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BEFORE THE  
ILLINOIS COMMERCE COMMISSION

111(d) POLICY SESSION 1

Chicago, Illinois  
August 18, 2014

Met pursuant to notice at 11:00 a.m.

BEFORE:

- DOUGLAS SCOTT, Chairman
- JOHN T. COLGAN, Commissioner (Telephonically)
- ANN McCABE, Commissioner
- MIGUEL del VALLE, Commissioner
- SHERINA E. MAYE, Commissioner

SULLIVAN REPORTING COMPANY, by  
Tracy L. Overocker, CSR

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1 CHAIRMAN SCOTT: Good morning everyone.

2 Is everything ready in Springfield?

3 MR. JIM ROSS: Yes.

4 CHAIRMAN SCOTT: Very good. Thanks, Jim.

5 Pursuant to the provisions of the Open  
6 Meetings Act, I now convene this Policy Session of  
7 the Illinois Commerce Commission to address  
8 U.S. Environmental Protection Agency's Clean Power  
9 Plan, better known as the 111(d) regulation.

10 With me in Chicago are Commissioner  
11 McCabe, Commissioner del Valle and Commissioner Maye.  
12 I'm Chairman Scott. We have a quorum. We should  
13 also have Commissioner Colgan available on the phone.

14 Are you there, Commissioner?

15 COMMISSIONER COLGAN: Yes, I'm here, Chairman.

16 CHAIRMAN SCOTT: Very good. Under the  
17 Commission's rules, we'll vote to allow Commissioner  
18 Colgan to participate by phone.

19 I move to allow Commissioner Colgan's  
20 participation by phone.

21 Is there a second?

22 COMMISSIONER McCABE: Second.

1           CHAIRMAN SCOTT:   Seconded by Commission McCabe.

2                           All in favor say "Aye."

3                           (Chorus of "Ayes".)

4                           Any opposed?

5                           (No response.)

6                           The vote is four to nothing and

7 Commissioner Colgan may participate in today's

8 meeting by phone.

9                           As you know, if you follow the  
10 Commission business, we have been holding policy  
11 sessions to explore issues that are important, but do  
12 not -- either do not arise in the normal course of  
13 Commission business or any additional dialogue or a  
14 need for an explanation where EPA draft Greenhouse  
15 Gas Rules are such an issue.

16                           I really appreciate the other  
17 Commissioners who saw the need for these sessions and  
18 are participating, as well as I want to thank you,  
19 Nicole Luckey and Suzanne Stelmasek, legal policy  
20 advisors, for really helping to put this together and  
21 we really appreciate it very much.

22                           As you know, on June 2nd, the United

1 States Environmental Protection Agency released its  
2 111(d) proposed guidelines known as the Clean Power  
3 Plan. It's probably not an exaggeration to say that  
4 these guidelines may be the most important  
5 utility-related EPA proposal that's ever been set  
6 forth and will require tremendous coordination from  
7 all the state agencies and that coordination has been  
8 going on. IEPA, ICC, Department of Commerce and  
9 Economic Opportunity and Illinois Power Agency have  
10 all been working together on what this rule means for  
11 Illinois and what our compliance pathways might be.

12 The IEPA and Director Bonnett have  
13 been holding meetings with stakeholders, individually  
14 and in groups. They will do the heavy lifting,  
15 drafting the state compliance plan and we very much  
16 appreciate the fact that they've stayed in touch with  
17 us and invited us to a lot of the meetings that  
18 they've been holding and also kept in touch with the  
19 other -- none of the other stakeholders, but the  
20 other agencies as well to better understand what  
21 people believe this proposed rule can or could impact  
22 in part in Illinois.

1                    Illinois is no stranger to looking at  
2                    greenhouse gas reduction. A few years ago, the  
3                    Illinois Climate Change Advisory Group made  
4                    recommendations which included setting renewable  
5                    energy portfolios as well as energy efficiency  
6                    portfolios. Those two recommendations, along with  
7                    some other things, are now part of the law in the  
8                    State of Illinois.

9                    We participated in a Midwest Accord  
10                   with five other states and the Province of Manitoba  
11                   in the latter part of the last decade working on a  
12                   regional greenhouse gas reduction program, and then  
13                   we also tried to see if that program had synergies  
14                   with other regional groups like the Regional  
15                   Greenhouse Gas Initiative or -- the northeastern  
16                   states that have actually started and implemented a  
17                   Regional Cap-in-Trade Program.

18                   We've participated in the Midwest  
19                   Stakeholders' Group on Section 111(d) that's been in  
20                   operation for over two and a half years now, that  
21                   they will try to make recommendations to US EPA about  
22                   what we'd like see in a proposed rule and now making

1 recommendations and stating opinions as to how we  
2 would like to see the rule changed or better  
3 clarified.

4 And we have been participating, along  
5 with Illinois EPA, in a group of Midwestern states  
6 that have been working both from environmental and  
7 economic regulator standpoints to try to see if there  
8 are any multi-state options that make sense for us  
9 and it does make sense for us to explore multi-state  
10 options that may be out there.

11 There is a need to know whether a  
12 regional or state-by-state plan will work best for  
13 Illinois because there is all the other states. And  
14 so the idea of getting states together to talk about  
15 those things we thought was important and it's  
16 something that the ICC as well as IEPA has been  
17 participating in.

18 And as the proposed Clean Power Plan  
19 allows for -- (inaudible due to coughing) -- State  
20 Board, but some will say even encourages it, that  
21 becomes more important as well.

