

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Petition for Determination) DOCKET NO. 991462-EU
of Need for an Electrical Power)
Plant in Okeechobee County) FILED: MARCH 3, 2000
by Okeechobee Generating)
Company, L.L.C.)
_____)

ORIGINAL

REBUTTAL TESTIMONY

OF

DALE M. NESBITT, Ph.D.

ON BEHALF OF

OKEECHOBEE GENERATING COMPANY, L.L.C.

VOLUME I

REBUTTAL TO JOHN H. LANDON

AFA _____
APP _____
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CMU _____
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EAG Hoff
LEG _____
MAS Starg
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DOCUMENT NUMBER-DATE

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FPSC-RECORDS/REPORTING

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

**IN RE: PETITION FOR DETERMINATION OF NEED FOR
THE OKEECHOBEE POWER PROJECT,
FPSC DOCKET NO. 991462-EU**

REBUTTAL TESTIMONY OF DALE M. NESBITT, Ph.D.

1 **Q: Please state your name and business address.**

2 **A: My name is Dale M. Nesbitt, and my business address is 27121**
3 **Adonna Court, Los Altos Hills, California 94022.**

4 **Q: Are you the same Dale M. Nesbitt who has previously filed**
5 **direct testimony in this docket?**

6 **A: Yes, I am.**

7 **Q: What is the purpose of your rebuttal testimony?**

8 **A: The purpose of this rebuttal testimony is to rebut and refute**
9 **various erroneous assertions made by FPL's witness John H.**
10 **Landon.**

11 **Q: Have you evaluated what Dr. Landon terms "the relative impact**
12 **on utility customers of the OGC Project and reasonable**
13 **alternatives" on page 5 of his testimony?**

14 **A: Yes. The Altos model explicitly and systematically compares**
15 **every alternative against every other alternative**
16 **individually and collectively and compares every alternative**

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1 against every existing plant or other alternative as they
2 affect the wholesale market in the FRCC. (I address the
3 concept of "utility customers" as advocated by Dr. Landon
4 elsewhere in this rebuttal testimony.) The Altos model
5 contains every existing power plant in Florida and
6 prospective new entry in Florida that might be assumed in a
7 given scenario. The model then simulates competition among
8 all existing and prospective plants that comprise that
9 scenario. The Altos model pits every plant, existing or
10 prospective, against every other plant. It therefore
11 systematically and explicitly compares every plant, existing
12 or prospective, against every other plant.

13 Dr. Landon has apparently forgotten that the supply
14 stack or supply curve in competitive microeconomics pits
15 every plant against every other plant explicitly and
16 systematically. He has apparently forgotten the answer that
17 emerges from such competition as well. The result of such
18 pitting of every plant against every other plant is that the
19 marginal plant sets the market price to which each and every
20 plant is then exposed. This cost of the marginal plant is in
21 effect a "limbo bar" under which every plant must pass if it
22 is to be competitive and operational. Plants that cannot
23 pass under the "limbo bar" are then out of the game and do
24 not enter the market. The "limbo bar" is a very apt analogy

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1 -- plants that get under it in a cost sense win and plants
2 that cannot get under it in a cost sense lose out. The very
3 existence of marginal cost pricing systematically and
4 carefully does precisely what Dr. Landon says needs to be
5 done—it considers each and every alternative in the market
6 and competes each and every alternative against each and
7 every other alternative.

8 **Q:** On page 5, lines 18-19 of his testimony, Dr. Landon asserts
9 that the Commission should use " . . . criteria that the
10 Commission previously has relied upon in determination of
11 need proceedings . . . " What is your view on this?

12 **A:** I believe that the Commission should use the same criteria it
13 used on the most recent and most precedential determination
14 of need--the Duke New Smyrna Beach proceeding.

15 **Q:** Has any evidence been put forth pursuant to lines 20-21 on
16 page 5 of Dr. Landon's testimony "that alternative projects
17 may be more cost effective than the OGC Project"?

18 **A:** No. In fact, as I stated in my direct testimony and restate
19 here, the OGC plant as a merchant plant will be
20 systematically lower in cost than any utility-owned plant
21 because OGC does not enjoy any cost pass-through and

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1 therefore has absolutely no incentive for anything but low
2 cost and maximum availability to operate. I discussed in my
3 direct testimony my view that utility owned plants are
4 systematically higher in cost because of the pernicious
5 incentives they face (incentives that were identified by
6 economists Averch and Johnson). Dr. Landon's statement is
7 without any substantiation whatsoever and in my view is
8 wrong.

9 **Q: Please comment on Dr. Landon's point 3 in lines 1-4 on page**
10 **6 of his testimony: "OGC has improperly calculated the**
11 **purported benefits of the Project by applying its wholesale**
12 **price suppression effect to Florida's regulated retail load.**
13 **This results in gross overstatement of Project benefits even**
14 **if the price suppression were properly calculated."**

15 **A: I patently disagree with this assertion. First, the Altos**
16 **analysis considers only wholesale markets. There is no**
17 **explicit consideration of retail markets. We have inferred**
18 **total wholesale market demand from total projected customer**
19 **demand so as to quantify the size of the wholesale market,**
20 **but we have systematically not addressed retail issues in our**
21 **analysis or testimony by design.**

22 Second, the idea that wholesale markets are equivalent

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1 to, or the same as, uncontracted demand or energy is
2 misleading and misstates the impact of wholesale markets on
3 customers. The idea that the regulatory fabric in FRCC will
4 completely separate and Balkanize uncontracted energy and
5 capacity markets from contracted energy and capacity markets
6 is utterly at odds with experience in other states and other
7 commodities. I know of no regulatory framework in place
8 anywhere that is not specifically designed to pass through
9 commodity cost reductions in upstream markets to downstream
10 customers. The very idea that downstream customers do not
11 benefit from fuel cost pass-through or purchased power cost
12 pass-through is incorrect. On the contrary, Professor Kahn
13 assuredly understands that variable cost are invariably
14 passed through directly to ratepayers and therefore that
15 variable cost savings are generally, if not invariably,
16 passed through directly to ratepayers. To reiterate, I know
17 of no regulatory framework that does not pass reduced
18 commodity acquisition costs (e.g., gas costs, electric power
19 costs, water costs) directly through to customers. Quite the
20 contrary, regulation is ubiquitously geared toward ensuring
21 that granted monopolies purchase the cheapest commodity they
22 can and flow the benefits of that cheapest commodity directly
23 through to ratepayers. I will amplify on this point later in
24 my testimony, pointing out that the more transparent and

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1 obvious the wholesale commodity prices are, the easier it is
2 for the regulator and the regulated utilities to identify and
3 take advantage of it.

4 Apparently Dr. Landon would have us believe that utility
5 customers should be permanently and completely Balkanized and
6 separated from wholesale markets so that they cannot benefit
7 from those markets at all. Would Dr. Landon have us believe
8 that there should be two tiers of customers in Florida, one
9 tier that is constrained to be a captive, unequivocal,
10 uncontestable utility customer and buy only from the utility
11 and be intrinsically denied whatever benefits might be
12 available from a competitive wholesale market? Would he have
13 us believe that utility customers are and should be denied
14 wholesale market benefits no matter how much difference in
15 price or cost might exist between the utilities to which they
16 are captive and the wholesale markets? Are the utilities
17 decisions never to be "marked to market" in the wholesale
18 markets that exist in the state? That is what Dr. Landon's
19 testimony implies to me, and I disagree with it. The
20 economic problem is that if commodities are not "marked to
21 market," then the participants in the given market are
22 leaving economic, efficiency-enhancing transactions "on the
23 table." The assertion that captive utility customers will be
24 forced to accept higher-than-market prices for upstream

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1 commodities in transparent markets is simply wrong and
2 unrealistic.

3 The political and economic heat that arises from the
4 availability of visible, transparent, lower cost commodity
5 motivates regulatory bodies to move quickly and decisively
6 toward the low price commodity source and to aid and abet the
7 local utilities in their quest to do so. Furthermore, it is
8 very easy indeed for a regulatory body to force least cost
9 commodity purchase, simply by disallowing recovery of excess
10 costs from captive customers. I am confident that the review
11 and oversight mechanisms are already in place to do so, and
12 I am confident that the Florida Commission, just as all other
13 utility regulatory commissions do, can easily enforce low
14 cost purchase.

15 Q: Dr. Landon asserts in lines 5-7 on page 6 of his testimony
16 that "OGC has failed to establish the relative cost-
17 effectiveness to utility customers of the Project because it
18 has not properly compared the Project with reasonable
19 alternatives." What is your opinion of that assertion?

20 A: Dr. Landon is incorrect. In the first place, Dr. Landon is
21 suggesting the wrong analysis. Indeed, Dr. Landon's
22 suggestion is a "straw man" created for ease of achieving Dr.

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1 Landon's desired result. He has set up a biased problem that
2 suits his purposes but which is not applicable here. The
3 reason that this "comparative analysis" suggestion is not
4 applicable here is that it presumes that the Okeechobee
5 Generating Project ("Okeechobee Project" or "Project") is
6 mutually exclusive to another plant that might be built by
7 FPL or another Florida retail utility. It assumes that
8 somehow there is a "zero sum game" going on in the FRCC in
9 which if the Okeechobee Project gets built then some other
10 plant does not get built. The Okeechobee Project is not
11 mutually exclusive to other projects because those projects
12 have the opportunity to prove that they should receive a
13 determination of need based on the statutory criteria. Since
14 no Florida utility has any obligation to buy from the
15 Okeechobee Project, it will presumably do so only when such
16 a purchase is cost-effective.

