

COMMONWEALTH OF PENNSYLVANIA

SENATE OF PENNSYLVANIA

ENVIRONMENTAL RESOURCES AND ENERGY COMMITTEE

PUBLIC HEARING ON SPECIAL SESSION SB

FUNDING FOR ALTERNATIVE ENERGY & FUELS

Before : SENATOR MARY JO WHITE, CHAIR
SENATOR RAPHAEL J. MUSTO, MINORITY CHAIR
SENATOR ROBERT M. TOMLINSON
SENATOR DONALD C. WHITE
SENATOR ANDREW DINNIMAN
SENATOR MIKE BRUBAKER
SENATOR WAYNE D. FONTANA
SENATOR EDWIN B. ERICKSON
SENATOR MIKE FOLMER
SENATOR ROBERT C. WONDERLING
SENATOR LISA M. BOSCOLA

Date : Wednesday, November 14, 2007, 9:00 a.m.

Place : Hearing Room One, North Office Building

By : Tracy L. Lloyd, Notary Public
Registered Professional Reporter

SPEAKERS:

IBERDROLA RENEWABLE ENERGIES USA
ERIC THUMMA, DIRECTOR, POLICY & REGULATORY AFFAIRS

GAMESA CORPORATION
JOE CAHILL, CEO

DEPARTMENT OF COMMUNITY & ECONOMIC DEVELOPMENT
HONORABLE DENNIS YABLONSKY, SECRETARY

PLEXTRONICS, INC.
TROY HAMMOND

NEW SPRING CAPITAL
BRIAN MURPHY, PARTNER

SPEAKERS (Continued):

BEN FRANKLIN TECHNOLOGY PARTNERS
STEPHEN A. COSTANTINO, VP, TECHNOLOGY
COMMERCIALIZATION GROUP

SWAN BIOMASS COMPANY
ROBERT H. WALKER, PRESIDENT

KEYSTONE BIOFUELS, INC.
RACE MINER, CEO

PENNSYLVANIA ENERGY RESOURCES GROUP
JOHN NIKOLOFF, PARTNER

1 CHAIRMAN WHITE: We have a tight schedule.
2 This is session day. I'm sure more members will
3 be dropping in and some will have to come and go,
4 so we will do our best to have a full audience
5 and be attentive.

6 We do ask that the witnesses please keep
7 their testimony somewhat brief so there is time
8 for questions from the Committee. This public
9 hearing is on the funding for alternative energy
10 fuels.

11 We ask that the witnesses please, when they
12 are ready to testify, press the little button to
13 turn the green light on the microphone. When you
14 are not speaking, if you would be kind enough to
15 shut it off so that we are not picking up
16 background noises.

17 Senator Musto, do you have anything?

18 SENATOR MUSTO: I have nothing.

19 CHAIRMAN WHITE: We will call the first
20 witnesses.

21 MR. HENDERSON: Our first witnesses are Eric
22 Thumma of Iberdrola, Joe Cahill from Gamesa, and
23 Sue LeGros from Mid-Atlantic Solar Energy
24 Industries Association.

25 CHAIRMAN WHITE: Are we missing someone?

1 Okay. Go ahead.

2 ERIC THUMMA: Good morning. Chairman White,
3 Chairman Musto, and Members of the Committee,
4 thank you for the opportunity to appear before
5 you today to offer recommendations on ways to
6 encourage additional wind energy development in
7 Pennsylvania.

8 We thank the Committee, the Senate, and the
9 General Assembly for their leadership in
10 promoting alternative energy generally and wind
11 energy specifically. I would like to especially
12 offer our thanks for the Committee's leadership
13 in passing Act 35, which provides important
14 enhancements to the Alternative Energy Portfolio
15 Standards Act.

16 If the Committee will indulge me, I'm going
17 to refrain from just reading my comments I
18 submitted, lengthier comments than the time I
19 have allotted today, so I will move forward with
20 some remarks and hope to keep within the five
21 minutes of allotted time.

22 Iberdrola is the largest owner and operator
23 of wind energy projects in the world. Iberdrola
24 Renewable Energies USA has one of its three main
25 offices in Radnor, Pennsylvania, and this year

1 commissioned its first U.S. wind energy project
2 at Locust Ridge in Schuylkill County.

3 Also, Iberdrola companies, Atlantic
4 Renewable and Community Energy have developed
5 Meyersdale, Somerset, Mill Run, Garrett, and Bear
6 Creek wind projects, all Pennsylvania wind energy
7 projects. We are currently developing the
8 Casselman wind project in Somerset County, and we
9 have a several hundred megawatt wind energy
10 project pipeline across Pennsylvania.

11 Iberdrola is committed to investing in
12 Pennsylvania's energy future and appreciates the
13 ongoing opportunity for dialog with members of
14 this Committee.

15 We'd like to note that wind energy is a
16 reliable resource. Wind farms produce power at
17 least 80 percent of the time. While they may not
18 always be at their maximum capacity during that
19 time, they are delivering energy to the grid
20 approximately 80 percent of the time.

21 Additionally, because Pennsylvania is part
22 of a very large great dispatch system called PJM
23 and part of Pennsylvania is also in the
24 Midwestern dispatch area, wind energy can easily
25 be integrated in the system very reliably without

1 any problems related to wind's sometime
2 intermittent nature.

3 Today, Pennsylvania's eight commercial wind
4 farms provide enough electricity to power 55,000
5 homes annually, and Pennsylvania is a wind energy
6 leader. Pennsylvania's unique in that it has the
7 benefit of having both a very good resource, but
8 also a fairly significant amount of electricity
9 load. Many of the states that have the best wind
10 resources in the Midwest don't have the benefit
11 of being near load centers, so that makes
12 Pennsylvania unique and it makes wind a good
13 choice for Pennsylvania's electricity future.

14 Other policy aspects of Pennsylvania, many
15 of which this Committee has helped to shape, make
16 Pennsylvania a good choice for wind energy. Wind
17 energy is part of AEPS Tier 1. As I mentioned,
18 we are part of the PJM MISO interconnections
19 which allow for ease of dispatch for wind energy
20 and also access to the broader PJM energy and REC
21 markets.

22 Electricity restructuring remains a critical
23 component for wind energy developers. The
24 opportunity to always have an available
25 counter-party from which to take our electricity

1 which is part of wholesale electricity
2 restructuring is critical. And the maintenance
3 of retail competition and the 38,000 customers
4 that are part of the PECO wind program is also
5 important for the wind industry.

6 So we have a great base here in Pennsylvania
7 from which to work with, and we're very grateful
8 for that. But today for this session I do offer
9 a few recommendations on how we can even further
10 enhance the opportunities for wind energy in
11 Pennsylvania. And I just have three of those.

12 One, it's absolutely critical that we can
13 maintain the consistent Tier 1 eligibility
14 requirements. The Tier 1 in the Alternative
15 Energy Portfolio Standard, it creates a market
16 for those resources, and it is important for
17 investors that are going to be looking at a 10 or
18 15 year horizon to pay back those investments.
19 They know the rules are going to be stable and
20 consistent.

21 The second recommendation relates to a
22 component of Senate Bill 1. As I've noted, I
23 believe chapter nine of that bill includes a
24 production incentive, and we think that's a good
25 idea.

1 It is the case that PJM is -- we think about
2 electricity markets for wind, it's not really
3 just a Pennsylvania market. It's really a
4 broader PJM market. So to a certain extent, we
5 are competing somewhat with Illinois which tends
6 to have a little better wind resource. The
7 projects are a little better, and so the
8 economics in Illinois can be a bit more
9 advantageous. That's not to say that projects
10 wouldn't happen in Pennsylvania. They will
11 happen no matter what because of the reasons I
12 mentioned, but a production incentive would level
13 the playing field with Illinois for wind energy
14 projects.

15 We do propose a consideration by this
16 Committee of the slightly different structure
17 than the one found in Senate Bill 1. Because of
18 federal depreciation, wind energy projects tend
19 to have a very limited state tax liability, and
20 so the production tax credit that is found in
21 that is probably not the most advantageous
22 mechanism for wind energy projects.

23 So we would recommend that the Committee
24 possibly look at the opportunity for production
25 grants. A production grant based on output from

1 wind farms is probably a little better structure
2 for us. It doesn't conflict with the federal
3 production tax credit, and it also rewards
4 projects that actually get billed and ensures
5 that the taxpayers are getting the benefit as
6 clean energy is delivered to the grid.

7 The last recommendation I have for the
8 Committee this morning is a requirement that
9 utilities when they go out for their bids for
10 default service and they're looking at meeting
11 their AEPS requirements, that they put out a bid
12 of both shorter term and longer term lengths,
13 provide a little bit more pricing information.

14 This recognizes that some meaningful part of
15 Pennsylvania's electricity load will probably
16 remain with the default providers, provide
17 additional pricing to the market, and we are not
18 suggesting that they are mandated to accept those
19 bids, merely that they offer those bids to get
20 the information. And if they get a competitive
21 bid, that they be enabled to accept that bid and
22 recover their costs pursuant to the provisions of
23 AEPS.

24 We think that long-term bids may actually
25 encourage discounts in pricing because locking in

1 that price sort of creates an anchor in your
2 bottom line in terms of how you are going to
3 finance your projects, and we think that this is
4 going to spur additional development in
5 Pennsylvania.

6 So I thank you for the opportunity to make
7 these remarks today. At the end of the panel,
8 I'd be very happy to answer any questions that
9 the Committee has, and again thank you for
10 inviting Iberdrola to be here today.

11 CHAIRMAN WHITE: When you say long-term, how
12 long are you talking?

13 MR. THUMMA: I think a five to ten year
14 spread. I do know -- I believe the Commission
15 has approved a five-year initial bid offer from
16 PECO Wind to bank credits, so there is maybe some
17 precedent to move forward on that, but I think
18 there is still some uncertainty in the market as
19 to exactly what folks can do.

20 CHAIRMAN WHITE: Okay. Let's hear the rest
21 of the testimony, then we will ask questions.

22 MR. CAHILL: Chairman White, Chairman Musto,
23 and the members of the Committee, on behalf of
24 the Gamesa U.S., headquartered in the
25 Commonwealth, I appreciate the opportunity to

1 appear before you today to discuss some key
2 policy recommendations that will help to ensure
3 the growth of Pennsylvania's thriving alternative
4 energy marketplace.

5 Let me begin by commending both the State's
6 Administration and Legislature for your
7 bipartisan work on this issue. Your joint
8 efforts over the last few years have helped to
9 make Pennsylvania a recognized manufacturing
10 leader in alternative energy development and
11 deployment.

12 My name is Joe Cahill. I'm the chief
13 financial officer of Gamesa's U.S. operations.
14 Gamesa is a company headquartered in Spain that
15 is publically traded on the Spanish stock market.
16 With over 5200 employees in 17 countries, Gamesa
17 is the most vertically integrated wind energy
18 company in the world. Gamesa manufactures all of
19 the components for wind turbines and separately
20 develops wind farms.

21 As many of you know, Gamesa selected
22 Pennsylvania for its United States headquarters
23 in September of 2004. Since then, we have
24 invested over \$110 million of capital investment
25 in the Commonwealth and created more than 1,000

1 jobs statewide at our manufacturing plants in
2 Cambria County and Bucks County. And our
3 development division and corporate headquarters
4 in center city Philadelphia. We also have
5 developed offices in Minneapolis, Minnesota and
6 Austin, Texas.

7 In the U.S., we have more than 1,000
8 equivalent megawatts under development and close
9 to 1,000 megawatts to be delivered or planned to
10 be delivered to wind farms by the end of this
11 year. Our focus in Pennsylvania has helped the
12 state become one of the leading producers of wind
13 energy east of the Mississippi River. As
14 Pennsylvanians, we can all be proud of these
15 accomplishments.

16 The Commonwealth's aggressive Alternative
17 Energy Portfolio Standard has helped to fuel the
18 growth of renewable energy while
19 Pennsylvania-based utilities have agreed to
20 purchase over 1,000 megawatts of wind power from
21 Gamesa-manufactured turbines.

22 Gamesa's decision to locate in Pennsylvania
23 was driven by the energy vision articulated by
24 the State Administration and the Legislative
25 leaders combined with Pennsylvania's highly

1 skilled work force, existing manufacturing
2 capacity, and the state's location amid the
3 growing alternative energy markets in the
4 Northeast.

5 Through the PJM Interconnect, Pennsylvania
6 is surrounded by other states such as New Jersey
7 and Maryland with large energy consumer
8 populations, limited wind resources and
9 state-passed portfolio standards. New Jersey
10 requires 25 percent clean energy by 2021;
11 Maryland is 12 percent by 2022. Strategically,
12 given the lack of available land of our
13 neighbors, Pennsylvania-based wind farms will
14 help to meet the renewable targets of these
15 states, as well.

16 It is true that Pennsylvania, as part of its
17 standard economic development portfolio to
18 attract outside investment, offered Gamesa \$22
19 million in various financial commitments. Gamesa
20 to date has utilized about one third of those
21 funds committed by the State and has been able to
22 meet and exceed the initial job expectations and
23 growth estimates.

24 We promised 1,250 jobs in five years
25 starting in 2005, and we have almost surpassed

1 that promise after two years of operating our
2 facilities. Right now, we are continuing to hire
3 more workers in Pennsylvania.

4 Gamesa's story fits well into the current
5 discussions as the Administration and General
6 Assembly work together to expand and develop
7 further the nation's most successful statewide
8 renewable energy strategy. Let me offer some
9 perspectives on behalf of Gamesa.

10 First, the Legislature should work to help
11 Pennsylvania businesses retool to meet the supply
12 needs of the alternative energy companies already
13 doing business here, and actively encourage
14 existing suppliers to set up shop in the
15 Commonwealth.

16 Enabling facility upgrades, capital
17 investment and training workers to manage these
18 new technologies from supply to construction
19 would establish Pennsylvania as the hub for the
20 development and maintenance of alternative energy
21 solutions and vastly expand this growing economic
22 sector and the number of jobs that go with it.

23 Due to the size and scale our components,
24 our wind turbines, attracting suppliers as close
25 to our facilities as possible is advantageous to

1 our business.

2 Second, the Legislature should consider
3 expanding the language in Senate Bill 1 dealing
4 with incentives to provide direct payments to
5 municipalities that accept the benefits of clean
6 energy. Right now, Gamesa and other wind energy
7 developers make payments in lieu of taxes to
8 municipalities where turbines are located. The
9 State should match that amount on a
10 dollar-for-dollar basis as a grant to the
11 municipalities. This increases the incentive to
12 host wind farms and directs state tax dollars
13 directly into local communities for the benefit
14 of residents who get to make their own decisions
15 but with all the possible assistance necessary.

16 Third, Pennsylvania should seek ways to
17 partner with other states to ensure the seamless
18 transport of the turbine components throughout
19 the United States. The Gamesa Pennsylvania
20 manufacturing plants build blades, towers and
21 nacelles and ship them to Pennsylvania projects
22 as well as projects throughout the United States.
23 Consistent permitting structures from state to
24 state would ease the flow of goods from our
25 Pennsylvania manufacturing facilities. In

1 addition, Senator Spector has been very helpful
2 in this regard in trying to get the consistency
3 from state to state.

4 Gamesa's success is evidence of how
5 effective the policies passed and enacted by the
6 State's Administration and General Assembly have
7 been. The sizeable potential for job creation
8 held by clean energy component manufacturing and
9 maintenance businesses continues to grow,
10 particularly with respect to wind energy
11 development, which quickly is becoming
12 Pennsylvania's most dynamic new economic sector.

13 As demand for electricity is increasing at 3
14 percent per year, wind energy is becoming an
15 important supplement to our overall makeup of the
16 nation's electricity supply. Currently, only 1
17 percent of the nation's energy supply, enough to
18 power nearly 2 million U.S. homes, is derived
19 from wind.

20 The U.S. Department of Energy is calling for
21 20 percent penetration of wind energy onto the
22 U.S. electricity grid over the next two decades.
23 The United States has more than 400 times the
24 wind potential than we're currently capturing.
25 Clearly, Pennsylvania is taking the lead in

1 creating energy independence for the rest of the
2 country.

3 Demand for wind turbines still outstrips
4 existing supply on a worldwide basis as well as
5 in the U.S., and projects that did not get built
6 in previous years are now being built thanks in
7 part to Gamesa's local production facilities in
8 Pennsylvania.

9 Today, the turbine components that Gamesa's
10 workers build at the company's two
11 Pennsylvania-based manufacturing facilities in
12 Ebensburg and Fairless Hills are being shipped
13 throughout the country.

14 Let me close by once again commending the
15 Commonwealth's Legislature and Administration for
16 your bipartisan support in growing Pennsylvania's
17 alternative energy marketplace and your
18 commitment to ensure that it continues to thrive.

19 Chairman White, Chairman Musto, and Members
20 of the Committee, I thank you for your time and
21 attention. I am happy to answer of your
22 questions.

23 CHAIRMAN WHITE: Thank you. We are missing
24 one witness.

25 MR. HENDERSON: Sue LeGros?

1 CHAIRMAN WHITE: We will proceed with
2 questioning then. Senator Musto.

3 SENATOR MUSTO: Thank you, Madam Chairman.
4 Good morning. Good morning, Joseph. I know you
5 explained, but I need an additional explanation
6 of what do you mean by consistent permitting
7 structures to ease the flow of goods out of
8 Pennsylvania manufacturing locations?

9 MR. CAHILL: I can give you an example. The
10 blades that we produce in Ebensburg and Fairless
11 Hills, and just to give you some dimension, the
12 diameter of a wind turbine is almost a football
13 field in length, so the size of these blades are
14 tremendous if you've seen them on the roads.

15 When we load them up on trucks, we load them
16 up three at a time, and they are in these cages,
17 these very long cages. So we have encountered
18 when we ship those triple blade cages over the
19 state lines into other states, they don't accept
20 the triple blade cage because of their
21 interpretation of the federal rules.

22 So what we have to do is off-load those
23 three blades onto single blade shipments and move
24 them through some of those states, so that's the
25 biggest example that I can give you on that.

