New Electricity: Generation, Pricing, Wheeling & Regulation

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In response to your questions, Michael:¹ in California, when you have a shortage of power and the summer is hot and dry, that alone doubles your load. The dam reservoirs were low, so the hydroelectricity all but disappears. On top of that, California only deregulated the wholesale cost but not the purchase price, and that was going to screw things up. The best analogy that I have heard in regards to California, wherein the government deregulates one end of the price equation and not the other, is that it is as if they had, in fact, finally changed the driving patterns of England by changing over from left-side to right-side driving for the trucks on the first of January, and then changed it for cars on February 1.

KeySpan has an interesting story; this is not, however, a sales pitch. Our origins were of a traditional electric utility and a traditional gas utility that later merged. Now, KeySpan is, in fact, the largest investor-owned generator of electricity in New York State and we are among top five distributors of natural gas. We also are the largest gas processors in Canada and we have many of our own oilrigs in the Gulf of Mexico. Do not ask me why, but we are also the gas company of Northern Ireland, and we call that our “focused strategy.” Even in this very uncertain market, we have got a total of six projects being built in New York right now —two significantly-sized combined-cycle power plants and four small peaking plants. We are also trying to build a pipeline.

CASE STUDY: NEW YORK CITY AND ENVIRONS

New York City is almost out of power. Two days ago, we came within 300 megawatts of a brownout.

The reality is that the entire New York region is very short on power. We are in a unique situation wherein we operate the power system on Long Island for the state. Although it is technically “public power” due to its state

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ownership, all the people wandering around wearing Long Island Power Authority hats actually work for KeySpan. We own all the generation that we sell to the Long Island Power Authority, plus we have our own merchant plants. In fact, we generate about 30 percent of New York City’s power.

Last August – the week of August 6, 2001 – when temperatures went to 100 degrees Fahrenheit, the entire Northeast seaboard, from Washington, D.C. right through upper New England, was on voltage reduction. During a voltage reduction, we lower everyone’s voltage by about five volts. Substantial damage occurs as a result – it screws up many electric engines – but it is the last step we can take before we institute rolling blackouts. That is the state of the market right now.

Recent tragic events in New York have, of course, changed everyone’s perspective. We are a Brooklyn firm, located right on the end of the Brooklyn Bridge, right across the East River from Ground Zero. It is very much a part of our agenda. I can say that all I did up until Christmas was to deal with issues concerning the disaster. Shortly after that, The New York Times ran a story claiming that because of the collapse of the World Trade Center, the power crisis in New York was no more. We had a hard time getting that story corrected. In fact, the actual numbers say that the World Trade Center itself had a regular load of 90 megawatts, but due to the relocations that were taken largely within New York City, the total loss now appears to be about 200 MW in a 10,000-MW market.

We also have a power-plant aging issue. It is very difficult to build a major project in New York. For example, our North Fork Power Station on Long Island, with its most recent addition in 1971, is the newest power plant on Long Island. This is the same situation that we have in the City; by next year, several 3,000-MW plants in New York City will be over 50 years old. We also have what are called simple-cycle plants that run on natural gas, but they only have a heat efficiency of about 32 percent.

Part of what is driving the shortage is that the U.S. economy is very strong. The average income on Long Island is US$77,000 per year in one county and $82,000 per year on the other. When the Long Island Power


3 See DER WEEKLY, Nov. 2, 2001, at 1, available at http://www.eren.doe.gov/der/ pdfs/summaries/nov2der.pdf (claiming that the total load loss as a result of the September 11 terrorist attacks was around 200 MW).

Authority was created three years ago and we merged, the electricity rates were brought down 20 percent because a bond issue absorbed a $5 billion debt that had been created trying to build a nuclear power plant in New York. In the summer of 1999, 475,000 air conditions units were sold on Long Island alone, and close to that number were sold last year as well. With power prices as low as they are, people are cooling their garages and making their pets more comfortable. The demand for energy has gone up dramatically, but you can imagine the challenge of siting a major power plant in New York City and the costs involved. We are now building a power plant in the heart of New York City, right on the water’s edge; the cost for its construction is about $1,200 U.S. per kilowatt, so to build the 250-MW plant, we are spending about $300 million.