17 Interestingly, the only time that the Project could
18 become mutually exclusive to another project would be when
19 the utility contemplating the other project signed a firm
20 capacity and energy contract with OGC for power from the
21 Project. However, this would only occur (assuming rational
22 behavior by the purchasing utility) when such a capacity and
23 energy purchase was cost-effective vs. the utility's
24 potential project. This demonstrates the inapplicability of

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1 the comparative approach suggested by Dr. Landon.
2 Accordingly, the correct "comparative analysis" is the one
3 that we have performed, i.e., a comparison of Peninsular
4 Florida with the Project to Peninsular Florida without the
5 Project.

6 Moreover, Dr. Landons's assertion is wrong for reasons
7 I have stated earlier. The Altos model competes every plant
8 against every other plant. Furthermore, because the OGC
9 plant is a merchant plant, its cost is zero as compared with
10 utility customer plant cost. Under passthrough regulation,
11 utilities can force their operating costs, fuel costs, power
12 acquisition costs, capital related costs, and other fixed
13 costs on certain or all classes of ratepayers in the FRCC.
14 OGC can force no costs on any ratepayer anywhere in the FRCC
15 or anywhere else. In comparison to utility plant costs,
16 OGC's costs are effectively zero from the perspective of
17 ratepayers, because such ratepayers cannot be forced to pay
18 for them; these ratepayers will only pay for electricity
19 produced by the project when their retail-serving utilities
20 buy it--cost-effectively--from OGC for resale to their
21 customers. There is no way an incumbent utility can beat a
22 plant with zero cost, and it can at best only match zero cost
23 if it too behaves like a pure merchant with zero regulatory
24 subsidy. OGC's costs are zero when measured in the regulated

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1 utility accounting system. No incumbent, regulated utility
2 can match them.

3

4 Q: Please comment on Dr. Landon's assertion in lines 8-11 on
5 page 6 of his testimony that "The risk-related benefits that
6 OGC alleges are unsubstantiated. A more thorough evaluation
7 of the risks associated with the Project and reasonable
8 alternatives suggests that consumers may benefit more if a
9 similar plant were built by a utility than they would if OGC
10 built the Project."

11 A: I disagree diametrically with this statement. Utility owned
12 plants are systematically higher in cost than merchant plants
13 because of the Averch-Johnson effect, because of the high
14 overhead costs resident in utilities, and because increased
15 concentration within the utilities increase the possibility
16 of exercise of market power by the incumbent. Merchants have
17 far lower cost structures because their incentives point
18 strongly toward low cost while utilities' incentives point
19 toward higher cost. In addition, the Averch-Johnson effect
20 (gold plating by incumbent utilities because they can earn on
21 excess costs) alone is enough to refute the completely
22 unsubstantiated claim by Dr. Landon that a utility owned
23 plant is lower in cost than a merchant plant. It is just the

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1 opposite—utility plant costs stand to be higher than
2 merchants. As a disciple of Professor Kahn, certainly Dr.
3 Landon should have an in depth knowledge of the Averch-
4 Johnson effect, what it means, and how it directly
5 contradicts his assertion. The Averch-Johnson effect implies
6 that utility costs will be systematically higher than
7 merchant costs whenever utilities are allowed to earn at or
8 above market rates (in a risk adjusted sense).

9 As I have stated previously during my testimony in the
10 need determination hearing for the Duke New Smyrna Beach
11 Power Project, merchant plants are "manna from heaven."
12 Absolutely zero economic risks are imposed on any ratepayer
13 in Florida. If the plant were never to run one single hour,
14 there would be no costs or benefits to FRCC ratepayers. If
15 it runs even one single hour, it necessarily drives the price
16 down during that hour relative to what it would otherwise be
17 and thereby provides direct economic benefits to everyone in
18 FRCC during that hour. OGC, just like Duke New Smyrna Beach
19 before them, is shouldering and internalizing all the
20 economic risks of the OGC project.

21

22 **Q: Please comment on Dr. Landon's assertion number 6 at lines**
23 **12-14 on page 6 of his testimony: "OGC's claim that the**

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1 Project will be dedicated to serving Florida consumers is not
2 supported by wholesale market conditions in Florida or by the
3 Project's status as a merchant plant."

4 A: It is largely a non sequitur and is incorrect. OGC is a
5 merchant facility. It is dedicated to serving the wholesale
6 market, which is an aggregate of individual customers,
7 generators, shippers, and the like. Benefit arises from
8 causing wholesale prices to be depressed, and the lower
9 prices are carried to consumers effectively "at the speed of
10 light" to the market and the customers that comprise it.
11 Lower price carries benefits quickly and completely, and
12 those benefits accrue to everyone who experiences those low
13 prices whether or not they buy from OGC.

14
15 Q: Please comment on Dr. Landon's assertion number 7 in lines
16 15-18 on page 6 of his testimony that "OGC's claim that the
17 Project will mitigate the exercise of market power by
18 incumbent utilities in Florida is not supported by the facts.
19 Moreover, ad hoc introduction of merchant plants into Florida
20 is a sub-optimal approach to mitigating market power."

21 A: This is one of the most fundamentally incorrect and
22 misleading statements of basic microeconomics that could be

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1 made. What Dr. Landon is in effect arguing is that the
2 emergence of a competitive fringe, or a competitive segment,
3 is not the optimal way to ameliorate market power in a
4 monopoly/oligopoly situation. This assertion is inconsistent
5 with the most elementary and universal results from economic
6 theory.

7 The famed economists Nash, Cournot, Stackelberg, and
8 others pioneered the analysis of a monopolistic supplier (or
9 oligopolistic suppliers) in parallel with a competitive
10 fringe vying to serve a market. Basic undergraduate
11 microeconomics texts show that the economically efficient
12 solution is the one in which the monopolist (sometimes called
13 the "Stackelberg leader" and other times called the large,
14 concentrated Nash-Cournot player) engages in competitive,
15 price taking behavior and furthermore that the larger the
16 size of the competitive fringe, the closer to the efficient
17 solution the market becomes. Period. Dr. Landon's assertion
18 is patently and unequivocally wrong. Advanced undergraduate
19 and graduate courses on monopoly behavior teach at a most
20 fundamental level that the emergence of a competitive fringe
21 with rapid and complete market entry leads directly and
22 unequivocally to the elimination of market power and to the
23 economically efficient solution. Dr. Landon's testimony
24 flies in the face of this elementary argument from basic

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1 microeconomics; Dr. Landon is wrong.

2 Let me give a few references that Dr. Landon should have
3 consulted before making the patently incorrect statement that
4 introduction of merchant plants into Florida is a sub-optimal
5 approach to mitigating market power. Hal R. Varian,
6 Intermediate Microeconomics, Fourth Edition, 1996, Norton,
7 clearly states that pure competition is the efficient
8 solution, and it occurs when unrestricted and complete entry
9 is allowed into a Nash-Cournot monopoly-oligopoly situation
10 such as exists in Florida. "If there are a large number of
11 firms and each firm's influence on the market price is
12 negligible then the Cournot equilibrium is effectively the
13 same as pure competition." This directly refutes Dr.
14 Landon's assertion; entry of competitive merchant firms into
15 a monopoly/oligopoly situation leads directly, unequivocally,
16 and continuously to a competitive and efficient market
17 solution. James W. Friedman in his classic monograph
18 Oligopoly and the Theory of Games, North Holland, 1977, page
19 30, writes:

20 Intuition suggests that a Cournot oligopoly converges to
21 a competitive market as the number of firms in the
22 market increases without limit. Such convergence has
23 two aspects; on the one hand, the Cournot equilibrium
24 would be expected to converge to a competitive

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1 equilibrium (i.e., to the efficient point equilibrium),
2 and, on the other, it would be expected that the total
3 output in the industry would increase with the number of
4 firms. The latter comes from a widely held belief that
5 under oligopoly output is restricted as compared with
6 what it would be under competition.

7 As Dr. Friedman's work recognizes, Dr. Landon is wrong;
8 entry of a merchant fringe is the most direct and easiest
9 path to efficiency. James W. Friedman writes in a later text
10 Oligopoly Theory, Cambridge Surveys of Economic Literature,
11 Cambridge University Press, 1983, p. 39.

12 These examples suggest the following: (a) Cournot
13 equilibrium is quasi-competitive. That is, total
14 industry output rises and market price falls as the
15 number of firms in the market increases. (b) As the
16 number of firms goes to infinity, Cournot equilibrium
17 converges to the competitive equilibrium. (c) The
18 number of firms in the market rises to a finite upper
19 bound if the firms have positive fixed cost. (d) The
20 output of a given firm falls as the number of firms
21 increase.

22 We see the Altos model predicting each and every one of these
23 phenomena as the merchant fringe grows in magnitude --
24 incumbent output drops, price drops, the solution moves

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1 directly to an economically efficient solution.

2 Dr. Landon's testimony does not display the most
3 rudimentary knowledge of monopoly, oligopoly, and market
4 power either in theory or as it exists in Florida. It is
5 crystal clear that FPL and FPC individually and jointly have
6 market power in generation because they individually and
7 collectively enjoy market concentration. Like most other
8 franchise utilities, they have been granted market power in
9 Florida by design. As players with market power, they are
10 potentially Stackelberg leaders or large Nash-Cournot players
11 either individually or collectively in the Florida market.
12 Just as Stackelberg, Nash, Cournot, and their successors have
13 proven, the unequivocally best, most economically efficient,
14 and most optimal way to mitigate, forestall, and prevent the
15 exercise of market power and eliminate it from consideration
16 altogether is for a competitive merchant fringe to emerge and
17 grow in Florida. From the perspective of economic
18 efficiency, economic growth, low price, increased output and
19 consequent increased reliability, and equity and fairness in
20 FRCC, it is good public policy indeed to encourage and foster
21 the emergence of a large and growing competitive merchant
22 fringe. Such a fringe is known to maximize economic
23 efficiency and wealth for Florida and eliminate the need for
24 the Florida Commission to police the Florida generation

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1 business for prospective exercise of market power. It makes
2 the Commission's job much easier and cheaper and leads to
3 lower overhead and regulatory cost.