1 SENATOR MUSTO: You're asking for
2 cooperation among the states?

3 MR. CAHILL: Consistency in how they
4 interpret the federal laws.

5 SENATOR MUSTO: Thank you. And, Eric, do
6 you believe the amount of production tax credit
7 in Senate Bill 1, 20 million, is sufficient to
8 achieve our alternative energy goals? I know you
9 mentioned that you'd rather see grants rather
10 than tax credits.

11 MR. THUMMA: Good morning, Mr. Senator.
12 Thank you for your question. I think that I have
13 not examined frankly how far that would go. My
14 suspicion is that as more projects come on-line,
15 over time that will get discounted, so I think
16 that is probably sufficient in some of the
17 earlier years.

18 In the out years as more projects come
19 on-line, they probably need to be readjusted. I
20 think ultimately just -- ultimately, we will want
21 to look at a way to get the market to make that,
22 but to spur some of the initial investments, I
23 think it could be a beneficial program.

24 SENATOR MUSTO: So due to the large
25 depreciation in your earlier years, your taxes

1 are much -- or profits are much lower?

2 MR. THUMMA: Our state tax liability in
3 early years of our projects is not that great, so
4 to take an investment in tax credit to apply to
5 our state taxes is not a mechanism that is going
6 to be the most useful mechanism for us.

7 I would just offer a couple other
8 observations on that. Other states, Utah and
9 Oregon, have either made those credits tradable
10 with other entities that do have a tax liability
11 or they've allowed those to then just be credited
12 against your overall -- sort of refunded to you
13 as a tax credit. Those would be alternative
14 mechanisms that the Committee could consider if
15 they didn't find the production grant to be an
16 acceptable mechanism.

17 Production grant is simplest for us, but I
18 offer those other examples of some other
19 mechanisms to deal with the limited tax liability
20 that our projects have.

21 SENATOR MUSTO: Thank you.

22 CHAIRMAN WHITE: Would you see that
23 production grant as a permanent thing or as a
24 temporary?

25 MR. THUMMA: That's a great question,

1 Senator. As you know, the production tax credit
2 that we get for the federal government over time
3 you realize that that just kind of gets built
4 into the proforma of projects, so I think
5 realistically if there were some sunset on that,
6 that's something that the industry would adjust
7 to as it builds its project finance.

8 Again, the idea is let's spur the
9 investments now, get the investments, and then
10 the dual nature of having both the competitive
11 electricity market and a REC requirement through
12 AEPS and hopefully some other federal incentives,
13 ultimately we hope that will take over in the
14 long-term.

15 CHAIRMAN WHITE: What do you think of
16 Mr. Cahill's idea, and I recognize we are in two
17 different aspects of the wind energy business
18 here, the actual manufacturer of the turbines and
19 the operator of, but what do you think of his
20 suggestion that we offer match incentives to
21 municipalities to ease the sitings of such
22 facility?

23 MR. THUMMA: We would support that idea.
24 Certainly, it is the local communities that make
25 these projects. Those are the folks where the

1 projects are located, so providing them some
2 additional benefit, frankly from -- I think the
3 theory being that this only benefits the entire
4 state, but the folks in those communities have
5 the projects. That makes sense to us. We would
6 support that.

7 Certainly, one of the -- the devil's always
8 in the details of how those things get shaped up,
9 but I think the general idea is a good one.

10 CHAIRMAN WHITE: We do have some precedent.
11 We have done it with waste facilities, for
12 example. Senator Erickson.

13 SENATOR ERICKSON: Thank you, Madam
14 Chairman. Good morning. First, thank both of
15 you for locating in Pennsylvania. We certainly
16 do appreciate that.

17 Mr. Cahill, are you having difficulty
18 actually siting some of these windmills in
19 different areas of the Commonwealth?

20 MR. CAHILL: Yes. We are encountering
21 difficulties with one particular site right now.

22 SENATOR ERICKSON: Can you discuss any
23 mechanisms that we might look at to improve that
24 situation?

25 MR. CAHILL: I believe one of the

1 suggestions that I made may help, not in the
2 current situation, but for future situations.
3 Also, education and awareness of what wind farms
4 are. I think that's half of our battle. I don't
5 know if it is half, but it is a big part of the
6 battle to explain what we are doing and why and
7 the benefits of it.

8 So a combination of education, and one of
9 the suggestions that I made about incentives in
10 municipalities would be my answer. Thank you.

11 SENATOR ERICKSON: Thank you.

12 CHAIRMAN WHITE: Senator Dinniman.

13 SENATOR DINNIMAN: I just wanted to
14 reiterate what you were saying concerning the tax
15 credit provision. This is a problem not only for
16 you, but it is a problem now in the biosciences,
17 as well. We give tax credits. We give these
18 initiatives to new companies, but you have no
19 profit, so you can't have the tax credit count
20 very effectively.

21 And so I think for start-up companies, be it
22 in energy or be it in the biosciences, that this
23 problem exists, and I appreciate you bringing it
24 to our attention, and could you explain a little
25 more how you believe that the tradable, the

1 tradability of these tax credits or giving you
2 that ability could help you significantly?

3 MR. THUMMA: Well, I'll tell you how I know
4 that it works in other jurisdictions. In Oregon,
5 basically what happens is the tax credits are
6 provided to the wind company. They are then able
7 to trade that to a bank or some other entity that
8 has tax liability to apply that. The bank will
9 generally make an upfront payment.

10 So let's say the credit is worth \$10,000,
11 but it could be spread over five years, which I
12 think is the provision in Senate Bill 1, they may
13 pay \$6,000 in year one. So we get a net present
14 value for that money that almost is equal to the
15 spread over the five years. Then the bank would
16 apply that credit on the five-year basis. So
17 that's essentially how I'm familiar with it
18 working in Oregon.

19 In Utah, my understanding is it's just a
20 credit. It is basically a refund which I think
21 is maybe not as preferable an approach. Again, I
22 would just say we'd probably prefer the
23 production grant better, but certainly the idea
24 of tradability would be something we would
25 absolutely entertain if that is something that is

1 more amenable to the Members of the Committee.

2 SENATOR DINNIMAN: This is something we
3 certainly have to consider. We are hearing this
4 from many new start-up companies in a variety of
5 different areas including energy, including
6 biosciences that what we think is a break really
7 doesn't help initially in that company.

8 And also there is sometimes a delay for the
9 year before all the tax information is in to get
10 the credit. So it is something that I'm sure
11 that we will consider and try to figure out some
12 solution for.

13 MR. THUMMA: Thank you, Senator.

14 CHAIRMAN WHITE: Senator Ferlo.

15 SENATOR FERLO: Thank you, Madam Chairman.
16 I want to thank you folks for being here today.
17 Obviously, I'm a big component for not only wind,
18 but solar, any other kind of truly renewable
19 energy source.

20 But just on the Senator's point on the
21 development and amendments on the R and D tax
22 credit, we actually did create the incentive for
23 the sale tax credit. So I think we already have
24 a model in place with the research and
25 development tax credit, and it saved several

1 millions of dollars. I think that can be the
2 same vehicle that we could use here as we expand
3 on this language of Senate Bill 1.

4 One of the issues, though, I don't know that
5 the State Legislature is ever going to
6 politically supercede local zoning authority and
7 powers. We're probably not going to do it for
8 the siting of windmills, but what's in the
9 horizon 10, 15, 20 years from now because it
10 seems like some of the concern is just the size
11 and massing and the technology itself and how
12 this will work, how the windmills are constructed
13 and what they look like.

14 Is there something different that will
15 happen in the future? I know some wind
16 activities on buildings are not with propellers
17 but actually -- I don't know what the language
18 would be -- is there something in the future that
19 would suggest that there is a way to look
20 differently at how these would be constructed or
21 is it always going to be a football field for
22 power?

23 MR. CAHILL: I'll try to answer as best I
24 can, Senator, and thank you for the question.
25 With the information that I know about future

1 development of the turbines, they're probably in
2 the close future are not going to change that
3 much. But certainly in the innovative landscape,
4 anything can happen with regard to wind or other
5 renewable technologies.

6 New ways of constructing less invasive in
7 terms of building roads, better technology in the
8 turbines themselves, more efficiencies --

9 SENATOR FERLO: As a company, did you spend
10 or allot a percentage of R and D internally just
11 for these accretions?

12 MR. CAHILL: Yes. Our Spanish parent
13 company has an R and D arm that works on these
14 projects all the time. So they are always
15 driving the efficiencies of the turbines
16 improving them.

17 SENATOR FERLO: We have a lot of
18 intellectual capital, and I suggest that there is
19 some way that marriages could be created between
20 that intellectual capital and yourselves. I
21 encourage that.

22 MR. CAHILL: We are very open in having
23 those discussions.

24 SENATOR FERLO: Thank you.

25 CHAIRMAN WHITE: Senator Brubaker.

1 SENATOR BRUBAKER: Good morning. Thank you
2 for your testimony. I came in during your
3 testimony because I was in another meeting, so I
4 do apologize for being late. I don't think you
5 covered this by me reading your testimony. Did
6 either of you talk about the reliability of wind
7 as an energy source? We hear a lot about that,
8 and, obviously, the turbines don't move when the
9 wind is not blowing.

10 Can you talk about reliability? How many
11 miles per hour of wind does it take to turn these
12 turbines, and when you identify a site, what kind
13 of due diligence goes into the identification of
14 site to provide for the reliability of that
15 energy?

16 MR. THUMMA: I'll try to take all those
17 questions. Senator, thank you. It is a very
18 important question. I appreciate the opportunity
19 to address those. I think there's been a lot
20 written about this in the press.

21 First, a wind turbine typically will start
22 operating around 7 miles per hour is when we
23 start producing energy, and there is a maximum
24 rated capacity for a wind farm. Let's say it is
25 30 megawatts or 20 megawatts. That's the amount

1 of megawatt hours it would produce in an hour if
2 the wind is blowing and we are hitting our
3 maximum rated capacity.

4 We are not always there. There is no doubt
5 about that. A wind farm in Pennsylvania produces
6 its maximum year -- what it can produce maximally
7 in a year if the wind was blowing at a hundred
8 percent efficiency all the time, we're probably
9 at about a 33 percent level on an average wind
10 farm in Pennsylvania.

11 However, wind farms are producing
12 electricity approximately 80 percent of the time
13 for a typical project in Pennsylvania. So we are
14 more often than not producing electricity
15 delivering it to the grid.

16 So reliability, it's an intermittent
17 resource, and what does that mean? I mean, and
18 the simplest way for me to describe that is
19 there's folks down in Valley Forge that are in
20 PJM, they are system operators. So what they are
21 concerned about is the deviation in production
22 over a five-minute period. That can be
23 understood to a very high level of certainty.

24 If the wind is blowing at a certain speed,
25 it's very likely it's going to be a high

1 percentage blowing at that speed five minutes
2 from now, so they are able to calculate for that.
3 So the simplest way to describe it is what
4 happens is they are looking at their computer
5 screens and when they see our resource coming
6 down a little bit, they turn up what is called a
7 reserve resource and they boost that up a little
8 bit, so the grid is always in balance.

9 So it is not the case that when the wind
10 isn't the blowing, the lights are going to go
11 out. I want to make that clear. I think
12 everybody knows that. I just want to reiterate
13 that because I've seen some mentions of things
14 like that in the press, and that's simply not
15 true.

16 So it is a reliable resource. There are
17 jurisdictions all over the world, Denmark for
18 example, that have integrated up to 20 percent of
19 their system with wind, and it can be done
20 efficiently and effectively.

21 We are certainly nowhere near that
22 percentage now in a very large system like PJM,
23 so we have a long way to go before we have to
24 start considering reliability questions related
25 to intermittent resources in Pennsylvania.

1 SENATOR BRUBAKER: My final question is,
2 Mr. Cahill, in your testimony on Page 3 you are
3 quoted as saying the U.S. Department of Energy is
4 calling for 20 percent penetration of wind energy
5 onto the U.S. electricity grid over the next two
6 decades. The United States has more than 400
7 times the wind potential than it is currently
8 capturing.

9 Would your vision be a complete build-out
10 for the Commonwealth of Pennsylvania to capture
11 this full potential?

12 MR. CAHILL: Thank you for the question. My
13 vision for the Commonwealth of Pennsylvania would
14 be more of a market driven answer, whatever the
15 market needs in terms of demand for energy and
16 what supply we have, whether it's wind or other
17 technologies. Wind is a component of the entire
18 energy pie, and we intend to produce energy to
19 meet the demands of the market.

20 SENATOR BRUBAKER: Market driven does not
21 accommodate the mandates and subsidies, does it?

22 MR. CAHILL: No.

23 SENATOR BRUBAKER: So you're asking for no
24 mandate and no subsidy?

25 MR. CAHILL: No, I'm not asking for that.

1 SENATOR BRUBAKER: You said you are looking
2 for a market, a free market solution.

3 MR. CAHILL: I didn't say free market.
4 Maybe I wasn't being clear. My answer is
5 whatever the demands are in the marketplace, the
6 demands from us, the consumers, that we will be
7 there to help meet those demands to the extent of
8 our capacity.

9 SENATOR BRUBAKER: I think that's a huge
10 point in these conversations. Is it the
11 consumers' market demand or is it the demand as
12 put in place by the government?

13 MR. CAHILL: I think right now it is a mix.

14 SENATOR BRUBAKER: Okay. Thank you very
15 much.

16 MR. CAHILL: Thank you.

17 MR. THUMMA: Senator, may I address that
18 momentarily? I apologize for cutting in.

19 CHAIRMAN WHITE: Yes.

20 MR. THUMMA: I think it is a mix, Senator.
21 I think we recognize that the great thing about
22 Pennsylvania is it's tried to promote both
23 approaches. So we have a very vibrant voluntary
24 market in the Pennsylvania.

25 As I mentioned earlier, there is 38,000

1 customers in PECO that are voluntarily paying a
2 premium to buy wind energy, but we do have the
3 AEPS, and that is a mandated structure, there is
4 no question about that.

5 But the one thing Pennsylvania did that
6 other states haven't done, and I think it is
7 going to make that system more effective is
8 within that mandate it's created a market. So
9 it's the cheapest resources from the cheapest
10 locations that will drive us to drive the prices
11 as low as we can within that mandate. So it is a
12 market structure, albeit with the government
13 underlying that structure.

14 SENATOR BRUBAKER: Thank you.

15 CHAIRMAN WHITE: Senator Tomlinson.

16 SENATOR TOMLINSON: Thank you very much, and
17 welcome, and Gamesa is about 15 minutes from my
18 house. You are located in Fairless Hills. We
19 welcome you coming to Bucks County.

20 You mentioned that -- I guess some of the
21 European countries are upwards of 20 percent of
22 this. What is their backup power or what do they
23 use? In other words, we know that the wind won't
24 always blow. We know that you have to have
25 another source of power. What in Europe do they

1 use as their -- if you took up 20 percent, they
2 still have to have a certain percentage sitting
3 there ready to shift or balance the load. What
4 do they use in Europe?

5 MR. THUMMA: That's a great question,
6 Senator. I can't answer that, but I'll be happy
7 to send you some correspondence to that.

8 SENATOR TOMLINSON: My point is that I think
9 that -- particularly here in Pennsylvania, I
10 think we do have a good base of generation. I
11 just wondered what the mix was in Europe. I
12 doubt very much it is as much coal. We use coal.
13 Pennsylvania has great coal. We have 35 percent
14 nuclear.

15 I was just wondering, and if you can get
16 back to the Committee with that, what is the mix
17 in Europe because they are able to go out in
18 greater percentages, and I think that's great,
19 but what are they relying on when they cannot get
20 to this type of power.

21 MR. THUMMA: I will note that there are only
22 certain types of resources that provide that
23 reserve, so you wouldn't use a nuclear plant as a
24 reserve. You are going to run that at maximum
25 all the time. So it would typically probably be

1 some sort of gas combustion turbine which you can
2 ramp up and down very easily. But, frankly, not
3 knowing the system mix, I don't want to answer,
4 but that's typically what you would probably use
5 in the United States.

6 SENATOR TOMLINSON: We would be back to like
7 our peakers, like the things we have as peak
8 which are high costs energy, also.

9 MR. THUMMA: It's sadly the nature -- well,
10 I think some reserve resources are actually also
11 coal based reserves and supplemental reserve
12 resources, but I'll get you an answer to that.

13 SENATOR TOMLINSON: What would be
14 interesting to the Committee is, number one, I
15 think we have a great advantage over European
16 countries because we have PJM, we have a great
17 grid and we do balance it very well, but I think
18 I'd like to know a little bit more about why
19 Europe has been a little more successful and
20 upfront on the alternative energies and the clean
21 energies.

22 Could you possibly tell me what is the
23 difference in the costs per kilowatt hour for
24 wind and maybe from the solar and what we are
25 paying for our base power?

1 I liked your point that a lot of people are
2 electing to do this, and it is a pretty
3 impressive number, but do you know what the
4 differences in the costs are because the consumer
5 actually has to pick this up?

6 MR. THUMMA: Sure. I'll give you just a
7 couple ways of describing that. For my voluntary
8 product in PECO, I'm a PECO wind customer, I'm
9 paying an additional \$7.56 for 300 kilowatt
10 hours. That's what I'm paying. That is the
11 difference in the cost.

12 I think that -- what will the cost be? We
13 all want to sort of know how much this is going
14 to cost. Now, it is, as I described earlier,
15 it's a market-based system, so it will be what
16 the market for renewable energy trends will bear.

17 So basically what you have to do to
18 determine that is there is two markets. I'm
19 sorry this is a complicated answer. There is an
20 energy market and we sell to them --

21 SENATOR TOMLINSON: It's a complicated
22 subject, so we expect complicated answers.

23 MR. THUMMA: We will sell energy directly
24 into that energy market. In fact, that's
25 reducing the cost of electricity for consumers

1 because when we sell in the energy market, we are
2 a price taker. We bid in at zero, so whatever
3 expensive resource -- more expensive resource is
4 not being dispatched because of us, that's a cost
5 savings to consumers.