22 I think that I know that I and I think

1 the other Commissioners believe that in addition to  
2 what I laid out above, that a set of policy meetings  
3 could help lay out the issues. Unlike other EPA  
4 rules that we've dealt with in the past -- and we  
5 actually had a policy session on a number of EPA  
6 rules back in -- some time ago here at the ICC --  
7 most of the EPA rules govern what can be done at an  
8 individual power plant, specifically, what's going to  
9 be done and reductions that need to be made at a  
10 specific plant.

11 This is different. This is a system  
12 and there's a lot of flexibility built into this  
13 proposed rule, a lot of flexibility for each state as  
14 to how it complies.

15 The rule is long and complicated and  
16 there are varying interpretations that we've heard  
17 already about different parts of the rule and may, by  
18 the time it's finalized next June, change again; from  
19 that point, the state will have approximately 13  
20 months to submit a plan, so as much work as we can do  
21 now, the better.

22 We also realize that the issues -- and

1     there are issues in the legislature -- or have been  
2     in the last session and look to be in the near  
3     future -- dealing with nuclear power generation and  
4     the market forces that influence nuclear power as  
5     well as renewable portfolio standards which have had  
6     many efforts to try to make some changes to it in the  
7     last couple of sessions, as well as the coal industry  
8     which is obviously heavily impacted by this  
9     particular rule and may seek some legislative  
10    solutions as well.

11                   All of this will have major impact on  
12    the response to the rule and the path that we choose  
13    can also have major impact, obviously, on those  
14    industries as we go forward.  So what we want to do  
15    is set out this issue in a very broad way to allow us  
16    to look at the energy industry in Illinois through  
17    compliance with this proposed rule as an educational  
18    process for ourselves as well as others and to do  
19    that in what now is set up for a series of three  
20    sessions.

21                   The first would be to explain the rule  
22    itself and what it means both nationally in terms of

1 compliance options and also what it means in terms of  
2 Illinois. We will do that with Jim Ross from the  
3 IEPA, who is on the screen there -- who is in  
4 Chicago -- Jim is the person on the screen there  
5 coming to us from Springfield -- and Franz Litz from  
6 the Great Plains Institute over to my left here.  
7 Franz is not only a nationally renowned clean air  
8 expert, but has also worked with Illinois and other  
9 Midwestern states on various greenhouse gas  
10 initiatives in the past.

11 A little bit strange in how we're  
12 scheduling this because after Franz and Jim are done,  
13 we're going to take a break for lunch and we're doing  
14 that because we were trying to accommodate the flight  
15 schedule for Joe Goffman from the US EPA who is going  
16 to come in.

17 Joe is the associate assistant  
18 administrator and senior counsel for US EPA and has  
19 not only been instrumental in crafting the proposed  
20 guidelines, but has also been going around the  
21 country talking to conferences, talking to individual  
22 power providers, talking to states about what the

1 rule says and what it means and that's really what  
2 the purpose of these sessions are.

3 We will then go through the specific  
4 building blocks that Jim Ross is going to lay out for  
5 us, the building blocks that US EPA has used to  
6 determine the amount of greenhouse gas reductions  
7 that they believe each state can achieve and for each  
8 state, it's a different amount.

9 Building Block 1 deals with coal plant  
10 heat rates.

11 And Building Block 2 increased the use  
12 of natural gas.

13 And then in Sessions 2 and 3, which  
14 will be held September 23rd and October 30th, we will  
15 get into both Building Blocks 3 and 4 and to start  
16 looking at compliance options and other multi-state  
17 options as well.

18 Again, the goal is an educational  
19 goal -- these policy sessions, as it is always for us  
20 when we leave these sessions -- and to try to find a  
21 compliance pathway that works the best for Illinois  
22 working with all of the stakeholders, especially with

1 our partner agencies who are responsible for putting  
2 this plan together.

3 So with that, let me ask other  
4 Commissioners if they would like to say anything at  
5 the beginning.

6 (No response.)

7 If not, then we will go right to Jim  
8 Ross. Jim is a manager for the Air Pollution Control  
9 Division for the Illinois EPA, someone I worked with  
10 for five and a half years when I was at the Illinois  
11 EPA and Jim does a fantastic job working with all of  
12 the Clean Air Act issues as well as other issues in  
13 the Air Pollution Control Division and I know he  
14 spent the last two and a half months trying to unpack  
15 this rule and figure out exactly what it means for  
16 Illinois.

17 And so, Jim, thank you very much for  
18 being with us today and thanks for IEPA, thanks to  
19 Director Bonnett for including us in all of the  
20 efforts you are making and with that, please go ahead  
21 with your presentation.

22

1 PRESENTATION

2 BY

3 MR. JIM ROSS:

4 Thank you, Chairman Scott,  
5 Commissioners, all those in attendance in Chicago and  
6 here in Springfield and those with whom -- on the  
7 phone.

8 My understanding is that the slides  
9 that I'll be going over today will be made available  
10 shortly after this session. Chairman Scott did a  
11 great job setting it up, what I'll be presenting here  
12 today. In our efforts at Illinois EPA to do  
13 outreach -- it involves myself, Illinois EPA Director  
14 Lisa Bonnett, who has been very involved and generous  
15 with her time and, Kevin Green, our clean air policy  
16 advisor -- we have met with hundreds of stakeholders  
17 and heard the gamut of differing opinions on -- all  
18 the way from exciting and ingenious to unlawful,  
19 unnecessary and --

20 (Laughter.)

21 So there is consensus on one aspect  
22 and that is that the issues are controversial and

1 complex and solutions are not readily obtained.