Right now, we have a 2,100-MW plant. You could stand on the edge of that plant, looking across the water, and yell at someone living on Roosevelt Island. You can see them looking out of their window; you can almost make out what they are saying. That is what New York is like; it is a compressed environment. To build the 250-MW plant next door, we cleared the three-acre parking lot. Since we are not going to use flow-through plumbing, we have to lift giant, 76,000-ton, radiators onto the roof of the existing plant to be able to add this power. Those, of course, are the challenges.

When we talk about deregulation, you are going to say, if you can build that plant for $400 a kilowatt in Maine, why would you build for $1,200 a kilowatt in New York? Ever since the blackout of the 1960s, there has been a rule that 80 percent of New York City power must be generated within the City of New York,\(^5\) so that, of course, is part of what is driving this. We have only 5,000 MW of transmission leading “foreign” power into New York City.

Then, of course, is the issue of timing. There is a very effective regulatory process in New York City, which allows us, under Article X,\(^6\) to get power built. Unfortunately, out of about 15 proposed projects and seven in the pipeline, all but three are on hold. For example, Reliant had a wonderful project in Queens – a complete natural gas re-powering – that the environmentalists loved. Now, post-Enron, they had to cancel that project. You would think that the idea of buying an old plant, tearing out the guts of it and installing combined-cycle generation, which we ourselves are hoping to do on Long Island, would be a great sell. In this financial environment, however, Reliant simply could not line up enough financing to do it.

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\(^6\) N.Y. PUB. SERV. LAW §§ 160-172 (McKinney 1999) (siting of major electric generating facilities).
I have to be careful as a closet Canadian living and working in the United States. As many of you may know, while Christine Todd Whitman was flying back from Europe saying, of course, we are going to support Kyoto, Dick Cheney went to Toronto and made that famous speech that said that individual efforts are laudable in their own right, but they do not amount to very much.

I had a visit from Channel 2, one of the national stations in France, several days after that sequence of events. We took the reporters to the North Port Power Station, one of our largest power plants, and they shot film for two days. They insisted on interviewing me, so we did it out on Long Island. It was one of those bizarre situations: they hung a picture of New York City behind me, and we talked for an hour and a half, discussing the whole situation, and then, suddenly, the lights came on, the cameras came on, the microphone went in my face: “So, Mr. Bush gave you a wonderful gift?” So there I was, a Canadian who went to the Kyoto Conference for Canada, sitting there, defending George Bush and his stance not to support Kyoto on French national TV. That was the interview.

THE REGULATORY AND FINANCIAL ENVIRONMENT

As I said, the United States' energy supply problems are mainly in areas such as California and the Northeast, which are very short of power. The real question now will be whether the U.S. can create the regulatory and financial environment to get these problems solved.

Enron tried convincing the world that it had “virtual assets” in the form of contracts, commitments, and obligations. Wall Street has now rejected this notion; we prefer hard assets, thank you very much. So if you are in the merchant power business as we are, and you actually build plants that will sell power in the marketplace, you want to pretend that the same chill that investors had toward Enron will not happen to you as well.

So then, of course, we have what is contributing to the regulatory risk. I would suggest that regulatory uncertainty, more than financial uncertainty, is the reason why more power plants are not being built. The power companies are not going to build if they cannot predict the regulatory market with any degree of certainty.

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8 U.S. Vice President Richard Cheney, Remarks at the Annual Meeting of the Associated Press (Apr. 30, 2001), available at http://www.whitehouse.gov/vicepresident/news-speeches/speeches/vp20010430.html (“Now, conservation is an important part of the total effort. But to speak exclusively of conservation is to duck the tough issues. Conservation may be a sign of personal virtue, but it is not a sufficient basis all by itself for sound, comprehensive energy policy.”).
State Governments Becoming Market Players

Last year, to avert a power crisis, New York parachuted in ten small generating units – General Electric LM6000s. Putting out 44 MW apiece, they are the cleanest, most current turbine technology available. Article X, the law that governs electricity generation in New York, exempts power plants up to 80 MW from having to go through a more intensive environmental review. What happened is that the state put two of those generators together, promised not to run them at more than 79.9 MW, and thus avoided two years of environmental review, and then dropped the generators into socially challenged areas. This is exactly what is happening this summer on Long Island, wherein LIPA is developing ten such generators on the island. Crisis averted.