4 Lest the power of emergence of a competitive fringe be
5 underestimated, consider the history of the world oil market
6 since 1970. When the first oil crisis occurred in 1973, OPEC
7 was supplying over 30 million barrels per day of a world
8 demand in the range of 45 million barrels per day. OPEC
9 owned and controlled 2/3 of the world oil market. Today,
10 OPEC is supplying 26-28 million barrels per day of a world
11 demand in the range of 60 million barrels per day. Market
12 concentration has eased primarily because of the emergence of
13 a competitive merchant fringe! Non-OPEC production has risen
14 from its 1973 level of approximately 15 million barrels per
15 day to today's level of approximately 30 million barrels per
16 day. As reported in USA Today on approximately Monday
17 February 21, 2000, the price of gasoline we were paying in
18 the 1970s expressed in today's present dollars-of-the-day
19 terms would be \$2.47/gal, far above what we are actually
20 paying even at the local maximum of the past several months.
21 Real, inflation adjusted oil prices have fallen dramatically
22 with the emergence of a competitive fringe outside OPEC in
23 spite of the fact that oil demand has grown markedly. The
24 same phenomenon is in store for FRCC. The emergence of a

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1 strong competitive merchant fringe will drive real prices
2 down in the FRCC as compared to what they would otherwise be.
3 Emergence of a competitive merchant fringe is the ideal way
4 to do so.

5 Q: What is your interpretation of "obligation to serve" and how
6 does it differ from Dr. Landon's implicit definition in line
7 6 on page 10 of his testimony?

8 A: Obligation to serve occurs "at the meter." Obligation to
9 serve is an intrinsically final customer-oriented concept.
10 Obligation to serve means that the local utility has an
11 obligation to deliver electricity at the meters of all people
12 or businesses in Florida who want it. The concept is
13 intrinsically an obligation at the customer site.

14 Obligation to serve is neither tantamount to, nor
15 synonymous with, "obligation to generate." There is no
16 obligation to generate either in Florida or anywhere else.
17 Obligation to serve is not isomorphic to, tantamount to, or
18 synonymous with the need to build a fully vertically
19 integrated supply chain all the way back to resources in the
20 ground. Utilities around the country have been purchasing
21 electricity from outside their own domains as a matter of
22 prudent practice for years. In Florida, numerous municipal

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1 and cooperative utilities, and even one investor-owned
2 utility, do not generate electricity. Utilities such as
3 PG&E and SCE in California have been systematically short of
4 indigenous generation for years. These utilities purchase
5 power at time of peak from Arizona, Nevada, and the Pacific
6 Northwest. They have no implicit or explicit obligation to
7 generate for their own account, and their practice of
8 externally purchasing power has long been deemed prudent.
9 The FRCC itself is structured so as to purchase power from
10 Southern through approximately 3600 MW of inbound
11 transmission. Assuredly, utilities in the FRCC and the
12 Florida Commission have deemed it prudent to buy power rather
13 than generate power on one's own account; otherwise, those
14 inbound transmission lines would simply not exist. No one
15 would pay for them. The Commission would not have approved
16 them. Their existence is prima facie evidence of the
17 prudence of buying power in order to meet unequivocal
18 obligation to serve.

19 Dr. Landon seems to argue that utilities must generate
20 using their own facilities in order to meet their obligation
21 to serve, and the Florida PSC should review and approve their
22 generation plans to do so. While some utilities do generate
23 using their own facilities and some do build their own
24 plants, there is no engineering, economic, logical, or

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1 practical need for this to be the case. Florida's utilities
2 need not make generation investments in order to meet their
3 obligation to serve today, in the past, or in the future.
4 There are other, more cost effective methods, namely merchant
5 entrants such as OGC.

6 An efficient, flourishing, robustly competitive
7 wholesale market that exposes prices to regulators,
8 utilities, customers, trading companies, marketers,
9 aggregators, and in fact all market participants is much
10 better than "command and control" system historically
11 overseen by the Florida PSC. It is well known that
12 efficiently determined prices in competitive markets are the
13 very best prices that can be developed-- better than any
14 regulatory entity can do unless it is continuously perfect in
15 its decisions and unless those decisions are continuously
16 reflected in regulated utility charges subject to its
17 jurisdiction. (The fact that the FRCC wholesale prices are
18 the highest of any region in the country is prima facie
19 evidence that in fact the FRCC utilities have in the past not
20 been effective or efficient in their decision making or that
21 the incumbent utilities in the FRCC are actively exercising
22 market power by denying entry and restricting capacity.) The
23 very best way to develop efficient, competitive, transparent,
24 ubiquitously observed wholesale prices is to encourage a

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1 flourishing, active, successful, competitive wholesale power
2 market.

3 **Q: Is Dr. Landon's discussion regarding construction costs**
4 **relevant to the Commission's considerations in this case?**

5 A: No, and the reason is that OGC is bearing the entire
6 construction cost risk. No party other than OGC in Florida
7 is bearing any construction cost risk whatsoever. The
8 Commission needs only to consider that the OGC plant is a
9 standard, commercial design that has a high probability of
10 being built at the same or similar costs to any other plant
11 in the United States. Clearly that is the case. All of Dr.
12 Landon's testimony related to OGC's construction cost or the
13 comparison of that construction cost to anyone else's
14 construction cost is generally irrelevant.

15 **Q: Dr. Landon argues in lines 1-8 on page 14 of his testimony**
16 **that "the Commission has reviewed the cost and availability**
17 **of fuel supplies as presented in several petitions in the**
18 **past." Is there any need for such review in this case?**

19 A: No. All fuel price and availability risk is being borne by
20 OGC. If there is no fuel available, or if fuel cost is above
21 market price, the only party that suffers is OGC. OGC is

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1 fully and completely internalizing all fuel price and
2 availability risk. (If OGC were to enter into firm capacity
3 and energy contracts with retail-serving utilities, OGC would
4 still bear these risks under most reasonably foreseeable
5 scenarios; at worst, the risks would be identical to those
6 associated with a utility-built-and-operated plant.)

7 The Okeechobee Project is an important factor in
8 catalyzing the GulfStream pipeline, which I understand will
9 be able to deliver 1.2 (or more) Bcf per day of gas into the
10 state when fully powered. The emergence of all or a part of
11 this magnitude of new gas supply into the State will
12 substantially ameliorate and mitigate any fuel supply
13 shortages that might have been considered in the "good old
14 days" in which FGT was the sole supplier to Florida and its
15 capacity was less than it is today. Perhaps it was
16 appropriate to review fuel supply issues in the past when
17 inbound pipeline capacity was less abundant than it is today
18 and much less abundant than it will be with the entry of
19 GulfStream. One of the significant benefits of the
20 Okeechobee Project is to help catalyze the entry of
21 GulfStream, which alleviates whatever gas supply shortages
22 might otherwise occur, puts substantial downward pressure on
23 Florida gas prices that badly need it, reduces gas supply
24 risk substantially by creating opportunities for "dual

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1 sourcing," and reduces the need for the Florida PSC to
2 scrutinize fuel supply issues attendant with merchant entry.
3 In brief, the Okeechobee Project will help "make the Florida
4 fuel supply problem go away," and Florida should welcome that
5 eventuality with open arms. In sum, Dr. Landon's assertion
6 is without merit. Historical precedent of allocating scarce
7 supply will change with the much increased availability
8 GulfStream will bring to Florida.

9 **Q: In your view, will OGC supply "firm" power? Is it just as**
10 **"firm" without a contract as with a contract?**

11 **A:** OGC is as firm as any power source one can find and in my
12 view firmer. Firmness emanates from strongly positive
13 incentives to run the plant for as many hours as possible.
14 (Technically, whether the power is supplied on a "firm" or
15 "non-firm" basis, in a tariff sense, will depend on the
16 contracts that OGC enters into with purchasing utilities,
17 even when those contracts are on an hour-ahead basis, they
18 may well be "firm.") In practical, real-world terms, OGC has
19 the strongest positive incentive for firm, reliable,
20 continuous service, firm in the sense of maximizing plant
21 availability and operation during each and every hour when
22 price is above its production cost. If it misses an hour of
23 operation, it misses an hour of revenues. Senior management

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1 in OGC will take a very dim view of missed hours of potential
2 positive revenues, just as they do in the mining, refining,
3 steel, semiconductor fabrication, airline, and other capital
4 intensive merchant industries. Firmness does not emanate
5 from contracts; firmness emanates from positive incentives.
6 Crude oil refineries rarely operate based on contracts, yet
7 their production is firm enough to fuel a colossal
8 transportation industry. Semiconductor fab lines' production
9 is firm. Airlines never have firm contracts (i.e., flights
10 can be canceled at any time), yet businesses and individuals
11 rely on airlines implicitly for immediately available firm
12 transportation. Firmness emanates fundamentally from
13 economic incentives, and OGC has far stronger economic
14 incentives to operate than do incumbent utilities who get
15 paid by forcing costs on ratepayers whether they operate or
16 not.

17 **Q: Please comment on Dr. Landon's assertion in lines 11-17 on**
18 **page 17, that: "In this dynamic market model, the concept of**
19 **need is captured in the prices that consumers are willing to**
20 **pay for a product."**

21 **A: I agree, and the Okeechobee Project will serve precisely the**
22 **type of competitive wholesale market he articulates and will**

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1 drive prices down in that market. Dr. Landon's statement
2 agrees with my testimony--the entry of OGC will drive down
3 wholesale market prices throughout FRCC and will benefit
4 every customer in the market by so doing.