2                   The first step in this process is  
3 constructively involved -- is understanding 111(d)  
4 and what is being proposed. It's a pretty humbling  
5 proposal in its complexity and my task is to attempt  
6 to explain one primary component of the proposal and  
7 specifically how Illinois CO2 reduction goals were  
8 derived by the U.S. EPA and to do so in layman's  
9 terms and in limited time. So here it goes and bear  
10 with me.

11                   Giving you a rule overview, the timing  
12 involved in the rule, some Illinois background  
13 information is necessary to kind of put everything in  
14 the -- context and perspective. The setting of  
15 Illinois role -- as Doug mentioned, I'll be going  
16 through the four building blocks, 1, 2, 3, 4.

17                   The last coal plant in -- (inaudible  
18 due to coughing) nuclear energy. We get lot of  
19 questions on that how it handles in the proposal.  
20 I'll be going over that with an example and then  
21 finally mass-base -- the conversion of rate-based to  
22 mass-based and then I'll be jetting off to another

1 presenter.

2                   So starting with some rule basics,  
3 setup slides are informational slides. Before we get  
4 into the actual goal determination steps, Clean Power  
5 Plan 111(d) applies to existing -- all existing  
6 fossil fuel-fired plants in the U.S. of course, the  
7 purpose is to reduce CO2 emissions to combat climate  
8 change.

9                   There is two main components, starting  
10 with the setting of the individual state emission  
11 rules. Each state has different emission rules.

12                   And then the second main component of  
13 the rule is guidance on the development of state  
14 plans. I put in yellow what I'll be going over, the  
15 setting of individual state rules here.

16                   Timing. So just a little over two  
17 months ago the proposal was released by the  
18 U.S. EPA -- and it's important to note that it is  
19 just a proposal, it's not final and the final could  
20 be significantly different than what's seen and  
21 proposed. We'll see.

22                   Comments are due to the U.S. EPA on

1     October 16th which is coming right up. I've heard as  
2     high as 3 million comments are anticipated.

3                     A short time thereafter, they will be  
4     doing a lot of reading, the EPA will come out with a  
5     final rule in June of next year. So June of 2015 and  
6     then a year from that date is the target date for  
7     states to commit their state plans to U.S. EPA for  
8     approval.

9                     Now, that date can be extended one  
10    year if legislation is required and we do anticipate  
11    that some degree of legislation will be required in  
12    Illinois, so we would have until June 2017, and you  
13    get two extra years if you do a regional approach and  
14    there is some momentum and advantages to a  
15    multi-state regional approach.

16                    Again, some more background  
17    information, Illinois has 17 coal-fired power plants,  
18    that's down from 22 about five years ago with 45  
19    electric generating units, the acronym there is EGU,  
20    I'll be referring to that throughout the  
21    presentation.

22                    Approximately 17,000 megawatts of

1 capacity, wide variety of borders and states, some  
2 greater than 60 years old all the way up to newer  
3 ones at only 4 years old. They range in size from  
4 smaller units of 74 megawatts to greater than 800  
5 megawatts. They fire sub-bituminous western coal  
6 mostly out of Wyoming to homegrown Illinois  
7 bituminous coal, fluidized bed boilers, supercritical  
8 boilers and most of them are well controlled with  
9 electrostatic precipitators for particulate matter  
10 control, selected catalytic reduction devices for NOx  
11 control, flue-gas desulfurization for sulfur control  
12 and a lot of activated carbon injection going on in  
13 the state for mercury control.

14           There will be about 30 natural  
15 gas-fired power plants affected by the rule of which  
16 three are natural gas combined cycle -- again,  
17 another acronym that I'll be using -- NGCC plants.  
18 Approximately 2,230 megawatts of capacity in the  
19 state right now, so these two coal plants, that's  
20 approximately 50 affected units in the state. The  
21 applicability criteria is greater than 25 megawatts  
22 and provide a third or more of the power to the grid,

1 so we anticipate these 50 EGUs being subject...

2                   Again, at the bottom, there are six  
3 nuclear plants in the state, approximately 12,000  
4 megawatts of capacity. What I don't have here that  
5 should be included is wind capacity, a little under  
6 3,000 megawatts in 2012 and the next slide we'll go  
7 into a little more detail on how Illinois gets its  
8 power.

9                   So, as you can see here, 90 percent of  
10 the generation in 2012 -- and this is 2012 net  
11 electricity generation, so not gross, net --  
12 90 percent of it comes from nuclear and coal with 49  
13 percent of that being from nuclear and then the  
14 remaining 10 percent is almost equally split with  
15 natural gas getting a little ahead of renewable  
16 energy, natural gas at 6 percent of generation and  
17 renewable energy at 4 percent and when we talk  
18 renewable energy here, we're primarily talking wind.

19                   Again, some setup slides before we get  
20 into the actual determination of the goal and I'll be  
21 beginning here kind of with the end in mind including  
22 some important background on the goal.

1                   The CO2 reduction targets for Illinois  
2                   are on a rate-based determination, which is -- a rate  
3                   is emission per amount of electricity generated.  
4                   More specifically, it's pounds CO2 per megawatt hour,  
5                   so emissions over generation. The Illinois final  
6                   target is a 33 percent reduction, so right off the  
7                   bat in Illinois emission -- final emission reduction  
8                   target is 33 percent reduction from our baseline  
9                   emission rate. The rates in output weighted average  
10                  basis -- I mentioned is net generation as opposed to  
11                  gross -- and compliance is based on average adjusted  
12                  emission rate of all existing affected EGUs and must  
13                  meet the interim goal which, again, is in 2020 and  
14                  the final goal is 33 percent reduction in 2030 and  
15                  thereafter. So you can't just meet the goal and go  
16                  back to your old ways, it's 2030 and thereafter.