But imagine: you are building a $300 million, combined cycle plant, in the middle of New York City. You have your capacity market, all of your projections on the energy cost and what you are going to get in terms of profits all figured out. Suddenly, the State of New York – the same entity that regulates you and provides all that oversight – comes in and drops these units in right behind you, changing the marketplace. The state then runs them “out of merit.” New York may well be the focus of the U.S. energy scene, because, depending on the summer temperature in New York City, there could easily be blackouts in the City, or close to it.

While David is going through the deregulation model in Ontario, trying to figure out how to get Canadian power down to New York, we in the U.S. are trying to figure out how and when we will get enough transmission capacity. The debacles in California and with Enron will have a profound impact on this issue. As many of you know, the Federal Energy Regulatory Commission’s (FERC) Order 888 gave other electricity generating companies access to the transmission system. FERC Order 2000 created the concept of a regional transmission organization. There is a big fight going on right now to decide whether there will be state or regional control.

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9 N.Y. PUB. SERV. LAW § 160(2) (McKinney 1999) (A “major electric generating facility” that activates the intensive review process is an “electric generating facility with a generating capacity of eighty thousand kilowatts or more.”).


11 Id. at 3. (“In this rule, the Commission seeks to remedy both existing and future undue discrimination in the industry and realize the significant customer benefits that will come with open access.”).

of the electricity grid, whether the regional unit will be more efficient, and whether those regional transmission organizations will extend into Canada.

I had a meeting for an entire morning with one of the FERC commissioners last week, and I raised this question, because she had come to Boston, so we were briefing her on the city. Bostonians are the largest users of liquefied natural gas (LNG) in the United States, as a full 50 percent of the heat load in Boston on a cold winter day comes from LNG, which, as you know, became a local security issue after September 11th. You can imagine why we need to get more pipeline capacity down from Canada.

The Cross-Sound Cable and States' Rights to Veto Projects

In any event, the debate now raging is whether Connecticut can prevent New York from getting new power. I think the focus on the Cross-Sound Cable (CSC) is an important one because the Connecticut Legislature has stopped the CSC because it would be taking power from Connecticut to New York City. Connecticut, for one, does not like New York City, even though most of Connecticut works in New York City. Two, there is a real shortage of power in Connecticut. So the official reason (which, of course, involves Robert Kennedy, Jr., because some of Kennedy cousins live on the coast) said that it was all about oyster beds, but the real issue is that Connecticut itself is constrained in its transmission capacity and in its power supply. The people of Connecticut have said, “Wait a minute –this does not make any sense. We have managed to successfully oppose new plants in Connecticut. We successfully opposed the Millennium Pipeline bringing new gas to Connecticut to power the power plants, so, therefore, if we give the power away to New York, our prices are going to go up.” An almost-unanimous Connecticut Legislature voted to place a one-year moratorium on the project. The Governor, fearing the lawsuits that may result, has vetoed it.

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14 Al Lara, Power Grid to Reward Conservation, HARTFORD COURANT, Mar. 16, 2002, at E1, available at 2002 WL 4797370 (states that southwestern Connecticut has a shortage of transmission lines, and power shortages may be imminent).
FERC and Proposed RTO Governance

FERC’s governance model, the Regional Transmission Authority (RTO), is believed to be able to bring the price of electricity down. A company called ICF Consulting created about 80 different regional governance scenarios and came to the conclusion that opening up the entire U.S. electrical transmission system will save about $10 billion a year.

The RTOs, however, are currently doing battle with New York. A FERC commissioner told me outright that it is an employment issue. The New York independent system does not want to go away because they will lose jobs; to some extent that is true. But the other issue is that New York keeps saying that they cannot rely on transmission, because if you have a major transmission failure, New York goes down, and people like KeySpan are not going to spend $1,200/kWh in New York City. If the City would simply open the grid up to outsiders, that would allow old coal plants of the Ohio Valley to sell very inexpensive power into New York—and that, of course, becomes the issue.