5 Q: Dr. Landon states in lines 1-6 on page 18 of his testimony:
6 "In contrast, in a regulated market, the regulator's job is
7 to oversee investment, production, and pricing to ensure that
8 customers obtain the level of goods and services that they
9 require and to ensure that these goods and services are
10 produced cost-effectively. In a regulated market it is the
11 regulators' job to evaluate need and see that it is met in
12 the most cost-effective manner." How have they done that in
13 the regulated past, and what tools have they used?

14 A: First, Dr. Landon has conveniently omitted from his testimony
15 how regulatory bodies have actually accomplished what he
16 advocates in the second sentence. Over the years, regulators
17 have relied on production simulation ("fuel burn") models
18 such as Promod or ProSym to assess the cost of operating a
19 given mix of plants in a least cost fashion. (Least cost in
20 those models typically means lowest fuel cost or lowest
21 variable cost.) Those production simulation models, which

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1 are long steeped and accepted in regulatory tradition in the
2 days of granted franchise monopolies, systematically and
3 explicitly recognize that it is the marginal plant that sets
4 the "price" below which each and every plant that operates
5 must be if it is to operate. This "price" has been given a
6 technical name from the operations research industry that
7 spawned those models -- "system lambda." Those traditional
8 methods recognize that the marginal plant sets the economic
9 signal to every plant in the system, which compete explicitly
10 and systematically against every other plant in the system.
11 System lambda is the "limbo bar" under which every plant must
12 get if it is to operate in any given time period. Even
13 though traditional regulation is a command and control system
14 whereby companies are granted franchise monopolies in certain
15 regions, the notion of a limbo bar price under which all
16 plants must get if they are to operate is quite analogous.
17 No one I know of in the traditional format has ever made the
18 painfully incorrect argument Dr. Landon has made here that
19 those methods are not comprehensive comparisons between and
20 among all aspiring plants. Quite the contrary, those methods
21 are known to compete everything against everything else.

22 Using traditional production simulation models,
23 regulators recognized when a fuel efficient plant enters a
24 system, a production simulation model will move the marginal

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1 plant to the left in the supply stack, and the new position
2 of the marginal plant will represent the status of weighing
3 every plant against every other plant.

4 The Altos method is analogous in the sense that it
5 competes everything against everything else in a much more
6 sophisticated fashion, yet it arrives at an analogous
7 marginal price without missing anything because of incomplete
8 pairwise comparison.

9 Before leaving this point, I would comment that a
10 production simulation model such as Promod or ProSym would be
11 entirely inappropriate for the FRCC with its nodally
12 disparate competitive wholesale market and its difficult
13 transmission constraint situation. In my view, Promod and
14 ProSym are not appropriate to represent the FRCC market
15 because they assume demand is uncontestable and because they
16 cannot take account of the nodalization and regionalization
17 within the FRCC market. They assume Florida is one large
18 regionally fungible fully accessible system in which all
19 electric plants and inbound transmission links are able to
20 access all customers. This is not true--some transmission
21 and generation resources are denied by constraints to some
22 customers or customer classes. The Altos approach aided by
23 the transmission system inputs from GE MAPPS takes proper
24 account of the economic and physical interplay between

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1 generation and transmission. Production simulation models do
2 not.

3 Q: Dr. Landon states on lines 13-15 on page 18 of his testimony
4 that: "However, the OGC Project would have no obligation to
5 serve customers and no contractual obligations to provide
6 Florida utilities with firm energy." Do you agree with that
7 statement?

8 A: No. OGC would have firm obligations of the type advocated by
9 Dr. Landon if FPL or FPC were to sign a firm contract with
10 OGC or any other power supplier. Dr. Landon seems to be
11 stating that FPL and FPC will chose not to sign firm
12 contracts with OGC.

13 Q: Dr. Landon states on page 18, lines 18-21 that "The
14 Commission should evaluate the cost effectiveness of the OGC
15 Project from the perspective of utility customers. Customers
16 would be ill served if the Commission were to abandon past
17 practices in an ad hoc fashion." Please comment.

18 A: Florida has the highest cost wholesale power in the United
19 States under the "past practices." I don't see how they
20 could be more poorly served than they have been in the past

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1 under the practices that Dr. Landon touts. Quite the
2 contrary, I would urge the Commission to continue the
3 practice it adopted in the Duke New Smyrna case, a practice
4 that stands to do more for electric customers and citizens in
5 Florida than any other course of action the Commission might
6 take. Dr. Landon ignores the fact that Florida is an
7 economic problem where power prices are concerned.
8 Industries, if they decide to operate or enter Florida at
9 all, are paying too much for power and compromising their
10 margins and their employment prospects. Economically
11 disadvantaged Floridians are being forced to bear a worse
12 regressive tax in the form of higher wholesale power rates
13 than anywhere else in the country. Dr. Landon is arguing for
14 the continuation of a practice that is not working.

15 I should also comment that the Commission's decision in
16 the Duke New Smyrna case can hardly be called an "ad hoc"
17 process. The amount of written and oral evidence, and the
18 time spent evaluating and deliberating on the issues posed in
19 that proceeding were voluminous and complete. It is one of
20 the most complete and comprehensive records of which I am
21 aware. That decision was one of the more completely debated
22 and carefully contemplated decisions in utility regulatory
23 history of which I am aware. Dr. Landon insults what was an
24 excellent and thorough process that culminated in the right

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1 decision.

2 Q: In lines 4-6 on page 19 of his testimony, Dr. Landon
3 attributes to OGC the basis upon which the project should be
4 approved. Do you agree with his attribution?

5 A: His attribution is incomplete and misleading. OGC witnesses
6 have shown that in addition to the attributions he puts
7 forth, the OGC project contributes positive environmental
8 benefits to Florida, mitigates a potentially very serious and
9 detrimental market power situation at the hands of the
10 utility incumbents, reduces risks to Florida ratepayers and
11 citizens, helps to catalyze a second gas pipeline into
12 Florida that is badly needed indeed, and delivers risk
13 mitigation and other potential benefits as well.

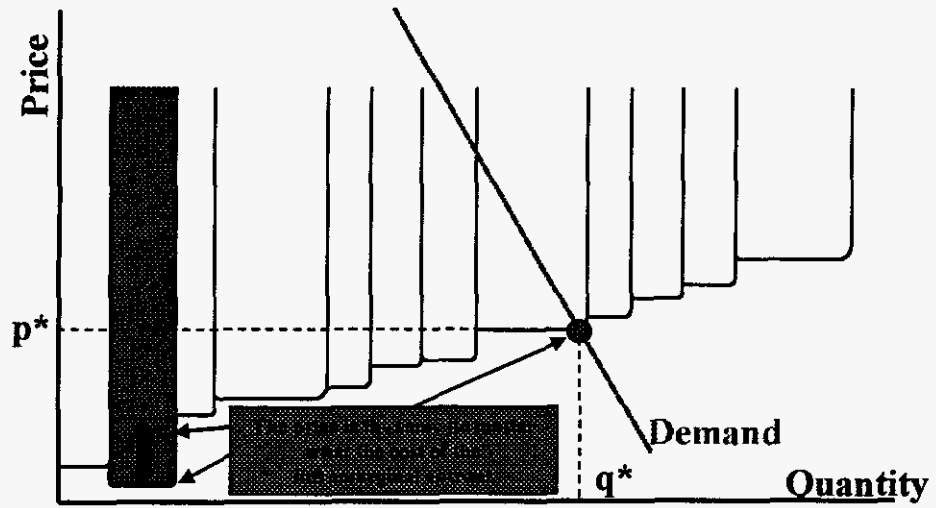
14 Q: In lines 7-11 on page 20 of his testimony, Dr. Landon states
15 "The Petition and supporting testimony do not present a
16 complete, comparative economic analysis to support the
17 assertion that the Project is the most beneficial alternative
18 for utility customers. Furthermore, OGC does not discuss how
19 sensitive its estimates are to changes in the underlying
20 assumptions." Please comment.

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1 A: I disagree strenuously with each and every one of Dr.
2 Landon's points. First, the petition and exhibits, as well
3 as my direct testimony, present a complete, proper, and
4 correct comparative analysis--of Peninsular Florida with the
5 Okeechobee Generating Project vs. Peninsular Florida without
6 the Project. Again, Dr. Landon's suggested analytical
7 framework--in which he assumes that the Project is mutually
8 exclusive to other potential projects--is inappropriate,
9 unrealistic, and misplaced.

10 OGC's analyses do in fact show that the Project is the
11 most beneficial alternative for Florida customers. The
12 price will be the same after OGC's entry into the FRCC no
13 matter what the particular cost of the OGC plant, just as
14 Figure 1 illustrates. It does not matter what the cost of
15 the OGC plant is; it will induce exactly the same price-
16 depressing effect no matter what its cost. This is an
17 extremely elementary result from fundamental microeconomics
18 and directly contradicts the statements in Dr. Landon's
19 testimony.

Figure 1: The Price Is the Same No Matter What the Particular Cost of the Inframarginal Entrant



1

2 Figure 1 has another particularly important rebutting
3 implication for Dr. Landon's testimony. The plants arrayed

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1 one by one in ascending order of cost are explicitly and
2 systematically competing against one another and the market
3 is explicitly and systematically taking account of such
4 competition. The diagram in Figure 1, which is the
5 methodology embedded in the Altos model and in a more
6 aggregate sense in the production simulation models that used
7 to be used in a franchise regulated environment,
8 systematically compares everything against everything else.