17                  Okay. This is kind of another picture  
18                  slide before we get into the nitty-gritty here and  
19                  provided a tangle here, the first column there -- and  
20                  first row is the 2012 unadjusted emission rate in the  
21                  state. It's unadjusted for RE and nuclear and I'll  
22                  be going over that in some detail and mentioning that

1 throughout this presentation. This 2,189 pounds of  
2 CO2 per megawatt hours, that's the actual 2012 CO2  
3 emission rate for all Illinois-affected EGUs.

4           You move into Row 2 there, that's our  
5 adjusted baseline. This is where they start from, so  
6 kind of ground zero for us is the 1,895 pounds of CO2  
7 per megawatt hours and then the final two rows, three  
8 and four, are the interim target and then the final  
9 target 2030 and beyond. The interim target is  
10 28 percent. You have to get that -- you are kind of  
11 on the steady path to get to the 2030 final target.

12           What I'm getting, how is our goal  
13 determined? How is this 33 percent reduction from  
14 the baseline determined? It was done in five steps  
15 and I'll take each one of them individually.

16           Step 1 is the baseline adjustment.  
17 Steps 2 through 5 are the application of the best  
18 system of emission reduction, BSER -- that's known  
19 and referred to -- and it's the application of the  
20 four building blocks.

21           What are these building blocks?  
22 They're measuring action policy's strategies that

1 states can take to reduce their CO2 emission from the  
2 affected units.

3                   So this is a pretty detailed slide  
4 here. This is Step 1 up in the left-hand corner. So  
5 taking each of the steps individually, starting with  
6 Step 1: Our unadjusted emission rate -- our starting  
7 point, so to say, the actual emissions from all the  
8 affected units is at the top half of this slide and  
9 that is, as I mentioned before, the EGU CO2 emissions  
10 over the EGU generation.

11                   So in the top half of that fraction,  
12 you have an numerator and in the bottom half, you  
13 have the denominator, some basic math; but important  
14 to understanding our goals and how they were derived.  
15 And so our adjusted baseline is 2,189 pounds of CO2  
16 per megawatt hour, so emissions over generation  
17 again.

18                   And our baseline was adjusted -- and  
19 that's the bottom equation there, so very similar to  
20 the top equation except in the denominator, you see  
21 the green rectangular box and the blue rectangular  
22 box, you see RE generation and at-risk

1 generation were thrown in to adjust the baseline. So  
2 we throw in these values, you come out with an  
3 adjusted baseline of 1,895 pounds of CO2 per megawatt  
4 hour.

5                   So why did the U.S. EPA adjust our  
6 baseline? I believe this adjustment will essentially  
7 provide an incentive or recognition to ensure that  
8 we -- what we currently have in the way of zero  
9 emitting CO2 generating sources in Illinois that stay  
10 here, that we don't lose generation from these  
11 sources and this is a critical point to understand  
12 and I'll be going over it several times.

13                   If we were to lose this generation,  
14 then we wouldn't be able to include it in the back  
15 end or compliance calculations and we would have to  
16 make up this lost generation some other way, maybe  
17 some more renewable energy or some more energy  
18 efficiency. We'll get to that.

19                   Okay. So the four building blocks --  
20 you see them here in front of you -- starting in the  
21 top left-hand corner going down to the bottom right,  
22 the first building block is heat rate efficiency and

1 improvement at coal-fired EGUs. So coal-fired plants  
2 would implement enhanced operation and maintenance  
3 practice or equipment upgrades so that EGUs generate  
4 more electricity while burning the same amount of  
5 coal. So they improve their heat rate for  
6 efficiency.

7                   And Building Block No. 2 is often  
8 referred to as redispatch to high-efficiency or  
9 cleaner natural gas combined cycling units. So  
10 Illinois would need to create a hierarchy for who  
11 supplies the power, who meets the demand that's out  
12 there such that the lower emitting -- the lower  
13 intensity -- carbon intensity units, such as NGCC  
14 units in particular, are dispatched over the  
15 higher-polluting or coal EGUs.

16                   The third building block is pretty  
17 simple. It's the easiest, I believe, of all our  
18 understanding, create policies that result in more  
19 renewable energy, more wind and solar in the state,  
20 maybe some more nuclear and nuclear upgrades.

21                   And then the fourth building block is  
22 more demand side, also known as end-use energy

1 efficiency. So use of energy efficient light bulbs  
2 and high EE-gearred building codes, low-income EE  
3 audits and assistance to correct deficiencies found  
4 in those audits.

5                   Now, one other thing I want to point  
6 your attention to in the slides is the vertical  
7 yellow line there. And you see to the left side of  
8 this line is inside the fence measures and then to  
9 the right is outside the fence line. So what does  
10 that mean? Well, inside the fence lines are just  
11 actions, measures that can be taken at the power  
12 plants themselves.

13                   So it's essentially -- we're talking  
14 inside the fence line, it's past that facility.  
15 Outside the fence line is -- it should be a  
16 no-brainer -- it's those actions that can -- are  
17 outside the facility's fence line and the remainder  
18 of the building blocks following that Category 2, 3  
19 and 4.

20                   So you see I have a percent associated  
21 with each of these? Well, 6 percent of the  
22 reductions in our 33 percent baseline come from

1 inside the fence line policy; in particular, the heat  
2 greater efficiency improvements and the bulk of them  
3 come outside the fence line.