Figure 1. RTO Cost-Benefit Study Scenarios

See Figure 1. If you fix transmission nationwide to a system where everybody gets on, everybody gets off, and you drive some development of merchant transmission, then you get to the middle line; you are saving almost $8 billion a year. If you have the situation where people know what their power is costing (real-time metering) —and people know if they turn their air
conditioners on at five in the afternoon, it will cost three times as much as at seven or eight o’clock in the evening – then that gets you all the way to the top.

The economic reality is driving the politics of this issue. There, of course, is the question mark. I asked the FERC commissioner, surely you are going to include Ontario and Quebec in any kind of RTO in the northeast, right? The commissioner said she thought so, but I was surprised that there was not a stronger statement on it. What is the western region going to look like? Those from Alberta know that there has been a tremendous bottleneck that has been provoked by the Bonneville Power Commission. Power coming out of Alberta must get by Bonneville and through British Columbia, and there is no love between British Columbia and Alberta in the power business. In Alberta, there is relatively low-sulfur coal. You build a power plant right on top of the coal bed. The plant stays put, but the digger just moves around the plant and it is relatively inexpensive. Needless to say, this is somewhat threatening to some of the power generators further south, which are using Wyoming coal. That leaves aside the northeast issue for the moment.

There is also the issue of open-access tariffs and trying to develop improved service. The key challenge is balancing the need for standardization with the need to allow for regional differences. However, when you have substantial regional differences (e.g., the cost of building plants in New York City), it can become very politicized with various states. So, the objective is to establish a common market framework where you can mitigate market power and reduce some of the transmission issues.

“WILD-CARD” ISSUES

Let us talk about the “wild-card” issues that we will be seeing come into play in the next twelve months.

Reluctance to Build New Plants

There has been a real wake-up call for those who are going to spend the money to build new plants. The stock prices for the “big players” are falling: Mirant, one of the aggressive companies in building new plants, has seen its stock fall from a high of $47 to a low of $7; its stock is now selling at about $13 per share. So how many plants do you think Mirant is going to build next week? Reliant’s stock price has fallen to $24, from a high of fifty dollars per share.

Nuclear Power: Costs and Risks

A while back, a nuclear power plant was built on Long Island; its sister plant cost $500 million. The cost of the Shoreham plant was $5 billion, and
it ran for one day. They had to turn it on to get into the rate base, and from then on, Long Island enjoyed the highest power rates in American until LIPA was created three years ago to share that debt across the state with a bond issue.

The most recent issue to come to the spotlight is that Indian Point, which provides 2000 MW to the 10,000-MW load of New York City, has corrosion problems. The plant, which is only ten miles from New York City, placed dead last on the Nuclear Regulatory Commission’s plant performance list, and a little known senator by the name of Clinton has recently supported the establishment of a 50-mile-radius evacuation plan for Indian Point. There is just one major problem: New York City is an island. Imagine trying to move 8 million people out of New York City, most of whom would need to head toward the plant on bridges. This plan, of course, would spell the end of power generation at the Indian Point plant.

There is one other problem: Indian Point has almost filled all of its waste containment areas, and there is no other place for that waste to go. The concern is not the containment vessel or the leaks that have taken place there, but on all the nuclear waste sitting in pools of water under tin sheds adjacent to the plant. This is a grave security issue, especially when you have 25 million people who live within a few days’ walk from the plant.

ANWR and Natural Gas Pipeline Routes

I want to touch briefly on ANWR. It has become a very important issue, and it will continue to be an intriguing one because of the gifting that has been going on to try to get ANWR done, including complete financial support for the employees of bankrupt American steel manufacturers, is fascinating to watch. However, the head of the steelworkers’ union said that they are not selling out for ANWR, not at any cost.