6 But there is another -- there is a second
7 market which is created by AEPS which is the
8 renewable energy trend market in which the
9 entities that have a compliance requirement have
10 to go out and buy those renewable energy credits,
11 so there is a cost on that.

12 So what will that cost be? In New Jersey,
13 we've seen \$10, \$15, \$20 a megawatt hour. That
14 is one or two cents a kilowatt hour, it's been
15 that cost. So going forward, the more projects
16 we get into the ground, the more successful we
17 are in siting, the more affordable it's going to
18 be because it is a straight-out supply and demand
19 calculation.

20 And as that becomes constrained, even though
21 our capital costs may be such that we are
22 competitive from a capital basis from other
23 resources because of that market structure, the
24 price is the price just based on this supply and
25 demand.

1 SENATOR TOMLINSON: Once you have these up
2 and you spend your capital, you're not paying for
3 fuel, obviously. You are using the wind, so I
4 would assume that that cost would diminish pretty
5 rapidly once you further the market penetration
6 you got.

7 MR. THUMMA: Our only variable cost is
8 operation and maintenance, so 90 some percent of
9 what we look at is an upfront capital cost. So
10 programs that help us diminish that capital cost
11 such as the production grant and obviously this
12 sort of federal incentives that we can -- that
13 can allow us to sell a cheaper product over time.

14 SENATOR TOMLINSON: If you can get back to
15 us a little bit with that other -- on that
16 back-up, that's an interesting point. We're not
17 going to -- I mean the nuclear and some of the
18 base coal plants are not going to shut down.
19 They are going to be producing 89 percent of the
20 power that they produce all the time anyway.

21 MR. THUMMA: That's right.

22 SENATOR TOMLINSON: Thank you.

23 CHAIRMAN WHITE: Senator Fontana.

24 SENATOR FONTANA: How many wind farms are
25 there in Pennsylvania now?

1 MR. THUMMA: We have eight wind farms now
2 serving about 180 megawatts of capacity.

3 SENATOR FONTANA: How much space does each
4 wind farm take up?

5 MR. THUMMA: It depends on the size. You
6 maybe have a better sense than I do. We try to
7 only use about a one to three acre footprint for
8 each turbine that we put up, and there's --
9 obviously, there needs to be space in-between
10 those because of the nature of wind sheer and
11 things of that nature.

12 SENATOR FONTANA: Thank you.

13 CHAIRMAN WHITE: Senator Boscola.

14 SENATOR BOSCOLA: Thank you. Would it be
15 cheaper just to buy wind power from Minnesota
16 instead of building new wind farms? Maybe
17 building a few, but not as many, just buying some
18 from Minnesota because it's cheaper, I would
19 think?

20 MR. THUMMA: It would be cheaper to buy
21 renewable energy credits from the Midwest. You
22 could go out and you can call a broker today and
23 get the price on what Texas wind is, and that
24 would be cheaper, but you wouldn't -- having a
25 wind project in Pennsylvania does give you a

1 capacity value. We are accredited with capacity
2 value by PJM, so that does enhance your
3 reliability. You are getting actual electricity
4 delivery into the system. So you have that
5 additional benefit.

6 So if you look at what many states have done
7 including Pennsylvania, they have recognized that
8 if we are going to have renewable energy and we
9 are going to invest in it, the rate payers that
10 are investing in it should get some benefit out
11 of that by having energy delivery components and
12 the capacity component that they're paying for.

13 In New England, New York, Pennsylvania, New
14 Jersey, all those states as they've designed
15 these for renewable energy credit markets have
16 had requirements that the actual energy be
17 delivered into the control areas that those
18 states are in.

19 SENATOR BOSCOLA: I mean I'm always looking
20 at the cost benefit analysis of anything.

21 MR. THUMMA: Of course.

22 CHAIRMAN WHITE: Thank you very much.

23 SENATOR TOMLINSON: Madam Chairman, just let
24 me go back to Senator Boscola's point. If we do
25 have it here, if we have wind power here, we

1 won't be running it particularly in the
2 summertime if it's solar or wind. We won't be
3 running those peaking gas high cost services, and
4 these will replace that which would, I think,
5 eventually save us some money.

6 MR. THUMMA: That's correct. We do have a
7 capacity benefit in the summer for wind. It's
8 honestly less than it is in the winter. We are
9 producing more in the winter than we are in the
10 summer. When we produce power, we are reducing
11 the peak load on the system that would have to be
12 provided by a gas unit, so I appreciate that
13 point, Senator.

14 CHAIRMAN WHITE: Thank you, gentlemen.
15 Dennis Yablonsky of Department of Community and
16 Economic Development.

17 SECRETARY YABLONSKY: May I begin?

18 CHAIRMAN WHITE: Yes, you may.

19 SECRETARY YABLONSKY: Thank you. I do not
20 have written testimony. What I would like to do
21 is spend five minutes or so and just briefly
22 summarize our view of these issues and the
23 Governor's proposal in this regard, and then I'll
24 be happy to take questions on our proposals, as
25 well as if you want my view on the Senate's

1 proposal, I'll be happy to share some of that
2 with you as well.

3 Let me start by saying that there is
4 obviously three objectives in the Governor's
5 proposal. The first is energy savings through a
6 series of regulatory and legislative changes.
7 The second is the Penn Securities Fuel Initiative
8 which is designed to generate about a billion
9 gallons a year of alternative biofuels, and the
10 third about growing Pennsylvania's energy
11 economy. My understanding is I'm going to
12 concentrate just on the third one today and focus
13 on the so-called energy independence fund or
14 whatever variation comes out of that.

15 The good news is that we are on the cusp of
16 a wonderful opportunity in that clean and
17 renewable energy, as it's defined by you in the
18 Alternative Energy Portfolio Standard is one of
19 the fastest growing economic sectors in
20 Pennsylvania and frankly in the world.

21 Last year there was \$71 billion in private
22 sector capital that was invested in this sector
23 worldwide. That was a 43 percent increase over
24 the previous year, and those growth rates look
25 like they're going to continue.

1 Pennsylvania is in a position to continue to
2 be a leader in this regard. We have been leading
3 the field since 2004. Two of the companies that
4 just spoke to you are two of the probably poster
5 children for the kind of company opportunities
6 that we can attract here, but there is also an
7 opportunity to home grow a lot of companies, as
8 well.

9 We have created over 3,000 jobs since 2004
10 in this sector with projects like Gamesa,
11 Iberdrola or Conergy and others, but there is a
12 lot more to be had than just that.

13 The other opportunity, the homegrown
14 opportunity that faces us is based upon one of
15 Pennsylvania's strongest assets which is our
16 college and university system which is well known
17 for its research and translational research in
18 life sciences and information technology, but I'm
19 sure you probably also know they are equally
20 strong in this area, in the field of clean and
21 renewable energy. And we have been generating a
22 lot of interesting new technologies and companies
23 that can generate jobs and move our technology
24 base forward.

25 So as a result of all that, we believe that

1 we can generate 13,000 new good paying jobs, much
2 higher than the state average, and about \$3.5
3 billion worth of capital investment over the next
4 four years or so with the proposal as the
5 Governor has submitted it.

6 That will be done by implementing the Energy
7 Independence Fund which is proposed at \$850
8 million level. It's got three major
9 subcomponents to it that address the three key
10 issues as we see them.

11 One, \$106 million for translational
12 research, incubation and early stage venture
13 capital. Let me give you an example of what this
14 can do. There is a company that was spun out of
15 Carnegie Mellon University a couple of years ago
16 called Plextronics. They are in the solar field.

17 As you probably know, solar is still
18 relatively expensive to manufacture and to sell
19 mainly because the process requires generating
20 solar cells in a clean room environment, similar
21 to the fabrication of semi-conductors, and it's
22 very controlled, and the equipment and the
23 environment is very expensive.

24 Plextronics has developed a patented
25 technology that is not scaled yet, but at a lower

1 level -- and you're going to hear from the
2 Plextronics people I think later this morning --
3 they are able to create solar cells by printing
4 them on plastics. It's an over-simplification of
5 the process, but if it's scalable, it could
6 revolutionize the cost and the time required to
7 make solar cell technology.

8 They've already, I think, added 50 jobs to
9 their company. They're going to grow further.
10 That is just one example of dozens of
11 opportunities when you add them up will create
12 thousands of jobs and will result in technology
13 that can be not only designed to serve
14 Pennsylvania's needs, but be exported around the
15 world to create additional opportunities.

16 What do we need to do that? We need more
17 early stage money through the Ben Franklin
18 Network. We need more venture capital money to
19 stimulate more venture capital so that when these
20 companies come out of the universities, they stay
21 here because there is indigenous venture capital
22 to support it, and I know that's part of your
23 proposal, as well. So that is the first piece
24 that we think is important.

25 The second piece, the big chunk of the \$850

1 is \$500 million for what I would broadly call
2 project financing. This is not early stage
3 stuff. This is where you have a technology.
4 You've got customers, and you want to scale a
5 project or scale a product.

6 This would include wind farms. It would
7 include solar manufacturing facilities. It would
8 include a range of clean coal development
9 projects that would go into the grid. It would
10 include the development and construction of lead
11 certified facilities, and this money would be
12 primarily low interest loans, but some grant
13 money as well, that would be used for working
14 capital, equipment financing, construction of
15 these facilities, as well as the site preparation
16 activity that goes along with -- a lot of these
17 projects end up in brown field sites that need
18 some work.

19 Finally, there is \$244 million in rebates
20 and production grants broken into two programs.
21 There's the \$44 million cool appliance swap that
22 would provide \$100 rebate for any homeowner or
23 business that wanted to trade in an old energy
24 inefficient refrigerator or room air conditioner
25 to get an updated one, and there is \$200 million

1 in rebates for the installation of solar systems
2 by businesses or homeowners, and production
3 grants for solar manufacturers who would agree to
4 produce and sell their products here in
5 Pennsylvania.

6 This would be paid for through the
7 Governor's proposal of a systems benefit charge.
8 I know this is a controversial part of the
9 proposal, but I'll be happy to answer more
10 questions about it. It's a nominal charge of
11 about a twentieth of a cent added to all
12 electricity users' bills, and in English it
13 translates to about 45 cents a month for a
14 homeowner, about \$3 a month on average for a
15 small business, and about \$74 a month on average
16 on a large business.

17 We have proposed this at a large and
18 aggressive level purposely. The reason is that
19 the demand levels that we're seeing for the whole
20 range of these needs is far beyond the existing
21 capacity of the state's programs, and we have
22 proposed it aggressively because we are not
23 living in a world in isolation. Other states are
24 also very interested in this. California has a
25 \$3 billion program. Iowa has a \$1.3 billion

1 program, and little old Rhode Island has a \$300
2 million program.

3 We are in a good position now. We have an
4 opportunity, I believe, to be a world national
5 leader in this field, but we can't do that by
6 nibbling around the edges. I believe we need to
7 take a clear, unambiguous and aggressive
8 position, and that's exactly what we propose.

9 That's the end of my comments, Madam
10 Chairman. I'd be happy to take any questions
11 from you.

12 CHAIRMAN WHITE: Before we take questions, I
13 just want to set the record straight on one
14 thing. The Governor has criticized the
15 legislation that Senator Tomlinson and I
16 introduced as spending only \$250 million which,
17 as you point out, he said was about what Rhode
18 Island was spending.

19 Yet, we consistently and publically stated
20 the our bill, Senate Bill 1, actually invests
21 \$530 million. There is \$250 million in bonds,
22 \$20 million for seven year tax credits, \$20
23 million for seven year consumer and small
24 business assistance, and that totals \$530
25 million.

1 Now, I can understand that the Governor
2 might think our program is too small, but I can't
3 understand why he consistently misrepresents it
4 as being a \$250 million program.

5 SECRETARY YABLONSKY: First of all, may I
6 make a few comments about Senate Bill 1?

7 CHAIRMAN WHITE: Yes.

8 SECRETARY YABLONSKY: I've looked at it
9 obviously, and I think it is a sincere effort
10 that addresses many of the elements that the
11 Governor proposed in some different ways and at
12 some different levels, but I think it is a very
13 serious proposal that we are looking at.

14 I do believe that it is not large enough and
15 it's not quick enough. I think that it needs to
16 be larger. Some combination of bond and annual
17 appropriation I think would work, but I do think
18 it needs to be larger than the 250 plus the
19 annual appropriations. I think it needs to be
20 spent a little quicker.

21 But that being said, I do think it is the
22 basis for a serious negotiation and hopefully a
23 basis for a way of finding common ground between
24 what the Governor wants to do and what you feel
25 you want to do.

1 CHAIRMAN WHITE: I'm encouraged to hear
2 that. Let's describe it accurately, particularly
3 in the public forum. I have a problem with that
4 being consistently called a \$250 million plan.

5 And, you know, the Governor has given the
6 impression this \$850 million bond is the only
7 game in town, and absent that, we are not making
8 any investments in alternative energy, but isn't
9 it true that we have allocated \$16 million in the
10 Growing Greener II bond for the PA Energy
11 Development Authority, another \$10 million in the
12 Alternative Fuels Fund and in PEDAs in 2004.

13 We have created the Sustainable Energy
14 Development Fund as part of the Electric
15 Restructuring Act. We provide money through the
16 Energy Harvest, and, of course we have access to
17 millions of dollars through the traditional
18 economic development fund as we just heard from
19 Gamesa who benefitted to the tune of \$20 million,
20 so we are doing this.

21 SECRETARY YABLONSKY: Absolutely, and that's
22 how we have created the 3,000 jobs that I
23 mentioned earlier, but on the PEDAs and the
24 Alternatives Fuel Investment Grant Program, for
25 example, we are getting 7 to 10 to 1. For every

1 application we fund, there is 7 or 10 other ones
2 that we can't fund that are good projects. So
3 the demand level is quite high out there for
4 these things right now.

5 CHAIRMAN WHITE: I understand, but I really
6 think that the tax on electricity, even as small
7 as you attempt to characterize it, it has a
8 \$10,000 annual cap, and you're saying that's for
9 large businesses, as well.

10 I've talked to hospitals that say they are
11 going to hit \$10,000. I've talked to
12 universities that say they are going to hit
13 \$10,000. So a \$10,000 bottom line hit to a lot
14 of businesses or non-profits is a hit. And so
15 it's not simply pennies here and there, and I
16 don't think there is an appetite in the
17 Legislature for an energy tax.

18 So I think what you are seeing Senator
19 Tomlinson and I attempting to do with Senate Bill
20 1 is come up with a compromise that lives within
21 our means, if you will, and that's where we are
22 trying to go here.

23 I'm sorry to make a speech, but I just
24 wanted to get the playing field on the record
25 before we begin, and I do appreciate your

1 testimony. Senator Musto?

2 SENATOR MUSTO: I have no questions at this
3 time.

4 CHAIRMAN WHITE: Senator Dinniman?

5 SENATOR DINNIMAN: Yes. Building on
6 something Senator White had said, does not the
7 gross receipts tax, which is the alternative to
8 the Governor's plan, that tax needs to assume
9 that we're going to have -- that the cost of
10 electricity goes up in order to pay for these,
11 but if we enact that, will that eliminate the
12 possibilities that Senator Boscola and others of
13 us have held out as perhaps the extension of the
14 rate caps because if -- I'm just curious because
15 if this alternative is based on the notion that
16 you are going to have enough money to support
17 SB-1 because the cost of electricity goes up,
18 then are we then closing the door to the
19 possibility of the Senate and the House
20 instituting a 2 or 3 year extension of the rate
21 caps?

22 Well, you're absolutely right. The use of
23 the gross receipts tax as it's been proposed by
24 the Senate assumes that there is going to be an
25 increase in rates enough to pay for this bond.

1 I've looked at the numbers, and the numbers work,
2 and I do want to say that as late as yesterday
3 the Governor at his press conference, when asked,
4 said that the -- he still believed the system's
5 benefit charge was the best way to do this, but
6 he was open to the gross receipts taxes and
7 alternative pending further discussions. And so
8 there's, I think, a willingness to have
9 discussion about that.

10 But the Governor's proposal did not include
11 extension of rate caps because we believe if we
12 did everything in the Governor's proposal, not
13 just the fund, but the other things that we would
14 have enough savings on energy that we would not
15 need to extend rate caps, etcetera, etcetera. So
16 I think that it was a separate proposal.

17 SENATOR DINNIMAN: I understand that, but I
18 think there is some members of the Legislature
19 who believe that a couple year extension might be
20 necessary so that we don't face what Maryland and
21 other states have spent, in all deference to the
22 Governor and in all deference to the proposal on
23 the gross receipts tax.

24 And the concern that I'm trying to express
25 is that, and you've answered it, is that the cost

1 of this program under SB-1 in part assumes an
2 extension, in part assumes increased cost of
3 electricity.

4 SECRETARY YABLONSKY: It does.

5 SENATOR DINNIMAN: And if we do that, it, in
6 essence, closes the door to what some of us feel
7 might be necessary one or two years from now, not
8 one or two years, but 2010 or 2011 if the
9 Governor's program does not save the amount of
10 money we need or if the energy companies have not
11 responded and we want to prevent such a rise for
12 consumers. So I just wanted to get that into the
13 conversation. I want to make sure that I
14 understand.

15 The second question I would have for you
16 related to all this is there is a great deal of
17 discussion of mandates versus, you know, tax
18 credits and subsidies, etcetera. The Governor
19 calls for a mandate, and I read the testimony of
20 the Pennsylvania Energy Resources Group which
21 questions whether mandates create the kind of
22 free market we want.

23 In the Administration's view, does mandates
24 create the type of market that -- and I happen to
25 believe it does -- that will increase the private

1 venture capital because venture capitalists want
2 to have some assurances, so could you speak to
3 why the Governor felt that would be important.

4 SECRETARY YABLONSKY: First of all, the
5 whole issue of picking winners and mandates, that
6 was defined in the Alternative Energy Portfolio
7 Standard bill. We chose which energy
8 technologies would be included in that, and there
9 is five or six of them, and that's done. That's
10 been done since 2004.

11 What this does is build on that. It builds
12 on it, and it uses that definition of those
13 energy sources to supply additional money through
14 the fund.

