band. Idaho Power did not object to this new form or

anything else in the decision. Now we have a situation where Idaho Power won the point and they are still using it against wind projects.

INTERACTION OF RFP AND PURPA PROJECTS

Q. If 55 $/MWh is a fair price for wind energy in Idaho, why have PURPA Contracts at 61 $/MWh?

A. PURPA Contracts will not receive 61 $/MWh. The 90/110 performance band and seasonality factors do not apply to RFP contracts. These terms lower the effective price of PURPA Contracts. We expect average revenues at our project in Idaho Powers territory to be reduced by 6%, with a 1% reduction for seasonality and 5% reduction for the 90/110 performance band requirement (based on a proprietary analysis). Although we consider our analysis confidential, I will represent that we would trade the 90/110 provision for a 5% fee to the utilities for ancillary services anytime. Therefore, our price would be 57 $/MWh in Idaho Power's territory, not far above the average RFP Price. I suspect most other PURPA developers would also make this trade.

Since the price is about the same, the most important reason to keep PURPA Contracts is that they are important for the agricultural community and rural counties. Large projects are typically located on high ridges which tend to be owned by the federal government. PURPA projects are primarily located on agricultural land. Wind projects uniquely coexist with agriculture. They take up only a couple of percent of the land and all of the original agricultural uses of the land continue. As for counties, almost 7% of our revenues go to property taxes – that's 4 $/MWh. Because renewables are more capital intensive, our taxes per kWh are far higher than fossil fuel projects. The Surrogate Avoided Resource (SAR) only pays 1 $/MWh. So when you exclude property taxes that are going to rural counties, our net price is effectively only 53 $/MWh.

In every industry, there are small and large competitors. Small companies survive by finding projects that big companies overlook. Since there is little price difference, Idaho should continue with both paths. It is always wise to avoid a concentration of risk. The mortality of wind projects during development, like all power projects, is pretty high. You never know when something like habitat for the sage grouse or transmission constraints will eliminate one of the few large projects. It diversifies risk to have many small developers working to beat fossil fuels. As long as there are fossil fuelled resources in a utility's generation expansion plan, there is a societal need and federal mandate to give renewable energy projects access to the market. PURPA is about renewables competing with fossil fuels, not with each other.

Q. What would prevent the losing RFP projects from simply reforming into PURPA projects?

A. Now this is a legitimate concern. If it is in the public interest to prevent this, then there is a solution. There is already a federal prohibition against two projects being within 1 mile of each other with common ownership. Developers can work around this by using two independent owners. To make this rule more effective, the rule needs to be applied to the developer. This can be accomplished by simply adding a clause into the PURPA Contracts requiring a representation that the Project is not within 1 mile of any other project with a PURPA Contract which has been developed under common control by the same developer and linking the representation to a default. Although it seems like this can also be worked around, it probably would be very effective. Financing sources would not sign on to such a contract without extensive due diligence on this issue since it could default the power contract. Although this is discriminating between QFs, Idaho is already doing that with the size limit.

GRANDFATHERING

Q. Idaho Power recommends grandfathering a project which had substantially completed its negotiations with Idaho Power before they started refusing to sign contracts. Did you want to comment on that?

A. Yes, I would simply like to point out that Idaho Power's contract doesn't really require any negotiations. Using the standard of "substantial completion" penalizes developers that were following a disciplined approach to developing their projects and relied upon the long term commitment of Idaho Power and the IPUC to PURPA wind development. These developers avoided wall papering the Commission with power contract approvals for infeasible projects. This was supposed to be about market access, it wasn't supposed to be a race. There are certainly better ways to handle grandfathering.

RECOMMENDATIONS

Q. What changes would you suggest to improve the PURPA contracting process?

A. I think the wind industry was being very responsible about requesting PURPA Contracts. The projects that have been approved, if there are no major transmission problems, should be good. However, now that Idaho Power has asked for a suspension, the credibility of the process has been destroyed and everyone with any chance is flying through the window. Clearly it is in everyone's interest to restore the credibility of the process and the projects. I believe this can be done without suspending access to PURPA Contracts by providing some guidance from the Commission.

I think three things need to be done to make demand for the contracts more manageable. First, the Commission should give some guidance regarding out-of-state projects. My understanding is that Idaho Power's position is that they do not charge wheeling to out-of-state projects that connect to their network. PURPA rights exist at the

point of interconnection. A project in Oregon does not have the right to sell its power in Idaho without making physical delivery here. Therefore, even if the Oregon connection is with Idaho Power, they don't need to wheel it for free. In fact, it may be against the FERC open transmission rules to do so. We are active in Oregon, so I can say that it is highly unlikely that a project could economically sell power under the Idaho Published Prices if it had to pay wheeling charges. By focusing on projects in Idaho, the Commission preserves the economic benefits for Idaho's farmers, ranchers and county governments.