9 With regard to Dr. Landon's assertion that OGC has not
10 tested the sensitivity of the decision to specific
11 assumptions, that assertion is both naive and wrong. Again,
12 consider Figure 1. What could possibly change the position
13 of the Okeechobee Project in the supply stack so much that it
14 moves off and to the right of the supply-demand crossing
15 point? What could possibly change the fact that the entry of
16 the Okeechobee Project displaces the original supply stack
17 without the Project outward and to the right and that such
18 displacement necessarily decreases the price of wholesale
19 power in Florida? The answer is "Very little." Demand would
20 have to be cut by more than half, an unlikely prospect. New
21 capacity additions would have to be immediate and far larger
22 than anything proposed to date, an unlikely prospect.
23 Increasing or decreasing gas or other fuel prices raises the
24 entire curve at once, and the relative heights of the lines

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1 changes very little. Changes in assumptions that "wobble"
2 the individual curves (the individual plants) have limited
3 effect on the supply-demand balance and on the market price.
4 Altos' answer is very robust indeed and not sensitive to any
5 reasonable changes in input assumptions.

6
7 Q: Dr. Landon asserts on page 20 in lines 18-21 of his testimony
8 that "... .whereas OGC relies heavily on an argument that
9 the Project is without risk to customers, it fails to
10 quantify these risk-related benefits and to compare them to
11 risk-related benefits consumers would receive from a similar
12 plant built by another entity." What do you think about that
13 assertion?

14 A: It is highly misleading. While technically, OGC has not
15 presented a dollars-and-cents quantification of the risk
16 benefits, such an analysis is unnecessary. The Okeechobee
17 Project imposes zero incremental economic risk on Florida
18 ratepayers and yet yields an additional 550 MW of capacity.
19 Incumbent plants impose nonzero incremental risk on Florida
20 ratepayers because their costs are--or can be--forced down
21 the throats of Florida ratepayers and because their costs are
22 systematically higher because of the Averch-Johnson effect.
23 A situation of certainty of higher cost is more risky than a

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1 certainty (or an uncertainty) of lower cost. Decision
2 analytic theory tells us that a virtually certain lottery of
3 a bad outcome is riskier and costlier than an uncertain
4 lottery with several good potential outcomes.

5 **Q: Dr. Landon asserts in lines 3-4 on page 21 of his testimony**
6 **that "OGC argues that benefits from the Project will flow**
7 **exclusively to customers in Peninsular Florida." Please**
8 **comment.**

9 **A: That is not my interpretation of what OGC or Altos have said,**
10 and this assertion is wrong. As we have shown with our
11 model, the entry of the Project decreases the price in every
12 region of Florida because of its entry, including the inbound
13 transmission entry points within Florida. This means that
14 the entry of OGC also depresses the price in Southern as well
15 during those hours in which inbound transmission is
16 unconstrained. People in Southern benefit from the price
17 decreases they experience at the same time people in Florida
18 benefit from the same price decreases. Price decreases
19 benefit everyone in Florida, and they benefit everyone in
20 contiguous states who experience them. I believe that the
21 testimony is that physical quantities (i.e., MWH) generated
22 by the plant will never leave the State. That does not at

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1 all mean that people in contiguous states do not benefit by
2 the price decreases that might leave the State as a result of
3 the OGC entry. It does not also mean that if people in
4 contiguous states benefit then people in Florida will not
5 benefit. There are not a fixed amount of benefits to go
6 around such that if someone in Georgia gets them then someone
7 in Florida does not. Benefits borne by reduced price are not
8 "zero sum" by nature. Everyone gets them. They too are
9 manna from heaven. Any assertion that if someone in Georgia
10 or another state benefits then necessarily someone in Florida
11 fails to benefit is also patently false.

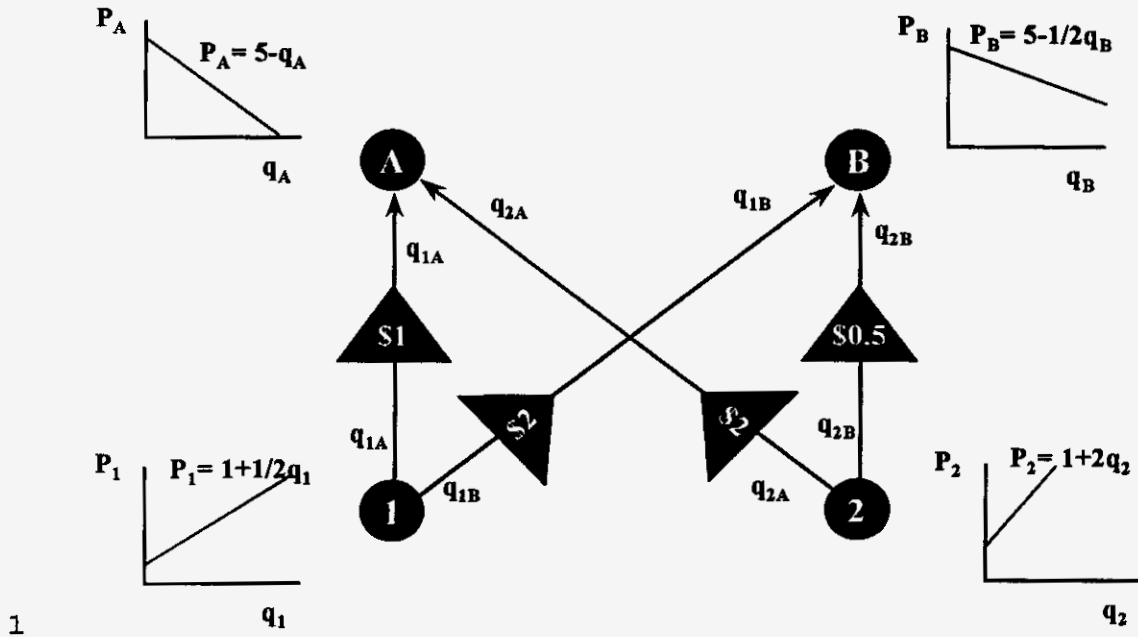
12 It is well known in the economics literature that
13 reducing the price in one region causes prices to be reduced
14 in all regions. I have put together a simple, illustrative,
15 pencil and paper example to demonstrate that indeed price
16 depressions borne of new entry are usually strikingly large
17 in magnitude, and they proliferate rather rapidly and with
18 surprisingly little attenuation throughout the entire
19 economic network.

20 This simple example effectively illustrates the salient
21 points and firmly rebuts the incorrect assertions in Dr.
22 Landon's testimony. Consider Figure 2 in which there are two
23 supply regions at the bottom of the diagram (denoted Regions
24 1 and 2), two demand regions at the top of the diagram

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1 (denoted Regions A and B), and an intervening transmission
2 system interconnecting each supply region with each demand
3 region. To keep the example simple, assume that the
4 transmission is available in whatever quantity the market
5 might want, there are no losses in transmission, and the
6 costs of the transmission are as shown. To keep the example
7 simple, I have assumed two individual, simple, straight line
8 price-quantity supply curves, one in each of the two supply
9 regions. I have assumed two individual, simple, straight
10 line price-quantity demand curves, one in each of the two
11 demand regions. This is quite a simple problem, two supply
12 regions each with a simple straight line supply curve, an
13 interconnecting transmission system with unlimited
14 availability and no losses at the indicated costs, and two
15 demand regions each with a simple straight line demand curve.
16 This is the simplest example I could render in a spatial
17 market situation with spatially disparate supply separated
18 from spatially disparate demand by a transmission network.
19 This is a simple representation of the power situation in
20 Florida's wholesale electric markets.

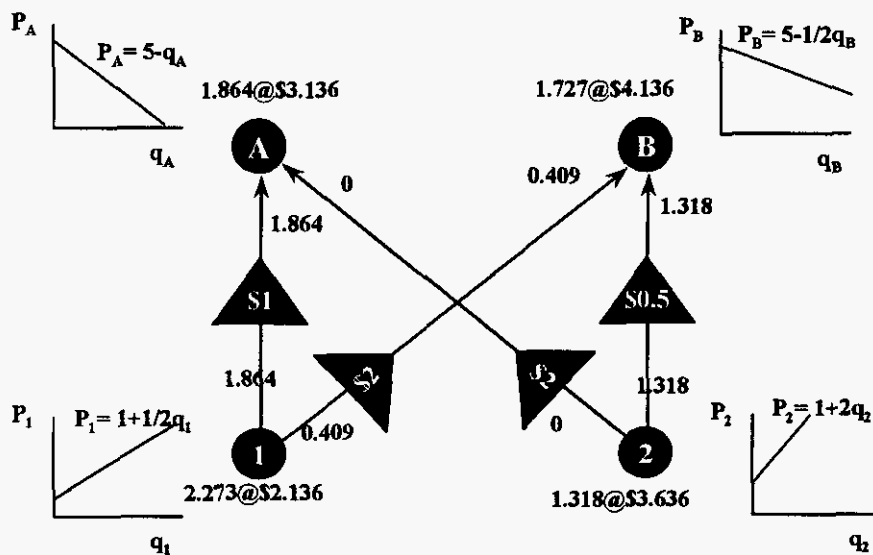
Figure 2: Spatially Distributed Supply and Demand--Two Markets With Two Sources



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1 What is the answer in this simple spatially distributed
 2 example? (I should mention that these spatially distributed
 3 market equilibrium answers are precisely what the Altos model
 4 calculates.) The answers are the prices and quantities
 5 flowing in Figure 3. (I have used in Figure 3 the notation
 6 quantity@price in the supply and demand regions and noted the
 7 quantities flowing through the various transmission links at
 8 equilibrium.) The market clearing prices in the two supply
 9 regions and the two demand regions are those shown in Figure
 10 3.

