

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 repossession 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 PEDA 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.)

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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.

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