Second, there needs to be an entry fee for PURPA Contracts. Like anything else that is free, it will be oversubscribed by projects that may have no chance of success. This is detrimental to both the wind industry and utility planning. The issue is to find some way of making this self administering so neither the Commission or Idaho Power are put in a position to have to evaluate a project's chances for success. I suggest that no PURPA Contracts be signed until the project makes its deposit for a Transmission System Impact Study. By this point the Transmission Feasibility Study is complete and the developer knows if it has an economic interconnection and path. For a good project, this is a necessary step anyway, so it is not an extra expense. For a questionable project, it may be enough to stop a frivolous request for a contract.

Third, as I pointed out earlier, large projects should be discouraged from bypassing the RFP route by extending the one mile limit to included common development. This will also help spread the PURPA contracts over a wider number of projects and sites.

Besides these recommendations, I would also like to suggest that the Commission indicate its support for paying 5% of the Posted Price to utilities in lieu of the 90/110 performance band. The band is really an inefficient mechanism that provides little valuable information. The 5% fee would be a better use of funds. The Commission would not need to modify it's previous order. Utilities are not required to follow a strict contract form and

may be encouraged to negotiate this alternative with the Commission's guidance. As I said, I believe this would be the preferred option for most developers.

Q. You've been ranting for an awfully long time. Does this finally conclude your remarks?

A. Yes it does.

Direct Testimony

Of

Glenn Ikemoto

Case No. IPC-E-05-22

Exhibit 1

Comparison of Judith Gap, Montana

And Idaho RFP Prices

COMPARISON OF JUDITH GAP AND IDAHO WIND ECONOMICS

		Montana		Idaho
Project		Judith Gap		RFP Type
Assumptions				
Year of Construction		2005		2006
Wind Classification		Class 6		Class 5
Class Avg Wind Speed at 50 m (mph)		18.80		17.35
Terrain		Rolling Plain		Ridge Top
Shear Factor (Note 1)		0.17		0.10
Hub Height (m)		80		80
Wind Speed at 80 m (mph)		20.36		18.18
Elevation (ft)		4,500		6,000
Wind Speed at Hub Height (mph) (speed at 50m * (80m/50m) ^ shear factor)		20.36		18.18
Base Price		**31.71**		**55.00**
Adjustment to 2005 $			-2.5%	(1.38)
Less Property Taxes			-6.5%	(3.60)
Comparable Price (2005 Levelized)		**31.71**		**50.03**
Energy Production Adjustments				
Lower Wind Speed in Idaho (at 80 m)			-12.0%	
Effect on Energy Estimate				
Convert Speed to Energy (Note 2)	1.60		-19.2%	
Higher Altitude in Idaho (Note 3)	2.0% per 1000 '		-3.0%	
Higher Array Losses in MT (Note 4)			5.0%	
Total Energy Difference			-17.2%	(8.59)
				41.44
Implicit Project Cost Difference			**-23.5%**	(9.73)
Adjusted Price		31.71		31.71

RESULTS

The entire difference in price between Judith Gap and an Idaho RFP project can be explained by a hypothetical 23.5% project cost increase between 2005 and 2006 (well within expectations), 17% more energy at Judith Gap, a property tax pass through and an adjustment to base year $.

Notes:
(1) Shear factors are typical values for ridge top and open plain sites
(2) The ratio of the change in energy production due to a change in wind speed is site specific. The assumption of 1.6 is based on side-by-side case scenarios
(3) Losses due to air density = 3% per thousand feet with rated power (no loss) 1/3 of time; net loss = 2% per thousand fe
(4) Educated guess - assumes 5% loss per row for three rows; row performance 100%, 95%, 90%; average = 95%.

CERTIFICATE OF SERVICE

I hereby certify that on the 15 day of July, 2005, true and correct copies of the PETITION TO INTERVENE OF ENERGY VISION LLC and the DIRECT TESTIMONY OF GLENN IKEMOTO were delivered to the persons on the attached Service List via the method of service noted.

By _____
Glenn Ikemoto
Principal
EnVision Systems, LLC

SERVICE LIST

PETITION TO INTERVENE and the DIRECT TESTIMONY OF GLENN IKEMOTO

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