Figure 3: Equilibrium Prices, Quantities, and Flows—Base Case



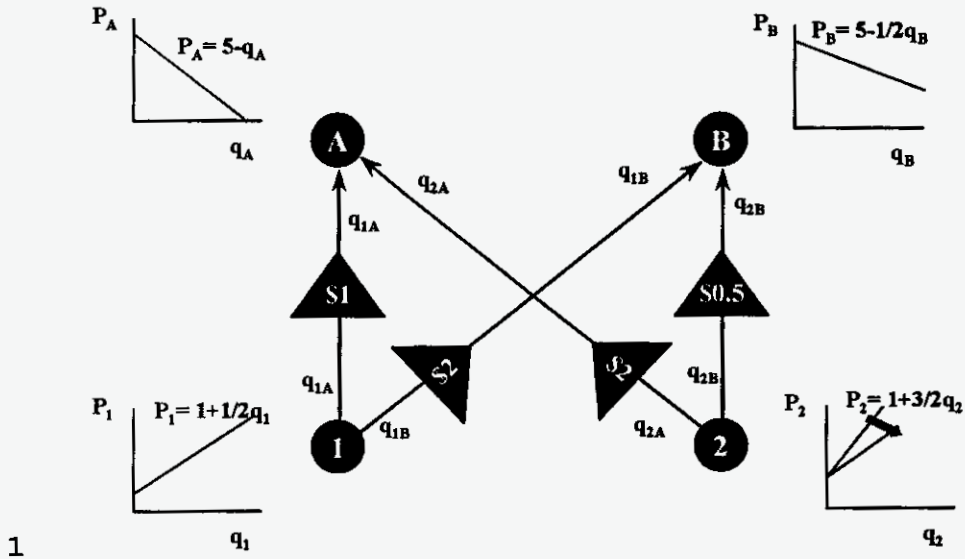
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1 Now, let us do in the example precisely what the
2 Okeechobee plant will do in reality in Florida--shift the
3 supply curve outward and to the right in one of the two
4 supply regions. Let us move the supply curve in region 2
5 outward and to the right. Specifically, let us assume that
6 there is a new supply source in region 2 that increases the
7 supply curve there, all else equal. In particular, the new
8 supply curve has the equation $p_2=1+3/2q_2$ rather than the old
9 equation $p_2=1+2q_2$. Figure 4 illustrates the situation in this
10 new case with an increased source of supply in supply region
11 2.

12

Figure 4: Higher Supply at Region 2, All Else Equal



1

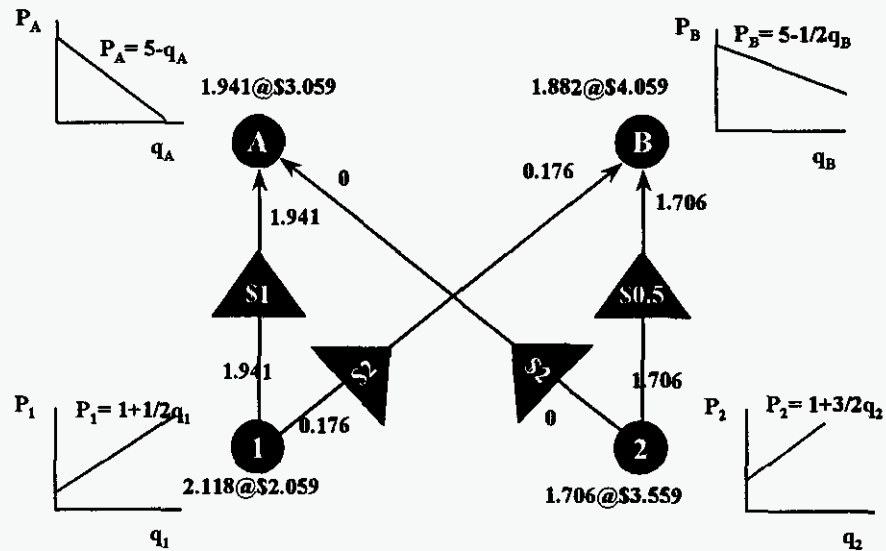
2

What will happen to the market clearing price in supply

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1 region 2 with this new, more abundant supply equation? What
 2 will happen to price in demand region B? Region A? The
 3 answer, amazingly enough, is that the price decreases by
 4 exactly the same amount in regions 1, 2, A, and B. Figure 5
 5 presents the new market clearing prices and quantities, i.e.,
 6 the new answer.
 7

Figure 5: Equilibrium Prices, Quantities, and Flow—Sensitivity Case



8

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1 Comparison of the market clearing prices in both of the
2 supply regions and both of the demand regions in the old case
3 (no new supply) with the new case (new supply in supply
4 region 2) indicates that the magnitude of price decreases
5 from the base case to the new supply case is exactly the same
6 in all four regions--both supply regions and both demand
7 regions. To emphasize, the price decreases by exactly the
8 same magnitude in region A even though region 2 does not send
9 any product at all to region A. Displacement alone is enough
10 to cause the same price decrease in a demand region that is
11 not even served. It is a fallacy disproved by this example
12 that a direct connection from a supply source to a demand
13 region is a necessary precursor to induce price depression.
14 The mere existence of displacement is sufficient to guarantee
15 the same degree of price depression in a displacement market
16 as in a direct market. Economic theory as embodied in this
17 example is sufficient to guarantee that. Notice that the
18 displacement effect realized in supply region 1, which is two
19 wheels removed from supply region 2 where the new supply was
20 introduced, is the same in magnitude. Regions upstream from
21 demand regions where there is no effect save for displacement
22 experience precisely the same degree of price reduction as
23 the region in which the new source of supply occurs.

24 It is entirely reasonable and possible and in fact

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1 entirely consistent with economic theory as embodied in this
2 simple example that the supply regions where a new source is
3 introduced experience a price reduction, the demand regions
4 directly downstream from that supply region that receive
5 positive quantities from that supply region experience
6 exactly the same price reduction, demand regions that are not
7 directly supplied by the supply region where a new source is
8 introduced experience a price reduction of the exact same
9 magnitude, and supply regions upstream from those
10 displacement demand regions experience the exact same
11 magnitude of price reduction as the original region itself.
12 This simple example illustrates that price depressions
13 emanating from the entry of a new supply source proliferate
14 outward unabated and undecreased in magnitude for a very long
15 distance. The Altos model results are not only perfectly
16 reasonable, they are in fact entirely expected both in a
17 modeling sense and in a real world sense.

18 I should point out that the veracity of this example is
19 very easy to prove. To verify that my calculations are
20 correct in both scenarios, all one need do is verify that the
21 indicated prices cause there to be zero excess supply and
22 zero excess demand in regions 1, 2, A, and B and that the
23 quantities balance everywhere throughout the transmission
24 system. In particular, one need only substitute the prices

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1 into the equations to see that the sum of inbound supplies in
2 each case is equal to the sum of outbound demands.

3 In the context of this simple example, why has the Altos
4 model predicted different degrees of price depression in
5 different regions? The answer lies in the transportation
6 restrictions and bottlenecks represented in the
7 transportation network imported from GE MAPPS. The foregoing
8 simple example causes the magnitude of price depression to
9 emanate outward unabated because there are no transmission
10 bottlenecks. When there are transmission bottlenecks, price
11 depressions can decrease in magnitude as one increases the
12 number of wheels away from the source of increased supply,
13 but the attenuation is not necessarily large in magnitude.
14 On the contrary, the degree of attenuation is usually not
15 particularly large because the electric transmission is
16 usually not dramatically improperly sized or severely
17 bottlenecked. (The size of the transmission system is not an
18 accident; it was designed that way.) The point of this
19 example is to illustrate how price depressions benefit
20 Florida and non-Florida customers alike even though the MWH
21 are sold only locally in the vicinity of the Project in
22 Florida. If customers in Georgia benefit from the fact that
23 Florida prices are reduced on and off peak and drag Georgia
24 prices down accordingly, that is perfectly OK. It is a

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1 benefit to Georgia that does not in anyway whatsoever reduce
2 the benefits in Florida one iota. It is patently wrong and
3 naïve to assume that the price depressions that are caused by
4 the Okeechobee Project must of necessity be strictly
5 localized. On the contrary, as we have shown, they are
6 significant and are ubiquitous throughout FRCC, and that is
7 the reasonable rather than the unreasonable result. The fact
8 that price depressions may be transmitted abated or unabated
9 into Georgia does not reduce their magnitude in Florida.

10 Lest one doubt the veracity of the methodology or the
11 result presented herein, please refer to the classic paper by
12 Nobel Laureate Dr. Paul Samuelson "Spatial Equilibrium and
13 Linear Programming" in the American Economic Review in 1956.

14 Q: Dr. Landon in lines 12-22 on page 24 and in lines 1-16 on
15 page 25 of his testimony argues that the benefits reported by
16 Altos should only be considered to apply to wholesale
17 quantities. He makes a calculation that 2.5 percent of the
18 MWH in Florida, ostensibly the wholesale MWH, might decrease
19 in price by the magnitude that Altos predicts but that the
20 other 97.5 percent of the MWH in Florida are Balkanized from
21 any benefits from the entry of OGC and therefore are not

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1 depressed in price at all. Do you agree with his analysis?

2 A: No. Dr. Landon's analysis is incorrect and ignores the
3 reality and the standard industry practice of "marking to
4 market" every action a company takes. The market provides
5 the fundamental benchmark of value, and companies should and
6 do mark their decisions to market at the market value. If an
7 entity does not "mark to market," it will almost certainly
8 leave economically efficient transactions "on the table" by
9 ignoring the market value of the commodities or services in
10 which it deals.

11 How easy is it to mark gas and power contracts to market
12 in practice? Keep in mind, natural gas and electricity are
13 traded by large trading companies such as affiliates or
14 subsidiaries of Enron, Duke, PG&E, Southern, AEP, and others.
15 Only a portion of total U.S. gas and electricity are
16 physically traded by those companies, yet gas and electricity
17 that are traded and gas and electricity that are bilaterally
18 contracted by regulated local distribution companies are
19 continuously marked to market at the posted market price that
20 is established by trading of perhaps one third or less of
21 total U.S. volumes. The observed market price is the
22 fundamental measure of value, and all players in the market
23 including regulated local distribution companies, pipelines,
24 producers, marketers, aggregators, and customers mark their

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1 decisions to market at the observed price. It is easy to
2 discern what the prices are. One need only phone the various
3 trading companies for a quotation. Gas prices are very
4 evident and very liquid at Henry Hub. The same degree of
5 transparency and liquidity have not yet emerged in
6 electricity.