4           Okay. So taking each one of these  
5 building blocks individually -- and this is Step 2 --  
6 so Step 1 was the adjustment of the baseline. Step 2  
7 is the application of the system of emission  
8 reduction -- and in this case, it's Building  
9 Block 1 -- turning your attention to the black  
10 rectangle near the bottom. And it says, Coal-fired  
11 EGUs take action to increase their heat rate  
12 efficiency by 6 percent so that they generate -- so  
13 that more electricity is generated by burning the  
14 same amount of coal.

15           So -- you see this table in each of  
16 the building blocks, it's kind of fill in the table  
17 as we go along. So the first row there you see is  
18 the baseline, so everything is reduced from our  
19 baseline so that they're applying each of these  
20 policies -- each of the building blocks measures to  
21 the baseline and adjusting our goal accordingly.

22           So the first adjustment is a 6 percent

1 down. It's direct and you'll see that in the third  
2 column over, the percent reduced is 6 percent from a  
3 cumulative risk basis. It's our first reduction, so  
4 6 percent also. So -- and that takes our emission  
5 rate down to 1,784 pounds of CO2 per megawatt hour.

6           Moving on to Step 3, which is Building  
7 Block 2 -- the application of Building Block 2. And,  
8 again, taking your attention to the black rectangular  
9 box, this is the dispatching of NGCC EGUs over higher  
10 CO2 emitting sources such as the coal-fired units and  
11 this results in less CO2 emitting and you can see  
12 from the table -- again, we're filling this table in  
13 because as we go along -- that there is a 9 percent  
14 adjustment to the baseline that results from Building  
15 Block 2 on a cumulative basis. It's 15 percent. So  
16 15 percent, we're well on our way to the overall  
17 33 percent reduction.

18           Step 4, Building Block 3, this is the  
19 policies that would -- buy Illinois -- gets more of  
20 its generation from renewable energy sources in  
21 Illinois and, in particular, I draw your attention to  
22 the black box. The U.S. EPA estimated an 115 percent

1 increase in renewable energy could be accomplished by  
2 2030. So that's from a starting point of 4 percent  
3 of our generation along with the original slides came  
4 from renewable energy in 2012 and that will take it  
5 to 9 percent of the generation in 2030.

6 So to the table we go and we're  
7 filling in the table. We're now at the row  
8 associated with Building Block 3, baseline is  
9 adjusted downward 7 percent from this policy and the  
10 cumulative reduction now is 22 percent.

11 The final building block, this is  
12 Step 4, Building Block 4. And, again, going to the  
13 black box, this is policies which promote increased  
14 demand side end-use EE which results in avoided  
15 generation from some of the higher intensity units  
16 such that there is less CO2 emissions, there's --  
17 predicating for an 11.6 percent increase in EE which  
18 is avoided generation from these high carbon  
19 intensity units plus 0.9 percent line loss  
20 improvements.

21 So that takes us to the row associated  
22 with Building Block 4. We're essentially completing

1 the table here. It takes us to our final goal:  
2 1,271 pounds of CO2 per megawatt hour and this is an  
3 11 percent reduction, implementing this policy, the  
4 cumulative is 33 percent, so we're essentially there.

5 One final table, to put things in  
6 perspective because we get asked about this, so this  
7 is the previous table with the goals highlighted  
8 33 percent reduction goal. One column to the far  
9 right there, this includes the unadjusted baseline.  
10 So what would happen, we adjusted the baseline and  
11 then applied each of the building blocks from that  
12 point, so what happened is we started from the  
13 unadjusted baseline -- well, then you can see that  
14 that's a 13 percent reduction just from the  
15 adjustments made and it sets us down each of the  
16 building blocks a different percentage so we can come  
17 up to a 42 percent reduction from our unadjusted  
18 baseline. So hopefully that clarifies that.

19 This is important to understand from a  
20 perspective of understanding how important it is to  
21 ensure that all the existing RE and nuclear energy  
22 are preserved and to fully understand how U.S. EPA

1 arrived at Illinois' totals.

2 In essence, though, a true, meaningful  
3 reduction in Illinois emission rates that Illinois  
4 will need to achieve is 33 percent. The 42 percent  
5 is only referred to the extent that we are unable to  
6 preserve existing RE in nuclear.

7 So if you don't quite understand that  
8 yet, don't feel bad. It's complex and I have some  
9 more slides as well -- I'll go over that in a little  
10 bit more detail -- but our effective goal is 33  
11 percent reduction from our baseline. And I'll go  
12 over it again and I will. This time by the numbers.  
13 So in the previous slides we looked at percent  
14 reductions in each step. Now we'll focus more on the  
15 numbers that are used and it will give you a  
16 different perspective on how it goes. We'll arrive,  
17 and hopefully, at a better understanding.

18 Again, Step 1 -- we're starting with  
19 Step 1 -- unadjusted 2012 baseline: 2,189. We have  
20 generation to the denominator to adjust, so you go  
21 down here, we added -- as I mentioned before, we  
22 added RE generation -- existing RE generation in 2012

1 and they added at-risk nuclear generation, which was  
2 5.8 percent. 2012 nuclear generation in Illinois was  
3 added in the denominator -- and I have a specific  
4 slide on this later -- I'll explain it in more  
5 detail -- but if you add any values to the  
6 denominator of this fraction, of this equation and  
7 it's going to reduce the goal, it's going to adjust  
8 the baseline in this case. So it did, in fact, do  
9 that and that's how we went from the 2,189 to the  
10 1,895 pounds of CO2 per megawatt hour.