15 And, second of all, does the kind of thing
16 that we did in the Alternative Energy Portfolio
17 Standard and would what we are proposing here
18 create more demand? Absolutely. You can go to
19 venture capital conferences. You can talk to
20 private equity people. What we are proposing
21 will create more demand and more activity and
22 create a competitive advantage for us versus
23 other states and other nations.

24 SENATOR DINNIMAN: All I want to do is make
25 the marketplace, the free marketplace, work as

1 effective as possible.

2 SECRETARY YABLONSKY: Agreed.

3 SENATOR DINNIMAN: And if mandates can help
4 get non-state money into the system, then I think
5 we need to examine this question. Thank you,
6 Madam Chairman.

7 CHAIRMAN WHITE: Can I follow-up on Senator
8 Dinniman's question? Does the Governor's plan
9 assume that energy costs will rise when the caps
10 come off?

11 SECRETARY YABLONSKY: The Governor's plan
12 assumes that we will be able to reduce energy
13 costs by a billion dollars a year based on all
14 the proposals. That is not the fund. It is the
15 other two pieces that I didn't talk about this
16 morning.

17 CHAIRMAN WHITE: Okay. Thank you. Senator
18 Ferlo.

19 SENATOR FERLO: I will avoid a partisan
20 diatribe and pass.

21 CHAIRMAN WHITE: Thank you, Senator Ferlo.
22 Questions?

23 SENATOR BRUBAKER: Thank you, Mr. Secretary.
24 I do appreciate the job you do.

25 SECRETARY YABLONSKY: Thank you.

1 SENATOR BRUBAKER: You talked about \$106
2 million for R and D, \$500 million for project
3 finance, and I think 240?

4 SECRETARY YABLONSKY: 244.

5 SENATOR BRUBAKER: 244. And collectively
6 that's the \$850 million?

7 SECRETARY YABLONSKY: Yes.

8 SENATOR BRUBAKER: When I add those three
9 numbers, I get 950.

10 SECRETARY YABLONSKY: 106.

11 SENATOR BRUBAKER: Right.

12 SECRETARY YABLONSKY: 500 and 244.

13 SENATOR BRUBAKER: Right. 950.

14 SECRETARY YABLONSKY: Does anybody have a
15 calculator?

16 SENATOR BRUBAKER: Do you have a pen?

17 SECRETARY YABLONSKY: I'm adding it again.
18 500 plus 244 is 744 plus 106 is 850. I may need
19 remedial math, but I think that's right.

20 SENATOR BRUBAKER: Great point. You're
21 right. I'm wrong. Let the record show I was 100
22 percent wrong. I need to go back to that.

23 CHAIRMAN WHITE: Are you smarter than a
24 fifth grader?

25 SENATOR BRUBAKER: Actually, I did that

1 intentional just to show everybody how
2 intelligent you are.

3 SECRETARY YABLONSKY: Thank you, Senator. I
4 appreciate that.

5 SENATOR BRUBAKER: Now, in regard to these
6 three investments, is it possible for you to
7 prioritize for them for us?

8 SECRETARY YABLONSKY: No.

9 SENATOR BRUBAKER: Would it be your
10 testimony that if you would fail on one, would
11 you desire to fail on all three?

12 SECRETARY YABLONSKY: It is an integrated
13 package that relies on elements of all three of
14 them to make the overall objectives work. So it
15 would be very difficult, if not impossible, for
16 me to say this is more important than another.

17 SENATOR BRUBAKER: So you would support not
18 moving forward with anything if one of the three
19 would not be able to succeed, is that correct?

20 SECRETARY YABLONSKY: I would argue against
21 taking any one of the three out.

22 SENATOR BRUBAKER: If one would come out,
23 you would support taking everything out, is that
24 correct?

25 SECRETARY YABLONSKY: It would depend on the

1 final proposal. It's hard for me to -- I would
2 have to -- I look at things in their entirety and
3 see whether in its entirety it would work or not.
4 I would have to see the details, but generally I
5 would say if you pulled -- entirely pulled one
6 piece out, this plan would be significantly
7 diminished in terms of what we could accomplish.

8 SENATOR BRUBAKER: Thank you. I appreciate
9 it.

10 CHAIRMAN WHITE: That would include consumer
11 buy-back?

12 SECRETARY YABLONSKY: Yes.

13 CHAIRMAN WHITE: Senator Tomlinson.

14 SENATOR TOMLINSON: Thank you, Madam
15 Chairman, and I'm assuming if you don't have the
16 consumer buy-back, you are not going to get the
17 deduction and demand that you --

18 SECRETARY YABLONSKY: That's correct.
19 That's a key element of the demand management.

20 SENATOR TOMLINSON: But you would be open to
21 negotiating a total package?

22 SECRETARY YABLONSKY: Absolutely.

23 SENATOR TOMLINSON: I thought I heard that
24 before. Could you describe a little bit about
25 the \$500 million that you want? What projects

1 are you looking at? What do you think you want
2 to do with that?

3 SECRETARY YABLONSKY: Sure. First of all,
4 there would be a chunk of money that would be
5 used for site preparation, for buying land, for
6 demolishing buildings, for doing environmental
7 remediation, getting utilities on the land.

8 A lot of the biofuels in coal and
9 manufacturing projects we're looking at are --
10 the good news is they are going to go into small
11 medium-sized municipalities, rural areas where
12 there is typically brown fields that need to be
13 cleaned up. You need site prep money.

14 Our site prep money, which has done a great
15 job through the CFA, has been all committed, and
16 we do not have resources at the level we need to
17 do the site prep. So that's the first major
18 chunk of this 500.

19 The second chunk would go for equipment
20 purchase and construction in these facilities,
21 and our existing programs for equipment purchases
22 which are limited to 5 million under MELF and
23 2.25 million PEDA, these projects typically are
24 tens or hundreds of millions of dollars. We need
25 bigger chunks of low interest loan money to make

1 these things work and to fill in the gap that is
2 required to make it work.

3 The third chunk we really want to incent
4 more construction of lead certified buildings,
5 which is the national green standard on how you
6 develop things, and we would make lead certified
7 construction of facilities eligible use here so
8 they could -- equipment associated with that, as
9 well.

10 So that's the major elements of how this
11 would work, and it's a big number because some of
12 these projects are large and need more than
13 \$500,000 or a million dollars worth of loans, and
14 the demand out there is significant and will get
15 even bigger should this pass.

16 SENATOR TOMLINSON: So, in essence, what you
17 are saying here, this 500 million, now you are
18 moving over into what is really your energy
19 independence phase of this where we were getting
20 into the biofuels and which is I think exciting
21 and I think good for Pennsylvania.

22 SECRETARY YABLONSKY: Yes.

23 SENATOR TOMLINSON: So can you tell me about
24 how much of that 500 million is divided towards
25 biofuels? Is some of it going back towards

1 energy generation, wind and solar or is a lot of
2 it going into the biofuels part?

3 SECRETARY YABLONSKY: We haven't allocated
4 the specific amount of the 500. That would be a
5 market driven need. If there is more need and
6 more good projects in solar, solar would get more
7 money. If there's in wind, wind will get more
8 money. It is within the confines of the
9 alternative energy portfolio.

10 SENATOR TOMLINSON: How about the difference
11 between electric generation and fuels for
12 automobiles and trucks?

13 SECRETARY YABLONSKY: We haven't proposed
14 any specific definition. We want to let the
15 market dictate that as it goes forward.

16 SENATOR TOMLINSON: Okay. Thank you very
17 much.

18 CHAIRMAN WHITE: Senator Fontana.

19 SENATOR FONTANA: The 500 million, is that
20 all loans?

21 SECRETARY YABLONSKY: No. It's about
22 approximately two thirds loan and one third grant
23 as we have proposed it.

24 SENATOR FONTANA: Some of the previous
25 speakers talked about they prefer grants to the

1 tax credits. How do you feel about that?

2 SECRETARY YABLONSKY: Everybody wants --
3 grants are first and foremost because you don't
4 have to pay them back, and you typically get them
5 upfront, so they are obviously the most
6 preferred, but I will tell you from experience
7 that while some amount of grant money is needed,
8 usually you need a little less grant money than
9 people ask for. Low interest loans can and
10 should be used as a part of the mix, and so I
11 think that some proper mix between grant and
12 loans is what's appropriate.

13 SENATOR FONTANA: Thank you.

14 CHAIRMAN WHITE: What about loan guarantees?

15 SECRETARY YABLONSKY: Loan guarantees could
16 be helpful, as well. We have some other programs
17 through the CFA that have loan guarantees, and
18 they have been helpful, as well. We haven't
19 proposed any here mainly because the level of
20 loan guarantees that people told us they needed
21 were in the 50, 100, 150 million dollar level,
22 and we just thought that was beyond the scope of
23 what could be accomplished here.

24 CHAIRMAN WHITE: Senator Boscola.

25 SENATOR BOSCOLA: Dennis, always good to see

1 you. I agree with Senator Dinniman in that maybe
2 we ought to look toward the general fund to pay
3 for this energy independence fund as opposed to
4 the gross receipts tax because you are taking off
5 the table any rate cap extension that would be
6 easy for us to figure out what to do when the
7 rate caps come off and we have maybe some of our
8 bills going up by 40 and 50 percent which is
9 unacceptable in my opinion. I would rather us
10 look somewhere else toward that money.

11 Here is the question I have for you with
12 regard to the 500 million, is there any money
13 that we could put aside to fast track like
14 nuclear siting because you know when Pennsylvania
15 needs to generate capacity in years to come by
16 30, 40 percent, we are not going to get there
17 with wind and solar. We have to think other
18 areas, and I really think nuclear is a key
19 component and how can we fast track those kind of
20 sitings and help companies that want to invest in
21 nuclear?

22 SECRETARY YABLONSKY: Nuclear is certainly
23 an inexpensive and clean source of energy and
24 looks like it is starting to make a comeback.
25 Certainly, our work with Westinghouse, they're

1 building four plants in China, multiple plants in
2 Korea, multiple plants in India. Their business
3 is booming. The good news is that most of the
4 jobs associated with that are going to be created
5 in Pennsylvania which is positive.

6 The U.S., of course, has been a little
7 slower, but my understanding is that they are
8 starting to consider permits, and they are
9 starting to look at this. And over the coming
10 years I think it's got to be driven by the feds
11 first because that's where the bottleneck is
12 right now. If that opens up, then I think, as a
13 matter of public policy, we should be looking at
14 it and what it means to Pennsylvania. I think
15 it's a little premature right now, but down the
16 road it could very well be something we need to
17 take a closer look at.

18 SENATOR BOSCOLA: And then on subsidizing
19 solar power, I mean I see that only generates two
20 tenths of one percent of all energy in the United
21 States. So our problem is you've got this big
22 company, British Petroleum, right, BP. It's the
23 biggest global player in the solar power arena.
24 So why -- this is the key -- why should taxpayers
25 in Pennsylvania subsidize a multi-billion dollar

1 energy conglomerate when they already would be in
2 Pennsylvania if it made sense for them to be
3 here? I just don't get it.

4 SECRETARY YABLONSKY: Well, right now the
5 reason for solar subsidies right now is because
6 the cost of solar systems for the reasons I
7 mentioned earlier typically make it difficult
8 except for a very slim few to be able to afford
9 them.

10 As we've seen in New Jersey, when you do
11 provide some type of a rebate, it does stimulate
12 the sale and installation of these systems, and
13 then that helps our grid, as was mentioned
14 earlier I think by Senator Brubaker as well as
15 Senator Tomlinson.

16 Solar and wind represent the opportunity to
17 take these very expensive gas and oil fired
18 plants to get fired up during peak times which
19 really is one of the major contributors to the
20 drive and wholesale cost. If we can get enough
21 solar and wind in here and get rid of having to
22 use those very expensive oil and gas facilities,
23 it will have a major impact on driving it down.
24 That cost reduction I think will be significantly
25 larger than any rebate we provide.

1 SENATOR BOSCOLA: I believe that wind and
2 solar have a place, but it's not the save-all to
3 our energy problems. I do have a problem
4 subsidizing because I have to respond to
5 taxpayers about why we are subsidizing a
6 multi-billion dollar company for stuff like this.

7 I do appreciate the fact that you said about
8 new technology because a company in the district
9 that I represent, Air Product, they are working
10 on a new solar coding system that they say very
11 soon will replace the \$40,000 panel. So I
12 appreciate your take on new technology. Thanks,
13 Dennis.

14 SECRETARY YABLONSKY: You're welcome.

15 CHAIRMAN WHITE: Senator Wonderling.

16 SENATOR WONDERLING: You mentioned
17 earlier -- I'm glad that we reached a consensus
18 on the total to be \$850 million because my
19 questions actually are related to how that number
20 was initially derived. If you could walk us
21 through the economics and the math associated
22 with the total, that would be helpful as it
23 relates to SB-1, the difference there, and it's
24 rather dramatic, at least on paper, and I would
25 be curious to know beyond the notion of demands

1 for applications as a criteria, what was the
2 economic analysis deployed to get to that number?

3 SECRETARY YABLONSKY: The economic analysis
4 included taking a good hard look at the existing
5 demand that we had and the known applications and
6 prospects that we are working with. It looked at
7 the projections of private sector investment.
8 The 71 billion I talked about earlier and how
9 much was going to be there, and then breaking it
10 down into components.

11 A key aspect of that was looking at how many
12 jobs would be created and how much capital
13 investment would be associated with that and did
14 it justify the investment through increased
15 income taxes and other things.

16 So I can't give you a simple equation
17 answer. It was kind of looking at multiple
18 pieces, iterating the process, coming back around
19 to something we felt was the right level.

20 SENATOR WONDERLING: I appreciate that.
21 First of all, I'm not discounting completely a
22 criteria that measures applications for free
23 money or low interest loan money. One would
24 argue that if you are going to increase the fuel
25 pot by a substantial amount, then more demand

1 folks want to seek grants or low interest loans.

2 I would be curious if you can provide the
3 committee the analysis or the -- actually, the
4 source data for the 71 -- you said 71 billion in
5 private sector investment -- where that
6 information came from because that is a key. I
7 think policy underpinning to the \$850 million
8 number other than just picking a number because
9 we think having so many more applications come in
10 the door.

11 SECRETARY YABLONSKY: I would be happy to
12 provide you with that source.

13 SENATOR WONDERLING: By the way, if that was
14 similar to other states of comparable size and
15 scope than Pennsylvania, that would be helpful.
16 You mentioned the CFA earlier, and getting back
17 to where these numbers are coming from, you
18 mentioned that part of the CFA no longer has
19 dollars available for site prep work?

20 SECRETARY YABLONSKY: Site prep work, yes.

21 SENATOR WONDERLING: I'm confused. I
22 thought the CFA still was relatively flush with
23 resources as a result of the borrowing done and
24 the economic stimulus, and, therefore, already
25 opportunity for those that want to get into this

1 particular vertical energy, alternative energy
2 currently in the government have a place to go?

3 SECRETARY YABLONSKY: It depends on which
4 program you are talking about. The vast majority
5 of the resources available to the CFA today have
6 been committed. For example, the \$300 million
7 Business in Our Sites Program, every dollar of
8 that's been committed. 200 million of that is
9 low interest loan which will eventually be paid
10 back and create a revolving fund, but the way
11 those loans are structured, it probably is going
12 to be a year or two before we see any significant
13 money coming back through that. So we are
14 basically out of site prep money right now.

15 SENATOR WONDERLING: So if indeed we did an
16 analysis of where we need to replenish within the
17 context of -- within the position of CFA, why not
18 just do that as opposed to creating new
19 bureaucracy and process? Why not just run the
20 initiative through the CFA I guess is my
21 question?

22 SECRETARY YABLONSKY: The proposal that we
23 made is to run it through the Pennsylvania Energy
24 Development Authority to create a single entity
25 that will look after all things energy. And that

1 board would have legislative representation as
2 well as administrative representation. I think
3 there is a logic with that approach.

4 Frankly, the same DCED staff that do the
5 site prep work for the CFA would also do the site
6 prep work for PEDDA, so I think you get the same
7 synergy there and value there. You just have a
8 group that's got a specific mandate to look after
9 energy in one place.

10 SENATOR WONDERLING: My limited experience
11 in being appointed to these types of boards,
12 Pennsylvania Public Television Network, PEDDA,
13 etcetera, etcetera, is that we don't do a very
14 good job as lawmakers in being diligent board
15 members because we are unfamiliar and --

16 SECRETARY YABLONSKY: Right.

17 SENATOR WONDERLING: So why not streamline
18 the process through one government through the
19 CFA? Just more of a hypothetical question on the
20 equipment issues. If I was a generator of
21 coal-fired powered facility and if I wanted to
22 retrofit my facility say with advanced scrubber
23 technology, would I be able to qualify under the
24 Governor's proposal?

25 SECRETARY YABLONSKY: No.

1 SENATOR WONDERLING: Why not?

2 SECRETARY YABLONSKY: I'll give you my view
3 on this. Scrubbers are something that utilities
4 have to do as a result of law. They generate
5 very little, if any, new economic activity or
6 jobs and they are used --

7 SENATOR WONDERLING: They preserve jobs.

8 SECRETARY YABLONSKY: They may preserve
9 jobs. They don't create a lot of new jobs, and
10 there are hundreds of millions of dollars of
11 investment per facility to get them done.

12 SENATOR WONDERLING: Which is what piqued up
13 my attention on that point as you gave the
14 example of alternative energy equipment is
15 hundreds of millions of dollars of cost
16 investment, etcetera.

17 SECRETARY YABLONSKY: This is a matter of
18 priority, Senator. I believe that our money
19 could be spent better elsewhere having a much
20 bigger economic impact than funding scrubbers.

21 SENATOR WONDERLING: As you well know, there
22 is a direct correlation between the BTU content
23 of bituminous coal and the negative consequences
24 that particular coal has on the environment.
25 Traditionally, coal that has a less BTU content

1 is easier to extract, and, therefore, the cost
2 benefit of a pollution control device meets a
3 federal standard for the environment, cleaning,
4 preserves jobs, and get there a lot sooner than a
5 model that's being proposed here to venture
6 capital at an early stage.