7 What is the fair market value, i.e., the true economic
8 value, of electricity in Florida? It is the market clearing
9 price in the competitive wholesale market. FPL, FPC, TECO,
10 and the other incumbents (as well as traders) will buy and
11 sell at that price and mark everything they do to market at
12 that price.

13 Q: On page 28 lines 1-6 of his testimony, Dr. Landon argues that
14 repowering adds combined cycle capacity and increases the
15 efficiency of the former steam turbine capacity. Please
16 comment.

17 A: While Dr. Landon's statement may be technically true,
18 depending on how one defines "increases the efficiency of the
19 former steam turbine capacity," it is misleading. I do not
20 believe repowering of existing, field fabricated, field
21 maintained, old, one-of-a-kind power plants is as economical
22 as installing a new, modern technology, fully integrated

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1 combined cycle plant in the first place. Repowering means
2 reworking an old, intrinsically high cost, field-constructed
3 facility, while installing new technology means availing
4 oneself of the best technology and cost available today.
5 Repowering old steam capacity to combined cycle typically
6 costs more per incremental kilowatt than new, greenfield
7 combined cycle capacity, and typically produces less
8 efficient units than comparable new, greenfield units. For
9 example, in 1993 and 1994, FPL installed new, greenfield
10 combined cycle units at its Martin Station and, in 1993, FPL
11 repowered (to combined cycle technology) a former steam unit
12 at its Lauderdale Station. According to FPL's 1998 FERC Form
13 1, the Martin units' heat rate was 7,140 Btu per kWh, but the
14 Lauderdale unit's heat rate was 7,681 Btu per kWh, about 7.5
15 percent higher than for the new Martin units.

16 **Q: On pages 31-32 of Dr. Landon's testimony, he puts forth an**
17 **analytical method he advocates for the analysis of the**
18 **Project's need. Do you think his methodology is valid or**
19 **correct?**

20 **A: No. It is straightforward to show that Dr. Landon's analysis**
21 **of an FPL plant versus the Okeechobee Project is not correct.**
22 **To see why, draw a conceptual dotted box around the FRCC, and**

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1 thereafter craft two scenarios. In the first scenario, place
2 the Okeechobee Project with approximately 550 MW, into the
3 dotted box, all else equal. In the second scenario, place an
4 FPL plant of same size and technology into the dotted box,
5 all else equal. In the first scenario, there is less total
6 cost to be borne by regulated FRCC ratepayers in the dotted
7 box but the same capacity in place. The Averch-Johnson
8 effect ensures that the OGC plant in scenario 1 will actually
9 cost fewer capital and operating dollars than the regulated
10 FPL plant in scenario 2 because of the pernicious incentives
11 of cost pass-through that augments cost. Furthermore, in the
12 first scenario, the capital and operating cost of the Project
13 are effectively zero from the standpoint of Florida power
14 purchasers because there is no way for OGC to force those
15 costs on anyone in Florida. The Project's capital,
16 operating, and fuel cost are totally and completely borne by
17 OGC. In scenario 2, the capital and operating cost of the
18 FPL plant are large and are destined to be borne by Florida
19 ratepayers. In scenario 1, there is zero incremental cost to
20 be borne by Florida ratepayers, and there is 550 MW more of
21 capacity in the State. In scenario 2, there is the same
22 additional 550 MW more of capacity in the State, but it is
23 accompanied by \$200 million plus in capital costs and
24 millions of dollars per year of operating and fuel costs that

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1 will be forced down the throats of some or all Florida
2 ratepayers. The entry of the Okeechobee Project cannot
3 increase regulated rates to retail customers because it adds
4 zero cost to rate base and zero variable cost pass-through.
5 Florida electric customers will, at most, pay for power
6 purchased--when cost-effective--by their retail-serving
7 utilities for resale to those customers; they will not, and
8 cannot be made to, pay directly for any of the capital,
9 fixed, or variable costs of the Project.

10 **Q: Dr. Landon testifies on page 33 of his testimony that**
11 **customers might be harmed if OGC is built as compared with an**
12 **FPL new build case. Is his analysis correct?**

13 **A: No. The dotted box around Florida paradigm shows that costs**
14 **are lower with the Okeechobee Project than with FPL, all else**
15 **equal. (Capacity is higher by the same amount in both**
16 **cases.) It is impossible for Florida ratepayers to be harmed**
17 **in aggregate if the Project enters as compared with an FPL**
18 **build case. Moreover, Dr. Landon's analysis assumes that the**
19 **Okeechobee Generating Project and an FPL-built plant are**
20 **mutually exclusive, which is simply incorrect.**

21 **Q: Dr. Landon argues in his analysis on pages 33-34 of his**

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1 testimony that with the Okeechobee Project, power is
2 purchased at market rates but with FPL, power is purchased at
3 below market rates. Please comment on his analysis in that
4 section.

5 A: Dr. Landon's analysis, perhaps unwittingly, makes the
6 strongest possible case for merchant entry such as OGC. If
7 it were true that the wholesale power price were \$30 as in
8 his example but the long run incremental cost of entry were
9 \$24 on a rolled in basis as in his example, the Commission
10 should bend over backward to build merchant power plants as
11 fast as possible to drive the wholesale power price down to
12 the long run marginal cost of entry. With constant returns
13 to scale technology such as power plants, establishing and
14 nurturing a competitive fringe is the best way to attract
15 entry to drive the price down to the long run marginal cost
16 of entry.

17 The only way Dr. Landon's price scenario could occur is
18 if entry is precluded and shortage and congestion leaves the
19 wholesale price above the long run marginal cost of entry.
20 In Dr. Landon's example, there is a shortage of capacity in
21 Florida that is keeping wholesale prices above the long run
22 cost of entry. Dr. Landon should know that the best solution
23 in such as situation is to foster as much entry as fast as

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1 possible to drive power prices down to the long run cost of
2 entry. That is precisely what a competitive market, i.e.,
3 entry of a competitive fringe, does. What he is implicitly
4 assuming is that the Okeechobee Project is the only plant
5 that will be allowed into the Florida mix and that the price
6 of \$30 in his example, which is far above the long run
7 marginal cost of entry, will be allowed to persist because of
8 lack of entry. If the Commission were imprudent enough to
9 deny all subsequent entry, OGC might enjoy the windfall Dr.
10 Landon is purporting and the Florida utilities might have to
11 buy power at prices higher than the long run marginal cost of
12 entry. That is preposterous and should be offensive to the
13 Commission, which is very capable of regulating and
14 precluding such behavior.

15 It is inconceivable that any regulatory commission would
16 be so imprudent as to let one plant in and then close the
17 door on all new entry, which is what would be required for
18 Dr. Landon's analysis to be correct.

19 **Q: On pages 34-35, Dr. Landon's testimony implies that FPL**
20 **should have an entitlement to build new plants in Florida.**
21 **Do you think FPL has or should have such entitlement?**

22 **A: FPL should have no such entitlement. While they should be**

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1 entitled to the opportunity to show that their proposed
2 plants offer the overall best deal for ratepayers, their
3 proposals carry several significant issues with them. The
4 incumbents are the systematically high cost provider because
5 of the Averch-Johnson effect, and they have market power that
6 will be intensified with further entry by them. I would
7 discourage them from building if I were the regulator. I
8 would deal with "uneconomic duplication" by systematically
9 favoring merchants over incumbents because I would be worried
10 about the systematically higher costs of the incumbents for
11 the same plant and I would be worried about the market power
12 they may well have been exercising in the past and can be
13 expected to be exercising even more in the future if they are
14 allowed to increase their market concentration.

15 **Q: On page 36 of his testimony, Dr. Landon offers the**
16 **prospective emergence of retail competition and the**
17 **consequent emergence of stranded costs as a reason to deny**
18 **entry to OGC. Please comment.**

19 **A: Dr. Landon is arguing that the Commission should take the**
20 **time to quantify and dispose of stranded costs before doing**
21 **anything related to merchant plant entry. In effect, Dr.**
22 **Landon is arguing that the Commission should allow the**

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1 incumbent retail-serving utilities to build high cost
2 generation, build it more slowly than the market needs, and
3 concentrate it in the hands of incumbent
4 monopolists/oligopolists with market power because of the
5 specter of potentially emerging retail deregulation, all in
6 a State that has the highest wholesale power cost in the
7 nation. He is arguing in effect that we should let the
8 already worst in class wholesale power price become even
9 worse while we debate the stranded cost issue for a
10 deregulation that has not happened or even been proposed yet.
11 This is unwise and unsound public policy that is clearly
12 contrary to the public interest. As a consumer, I would
13 rather have benefits today before I face a stranded cost
14 negotiation in the future than have no benefits today and
15 still face the same stranded cost negotiation in the future.
16 The idea of holding merchant power hostage to stranded cost
17 debates for yet-to-be-proposed regulation is completely out
18 of line. I am confident the Commission will solve the
19 stranded cost problem when the time is right.

20 There is another aspect of Dr. Landon's argument that is
21 truly preposterous. On pages 36-37, he essentially argues
22 that Florida should keep its power costs and prices high so
23 that stranded costs can be minimized. That is one of the
24 most ill-advised recommendations I could conceive. The

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1 literature on economic efficiency tells us the exact
2 opposite--Florida should strive to move immediately to a
3 competitive wholesale market irrespective of alleged stranded
4 cost or any other issues if Florida wants to maximize
5 economic efficiency, wealth maximization, relief to
6 economically disadvantaged ratepayers saddled with the
7 highest wholesale power costs in the nation, and so forth.
8 Stranded cost is a wealth transfer problem completely
9 outside, not inside, the pricing system. To solve it inside
10 the pricing system by distorting prices reduces economic
11 efficiency. Florida should solve the stranded cost problem
12 when and if it comes into existence.