11 At some point we get a visual, so this  
12 will hopefully give some perspective in a visual  
13 manner on how our baseline was adjusted. So you see  
14 at the top of this slide is the 2012 unadjusted  
15 baseline. All there is in the fraction and the  
16 equation is the emissions of the affected EGU, the  
17 CO2 emissions in the numerator and the fossil fuel  
18 generation from the affected EGUs is the denominator  
19 and that gives you the 2,189.

20 You look at the bottom half of this  
21 slide, the bottom equation, we're throwing in the two  
22 purple blues, which is RE generation and at-risk

1 nuclear generation, I give you some amount there, is  
2 8,300,000 megawatts of RE generation in 2012 and the  
3 at-risk nuclear generation calculates out to  
4 5,305,342 megawatts, which is thrown into the  
5 denominator and that gives you the adjusted baseline.  
6 The blue-green shows up there -- it's 13 percent  
7 downward adjustment -- but it's only pertinent to the  
8 extent that we can't add those purple blocks back  
9 into the compliance calculations.

10 So Step 2, Building Block 1 by the  
11 numbers, again, we're adjusting the numerator by  
12 subtracting the CO2. So we're reducing the amount of  
13 emissions in the numerator and that's going to lower  
14 our goal and how much we reduce it, that kind of is  
15 the remainder of the slide, how we came up to that.

16 Illinois 2012 coal emission rate  
17 corresponds with number one there. The actual  
18 rate -- we haven't seen this before -- this is just  
19 from the coal unit. The actual rate from the coal  
20 units in Illinois was 2,334 pounds of CO2 per  
21 megawatt hour, kind of a shorthand equation in the  
22 next line there so you apply the 6 percent heat rate

1 improvement, that knocks it down to 2,194.

2                   You have to determine the CO2 emission  
3 reductions that are associated with this value and it  
4 comes out to a pretty -- pretty large number,  
5 11,087,054,264 pounds of CO2, which we like using  
6 terminology in terms of tons. This equates out to  
7 5,543,527 tons so that provides some perspective, to  
8 me at least, of how much reduction in CO2 are coming  
9 from the application of Building Block 1 which is  
10 greater than 5 million tons of CO2.

11                   So if we adjust the equation by  
12 putting -- accounting for this one in the numerator,  
13 we come out with a new goal of 1,784 and these  
14 numbers correspond with the values in the previous  
15 chart.

16                   Step 3, which is the application of  
17 Building Block 2, again, that's the redispach of  
18 power to clean air generating units, specifically,  
19 natural gas combined cycle plants. We have at least  
20 three large ones in Illinois and there's Dynegy,  
21 Nelson and Holland Energy.

22                   So right now they show us that

1 Illinois and DC plants are running at a 29 percent  
2 capacity, so we would need to create an important  
3 goal policy that somehow has these plans running at  
4 70 percent of their capacity from some time between  
5 2020 and 2030, but definitely 2030 and beyond.

6                   So by the numbers still on Step 3,  
7 we're going to subtract again, like we did in Step 1,  
8 the CO2 emission level from the numerator, which will  
9 reduce our goal in kind. So going down the steps  
10 here, what is the CO2 emission reduction associated  
11 with the NGCC plants operating at 29 percent --  
12 operating at 70 percent capacity versus 29 percent  
13 capacity, this added capacity -- added operating  
14 amount displaces coal generation and, hence, reduces  
15 CO2 because you have cleaner units operating in place  
16 of the higher carbon intensity units. So this  
17 equates to greater than 7 million pounds of CO2  
18 reduced from this policy which equates to 8,644,110  
19 tons of CO2.

20                   So this policy, as it should -- and  
21 when we look at the percents earlier, it was 6  
22 percent from Building Block No. 1 and Building Block

1 No. 2 is at 9 percent, so 8 million tons is greater  
2 than 5 million tons, so the numbers do work out and  
3 the new goal is the 1,614 pounds of CO2 per megawatt  
4 hours that you see here at the bottom.

5 Moving on to Step 4, which is the  
6 application of Building Block 3, which is the  
7 expanded use of low and zero emitting renewable  
8 energy and new and preserved nuclear, this policy  
9 offsets generation from affected fossil fuel-fired  
10 units, so we have zero to low emitting generators  
11 taking the place of generation that will come from  
12 the higher carbon intensity units.

13 I'm going to show here that U.S. EPA  
14 estimates that RE generation will increase from  
15 greater than 8 million megawatts in 2012 to nearly  
16 18 million megawatts in 2029 and I had mentioned  
17 before that this is going from 4 percent generation  
18 in 2012 -- total generation in the state to roughly  
19 9 percent of the total electricity in the --  
20 generated in the state coming from RE and primarily  
21 from wind, I believe.

22 So by the numbers, still on Step 4,

1 applying -- so we're going to add generation to the  
2 nominator here and that will, likewise, reduce the  
3 emission rate or reduce the goal and so we readily  
4 calculate the additional generation from renewable  
5 energy by more than doubling our renewable energy in  
6 2030, it comes out to be an additional 9,518,004  
7 megawatts of renewable energy and that gives us our  
8 new goal and we plug this into our calculations.

9           Step 5, the final step, the final  
10 adjustment to our goal, again by the numbers, this is  
11 expanded use, demand side or end-use energy  
12 efficiency. This reduces the demand for power and  
13 thus reduces generation from affected EGUs and,  
14 thereby, CO2 is not emitted, so it's avoided  
15 generation or avoided emissions. And calculation of  
16 final EE percent reduction is done by calculations  
17 shown here, it's a total of 12.5 percent, which  
18 includes 11.63 percent from demand-side EE policies  
19 and 0.9 percent line loss improvements. Line loss  
20 improvements are simply more efficient transmission  
21 and distribution of electricity.