I saw a recent presentation where the economics of the dominant Alaskan route is based on 44-inch steel pipe. Unfortunately, you cannot make 44-inch steel pipe in America with enough wall thickness; such a pipe can only


be manufactured outside the United States. Even still, one of the most recent promises is that pipe is going to be built with U.S. steel, which is fine; only the price of the line just went up. At this point, they would have to build two 24-inch lines side by side to get that done, so the shouting is not over yet on the line. Speaking as a large distributor of natural gas, we would like this to get done. Speaking as a closet Canadian, if you can build the line into the Delta for $3 billion—the American-proposed route is $13 billion—and you can get the line completed within three years on that route, and if Stephen Kakfwi, the premiere of the Northwest Territories, likes the idea, I think we may be able to go forward with that plan.

Figure 2. Proposed Routes for the Natural Gas Pipeline

What is intriguing is that the dominant producer on the Alaskan side, Exxon, is the owner of Imperial, the dominant player on the Canadian side. So, if you really want to know what is going on, maybe you should go to Irving, Texas.

I look forward to our dialog. Thank you very much.

\[21\] Id.
APPENDIX: VISUAL PRESENTATION

Canada/United States Law Institute Conference:

"New Electricity: Generation, Pricing, Wheeling and Regulation"

April 20, 2002

David J Manning, KeySpan, Brooklyn NY
Senior Vice President, Corporate Affairs

Section One:

New York City Case Study
In 2001,

Three events occurred.
- Over 400 MW of new generating capacity was added for the summer.
- During the week of August 6-10, New York experienced 90°F temperatures with high humidity. On August 9, New York City reached 103°F. The resulting surge in electricity demand exceeded the peak load forecast by 115 MW. Consumption soared to a record-breaking level of 10,650 MW.
- The previous summer's near tragedy was dwarfed by one more permanent and devastating on September 11, 2001.

Forecast Increased Demand for Electricity

First, Renewed Growth in Demand
- By the summer of 2003, the New York Building Congress predicts that peak load demand will reach 10,900 MW and rise to a level of almost 11,400 MW by 2006.
- To meet this increase and to meet the in-city installed capacity requirement of 80%, NYC needs 600 MW of new generation.
- This level of growth would be slightly below the average gain of 170 MW per year experienced between 1995-2000 when the city saw strong economic and high population growth.
Second, Need to Replace Aging Power Plants

- To meet 2001 demand, older units had to be restored. As a result, over 700 MW of generation will be over 45 years old in 2002.
- Newer, more efficient generation needs to be constructed. If not, the amount of generation that is over 45 years old will double in two years and continue to grow to about 1800 MW by 2006.
- To update less efficient and clean generators, between 700-1800 MW of new generation is needed during the next five years. Any cleaner technology will also bring significant environmental benefits.

Third, Need to Assure Market Stability

- To meet growing demand and replace aging plants, the Building Congress of New York City recommends at least 800-1000 MW of additional capacity be established.
- The New York ISO suggests that New York City needs 2,000-3000 MW.
- At levels near capacity, wide price swings in the newly deregulated power market could prove dangerous.
- To ensure market stability, more capacity needs to be assured.
Impediments to Resolving this Supply Deficit

- Electricity market uncertainty related to NYISO operational practices and cost controls; NYISO’s balancing (“spot”) markets are not seen as fair, efficient, and transparent, creating substantial risk to investors.
- Over the past year, the New York State Siting Board under the Article X permit process approved three new City-based generating projects.
- However, no new supply is scheduled to come on line during 2002, nor are any generating facilities presently under construction in New York City.
- Importing of power is constrained; transmission capacity into the City is limited to approx. 5,000 MW.