13 **Q: Dr. Landon talks about categories of risk in lines 10-17 on**
14 **page 38 of his testimony and asserts that OGC bears about the**
15 **same level of risk in these categories as do incumbent**
16 **utilities. Do you agree?**

17 **A: No. I think utilities bear higher construction cost risks.**
18 **Vendors know that utilities can pass costs through to**
19 **customers, and I would expect them to price accordingly. I**
20 **also expect higher operating cost risks. Once again, vendors**
21 **know that utilities can pass costs through to customers, and**
22 **I would expect them to price accordingly.**

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1 Q: In lines 12-14 on page 41 of his testimony, Dr. Landon
2 asserts that the availability risk of the Okeechobee Project
3 is worse than for incumbent plants. Do you agree?

4 A: No. OGC has stronger incentives for high availability than
5 incumbent utilities who force their costs on ratepayers. I
6 disagree with any assertion that OGC will have lower
7 availability than incumbent plants.

8 Q: Dr. Landon asserts on page 46 of his testimony that Florida
9 is a "reasonable" location for a plant to export to
10 contiguous regions. What has the historical situation been
11 in that regard?

12 A: The wholesale price of power in Florida is the highest in the
13 nation. There has been no economic incentive for power to
14 flow out of the highest priced region in the nation (Florida)
15 to a lower priced region except during temporary,
16 exceptional, ephemeral periods of time. There is strong
17 economic incentive for power to flow into Florida from lower
18 priced regions except during temporary, exceptional,
19 ephemeral periods of time. It is a simple economic
20 phenomenon that commodities are transported from low price
21 regions to high price regions and not the reverse.

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1 Q: On page 48 in lines 7-10 of his testimony, Dr. Landon states:
2 "The effects of OGC exports are two-fold. First, since the
3 merchant plant is no longer serving the Florida market, more
4 expensive units must be brought online, increasing generation
5 costs to regulated retail utilities like FPL, and in due
6 course, the customers." Isn't Dr. Landon effectively
7 admitting by this testimony that OGC is a lower cost provider
8 than FPL plants?

9 A: Yes.

10 Q: Isn't Dr. Landon also admitting by this testimony that
11 utilities and their customers can and will be buying power
12 from the Project and that the depressions in the wholesale
13 price will indeed find its way to utility customers?

14 A: Yes. This testimony effectively admits that the Project is
15 a low cost provider and that its benefits will be
16 systematically accruing to utility customers and that those
17 benefits will be denied to utility customers if the power is
18 sold out of state. Yet previously, Dr. Landon testified the
19 precise opposite--that the benefits of OGC would not accrue
20 to utility customers. His "2.5%" analysis on pages 24-25 of
21 his testimony asserted that virtually no benefits of the

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1 Project would accrue to utility customers. If there are
2 virtually no benefits accruing to utility customers, how in
3 the world can utility customers be harmed if power from which
4 they are not benefitting is sold out of state? Dr. Landon's
5 testimony is intrinsically inconsistent. The truth of the
6 matter is that the full benefits of the Project will, under
7 all reasonably foreseeable scenarios, accrue to the customer
8 base in Florida. (The Project's presence will also cause
9 some price suppression benefits in other regions, but that
10 does not reduce the benefits that the Project provides to
11 Florida electric customers.)

12 **Q: Please comment on "playing the spark spread" as Dr. Landon**
13 **characterizes it on pages 50-51 of his testimony.**

14 **A:** OGC will mark its gas and power to market. That strategy
15 continuously and effectively plays the spark spread. Dr.
16 Landon implies incorrectly that this is a "bad" thing. On
17 the contrary, it is not a "bad" thing, it is a "good" thing.
18 It delivers the maximum possible economic efficiency benefits
19 to the aggregate of Florida gas ratepayers and electric
20 ratepayers. To see why Dr. Landon's testimony is wrong in
21 its assertion that this is a "bad" thing, ask the following
22 simple question: Would the Commission want OGC or anyone
23 else to burn up high priced \$5/Mcf gas (during time of a gas

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1 shortage) when the power price was only \$30/MWH? Assuredly
2 not--the gas is worth more than the power. In such a
3 situation, the gas would be worth far more to a Florida gas
4 ratepayer than the power would be to a power ratepayer, and
5 the Commission would want OGC and everyone else to deliver
6 the gas to the needy gas ratepayer. In the converse
7 situation, would the Commission want OGC or anyone else to
8 burn up \$2/Mcf gas (during time of gas abundance) when power
9 price is \$30/MWH? Most assuredly yes--the power is worth
10 more than the gas. In such a situation, the power would be
11 worth far more to a Florida electric ratepayer than the gas
12 would be to a gas ratepayer, and the Commission would want
13 OGC and everyone else to burn the gas and deliver the power
14 to a needy electric ratepayer. Dr. Landon's assertion flies
15 in the face of the most basic, fundamental, elementary
16 understanding of economic efficiency in multicommodity
17 markets. OGC will, by marking its gas and electricity to
18 market, be doing Florida a favor in terms of enhancing the
19 overall efficiency of electricity and natural gas production
20 and use. What Dr. Landon improperly characterizes as a bad
21 thing is in reality a good thing for Florida.

22 **Q: In lines 9-16 on page 56 and the question preceding, Dr.**
23 **Landon states that "Dr. Nesbitt is advocating a change in**

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1 market structure in Florida. This backhand advocacy of
2 partial deregulation is not appropriate or relevant to a
3 determination of need proceeding." Please comment.

4 A: Dr. Landon's argument is unfounded and misplaced: market
5 power issues are not equivalent to, or even meaningfully
6 related to, deregulation issues. Take OPEC for example. Is
7 OPEC a deregulation issue? Assuredly, it is a market power
8 issue, but it is not at all a deregulation issue. Take
9 Microsoft as another example. Is that a deregulation issue?
10 Assuredly, it is a market power issue, but it is not at all
11 a deregulation issue. Market power issues are separate and
12 distinct from deregulation issues. Market power is always
13 bad for people on the demand side of the equation (Florida
14 ratepayers, citizens, and businesses) if it is exercised.
15 The fact that wholesale power prices are high in Florida
16 relative to the rest of the country implies that market power
17 might be being exercised in Florida by the incumbents.
18 Incumbents have the market concentration to exercise market
19 power, and denial of entry to the Florida market is being
20 championed by the incumbents. The ferocity of opposition in
21 the Duke New Smyrna case and now in these proceedings is
22 evidence of incumbents erecting barriers to entry. That in
23 itself can be construed as the effective exercise of market

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1 power. Authorizing merchant entry is the most effective way
2 to thwart the prospective or actual exercise of market power.
3 That is not an argument for deregulation. It is an argument
4 for thwarting prospective market power at its roots in the
5 most cost effective fashion. The need to thwart market power
6 that might otherwise be exercised is one of the legitimate
7 and important arguments for "need" for the Okeechobee
8 Project.

9 Moreover, given the Commission's fundamental regulatory
10 purpose--to promote and protect the public interest--these
11 considerations are entirely relevant to this need
12 determination proceeding. I cannot emphasize strongly enough
13 that market power and market concentration are bad for FRCC,
14 driving prices up and driving quantities down compared to the
15 economically efficient place at which they should be. This
16 hurts Florida ratepayers.

17 Q: Dr. Landon asserts that FPL and FPC are unlikely to be
18 exercising market power on pages 58-59 of his testimony. He
19 justifies his assertion by arguing that they are required to
20 sell wholesale energy at regulated, cost-based prices. Do
21 you agree with his analysis?

22 A: No. Dr. Landon asserts that cost-based rates necessarily

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1 ensure against the exercise of market power. There are
2 several examples where the incumbent utility can be
3 extracting monopoly rents even under seeming cost-based
4 rates. Depreciation is one of the elements of allowed cost.
5 If depreciation is recovered through the exercise of market
6 power (i.e., denial of merchant entry) faster than the true
7 economic rate of plant deterioration, then such "accelerated"
8 depreciation can be monopoly rent or the exercise of market
9 power parading in different clothing. To the extent that
10 incumbents have written off their depreciation faster than
11 would be justified through the true economic rate of plant
12 deterioration, then they will have already extracted monopoly
13 rents. To the extent that the remaining book value of their
14 plants is below the fair market value of those plants, as
15 would, I believe, be reflected in bids for those plants on
16 the open market, monopoly rents might have been extracted.

17 Another mechanism of extracting monopoly rents from
18 Florida ratepayers would be to inflate costs higher than they
19 would be in a mark-to-market competitive market. Such
20 inflated costs may be monopoly rents or market power exercise
21 parading in "cost" clothing.

22 Another mechanism of extracting monopoly rents from
23 Florida ratepayers would be to deny entry to merchants or
24 other outsiders and to underbuild indigenous capacity. This

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1 would drive prices higher than the economically efficient
2 level and obscure efficient costs. High costs and high
3 prices provide extra opportunities for incumbents to extract
4 monopoly rents or exercise market power.

5 There are many ways for regulated incumbents to extract
6 rents under cost regulation. The simplest and most efficient
7 way to ensure that they do not is to allow the entry of
8 merchant plants in sectors where there are no natural
9 monopolies to discipline and expose the price. Approval of
10 the Okeechobee Project will foster that objective.

11 **Q: Does this conclude your rebuttal testimony as to Dr. Landon?**

12 **A: Yes, this concludes this portion of my rebuttal testimony.**