7 All I would ask you is that in this debate,
8 we understand that there is a current status of
9 technology that is being deployed and possibly
10 things may not be ignored.

11 You mentioned 3,000 jobs earlier, and
12 there's been media attention to your agency's way
13 to keep track of jobs as it correlates to
14 government subsidy in the name of economic
15 development. Can you provide to the Committee
16 chair how that 3,000 jobs created number was
17 derived?

18 SECRETARY YABLONSKY: Certainly. I would be
19 happy to do it.

20 SENATOR WONDERLING: One last question, we
21 have been investigating, and I think Senator
22 White had mentioned a hundred million dollars
23 when we deregulated the electric utilities, and
24 we created funds and regional reinvestment boards
25 that are under the PUC. I think there is about a

1 hundred million dollars sitting there.

2 We had the idea that that could be
3 redeployed. By the way, utilities have already
4 kicked in for that. It is sitting over there.
5 That hundred million dollars could be redeployed
6 to County governments, local governments to
7 retrofit to meet a lead standard.

8 In my home county, Montgomery County, it's
9 estimated to save the county's operating budget
10 anywhere between 800,000 to \$1.5 million a year
11 in energy savings alone by the county government
12 by just retrofitting large county buildings to a
13 lead standard.

14 Would you be willing to take a look at that
15 proposal, in particularly through legislative
16 committee re-possession on how that \$1 million can
17 be redeployed for retrofitting on lead as opposed
18 to construction as stated?

19 SECRETARY YABLONSKY: I don't know what that
20 hundred million dollars is going towards now and
21 what we'd be taking it away from, but I certainly
22 do believe that our local governments could use
23 some assistance in this regard to improve their
24 energy efficiency. They're all struggling with
25 costs and finances, and this would be one area

1 where we could be helpful. I certainly would be
2 willing to take a close look at this.

3 SENATOR WONDERLING: If that doesn't work,
4 and this is already in your proposal, and I
5 missed it, your statement on the first flood of
6 cash on the 850 would be for new construction to
7 meet a lead standard.

8 SECRETARY YABLONSKY: Yes.

9 SENATOR WONDERLING: And what about
10 retrofit?

11 SECRETARY YABLONSKY: Retrofit would be
12 fine. If I said new -- if I implied new
13 construction only, I didn't mean to.

14 SENATOR WONDERLING: Thank you.

15 CHAIRMAN WHITE: That's a very interesting
16 point, Senator Wonderling. I'm always suspicious
17 when we say we are going to recognize all this
18 wonderful cost savings, and you spend your cost
19 savings five times.

20 When you are dealing with homeowners, I
21 think those cost savings are very difficult to
22 predict and qualify. I think the better, more
23 fertile area for really recognizing some true
24 demand side reduction is more on the small
25 businesses where they can see a payback on that

1 investment.

2 In five years of energy cost, they can
3 predict in five years they will have their money
4 back, if that makes sense. I think the same
5 thing is true of counties who are operating on a
6 very tight budget who have every conceivable
7 incentive to retrofit their courthouse and their
8 buildings, old buildings in many cases, to
9 recognize real energy savings.

10 I think that's where you are going to see
11 the demand side reduction, not with everybody
12 turning in their dishwashers and refrigerators.

13 SECRETARY YABLONSKY: Wherever we can get
14 it, it would be great.

15 CHAIRMAN WHITE: Senator Musto.

16 SENATOR MUSTO: Thank you, Madam Chairman.
17 Mr. Secretary, a section of Senate Bill 1
18 includes using bond money for pollution control
19 technology for electric generating units. And
20 since this was not included in the Governor's
21 proposal, could you comment on that, please?

22 SECRETARY YABLONSKY: Yes. I commented
23 briefly earlier. That's the one area of the
24 proposal that I would, I think, take exception
25 with. I believe that it takes away from other

1 things that have more value, and I think that, as
2 I recall, it is something in the neighborhood of
3 \$75 million over the period of time. That would
4 allow us to do maybe one project.

5 So I think that that's a part of the
6 proposal from -- this is Dennis Yablonsky
7 speaking now -- that I would want to see taken
8 out and use that money for other things that have
9 bigger economic value.

10 SENATOR MUSTO: So it leaves room for more
11 negotiation, I imagine?

12 SECRETARY YABLONSKY: Hopefully.

13 SENATOR MUSTO: Thank you.

14 CHAIRMAN WHITE: Just in defense of that, I
15 think the reason Senator Tomlinson and I included
16 that came out of the hearing that we had, I think
17 in this very room, where we were told that for
18 the smaller plants in particular that are going
19 to have trouble meeting the Clean Air Interstate
20 Rule requirements that we could lose as much as
21 10 percent of our current generating capacity,
22 coal fire generating capacity.

23 That causes me a great deal of heartache
24 because that's not going to be replaced quickly,
25 and certainly solar and wind and the rest of them

1 are not going to fill in that 10 percent. We are
2 not going to see an immediate 10 percent drop in
3 demand on anything we do.

4 So that was the rationale for putting that
5 in there, and we certainly are willing to discuss
6 it, but it's not just a freebee. It is something
7 that really can have a serious impact on people's
8 electric bills.

9 SECRETARY YABLONSKY: I understand. I don't
10 mean to be overly critical, Madam Chairman. I
11 just was asked a direct question, and I just
12 would prefer to see the money spent elsewhere.

13 SENATOR TOMLINSON: Madam Chairman, I think
14 it also would reflect directly on the rates, your
15 electric rates, if you take 10 percent out of the
16 market. I think it is going to also reflect on
17 people's rates.

18 The other thing that we found out through
19 the PUC testifying is if we do lose that 10
20 percent, many of your larger plants have already
21 retrofitted, already worked on it. It is some of
22 your marginal smaller plants, and I think as we
23 go through this, and always ask the question
24 about what's the base of your energy portfolio,
25 nuclear, coal, what is your basis. If we didn't

1 have such a strong basis, if we didn't have such
2 strong coal and nuclear basis, we wouldn't be
3 talking about wind and solar at all.

4 And I think that's part of what we're trying
5 to say here is we need to keep that base strong
6 and still talk about doing the rest of this.
7 Thank you. Thank you, Madam Chairman.

8 CHAIRMAN WHITE: Let's keep it short. We've
9 slipped a little on time.

10 SENATOR BRUBAKER: I do appreciate the
11 opportunity. As a follow-up to Senator
12 Tomlinson's point earlier, he had asked you a
13 question about solar and wind versus biofuels,
14 and your answer was to let it up to the
15 marketplace.

16 SECRETARY YABLONSKY: Right.

17 SENATOR BRUBAKER: Do you support mandates
18 to ethanol -- market-based mandates to ethanol
19 and biodiesels?

20 SECRETARY YABLONSKY: I support the
21 Governor's proposal of 10 percent ethanol and 20
22 percent biodiesel fuel based on the
23 infrastructure laid out. Yes, I do agree with
24 that.

25 SENATOR BRUBAKER: I assumed you did. Then

1 the final question is has your research allowed
2 you to be confident that corn-based ethanol, when
3 the timing is appropriate, could make a
4 conversion to cellulosic?

5 SECRETARY YABLONSKY: Yes. As late as
6 yesterday, Steve Gatto, the CEO of BioEnergy
7 which is the company that's building the
8 corn-based ethanol facility in Clearfield County
9 and also is building them in other places around
10 the United States, part of the Clearfield County
11 project is a pilot project on cellulosic-based
12 ethanol although using woodchips, and he
13 specifically said that 70 percent of the
14 investment you make in a corn-based ethanol
15 facility is usable in cellulosic, and that it can
16 be converted over.

17 CHAIRMAN WHITE: Thank you. Thank you,
18 Mr. Secretary.

19 SECRETARY YABLONSKY: You're welcome, Madam
20 Chairman.

21 MR. HENDERSON: Our next witnesses are Troy
22 Hammond from Plextronics, Incorporated, Brian
23 Murphy from New Spring Capital, and Stephen
24 Costantino from Ben Franklin Technology Partners.

25 CHAIRMAN WHITE: Good morning, gentlemen.

1 If you would please, as each of you speaks, be
2 sure the green light is on on your microphone.
3 And when you are not speaking, if you could shut
4 it off so we don't get feedback. Mr. Hammond.

5 MR. HAMMOND: Thank you, Chairman White,
6 Chairman Musto, and Members of the Committee for
7 the opportunity to present and discuss my views
8 regarding funding opportunities for innovative
9 low cost solar technologies.

10 I have submitted a written copy of my
11 testimony for the record and will summarize it
12 for you today. First of all, I commend the
13 Committee for their leadership in having this
14 hearing. This dialogue is essential for the
15 Commonwealth, and I thank your Committee for
16 addressing the importance of innovation related
17 to our current energy challenges.

18 My name is Troy Hammond, and I am the vice
19 president of products for Plextronics,
20 Incorporated, located in Harmar, just outside of
21 Pittsburgh. Plextronics was founded in 2002 as a
22 spin-out of Carnegie Mellon University. Our
23 company is the leading developer of a new class
24 of solar cells called organic solar cells, based
25 on a unique type of plastics called conductive

1 polymers.

2 We were informed this summer by NREL, the
3 National Renewable Energy Laboratory, in
4 Colorado, that our cells now hold the world
5 record for efficiency of this type of solar cell.

6 There is good reason to support new,
7 innovative solar technology. Solar cells
8 directly convert sunlight to electric power in a
9 clean, renewable manner with no direct emissions
10 into the atmosphere. However, today's solar
11 technology cannot yet deliver cost competitive
12 power in most situations.

13 In fact, the cost per kilowatt hour can be
14 two to five times as expensive depending on the
15 customer, the technology and the geographical
16 location. Our goal is to enable the installed
17 solar energy cost that is fully cost-competitive
18 by 2015 or sooner.

19 Clearly, achievement of this target will be
20 game-changing. We believe that new thin film
21 technologies like ours can unlock the sun's
22 potential. The novel version of plastics used by
23 our solar cells strongly absorb the sun's light
24 and behave like a semiconductor, very analogous
25 to silicon, in the generation of electricity.

1 But rather than requiring expensive silicon
2 manufacturing equipment and processes, these
3 plastics are made in the form of inks that can
4 literally be printed much like a newspaper is
5 printed. The total manufacturing cost can be as
6 much as ten times less costly per square foot of
7 solar module.

8 Further, key discoveries of this technology
9 were made right here in Pennsylvania by our
10 co-founder Professor Richard McCullough at CMU,
11 and these materials are now manufactured by
12 Plextronics. Yet additional performance
13 improvement and scale-up is still required.

14 The focus of our development activity is the
15 continued improvement of organic solar cell
16 performance and, critically, the scale-up to
17 large volume manufacturing for solar modules.

18 The rapid progress that we have made in the
19 early seed stage of our company would not have
20 been possible without Pennsylvania-supported
21 funding at key junctures. Innovation Works, our
22 Pittsburgh-based Ben Franklin Technology Partner,
23 was a key investor in Plextronics in the early
24 days, before we closed our first round of venture
25 capital funding.

1 Support from the Pennsylvania Energy
2 Development Authority allowed us to expand the
3 focus of our research of these unique plastics
4 from certain electronics applications that
5 focused just on short term revenue to tackle the
6 much bigger, longer term opportunity in solar
7 cell applications. These efforts were further
8 supported by the Sustainable Energy Fund of
9 Pennsylvania.

10 We have now matured to a company of 50
11 employees, including 20 Ph.D.'s, many of whom
12 have been recruited to Pittsburgh from outside
13 the region. At the end of 2008, we will employ
14 between 65 and 75 people and have the
15 manufacturing plan in place to produce 3
16 megawatts of solar cells at our pilot facility in
17 Pittsburgh.

18 Continued support at this juncture where our
19 focus is scaling up to module manufacturing is
20 critical. We recommend that the Senate Bill
21 Number 1 include language that would support
22 through grants and low interest loans the
23 manufacturing scale-up of this technology right
24 here in Pennsylvania.

25 Specifically, I urge this Committee to

1 consider funding activities that enable the
2 manufacturing scale-up of low-cost solar
3 photovoltaic modules here in the Commonwealth.
4 Companies or entities receiving funding in this
5 area should be able to demonstrate a clear
6 pathway to help Pennsylvania meet its obligations
7 under the Alternative Energy Portfolio Standard
8 targets of 2020.

9 Companies that receive funding in this area
10 should have a clear pathway to grid-parity cost
11 of electricity. Grants and loans for working
12 capital, equipment acquisition, construction and
13 site preparation for the proposed solar cell
14 manufacturing facilities are crucial incentives
15 that will accelerate our ability and the
16 Commonwealth's ability to grow and expand its job
17 base. These projects will have significant
18 economic impact within the Commonwealth.

19 In the short term, the Commonwealth of
20 Pennsylvania is in a position to reap huge
21 economic benefits by funding technology
22 advancements in the alternative and renewable
23 energy sector. These short-term investments will
24 ultimately reduce or eliminate the need for
25 further government subsidies to meet and exceed

1 the Alternative Energy Portfolio Standard targets
2 of 2020 because we will have built the solar
3 technology that fulfills our needs and is cost
4 competitive.

5 I want to thank this Committee again for
6 extending an invitation to Plextronics to present
7 our vision for a new technology that will enable
8 cost competitive solar by 2015. Clearly, we are
9 at a crossroads in addressing energy policy in
10 the Commonwealth, and I urge this Committee to
11 consider funding programs that will enable
12 Pennsylvania to build and maintain a leadership
13 position manufacturing low cost solar technology.
14 Thank you.

15 CHAIRMAN WHITE: Thank you. Your testimony
16 underscores my point made earlier that we are
17 already doing many of these things through the
18 Pennsylvania Energy Development Authority and the
19 State Energy Funds, with the bonding that we
20 approved for the Commonwealth Financing. I don't
21 think any of the bills we passed will be quite as
22 detailed as you are describing in describing the
23 recipients of this money.

24 Legislation typically puts a pot of money
25 out there and then gives a decision-making

1 mechanism, but doesn't make all the decisions in
2 the bill itself, but I think your work is very
3 exciting. Questions? Well, let's continue.
4 Mr. Murphy.

5 MR. MURPHY: Senator White, Members of the
6 Committee, my name is Brian Murphy. Good
7 morning. It's a pleasure to be here today. I'm
8 a general partner at New Spring Capital, and we
9 are a Radnor, Pennsylvania based private equity
10 fund. Today we have three funds under management
11 with approximately \$450 million of capital.

12 The firm is a Mid-Atlantic investor. We
13 invest throughout the Mid-Atlantic corridor in
14 the areas of healthcare, information technology,
15 and business services. That's at today 60
16 percent of our investments are here in the
17 Commonwealth. The State has been an active
18 investor in our fund activity with our healthcare
19 fund having capital from the tobacco investment
20 board, our mezzanine fund from the CFA, and the
21 state employee retirement system has invested in
22 our growth and expansion fund.

23 I'd like to begin by providing a brief
24 overview of the venture capital investment model
25 for your information. A venture capital pool is

1 an organized pool of capital, typically a
2 ten-year limited partnership along with
3 management such as Plextronics management.

4 We invest in companies that are developing
5 new products, enhancing research and developing
6 new services. We add value to companies with
7 both our capital, our active board participation,
8 and by mentoring management. Contrary to public
9 opinion, venture capitalists are more
10 entrepreneurs than financiers.

11 The industry takes a higher calculated
12 business risk with the expectations of
13 significantly higher economic returns. Thus, the
14 venture capital returns is an asset class or
15 typically a non-corollary asset class to the
16 public markets. Over a ten-year period, the
17 asset class has consistently outperformed other
18 benchmarks such as the S&P 500, the Russell 2000,
19 and NASDAQ.

20 In general, funds will evaluate several
21 opportunities a year, in fact, thousands of
22 opportunities a year to make a few investments.
23 Typically, no more than 10 percent of a fund's
24 total investable capital is allocated to one
25 particular deal, and rarely do funds invest

1 alone. They oftentimes build syndicates with
2 like-minded investors.

3 Once a fund is committed to the deal,
4 certain amounts of that capital are invested
5 upfront. Other amounts are reserved and put in
6 as the company continues to meet its milestones
7 on this developmental path.

8 Funds invest throughout the lifecycle of a
9 company. And when liquidity events occur, funds
10 are distributed back to investors. So venture
11 capital is neither short-term in nature, and it
12 is an ill-liquid investment as investments are
13 made out of a closed end partnership. Therefore,
14 returns are typically generated in the back-end
15 of the fund's life, five to seven years
16 typically, and I've enclosed as an exhibit a
17 J-curve which kind of shows how venture funds
18 typically distribute capital back to investors.

19 Turning that model to the energy sector
20 unit, the history of the information technology
21 industry we think is a testament to venture fund.
22 In the seventies, most IT firms were start-ups.
23 Those firms created the backbone of what is
24 today. The IT industry having funded companies
25 as well-known as Intel, Microsoft, Apple and

1 Sysco. We think the energy sector is geared to
2 mimic the IT industry.

3 The leading energy companies of tomorrow are
4 being venture funded today. According to Mark
5 Heeson, the president of the National Venture
6 Capital Association, 7 percent of all private
7 equity in venture capital investments are in the
8 energy sector today, is third behind life
9 sciences and information technology. That amount
10 is expected to double over the next three years
11 as it has doubled over the last three years.

12 As more capital comes into the space, the
13 capital per deal is also going up. In 2006, we
14 saw approximately \$4 to \$6 million per average
15 private equity energy sector related investment,
16 that capital is now up to \$10 million, and we
17 think that that will continue to go up as
18 investments are made over the next 12 to 18
19 months.

20 Currently, alternative energy companies are
21 being aggressively targeted to relocate to other
22 states, lured by the promise of additional
23 venture funding, tax credits, grant funding and
24 infrastructure support. States like California,
25 New Mexico, Ohio are leading in putting together

1 attractive economic incentive packages.