22           And so -- we're still on Step 5, so by

1 the numbers, we're going to add the avoided  
2 generation from energy efficiency to the denominator,  
3 which would reduce the goal and show the calculations  
4 here with what we're trying to come up with is the  
5 avoided amount of generation, we show that -- we show  
6 that here consistent or across from No. 2, the  
7 avoided generation is 17,952,530 megawatt hours. You  
8 plug that into our equation, you plug it into the  
9 denominator, which will reduce the emission rate and  
10 you come up with a final goal. Luckily the numbers  
11 work out and you do come up with the final goal.  
12 It's 1,271 pounds of CO2 per megawatt hour.

13                   So now we've gone through how the  
14 goals were determined two different ways. So,  
15 hopefully, this will help you understand them  
16 somewhat better than before. It is complex. I had  
17 to go over it numerous times which is why I mentioned  
18 at the beginning it's kind of a humbling proposal in  
19 its complexity and aspects.

20                   We often get asked, and rightfully so,  
21 how is nuclear handled in both calculations and I  
22 touched on that numerous times. I'll try to address

1 it in somewhat more detail. I've got a couple of  
2 slides here to explain that and this is critically  
3 important for Illinois as we have more nuclear  
4 generation than any other state. So it is something  
5 we want to pay attention to and focus in on.

6 So another kind of busy slide here,  
7 the top half of the slides I'm going to start with  
8 are 2012 adjusted baseline calculations. I like  
9 referring to -- the U.S. EPA refers to them as the  
10 front-end calculations. Just look at the right-hand  
11 corner, unadjusted baseline. That's just for  
12 reference. What we're really focusing in on in this  
13 slide is our adjusted baseline number, the 1,895, and  
14 you'll see in the bottom half, the nominator of this  
15 fraction, this emission rate, the RE generation was  
16 added and we talked about that, but we're going to  
17 focus in on the yellow spot here, the at-risk nuclear  
18 generation.

19 So I showed before how that was  
20 calculated and it's 5,305,342 megawatts of at-risk  
21 nuclear generation in the State and it was added at  
22 the front. Now, how does this wash out? How -- I've

1 said several times that this has potential to have no  
2 net impact. Why is that so?

3 Well, you see at the bottom of this  
4 slide, our compliance or our back-end calculations  
5 and this is how we would calculate compliance with  
6 the rules that we have to demonstrate annually to  
7 U.S. EPA in 2020.

8 So each year we would do compliance  
9 calculations provided to the U.S. EPA where they  
10 would compare our goal of 1,271 pounds per megawatt  
11 hour in 2030 to what our actual emission rate was --  
12 or adjusted emission rate was for our compliance  
13 calculations here.

14 So what all do we get to throw in on  
15 these compliance calculations that we provide to U.S.  
16 EPA? Well, my understanding is the values in the  
17 equation at the bottom. So if you look to the  
18 nominator of this fraction, you'll see -- we'll throw  
19 in the -- starting left to right, we'll throw in the  
20 generation from the existing affected fossil  
21 fuel-fired plants, we get to add in total  
22 RE generation, so existing -- and new, that's how the

1 RE that we had in 2012 washes out, so we get to  
2 include it here. So it essentially has no net impact  
3 as long as it gets included here like it wasn't even  
4 adjusted at the beginning.

5 So we get to throw in the new EE and  
6 avoided generation in our compliance calculations  
7 and, importantly, for what I'm trying to explain at  
8 the far right, we get to throw in any new -- which  
9 don't anticipate any new -- we get to throw in that  
10 same amount of generation provided that we preserve  
11 all of our nuclear generation, we can throw in that  
12 same amount, that 5,305,342 megawatts in our  
13 compliance calculations so that -- you see that I  
14 draw an arrow from the top where we included it and  
15 those adjusted baseline calculations to the bottom  
16 and the compliance calculations and say that nuclear  
17 generation is less than future years and present  
18 compliance calculations is reduced if it's the same  
19 as one net impact and to the extent we have any  
20 nuclear, it's a benefit.

21 Like everything else, I want to go by  
22 the numbers here. I'll give you an example. Again,

1 as we get asked this question very, very often, I  
2 wanted to give a numerical example here to begin  
3 with, but if you go back and look at this it makes  
4 more sense. So maybe you get it now and that's  
5 great; but using my example here, 69 percent of the  
6 13 percent adjustment to the baseline is nuclear.

7 So in that adjustment of baseline, I  
8 mentioned that we went to the end adjustment to the  
9 adjustment and there was a 13 percent drop rate.  
10 Point 3 percent of that is nuclear; 4.7 percent of  
11 that was from the renewable energy and that hopefully  
12 adds up to that -- to the 13 percent.

13 The second bullet point here is just  
14 so we could stand -- kind of what could be the  
15 maximum impact if we weren't able to preserve our  
16 nuclear energy -- well, if we lost all of our nuclear  
17 power plants, which I believe is unlikely, we could  
18 stand to lose 8.3 percent of our goal, our ability to  
19 account for that in our gross calculations.

20 Just providing here, again, how that  
21 amount was calculated, 5.8 percent of our 2012  
22 nuclear generation, which was 91,471,413 megawatts,

1 gives you the greater than 5 million megawatts. I've  
2 said that number several times now.

3           The last two bullet points is just an  
4 example. What happens if our nuclear generation  
5 assurance in -- and I picked a year -- in 2025 --  
6 nuclear generation were to shrink to 70 million? So  
7 that's down from 91 million in 2012 and we have less  
8 credits, less generation we can put in that  
9 denominator for our compliance calculations. I show  
10 here that we always have to use the 5.8 percent, at  
11 least as the rule is written now. This may get  
12 tweaked again -- it's just a proposal -- but we  
13 always have to use that 5.8 percent.