Status Report on Approved and Scheduled Projects

- Ravenswood won’t be operational until 2004. The East River Repowering Project has also been delayed until 2004. Their combined total of 538 MW was originally scheduled to open during the summer of 2003.
- Another project, the proposed Poletti Plant, would provide 500 MW of power. Plans are expected by the end of this month, but construction will not be complete until midsummer 2004, at the earliest.
- In addition to these projects, thirteen other generating facilities have been Proposed and are in varying stages of the approval process. Combined, they have the potential for adding approximately 7,500 MW of capacity for the New York City area.
- Several have target dates of 2003 or 2004, but in reality, unless early approval is received and the market for the proposed plants is favorable again, few of these projects can be expected to be in service prior to the summer of 2005, or even 2006.
New Supply not Guaranteed, Despite Proven Need

- There are good reasons to believe that not all projects which are approved will be built, exacerbating concerns over the City’s required needs by 2006.
- Delays abound since the failure of the Enron Corporation and the decreasing willingness of the financial community to underwrite proposed projects. This national trend has begun affecting proposed New York City projects, including those successfully through the approval process.
- Reliant Resources (formerly Orion Power) Astoria Generating Facility stated that the collapse of Enron has made it difficult for energy companies such as Reliant to secure financing, delaying the project’s completion until as late as 2007. However, Reliant stated it is still committed to the repowering project.

Temporary Impact on Projected Electricity Demand

- The September 11, 2001 destroyed 13.4 million square feet at the World Trade Center, 4% of Manhattan’s total office space, and severely damaged another 15 million square feet of office space adjacent to the WTC complex.
- In the aftermath, about 75 of the WTC area businesses have relocated within the City.
- The net loss of demand at this time is about 20 MW.
- These reduced demands are temporary, and rebuilding around the city has been expedited. Peak load demand in 2002 is expected to be 10,665 MW, similar to the level reached during the summer heat wave of 2001. Another heat wave this summer could drive 2002 peak load higher than now expected.
Projected Electricity Needs for the Next Five Years

• To meet demand, to replace aging power plants, improve the environment and to maintain market stability, New York City still faces a critical need for the 2,000-3,000 MW of new electric capacity by 2006.

• Conservation efforts and consumer demand reduction programs will help ease peak load demand, but construction of new facilities is still necessary to provide sufficient reliable power.

Section Two:
The Regulatory & Financial Environments
Post-Enron Issues

- Capital Markets have "Caught A Chill" toward generation.
- Low Tolerance for Regulatory Uncertainty
- Hard Assets versus Ongoing Contracts
- Additional conservation, transmission and use of clean distributed technologies will help.
- New generating facilities are needed to meet power demand, preserve the environment and ensure stable electricity prices.

Challenges to Investment: Market Regulatory Risk

- Spot market transactions in pooled markets
  - Scheduling incongruities between jurisdictions
  - Price "Administration"
  - "Uplift" payments
  - Pre-emptive emergency actions by ISOs
  - Over-commitment of generation to compensate for lack of spinning reserves
  - Operator discretion
  - Operator error
  - Poor systems and software
- Lack of liquidity and maturation of forward markets
- "Political" risks
  - inward-looking ISOs
  - incongruent environmental rules
U.S. Drive for Market Standardization

- North American markets undergoing fundamental change
- FERC Order 2000 Vision: Regional Transmission Organizations (RTO)
  - Procedural Responses in 2001
  - Political/Territorial Responses in 2001/2002
  - FERC Decisions Forthcoming?
- Supreme Court Ruling on FERC Order 888
- Notice of Proposed Rule Making (NOPR)
  - Standardized Transmission Service
  - Standard Market Design (SMD)

What is a Regional Transmission Organization (RTO)?

- Something like the tight power pools and ISOs structures of the U.S. Northeast (most specifically, PJM)
- Governance over current loosely aligned control areas, NERC Regions, Transco’s (MISO/Alliance)
- A corporate organization independent of market participants that:
  - Controls the bulk power facilities within its geographic domain
  - Conducts transmission planning functions
  - Maintains short-term reliability
  - Administers the spot energy, capacity, and ancillary service markets
3. Benefits of RTOs

- No pancaking of rates across the system ($$ savings)
- Pooled reserves ... optimal capital investment & increased reliability
- Maintenance coordination
- Increased competitiveness of markets
- Creates certainty and liquidity
  - critical for investment in physical assets
  - critical for vibrant wholesale and retail marketplaces
- Optimization of assets, marketing, and trading over larger areas
  - positive: removes arbitrary, inter-ISO trading and investment barriers
  - negative: removes inter-ISO/inter-region arbitrage opportunities
- Larger, more regional RTOs are less susceptible to political influence than smaller regions or single-state/province ISOs