2 In order to create attractive and retain
3 leading edge companies in this competitive
4 environment, we urge the Commonwealth to continue
5 to dramatically commit to comparable and
6 differentiated economic incentives. If
7 Pennsylvania is not an attractive environment to
8 do business, the state and funds like New Spring
9 lose valuable investment deal flow.

10 As a case study, I'd bring your attention to
11 the funds invested in New Spring's healthcare
12 investment fund through the TSIB. Through that
13 fund, we have invested \$10 million in seven
14 Pennsylvania companies that syndicated -- our
15 capital has been syndicated with approximately
16 \$148 million of additional outside investors
17 capital, and today, as you can see on the chart
18 that I have affixed to the presentation, those
19 companies are producing over \$200 million of
20 revenue and employ over 800 Pennsylvanians and
21 are growing at rates far superior to the
22 healthcare consumer CPI.

23 So we have reviewed the Special Session Bill
24 1 and support the commitment to the Ben Franklin
25 organizations and the under-commercialization of

1 alternative technology. As you can see from the
2 industry data, the commercialization capital
3 affixed to the bill, 40 percent of the \$12.5
4 million is very small relative to the amount of
5 venture capital required to back emerging
6 companies.

7 In addition, the \$1.5 million cap per deal
8 is a relatively small percentage of the average
9 deal size in the energy sector today. We would
10 encourage you to consider that capital that is
11 too modest in its amount or too regulated in its
12 requirements will not be attractive to
13 institutional investors or portfolio companies of
14 institutional investors.

15 Conversely, we encourage you to aggressively
16 pursue making Pennsylvania a continued attractive
17 place for both companies and venture capitalists
18 who enjoy great deal flow.

19 Finally, it is important that the State
20 recognize the need to evergreen this capital. As
21 I mentioned, private equity funding and venture
22 capital funding is a long-term horizon, it's a
23 long-term commitment, and evergreening this
24 capital will continue to perpetuate additional
25 capital coming into the system we think

1 advantageous.

2 Thank you for your time today and your
3 continued support towards enhancing the corporate
4 investing climates in Pennsylvania which you have
5 done an outstanding job. Thank you very much.

6 CHAIRMAN WHITE: Mr. Costantino.

7 MR. COSTANTINO: Madam Chairman, Members of
8 the Committee, I am Steve Costantino, Vice
9 President, Technology Commercialization Group of
10 Ben Franklin Technology Partners of Southeastern
11 Pennsylvania. In addition to my activities
12 there, I'm serving as the coordinator on energy
13 issues for the four partners that form our
14 statewide network which serves all 67 counties.
15 We appreciate you recognizing the value of our
16 organization and our networks bring to the energy
17 independence effort.

18 Over the years that our organization has
19 been in existence, Ben Franklin has evolved into
20 a dynamic resource that is helping develop and
21 grow the Commonwealth's technology industries.
22 By linking talent, expertise, and capital, BFTP
23 helps convert Pennsylvania ideas and Pennsylvania
24 innovations into highly paid Pennsylvania jobs.

25 In the more detailed written testimony that

1 I have provided is a summary of the results of a
2 study that examined the impact on our
3 organization over the 1989 to 2001 time frame.
4 This included a boost in the State's economy of
5 \$8 billion, and for every public dollar invested
6 in BFTP during that time frame, an additional \$23
7 of income was yielded back to the State.

8 The tax revenue generated as a result of the
9 program has more than covered the cost of the
10 program. Our longstanding positive track record
11 in economic development has come through
12 supporting numerous technologies spanning a wide
13 band width of market sectors, whether it is
14 biotechnology, information and communications,
15 advanced materials or Nano technology, our
16 demonstrated capability to identify and support
17 the latest innovations has benefited the
18 Commonwealth by ensuring that it is active at the
19 cutting edge investing in technology innovators
20 across Pennsylvania.

21 Also, having our finger on the pulse of
22 technology development, we also recognize when
23 significant opportunities develop and the timing
24 is right to undertake a more comprehensive sector
25 focused initiative.

1 We seek the clean tech sector as a prime
2 example of such an area. We see tremendous
3 opportunity here as it relates to alternative
4 energy and other clean technologies. We believe
5 that Pennsylvania is second to none in terms of a
6 unique combination of assets and strengths that
7 could be built upon to make our state a leader
8 both in technology and economic opportunity.

9 We possess a wealth of indigenous natural
10 resources, a strategic geographic location,
11 abundance of world class research and development
12 facilities and institutions as well as both
13 longstanding and newer anchor companies to which
14 you spoke to earlier this morning with
15 significant clean technology resources.

16 Senate Bill 1 says shall be used for
17 commercialization and acceleration of the
18 development of emerging alternative or renewable
19 technologies in this Commonwealth to include
20 funding of the costs associated with capital
21 investment, translational research and other
22 costs. This approach matches well with our
23 capabilities and would help us in executing our
24 part of the mission built upon Pennsylvania's
25 existing strengths in this sector.

1 We have a demonstrated successful track
2 record in facilitating the transition from
3 potential to economic reality in the technology
4 arena. We do this through a tool kit of programs
5 that we like to refer to as a commercialization
6 continuum where we support activity from early
7 stage research through early stage
8 commercialization.

9 This includes a complimentary interrelated
10 set of programs and services accompanying various
11 stages of transitional research and proof of
12 concept research, incubation facilities, start-up
13 management expertise, and pre-seed financing.

14 Within the realm of clean tech, there is a
15 broad range of existing and potential commercial
16 applications that require technological
17 advancement. A common view among the experts is
18 that there is no one silver bullet to address our
19 energy independence and climate change issues,
20 and at the core of most of the potential
21 solutions is technology.

22 In the attachment to my written testimony,
23 you will see a chart that originated from
24 Lawrence Livermore Laboratory that summarizes and
25 strongly supports this point.

1 You've just heard from Plextronics, an
2 exciting example of a Pennsylvania-based company
3 that is commercializing technology developed at a
4 Pennsylvania university and for which Ben
5 Franklin provided significant support during its
6 first four years of existence from the time it
7 was spun out of Carnegie Mellon until it was able
8 to raise its first BC round four years later.

9 This is an example where our knowledge of
10 research institution capability combined with our
11 ability to provide seed stage capital and support
12 directed towards a dynamic emerging market has
13 made a real difference.

14 There are other examples. One is Power and
15 Energy, Incorporated, a company in southeastern
16 Pennsylvania developing a novel reactor
17 technology for hydrogen production from liquid
18 fuels such as gasoline or ethanol to directly
19 feed an adjacent fuel cell.

20 BFTP invested in this company before it was
21 ready or funding was available. This funding was
22 key to further the company's proof of concept
23 work as well as to develop initial revenue
24 streams and sustainability through its hydrogen
25 purification technology.

1 Due to the company's further progress, they
2 have gained interest from the Navy and their fuel
3 cell program resulting in over a million dollars
4 in subsequent grants to the company.

5 Since the announcement of the Governor's
6 energy independence strategy in February, each of
7 the four Ben Franklins have seen a significant
8 uptake in the number of energy related start-ups
9 that have approached their local Ben for support.

10 We believe that the funds proposed in Senate
11 Bill 1 will enable the Bens to serve these new
12 start-ups and each Ben to target specific
13 commercialization resources to capitalize on the
14 unique strengths of each region of the
15 Commonwealth from fuel cells in eastern
16 Pennsylvania to clean coal technology in the
17 western part of Pennsylvania in addition to the
18 emerging solar and wind and other renewable
19 energy technologies that are currently being
20 developed in research centers throughout the
21 Commonwealth.

22 According to Clean Tech Capital Group, 79
23 percent of clean tech venture capitalists believe
24 that the current state and federal public
25 policies are a prominent factor in investment

1 decisions.

2 In Pennsylvania, the Ben Franklin Program
3 serves as the largest source of seed funding for
4 technology start-ups and is consequently one of
5 the key public programs that has helped give
6 Pennsylvania a strong reputation among venture
7 capital.

8 We believe that Senate Bill 1 provides
9 Pennsylvania with the unique opportunity to
10 further leverage its assets in energy and
11 technology and commercialization, and that
12 utilizing the existing strengths of the Ben
13 Franklin network will enable the creation of more
14 energy related tech companies like Plextronics,
15 Power and Energy, and others that are currently
16 being served by the Bens throughout the
17 Commonwealth.

18 Thank you very much for your time.

19 CHAIRMAN WHITE: Questions? Senator Musto?
20 Senator Boscola?

21 SENATOR BOSCOLA: I notice at the end of
22 your testimony you said you'd be very pleased if
23 this bill, Senate Bill 1, include an amendment
24 that would mention Ben Franklin Partners. What
25 do you mean by that? Can you be more specific?

1 MR. COSTANTINO: I'm sorry.

2 SENATOR BOSCOLA: You're asking for an
3 amendment to Senate Bill 1 that you be mentioned,
4 is that what you're asking for?

5 MR. COSTANTINO: I'm sorry. I don't --

6 SENATOR BOSCOLA: At the end of your
7 testimony you say we are very pleased to be
8 included in this bill and would like to request
9 that you consider an amendment which would
10 specifically mention the Ben Franklin Technology
11 Partners.

12 MR. COSTANTINO: I'm sorry. That is an
13 error in my testimony.

14 SENATOR BOSCOLA: An error?

15 MR. CONSTANTINO: Yes.

16 SENATOR BOSCOLA: Okay. Thank you.

17 CHAIRMAN WHITE: Any questions? Senator
18 Wonderling.

19 SENATOR WONDERLING: I'd just like to thank
20 you gentlemen for your thoughtful testimony.
21 Mr. Hammond, just very quickly, to build on my
22 line of questioning of the Secretary, can you
23 provide the Committee at your convenience how you
24 interacted with DCED as it relates to reporting
25 on your job creation statistics?

1 MR. HAMMOND: Absolutely. We will provide
2 that separately, if that's okay.

3 SENATOR WONDERLING: Thank you.
4 Mr. Murphy -- actually, one more question,
5 Mr. Hammond. Can you define for me you put a
6 term out there that I'm not familiar with,
7 manufacturing scale-up, which I think could
8 probably be a template for any entrepreneur that
9 has, as you have shown and demonstrated, sound
10 technology, international accolades, good
11 business model, right financial drivers.

12 First, I guess a definition of the term of
13 what you are using, manufacturing scale-up, and
14 why in your particular economic sector requires a
15 more healthy dose of government intervention in
16 that than say the IT sector of 10 or 15 years
17 ago?

18 MR. HAMMOND: Senator, thank you for the
19 opportunity to present here and also to respond
20 to the questions. Again, as background, we're
21 supported at the seed stage very helpfully and
22 critically by the Bens and PEDDA and other
23 resources.

24 We have now. With the success that we've
25 made in our technology, been able to secure

1 venture capital funding and strategic partner
2 funding which is quite ready to support our
3 working capital over the next two or three years
4 based on where we are now.

5 The key in our technology is we have
6 developed the ability to make these inks and
7 materials and shown on a very small scale that we
8 can make solar cells that work extremely well,
9 but our challenge is putting the capital in
10 place, the \$10 or \$20 million pilot manufacturing
11 plant to actually make solar cell modules for a
12 company like Plextronics very challenging to get
13 the fixed capital.

14 So by scale-up I mean taking what is a
15 research solar cell on a small scale and turning
16 it into something that would be more like the
17 size of this table which requires significant
18 fixed capital.

19 SENATOR WONDERLING: What I'm struggling
20 with is how that's unique in the alternative
21 energy sector as compared to the life science
22 sector. There is a company right outside of
23 Philadelphia, a life science company that
24 received private investment capital to, on their
25 nickel, install the largest super computer on the

1 east coast to do computational analysis for life
2 science. So there was private investment there
3 for that. Why the need for the government to be
4 so aggressively in the energy sector as it
5 relates to your business model?

6 MR. HAMMOND: Thank you. I think there is a
7 couple of important points on this in terms of
8 the scale of capital. First, of course, the size
9 of the capital for a company the size of
10 Plextronics is significant in terms of funding
11 that fixed cap.

12 The second is this solar technology is from
13 a time frame, as I mentioned in my testimony,
14 full deployment to the point that it's a full
15 kind of positive margin revenue generating
16 business is a number of years away. At a large
17 scale, it is at least probably four to five years
18 away for a new technology like Plextronics, and
19 that would be an aggressive timeline.

20 As I mentioned in my testimony, I think we
21 are well positioned to contribute cost effective
22 solar power to meet ultimately the 2020 targets
23 for the AEPS, but the timeframe for that real
24 substantial sized positive margin business is
25 long enough that it becomes a challenge to get

1 that kind of fixed capital.

2 SENATOR WONDERLING: Thank you. That is a
3 lot similar than everything to the life science
4 sector. Thank you for that. Just some quick
5 questions for Mr. Murphy. What percentage of
6 your current investment portfolio is investing in
7 Pennsylvania-based companies and what percentage
8 are out-of-state?

9 MR. MURPHY: Today about 60 percent of the
10 investments across all of our funds are
11 Pennsylvania.

12 SENATOR WONDERLING: 60 percent?

13 MR. MURPHY: Approximately 60 percent, yes.

14 SENATOR WONDERLING: You've made a claim
15 which maybe this is a more philosophical point as
16 to what is a measure of the attractiveness, and
17 you look at the financial statements of the
18 companies that you and your other partners
19 probably sit on the boards of so you have a
20 fiduciary responsibility.

21 When you look at the balance sheets of the
22 companies you are investing in, as it relates to
23 the attractiveness quotient, are you looking more
24 towards a favorable tax climate and tax policy
25 that encourages early stage to mid-stage growth,

1 tradability of NOL's, R and D tax credits,
2 etcetera, etcetera or \$850 million in grants and
3 low interest loans? I'm not talking about the
4 policy that we're addressing. I'm talking about
5 when you serve as an officer on the boards in
6 which you are investing and you are looking at
7 the balance sheets, in your estimation which is a
8 better way to go?

9 MR. MURPHY: Well, I'll tell you how we look
10 at it. It is a bit of a combination as you might
11 expect, but we really look -- for us, it's really
12 about how to get leverage and extend the amount
13 of capital and the runway that a company has with
14 capital that it has so that it can continue its
15 development to hit key milestones because those
16 key milestones are typically the driver of
17 valuation for a company.

18 We look at a combination of how can we
19 leverage our capital and the company's assets to
20 extend the lifecycle of this particular round of
21 financing. So, clearly, grant funding does a
22 nice job of that. If we can access NOL's that
23 can be maybe sold, that can be turned into cash,
24 that gives us more capital and more runway
25 because, obviously, the earlier stage companies

1 are managing burn rates to hit operational
2 milestones. And as they hit those milestones,
3 then, obviously, more financing opportunities
4 open up, whether that is additional private
5 equity capital, whether that opens up the public
6 markets in some cases, or whether that really
7 just opens the investment to other investors
8 interested in recapitalizing the company.

9 SENATOR WONDERLING: You and I can connect
10 at a future date as to the notion of how to make
11 such funds evergreen. I think the time is ripe
12 to revisit the role of the state pension funds in
13 just that we have a very small share of the
14 total, but, by example, we are struggling right
15 now with the life science greenhouses and
16 determining an evergreen source of funding for
17 them to support the life science vertical which
18 is inherently the issues I think we have when
19 state government takes a more prominent role as a
20 venture capital partner in that we move by the
21 cycles of change, and the political winds move us
22 in different directions.

23 The notion that the state can establish an
24 evergreen relationship with a company like yours
25 to sustain a vertical is challenging from a

1 policy perspective. We are seeing that proven
2 right now through the life science.

3 MR. MURPHY: It is challenging, and I think
4 you're right, lots of dialog because there are
5 very constructive ways for that to happen, I
6 think, in both ways because I think the
7 incentives on one hand are extremely aligned
8 about creating a very open and progressive
9 business climate with capital --

10 SENATOR WONDERLING: Returning twice the
11 amount that is statutorily required, and that is
12 a non-tax source of revenue C fund issues as
13 opposed to the Governor's proposed post energy
14 tax.

15 MR. MURPHY: Right.

16 SENATOR WONDERLING: Thank you.

17 CHAIRMAN WHITE: Senator Dinniman.

18 SENATOR DINNIMAN: I just wanted to follow
19 up on Senator Wonderling's question. This is
20 really one of the keys for us, and it would be
21 helpful, Mr. Murphy, if you would put some of
22 your ideas down for the Committee.

23 What we are really saying is that there
24 needs to be this continuum of support. There
25 needs to be not only the beginning support, but

1 the effort into commercialization. And maybe
2 because life sciences is more evolved and both
3 Senator Wonderling and I supported it very
4 strongly because of our districts and because we
5 understand what is going to result for
6 Pennsylvania.

7 Now, as we start on energy, we don't want
8 these programs necessarily to compete with each
9 other. We want to be able to be supportive of
10 both, but we also want to understand when it's
11 best to put our capital in and how that capital
12 is going to be increased because, as Senator
13 Wonderling said, perhaps the profits we are able
14 to get back into the fund will be used by using
15 the market right. We then can save, and then we
16 don't have to use as much taxpayer dollars later
17 on.

18 But what's happening now is if we are
19 putting so much money initially into development,
20 when it gets to the next stage, then we don't
21 always have the money to go, whether it's the
22 scale-up of manufacturing or whether it's taking
23 it along in steps.

24 So I feel that if you could write to the
25 Members of the Committee what are your thoughts,

1 what's the thoughts of the venture capital
2 community in answering what Senator Wonderling
3 said here on energy so that we then can have a
4 better public policy understanding because a
5 little here in this program, a little of that,
6 but we're not doing this in a coordinated best
7 way, I believe, and your insight would be very
8 much appreciated because none of us who's in here
9 are venture capitalists. And so, subsequently,
10 we need to increase our understanding of the
11 field.

12 MR. MURPHY: I'd welcome the opportunity and
13 be glad to share some thoughts on that. Thank
14 you.

15 CHAIRMAN WHITE: Senator Fontana.

16 SENATOR FONTANA: Thank you. Mr. Hammond,
17 you talked about solar, that it's little more
18 expensive to produce. As time goes on, do you
19 think it is going to be a better use for the
20 average citizen out there in their home or more
21 to businesses or manufacturers is the better use
22 of solar as time goes on? You made a projection
23 of 2020.

24 MR. HAMMOND: Thank you, Senator. I
25 absolutely do. The cost of -- the equivalent

1 cost of power from solar is coming down rapidly,
2 and that will be accelerated by new technologies
3 like Plextronics's that come on-line over the
4 next four to five years. That really will make a
5 big difference in the total what's called the
6 LCOE, the levelized cost of energy, which
7 basically amounts to the cents per kilowatt hour,
8 an average that you are paying for solar.

9 And one of the points that is often missed
10 is the coincidence of when solar is generating
11 power relative to the true cost of energy which
12 is it's the hottest summer afternoon is where
13 they are producing the most power and where the
14 true effective cost of energy on the grid is
15 actually significantly more than the average cost
16 that you for your home or residential or
17 commercial or industrial customer actually pays
18 for their electricity. So those two points will
19 absolutely be crossing over the next five to
20 eight years.

21 And, as I said, depending on the locale, the
22 specifics, it can be much sooner than that. So
23 you are going to see early deployment --
24 deployment of solar is growing rapidly, partly
25 subsidized.

1 The largest consumer of solar, installing of
2 solar today is actually in Germany, partly
3 because of the subsidies they put in place.
4 Pennsylvania, sometimes there is a rap about
5 don't you need constant sunlight, do you
6 basically have to be Phoenix to make use of
7 solar. I mean Pennsylvania has 50 percent more
8 sun than the best locations in Germany. Germany,
9 as far as solar resources, is about equivalent to
10 Seattle.

11 So solar is growing rapidly. Scale-up is
12 happening. Costs are coming down, and it will
13 make a significant impact in our energy
14 portfolio.

15 SENATOR FONTANA: And one for
16 Mr. Costantino, the total funding in Senate Bill
17 1 for Ben Franklin is \$12.5 million. What kind
18 of an impact do you feel that will have and what
19 other sources of funding do you get?

20 MR. COSTANTINO: Well, the impact will be
21 beneficial. It will allow us to do more with
22 emerging companies and supporting more emerging
23 research activity that is going on at our local
24 universities.

25 Having said that, our demand always exceeds

1 our dollar amount, so certainly even more would
2 be better, but we try to do things where we
3 develop activities where we can get additional
4 leverage funding, for example, through federal
5 funding and so on to build upon the funding that
6 we get from the state.

7 SENATOR FONTANA: Thank you.

8 CHAIRMAN WHITE: That's \$12.5 million
9 annually?

10 MR. COSTANTINO: Yeah, per year.

11 CHAIRMAN WHITE: Any other questions? Thank
12 you, gentlemen.

13 MR. HENDERSON: Robert Walker from SWAN
14 Biomass Company, Race Miner from Keystone
15 Biofuels, Incorporated, and John Nikoloff from
16 Pennsylvania Energy Resources Group.

17 SENATOR BRUBAKER: Before you begin, Senator
18 White, I need to leave in a few minutes. To let
19 you and the persons that are here to testify, I'd
20 like to communicate my apologies to you for
21 leaving early. I'm immensely interested in what
22 this panel has to say. I'll follow up with
23 Senator White to get the behind the scenes
24 information. Thank you very much.

25 CHAIRMAN WHITE: Thank you, Senator. You

1 can begin, Mr. Walker.

2 MR. WALKER: Good morning. And thank you to
3 Chairman White, Chairman Musto, and the rest of
4 the panel by giving us the opportunity to address
5 a very important issue, mainly renewable fuels
6 business. I'm talking transportation fuels, and
7 that's the incentives to get commercial
8 facilities going with new technology.

9 I'm president of SWAN Biomass Company. We
10 are licensors of technology for the conversion of
11 cellulosic biomass to fuel ethanol.

12 CHAIRMAN WHITE: Pull the mic a little
13 closer.

14 MR. WALKER: I'll get closer. I'm president
15 of SWAN Biomass Company, and we are licensors of
16 technology to convert cellulosic biomass to fuel
17 ethanol.

18 I've submitted some my statements for the
19 record and will go through it briefly here to get
20 to the more important part of risk management in
21 this area.

22 It is generally agreed that Pennsylvania
23 would benefit from the establishment of capacity
24 to produce gasoline substitutes like ethanol.
25 Petroleum imports would be reduced as would the

1 exported dollars to pay for it.

2 We have heard earlier today about new jobs
3 being developed and economic activity being
4 generated by these kind of things, and the
5 standard of living for Pennsylvania citizens
6 would be improved. There would be an increase in
7 the tax base at federal, state and local levels,
8 and I'm sure it would be appreciated at each of
9 those.

10 It is also generally agreed that if this
11 capacity were to be based on what ways to
12 under-utilize cellulosic resources, which is the
13 term used in Pennsylvania and also efficient
14 energy crops, Pennsylvania could obtain a
15 competitive advantage over its neighbors in the
16 advancement of the welfare of its citizens.

17 Pennsylvania probably is the state with the
18 largest abundance of high quality accessible
19 cellulosic resources. Achieving these benefits
20 requires a reduction in the risk of building the
21 first commercial facilities to produce fuel
22 ethanol from cellulosic biomass.

23 I emphasized the first ones. Reduction of
24 the remaining risk is best provided -- much of
25 the risk has already been mitigated. Reduction

1 of the remaining risk is best provided, we
2 believe, through grants or loans comprising 15 to
3 20 percent of the capital cost for the first one
4 or two facilities.

5 Thereafter, these facilities are profitable
6 enough for private investors to invest in without
7 additional help from the state or from other
8 funding agencies.

9 Risk associated in the building of a
10 first-of-a-kind biorefinery of the type and size
11 needed has both technical and financial
12 components. The questions are will the
13 biorefinery be economically competitive.

14 Based on the process design package
15 developed for a 30 million gallon per year
16 facility by experienced engineering firms for
17 SWAN Biomass Company, the answer is unequivocally
18 yes.

19 SWAN has been working at the reduction of
20 ethanol costs from its process for a long time.
21 What we do is we pick out an area, isolate on it
22 and see how much we can reduce it. In California
23 -- and I'll use California as an example because
24 they are very far along in this process -- for
25 feedstocks, the cost initially for producing --

1 feedstock costs for producing a gallon of ethanol
2 have been reduced from about 78 cents for
3 feedstock to around 43 cents per gallon.

4 We are in the process of introducing a new
5 variety of cane which will further reduce this
6 cost to about 26 cents per gallon. And at that
7 point in time, all of the costs will be levelized
8 at very low levels for commercial facilities.

9 These reductions in cost convert directly to
10 increases in cash margin and manufacturing cost
11 reductions and in the financial community the
12 EBITDA metric for financial profitability.

13 In Pennsylvania, the initial cost of
14 feedstock per gallon of fuel ethanol is predicted
15 at this stage to be about 39 cents per gallon.
16 We are working with others to achieve reduction
17 of a similar magnitude to those that were
18 calculated for -- were developed for California.

19 One of the advantages that cellulosic
20 ethanol feedstocks bring, and this is a reduction
21 and risk to the State Administrations, is that
22 the feedstocks do not have to exhibit price
23 swings typical of petroleum or grain markets.

24 If the price for one feedstock goes up, it
25 is easy to switch to another feedstock available

1 at a lower cost. Thus, the cost for
2 cellulosic-based ethanol can be expected to rise
3 perhaps predictably in parallel with general
4 inflation without wild swings.

5 The second question to be asked is has the
6 technology been developed sufficiently to be
7 applied at a commercial scale? And the answer
8 here again is definitely yes.

9 Reputable engineering firms have indicated
10 that they will stand behind their designs in the
11 process design package. The process design
12 package has been reviewed by an independent
13 engineering firm and found to be acceptable.
14 Permitting studies are almost complete for the
15 cane-based facility in California and have been
16 well received by the relevant approval groups in
17 that area.

18 Even with all this evidence of confidence in
19 the technical community, the financial community
20 is predictably going to be uncomfortable until
21 the first commercial facility is working. The
22 concern is not that the EBITDA may shrink, the
23 cash margin may shrink, that can be mitigated
24 easily with a cents-per-gallon tax benefit, but
25 that's not really the thing that people are

1 looking for. But the risks that they see or
2 don't see are unknown and they are not able to
3 articulate them. They are just their risks.

4 They generally characterize it as what if
5 everything goes wrong and they are looking for
6 something else to mitigate that unknown component
7 of risk. Such risks in the past have been offset
8 by the provision of grants, loan guarantees, and
9 these are the most potent tools in the public
10 arsenal today.

11 The federal government has chosen to provide
12 up to \$80 million in support for several
13 biorefineries recently, representing about 80
14 percent of the cost of a SWAN-based facility. We
15 did not participate in that auction of federal
16 money because of some of the things that go along
17 with it, but it just shows you the size of what
18 people are willing to go to get these things
19 started.

20 This issue has been discussed with several
21 financial entities in the private sector, and I
22 might add that all of the people that we are
23 talking to are people outside of Pennsylvania
24 that want to come into Pennsylvania to invest,
25 and they felt that a range of 15 to 20 percent

1 would be sufficient given the advanced state of
2 SWAN's developments.

3 This level of support for the first
4 biorefinery is therefore recommended for
5 biorefineries in Pennsylvania. After the first
6 plant is built -- I can't emphasize this
7 enough -- given the technology, it is unlikely
8 that any such support will be needed for
9 subsequent biorefineries using that technology
10 and the amount needed, if any, to support any
11 first-of-a-kind biorefinery using another
12 technology would be much less because it is the
13 getting over the cellulosic to ethanol hurdle
14 that is the most important barrier.

15 Should the recommended incentives be
16 provided and SWAN's development program remain on
17 schedule, we would expect to have one biorefinery
18 ready for ground-breaking in 2008 and two others
19 in an advanced stage of development. That
20 progress would make Pennsylvania the clear leader
21 in the production of ethanol from cellulosic
22 feedstocks.

23 I thank you for the time to give these
24 opinions and look forward to your questions.

25 CHAIRMAN WHITE: Thank you, Mr. Walker. We

1 will proceed with Mr. Miner's testimony.

2 MR. MINER: Thank you, Madam Chairman. Good
3 morning. My name is Race Miner, and I'm the CEO
4 and a founding partner in Keystone Biofuels, a
5 biodiesel production facility located in
6 Shiremanstown, Cumberland County, about five
7 miles due west of here.

8 Our firm is also a founding member of the
9 Pennsylvania Biodiesel Producers Group, and I
10 come to you today representing both my company
11 and that statewide organization.

12 Keystone Biofuels produces 100 percent pure
13 ASTM-certified biodiesel from soybeans and other
14 fully renewable organic resources. In a region
15 beset by air quality concerns driven largely by
16 the high volume of diesel trucks, our company and
17 others like ours are providing instant and
18 workable solutions with a product that addresses
19 three critical issues, environmental and health
20 protection, energy independence, and economic
21 value all at once.

22 I'm here today because the Pennsylvania
23 biodiesel industry needs your help. Senate
24 Bill 1 addresses a wide range of energy
25 independence considerations with a primary focus

1 on supporting the development and capital
2 investment needs of emerging energy technologies.

3 Biodiesel, however, is not an unproven
4 technology. Keystone Biofuels is not a
5 pre-start-up company. Our firm and others like
6 it have already built the facilities, established
7 proven technologies, and today ship
8 quality-certified commercially viable fuel. So
9 if we don't need the kind of help that is in
10 Senate Bill 1, what do we need?

11 To answer this question, consider that while
12 our technology is established and our
13 Pennsylvania biodiesel companies are producing
14 product right now, our industry overall is still
15 very much emerging.

16 Biodiesel is fairly new, like many other
17 alternative energy technologies. And yet it also
18 harkens back to the very beginnings of the diesel
19 industry when the producer of the diesel engine,
20 Rudolf Diesel, predicted over a century ago that
21 diesel engines would be best served by using some
22 form of biodiesel fuel.

23 Our industry is faced with three unique
24 challenges today. The first is extreme
25 fluctuations in the price of our feedstocks due

1 to speculators investing in future expectations
2 of market growth, as well as Midwest grain
3 conglomerates seeking to buy out the market and
4 control vertical integration of production.

5 The second is distribution. We need our
6 product distributed on fuel racks and at retail
7 and commercial fueling stations in order to
8 remain viable. Customers want biodiesel fuel,
9 this is a fact. However, with distribution
10 largely controlled by the petroleum industry and
11 up-front costs of independent distributors high,
12 customers want our product but struggle to obtain
13 it.

14 The third is support from other states.
15 More than 20 other states have enacted some form
16 of incentive for their biodiesel production
17 facilities in order to spur in-state production
18 and price-competitive exporting from their states
19 to other locations such as Pennsylvania which
20 further impacts our competitive position.

21 Today it's cheaper for a distributor to buy
22 fuel in the Midwest, truck it to Pennsylvania and
23 sell it here. Then we can produce the fuel
24 ourselves using not only Pennsylvania fuel, but
25 also Pennsylvania feedstocks from Pennsylvania

1 farmers. I think it was testified in front of
2 this Committee that very fact that one of the
3 largest marketers in the state of Pennsylvania is
4 importing his fuel from the state of Iowa.

5 In short, we need market development
6 funding. Not research and facilities fund. And
7 we need it for three years while biodiesel
8 stabilizes in the marketplace. Our ask is
9 defined in Senate Bill 10 which calls for a \$1
10 per gallon production incentive to support the
11 commercial viability of biodiesel fuel in the
12 marketplace.

13 This incentive is proposed to cap at 10
14 million per year for three years. This formula
15 directly meshes with the proposed usage mandate
16 over the coming years which raises the question
17 of why an incentive is necessary along with a
18 mandate.

19 The answer is that a mandate tells people
20 what to buy, but not how, when, or from whom. A
21 mandate that works without the incentive will
22 increase consumption without supporting in-state
23 production or distribution. We will rapidly
24 destroy our Commonwealth's biodiesel industry as
25 more people would be using the fuel.

1 This is exactly what the Pennsylvania
2 biodiesel industry faces today. Two of our
3 members have already idled their plants, and our
4 total membership's production including that of
5 our own firm has been reduced by 90 percent as
6 reported by the Susquehanna Valley Center for
7 Public Policy in their analysis published in
8 October.

9 We need to make Pennsylvania biodiesel more
10 competitive while the market itself settles and
11 overcomes short-term speculation, aggressive
12 incentives from other states, and the vertical
13 integration efforts of Midwest grain
14 conglomerates. Otherwise, our industry will
15 quickly die.

16 The request sought in Senate Bill 10 is
17 already one-third of what our members originally
18 requested, which was, I believe, 15 million in
19 the first year, 30 million in two subsequent
20 years for a total of 75 million. We agreed to
21 this reduction to a 10 million per year level in
22 order to meet requests to keep it within a
23 certain state budget cap.

24 The need for the dollar-per-gallon match is
25 critical. We are willing to accept a lower cap

1 on the program in order to protect the integrity
2 of that dollar-per-gallon match. From a fiscal
3 perspective, the financial results are the same,
4 but from a policy perspective, protecting the
5 dollar-per-gallon match is essential in order to
6 keep Pennsylvania competitive with the federal
7 program and those of other states.

8 The funding for this program comes from
9 Senate Bill 10. It addresses this with the AFIG
10 program to fund it, A program to provide this
11 biodiesel production incentive. As of August of
12 this year, there are \$20 million of funds unused
13 in the AFIG program. Based on DEP's report on
14 AFIG, the program's fund balance exceeded 25
15 million in June of '06 and 21 million in June
16 of '05.

17 We are able to both fund the Senate Bill 10
18 provision and still keep a healthy fund balance
19 for AFIG at the same time. In fact, the funds
20 are meant to be deployed, so in reality our
21 provision improves the effectiveness of AFIG by
22 using a revenue-based incentive model. This
23 compliments the many grant and incentive
24 programs in Senate Bill 1.

25 Senate Bill 10 is an extremely

1 cost-effective tool that makes the intentions of
2 Pennsylvania's planned mandates and the vision of
3 this Committee in terms of enhancing the
4 Commonwealth's energy policies for the future
5 possible.

6 We have a long way to go in order to get our
7 state using biodiesel across the board, and
8 unlike other technologies, biodiesel is here
9 today, now. We don't need to worry about risky
10 technologies, unproven concepts, or speculative
11 risks with state investment as with some other
12 energy technologies. All we need to do is get
13 the product deployed to the field widely and
14 cost-effectively.

15 For that, we need both a mandate and a
16 production incentive, but nothing else.
17 Everything else is taking care of itself, yet
18 without the support of this incentive,
19 Pennsylvania biodiesel will have been developed,
20 established, launched, deployed, and then
21 promptly lost, all before other sectors have even
22 gotten past the R and D phase.

23 Don't let the best immediate option for
24 alternative fuels deployment disappear from
25 Pennsylvania's economic landscape because of a

1 state energy policy that only addresses
2 pre-launch technologies.

3 Help us take Pennsylvania biodiesel from
4 emerging to stabilized as an industry over the
5 remainder of this decade. It will work for the
6 environment, for our energy independence, and for
7 our economy. Together, we can make Pennsylvania
8 a leader not only in alternative energy
9 consumption, but also in alternative energy
10 production. Thank you.

11 CHAIRMAN WHITE: Can you just tell me what
12 state gives the dollar-per-gallon incentive?

13 MR. MINER: I believe Indiana currently has
14 a dollar, and Iowa has \$1.50 per gallon.

15 CHAIRMAN WHITE: Iowa?

16 MR. MINER: Iowa, the state of Iowa, yes.

17 SENATOR DINNIMAN: There is a map attached.

18 MR. MINER: Mr. Nikoloff has a detail.

19 CHAIRMAN WHITE: Go ahead.

20 MR. NIKOLOFF: Thank you, Senator. Thank
21 all of you Senators for this opportunity again to
22 come before you. My name is John Nikoloff. I am
23 president and partner of the Pennsylvania Energy
24 Resources Group. We are actually a business,
25 strategic consulting firm, working with a number

1 of alternative energy companies, not just in the
2 biofuels areas, but in several of the advanced
3 technologies, waste to energy, hydrogen fuel
4 cells, and other areas, but I'll focus my remarks
5 this morning to the biofuels sector.