RTO Cost-Benefit Study Scenarios

- Transmission Only
- RTO Policy
- Demand Response

Savings, Million/Yr ($2,000)


Source: "Economic Assessment of RTO Policy" Prepared for PJM by ICF Consulting February 2002
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Standardized Transmission Service and Wholesale Market Design

• NOPR with reformed Open Access Transmission Tariff Summer 2002
• FERC intends to reform U.S. public utilities' open access tariffs to reflect standardized market design
  - provide more choices & improved services
  - reduce delivered prices through lower transaction costs and wider trade opportunities
  - improve reliability through better grid operations and expedited infrastructure improvements
  - increase certainty about market rules and cost recovery
• Key challenge: balance need for standardization (for a seamless grid with streamlined operations and costs) with need to permit regional differences and market innovation
FERC’s Standard Market Design Principles

- Objective: establish common market framework
  - promotes economic efficiency, lowers delivered energy costs
  - maintains power system reliability
  - mitigates significant market power
  - increases choices offered to wholesale market participants
- Standardization reduces transaction costs and seams issues
  - deviations must be consistent with or superior to SMD
  - deviations/changes must be compatible with neighboring systems
- Market rules must be fair, well defined and understandable

Options for buyers and sellers should include
- self-supply
- long-term & short-term energy and transmission acquisitions
- financial hedging opportunities
- supply or demand options
- Market rules must be technology and fuel-neutral
- Price signals should reflect time and locational value of electricity
- Transmission planning and expansion processes still needed
- Demand response essential
- Transmission Owners can recover embedded and new costs ... and merchant transmission would be enabled
FERC's Standard Market Design Elements

- Location Based Pricing
- Day-Ahead Energy Market
- Bid Screens and Mitigation
- Available Capacity Obligation (ACAP)
- Damage Control Bid Cap
- Ancillary Services
- Demand Participation
- Implementation

Section Three:

Wild Card Issues
Post-Enron Issues

Impact on Major Players
- Calpine (CPN), at $11.75 Tues 4/9/02, 52-week range: $6.15-58.04
- AEP, at $47.38 Tues 4/9/02, 52-week range: $39.70-51.20
- Mirant (MIR), at $13.08 Tues 4/9/02, 52-week range: $7.50-47.20
- Reliant Resources (REI), at $24.60 Tues 4/9/02, 52-week range: $20.25-50.45
- Dynegy (DYN), at $28.67 Tues 4/9/02, 52-week range: $20-59.00
- Williams Company (WMB), at $21.90 Tues 4/9/02, 52-week range: $14.05-44.35

Nuclear Power Issues

- Contaminated Waste
- Corrosion
- Post-September 11 Security Concerns

"Transporting 70,000 tons of the most dangerous substance known to man is hard to do," says Nevada Senator Reid.
Domestic Fuel Issues
Alaskan Natural Gas Pipeline Route Options

Domestic Fuel Issues
Alaskan National Wildlife Refuge
Clean Coal Technology

New Coal is crucial in the National Energy Agenda

Kyoto Protocol, 1997

- Signed by all industrialized nations except the US. Ratifications are expected by early 2003.
- GNP growth is expected due to their head start in developing new technologies to cut emissions, creating a comparative advantage.
- EU nations' benefits from reduced acid rain and air pollution will cover .06% of GDP.
- Japan can expect 0.9% GDP rise, or US$47.3 billion, plus spillover effects.
The Kyoto Protocol

- President Bush refused to sign the Kyoto Protocol.
- "Fatally flawed" plan
- Environmental harms from emissions cannot be proven
  - CO2 is not a pollutant
  - Not caused by human activity, but a natural occurrence
- Domestic employment impacts ("thousands of jobs").
- Administration said US GNP would be reduced between 1.6% to 3% each year between 2005 and 2010, averaging $9,425 billion annually.
- Bush asked the oil and coal industries to adhere to voluntary restrictions.

Conclusions

- The need for regulatory certainty
- Certainty of supply, predictability of demand
- Efficient Markets
- Clarity on environmental issues