6 Energy Resources Group and the people that
7 we're working with to help make successful all
8 believe that a growing biofuels industry can be a
9 big economic boom to the State of Pennsylvania,
10 but that action is needed now to prevent
11 additional drain of consumer dollars and tax
12 revenues to imports.

13 We hear a lot of talk about imports and
14 concern over the price of gasoline and the price
15 of oil because of OPEC, but we are also competing
16 with more aggressive states, as Race just
17 mentioned, Indiana, Iowa, Kentucky and others.

18 There are a number of issues addressed in my
19 testimony. I want to skip through that very
20 quickly for the sake of time and to give you a
21 chance to ask as many questions that you have.

22 I want to address maybe three or four quick
23 points, that, again, I apologize, but I'll skip
24 through what's there in the testimony. I've been
25 making some notes as I've been listening this

1 morning.

2 One of the issues that I sense from talking
3 to all of you and other members of the House and
4 Senate is what is the standard in ethanol, where
5 are we going with ethanol production. We just
6 want to say for the record that the location of
7 ethanol facilities in Pennsylvania should and
8 will be based on individual company's economics
9 to a great extent and the marketplace.

10 Arguing that we don't have corn in
11 Pennsylvania to support it doesn't matter if
12 somebody can show at the bottom line of their
13 business plan and get convinced financial markets
14 and others that that business plan will work.

15 We are working with four different companies
16 in Pennsylvania, and right now about 12 companies
17 from outside the state looking at Pennsylvania
18 who are all going to the private market for
19 funding. Some of them have received some
20 assistance from the Commonwealth. Others have
21 not. But the companies from outside the state
22 are looking at Pennsylvania as a destination
23 market to build plants for a specific reason.

24 Their end cost to distributing the product
25 to the east coast market are substantially

1 cheaper than shipping from the Midwest. The
2 price of transporting corn into Pennsylvania in
3 the short term and other products in the
4 long-term is balanced out by the economics of the
5 distribution side of that equation.

6 So Pennsylvania is basically a natural
7 location, and there will be plants built
8 regardless whether the State puts money into this
9 or not, but the bottom line is that other states
10 are aggressively seeking to help build plants on
11 the east coast. If we don't do something, and I
12 don't necessarily want to define something this
13 morning, but at least make Pennsylvania
14 competitive with the other states. Some of the
15 companies we are working with will be more than
16 happy to go to North Carolina and Georgia or
17 Florida.

18 We are now working with 30 companies that
19 are looking at biodiesel production in
20 Pennsylvania, about 17 different ethanol
21 companies, five companies that are looking at
22 biomass or coal or a combination of biomass and
23 coal to fuel, and dozens of companies that are
24 working within that system developing new
25 processes to improve the production of ethanol,

1 to improve the production of biodiesel, to
2 eliminate costs within those systems.

3 There are two or three key things that need
4 to be done. Everyone is asking about mandates.
5 We have companies that support mandates. We have
6 companies that oppose mandates at the state
7 level. The National Biodiesel Board opposes
8 mandates at the national level. There are
9 reasons for that, and they are all political. We
10 all know how that plays out.

11 We have companies that know that a mandate
12 in Pennsylvania will probably hurt them, but they
13 still support the mandates because they believe
14 that it's necessary from the energy security
15 standpoint. So you have a mixed bag when you
16 talk to the individual companies.

17 By and large, the ethanol companies tend to
18 support a mandate for ethanol recognizing the
19 federal renewable fuel standards is going to
20 require a certain amount of production anyway.
21 They see mandates as something that will provide
22 in itself an incentive to locate plants in
23 Pennsylvania.

24 But the bottom line, as Race just said, is
25 that with mandates, the mandates mean nothing

1 unless we have the capabilities to meet those
2 mandates. Otherwise, you are still simply
3 supporting other states.

4 And a couple of things that are sitting out
5 there that have been glossed over in all the
6 discussions we've had over the last six months,
7 people acknowledge they aren't really being
8 talked about in terms of the policies and the
9 support structure for this.

10 One thing that Race just mentioned which is
11 distribution systems and the ability to get these
12 products to consumers at the retail level, and
13 the other side is coming up with a feedstock to
14 support these companies.

15 Right now in Pennsylvania, if you try to
16 produce biodiesel with soybean oil produced by
17 Pennsylvania farmers, if you took every soybean
18 grown in Pennsylvania, squeezed every drop out of
19 it, you'd be able to get 23 million gallons of
20 soybean oil.

21 On the other side, even if you had 23
22 million gallons capability for the biodiesel
23 industry, we only have crushing plants capable of
24 crushing 5 to 6 million gallons a year. So the
25 infrastructure to provide that feedstock to the

1 biodiesel industry is missing, and I'm not
2 hearing a lot of talk about what do we do to
3 support and encourage development of that piece.

4 From the ethanol side, you have a similar
5 situation as you look forward toward cellulosic.
6 While Pennsylvania has incredible capability with
7 forest resources, biomass resources to feed the
8 cellulosic ethanol industry, over the years
9 because of the decline in the paper and paper
10 products industries in Pennsylvania, we have lost
11 a lot of foresters.

12 We've had a lot of companies that were
13 hauling wood that are no longer hauling wood,
14 that you are going to have a two to three year
15 scale-up just in developing the logistics system
16 to get the wood products to these plants. We
17 hope what you won't do in this overall package is
18 forget that critical piece of this when we are
19 putting together a program that helps
20 Pennsylvania.

21 There are two other issues I want to touch
22 on briefly, and then I'll be more than happy to
23 throw it open to questions. One is that the
24 issue over ethanol, the issues over ethanol, and
25 the fact that people on both sides of the issue,

1 is it energy efficient or not, is it healthy or
2 not, is it productive for Pennsylvania or not,
3 does it create jobs or not. The fact that you
4 have that kind of confusion is significant. It
5 is also considerable. What Pennsylvania doesn't
6 have -- I sit as an advisor to the Governor's
7 Renewable Agricultural Energy Council. That
8 council has been talking for two years now since
9 it was formed about the need for funding for
10 education for consumers, for retailers, for the
11 industry in terms of biofuels, what they are and
12 what they aren't.

13 After a year of discussing these things,
14 when people are still asking questions like is
15 ethanol more explosive than gasoline, and in one
16 case a member who is not on this committee asked
17 me what is the difference between ethanol and
18 biodiesel. There is an educational need that is
19 out there.

20 If somewhere somehow, whether it's through
21 AFIG, through Energy Harvest, through the
22 programs you set up, there could be some money
23 set aside to allow an educational effort, similar
24 to what is being done in other agricultural
25 industries to just get the public informed as to

1 what biofuels are can be helpful.

2 The last thing I want to touch on is quality
3 assurance. We think that is critical both on the
4 ethanol side and on the biodiesel side. There
5 are questions now over octane ratings already on
6 gasoline. There are questions over what
7 percentage of ethanol is actually in a product
8 that is being sold. We're forced right now in
9 the non-attainment areas to have 10 percent
10 ethanol in all the gasoline in most of the
11 eastern part of the state. The Pittsburgh area
12 has similar regulations.

13 On the ethanol side, you have issues, and on
14 the biodiesel side you have an even larger issue,
15 and that is that we're working with companies
16 that are making biodiesel with animal fats, waste
17 oils, soybean oil, canola oil, algae, rapeseed
18 oil. There are a number of different ways you
19 can make biodiesel, and a number of different
20 capable processes that do that.

21 The critical side is to get to the ASTM
22 6751 Standard which are in Senator Dinniman's
23 bill which are in virtually every discussion that
24 we've had. People recognize that.

25 One of the other reasons that we encourage

1 you to keep that and put enforcement provisions
2 in is that we are also working with large
3 companies, Case New Holland just this week
4 announced they are going to be able to
5 manufacture all their tractors are going to be
6 B-100 capable, and they will be able to warranty
7 their engines.

8 There are huge national engine companies
9 that want to be able to warranty their engines to
10 use biodiesel, whether it's B-20, B-50, B-100,
11 but they can't do the bench testing unless they
12 have a reliable supply of biodiesel at quality
13 standard that is in effect and that it's met.

14 We would encourage you to keep that ASTM
15 6751 Standard in for biodiesel and maybe to go a
16 step beyond and require those companies to
17 certify on their own on every batch, when they
18 change feedstocks, when they change suppliers or
19 on an ongoing basis if it's a continuous flow
20 operation that what they are producing is meeting
21 those standards because failing to do that is
22 going to hurt the industry, not just in terms of
23 developing standards for engine use but also in
24 terms of consumer acceptance of the product.

25 We might even go one step further and

1 suggest that meeting those criteria and those
2 standards from ASTM be a criteria for receiving
3 the funding that Ben is talking about going
4 forward because if you're not producing a quality
5 product, paying you to receive those quality
6 products isn't going to help the industry.

7 The last thing I'll mention because it's
8 been brought up to us in every discussion we've
9 had is the issue over renewable diesel, other
10 kinds of diesel or products that are a portion
11 bio product. That's been a discussion that we've
12 had with virtually everybody we've talked to.

13 One of the things we might suggest is that
14 as you look at the issue of what do you do with a
15 B-100 biodiesel versus a product that has 2
16 percent animal fats, waste oils, and other oils
17 is that if there is going to be an incentive
18 program based on that production, the incentives
19 be based on the percentage of bio product in that
20 product.

21 To us, you can't compare a product that is
22 98 percent diesel and make an incentive payment
23 to them at the same level as something that is a
24 hundred percent diesel. Paying it at the retail
25 end, that's one story, but if you are paying it

1 at the production end, that's another. And at
2 the production end, what folks like Ben are
3 looking at doing is producing a hundred percent
4 biodegradable product, and they should be
5 incentivized for that. I'll thank you for your
6 time and be happy to answer any questions.

7 CHAIRMAN WHITE: A lot of information here.
8 I know there is not a lot of time.

9 MR. NIKOLOFF: The one thing I will add,
10 Senator, is that as you are looking at these
11 incentives, we were trying to, after our meeting
12 with some of the biodiesel producers in the last
13 couple days trying to put together a list, and I
14 suspect Patrick may have them, but just in going
15 to the EERE website at the DOE website, looking
16 at state incentives for ethanol and biodiesel, I
17 did a quick printout of just the summaries of
18 state laws and incentives, and in nine point type
19 it came out to 56 pages.

20 CHAIRMAN WHITE: I doubt that anything we
21 come up with is going to go into the similar
22 level of detail at a legislative part that you
23 are talking, for example, ASTM standards, and I
24 don't see how any state can set up a program for
25 quality control of a product that is going to be

1 moving in interstate commerce, and I'm not even
2 sure it is appropriate for us to do so.

3 Typically, those are done by trade
4 associations or by other types of organizations.
5 Obviously, if we are going to provide production
6 subsidies for some kind of a product, I agree we
7 should be providing the subsidies for products
8 that meet certain standards, but I don't know how
9 we could ever construct or enforce this.

10 MR. NIKOLOFF: Senator, one of the things
11 that has been suggested to us by the companies
12 themselves is they'd be happy to self-test, and
13 all they have to do then is provide the lab
14 certification when they go in for those funds.
15 It wouldn't require setting up a new bureaucracy
16 in the Department of Agriculture. In fact, Race,
17 you can correct me if I'm wrong, but I think that
18 with the federal programs now through the IRS,
19 the IRS is requiring that to qualify for the
20 federal funding.

21 CHAIRMAN WHITE: Submit that document as
22 part of your request.

23 MR. NIKOLOFF: That would be an ongoing
24 certification process done by the company
25 themselves.

1 MR. MINER: If I could, as biodiesel
2 producers, we are heavily self-regulated, and we
3 do that testing in-house anyhow, but we do it for
4 the federal level of the assistance that we get
5 at the federal level, so it would be quite easy
6 to just piggyback off of that.

7 CHAIRMAN WHITE: Okay. Questions? Senator
8 Tomlinson.

9 SENATOR TOMLINSON: Just briefly, if you
10 could, it's been said that creating ethanol takes
11 more energy, more BTUs than it does -- than you
12 get benefit out of it. Can you square that away
13 with me because I'm hearing both sides of that,
14 and even compare that to what BTUs it takes to
15 create a gallon of gasoline and how much it would
16 cost to do that and compare those.

17 MR. WALKER: I can provide you with a
18 written comparison, but just for the sake of
19 Pennsylvania is in a situation which is perhaps
20 unique for any state. You can, from a renewable
21 resource so that the energy coming from renewable
22 resources is sitting there, in fact, will rot in
23 the forest if you don't take it away. You can
24 actually drive the energetics of the plant by
25 burning additional biomass of the same sort or we

1 have been encouraged to consider coal wastes as a
2 source.

3 If you go with the totally renewable fuel
4 facilities, all that energy has come off
5 basically from the sun. There is no fossil fuel
6 put in. You can even drive the truck that carry
7 the stuff back and forth with fully renewable
8 fuel.

9 We may, in terms of the design to the
10 plants, concede that getting rid of coal waste is
11 an equally important benefit to the state, but
12 that's the state to tell us which to do.

13 CHAIRMAN WHITE: Waste coal qualifies as a
14 Tier 2 alternative energy from the alternative
15 portfolio; right?

16 MR. WALKER: Yes. Under Pennsylvania
17 definitions, but, as far as I know, it is not a
18 federal definition. So we have to wear a couple
19 hats.

20 MR. NIKOLOFF: Senator, maybe I can address
21 that from the agricultural side in terms of the
22 net energy balance, Senator. There have been a
23 number of articles written using studies that are
24 now 15 years old based on the cost of production
25 of certain crops like corn.

1 Agriculture has changed a lot, and those of
2 you who know me know agriculture is near and dear
3 to my heart. Over the last 15 years, there have
4 been significant changes in production
5 agriculture technology, energy use, and so on.

6 The studies that were originally put out
7 that showed ethanol with a slight end net energy
8 balance were also based on production figures at
9 two and a half gallons per bushel. Because of
10 processes, that is now up to over 2.7 gallons per
11 bushel.

12 Pennsylvania now -- half of the corn grown
13 in Pennsylvania is grown with no till. There has
14 been a significant reduction in fertilizer and
15 pesticide use which further limits the amount of
16 energy going into it. Some of the more recent
17 studies I've seen have shown that that's probably
18 1.3 to 1.4 to 1 even with ethanol, so that it
19 does show a balance and will provide some of the
20 information.

21 SENATOR TOMLINSON: How about biodiesel?

22 MR. MINER: I'm glad you asked. I was
23 chomping at the bit. Even the most conservative
24 estimates suggest that biodiesel has what's
25 called a positive energy balance of about 3.2 to

1 1, so every unit of energy that's consumed in the
2 production of that, and that's from field to
3 fuel, it creates 3.2 units of energy.

4 SENATOR TOMLINSON: Is it -- someone was
5 speaking to me, can these ethanol plants also
6 become biodiesel plants, and they can't -- you
7 can't use do both?

8 MR. NIKOLOFF: It's totally different
9 systems and processes.

10 SENATOR TOMLINSON: You couldn't take the
11 corn oils and make it diesel?

12 MR. NIKOLOFF: The corn oil can -- I'm
13 sorry. Corn oil from the ethanol plants can be
14 used to support the biodiesel industry and used
15 to make biodiesel, yes. In fact, a number of the
16 companies that we are working with are looking at
17 doing that, and the corn oil's by-product will be
18 sold to biodiesel.

19 SENATOR TOMLINSON: Wouldn't that make that
20 plant even more valuable and more efficient?

21 MR. NIKOLOFF: There are efficiencies there,
22 but one of the realities of putting up an ethanol
23 plant is that it costs about \$2.50 to \$3.00 a
24 gallon to construct one. So if you are doing a
25 50 million gallon plant, you are still looking at

1 close to \$150 million, a 100 million gallon plant
2 you are looking at \$250 to \$300 million.

3 And then to tack a biodiesel plant on top of
4 that you are going to throw on with those kinds
5 of numbers another \$15 to \$20 million. When you
6 are scraping to get that first 250 put together,
7 you can make -- your bottom line actually looks
8 better by selling the by-product to a biodiesel
9 plant that's a few miles down the road than it is
10 to do it yourself.

11 MR. WALKER: Let me address one more issue
12 since we've raised that subject is that basically
13 the residual solids that are produced from a
14 cellulosic ethanol plant can be easily sent to a
15 coal liquefaction facility and produce a
16 renewable biofuel diesel that way.

17 Now, it's created in a different way. It's
18 not an interaction of two chemicals that provide
19 it, but it's a more efficient way of simply
20 taking -- making a synthetic gas out of it and
21 sending it over to the coal plant to add to its
22 synthetic gas which is the same composition.

23 MR. NIKOLOFF: I'm starting to feel like we
24 are tag-teaming, but from the ethanol end, the
25 other by-product is dry grains is something that

1 can feed back to the farm industry for swine,
2 dairy, horse feed, as well.

3 So that when people are concerned about not
4 having enough corn in Pennsylvania, by bringing
5 that corn stock here to feed ethanol, it actually
6 brings a product here that can be used to feed
7 the livestock industry.

8 It was pointed out earlier that the numbers
9 for corn right now and the cost for corn are
10 high. A great example is that three weeks ago
11 U.S. Today announced a record corn crop in the
12 United States in the morning, and then that
13 afternoon the price of corn went up 20 cents a
14 bushel in Chicago. It makes no sense
15 economically. It's all traders.

16 SENATOR TOMLINSON: Thank you.

17 CHAIRMAN WHITE: I think that's it. Thank
18 you very much, and thanks to all of you for your
19 attention. Very interesting.

20 (The hearing concluded at 12:46 p.m.)

21

22

23

24

25

I hereby certify that the proceedings and evidence are contained fully and accurately in the notes taken by me on the within proceedings, and that this copy is a correct transcript of the same.

Tracy L. Lloyd, Notary Public
Registered Professional Reporter

The foregoing certification does not apply to any reproduction of the same by any means unless under the direct control and/or supervision of the certifying reporter.