14           So in this example, we multiply that  
15 by the 70 million number -- million megawatts and so  
16 we would only be able to apply 4,060,000 megawatt  
17 hours in the denominator to adjust. So I calculated  
18 that out. That's roughly about 2 percent less credit  
19 that would need to be made up by some other rules --  
20 some other policy would have to exceed its goals,  
21 perhaps, renewable energy or energy efficiency  
22 targets would be exceeded.

1                   In my conclusion, there is -- kind of  
2     the last bullet point. Therefore, there is an  
3     incentive built into this proposal for Illinois to  
4     preserve nuclear so that we can continue to adjust  
5     the rate for compliance calculations and make the  
6     initial adjustment made in the baseline negligible or  
7     at least small enough so that there's not a large  
8     impact.

9                   Almost done here. So the conversion  
10    to mass-based, I only had one slide on that. My  
11    initial take on this is that it's not readily done.  
12    We're working with the U.S. EPA on this conversion.

13                  My understanding is Illinois would  
14    need to first develop our State plan to achieve the  
15    compliance with the rate-based goals and then  
16    determine the mass-based equivalent amount that is  
17    the amount of mass that would be reduced from our  
18    State plan to achieve the rate-based goals and then  
19    this would be the equivalent amount of mass that we  
20    would need to reduce in our State plan.

21                  There's definitely some advantages  
22    that exists for mass-based versus rate-based and just

1 the bottom there, I just show that rate-based  
2 goals -- we know this now is pounds CO2 per megawatt  
3 hours and emissions over generation. Mass-based  
4 goals is much simpler. It's just tons of -- tons of  
5 CO2.

6 This is kind of my segue slide. Now  
7 that we hopefully all understand -- or at least  
8 understand better how the goals were determined, it's  
9 going to take, in my estimation, a massive effort,  
10 many entities working together to come up with the  
11 most reasonable State plan that we can develop to get  
12 us -- to ensure that we meet our targets. And with  
13 that, I'll stop.

14 CHAIRMAN SCOTT: Thanks. We've got a couple  
15 questions for you, Jim. Commissioner McCabe first  
16 and then I've got a couple of clarifying questions  
17 and then we'll move on to Mr. Litz.

18 COMMISSIONER McCABE: Jim, thanks for laying  
19 out how the goals were established and just picking  
20 up on what you last said, just because the goals kind  
21 of grew to adoptions on each of those building block  
22 buckets, that doesn't mean how the final state will

1 plan will end up looking?

2 MR. JIM ROSS: That's absolutely true. Those  
3 are just the -- that system of emission reductions  
4 that U.S. EPA used to arrive at our goal. There is a  
5 multitude of other policies -- emission reduction  
6 policies that could be used, applied to meet the  
7 reduction goals.

8 The rule is pretty flexible, it does  
9 not describe that these are the only four policies  
10 that can be used to meet the goals and I believe the  
11 next presenter may cover this in more detail.

12 COMMISSIONER McCABE: Okay.

13 CHAIRMAN SCOTT: Thank you. A couple quick  
14 clarifying questions, Jim. Thanks very much for your  
15 presentation.

16 The at-risk nuc number, that original  
17 5.8 percent number, just so everybody understands,  
18 that was not just assigned to us, but that same  
19 number was assigned to the other 22 states that  
20 nuclear generation as well; right? It wasn't a -- it  
21 wasn't a comprehensive look at Illinois' nuclear  
22 fleet in particular, it was just kind of a number

1 assigned -- a risk number assigned to everybody?

2 MR. JIM ROSS: Yes. That's absolutely correct.  
3 They looked at some studies and they determined that  
4 6 -- roughly 6 -- 5.8 of that nuclear generation  
5 nationwide was at risk. They didn't look at specific  
6 at-risk nuclear generation in each state.

7 So each state has that -- has their  
8 baseline adjusted by 5.8 percent of the nuclear  
9 generation in 2012. And, likewise, each state can  
10 adjust by that amount whatever their generation is in  
11 the future years times 5.8 percent in their  
12 compliance calculations, 2020 and beyond.

13 So, yeah, those were not -- there was  
14 no determination made specifically that that's the  
15 amount of at-risk nuclear in Illinois.

16 CHAIRMAN SCOTT: Thanks.

17 And then one last question. You talk  
18 about rate versus mass, just so everybody kind of  
19 understands that -- and I'm actually worried about  
20 myself because I understood all of your presentation,  
21 so I don't know what that means about me -- but in --  
22 when we talk about rate versus mass -- when we talk

1 about rate, we're talking about the amount of either  
2 heat rate or emissions per megawatt hour that's  
3 generated. And when we talk about mass, we're just  
4 talking about tons; right? Is that --

5 MR. JIM ROSS: Yes, that's correct. It's much  
6 easier to understand the mass-based goals --

7 CHAIRMAN SCOTT: Right.

8 MR. JIM ROSS: -- because say for 2030, they  
9 could just say, Well, you need to reduce whatever you  
10 emitted in 2012; if it's 100 million tons of CO<sub>2</sub>,  
11 well, in 2030 you'd need to only emit 70 percent tons  
12 of CO<sub>2</sub> for a 30-million ton reduction.

13 Everybody can grasp that I think a  
14 little more readily than they can looking at  
15 rate-based.

16 CHAIRMAN SCOTT: So -- and so the other part of  
17 that which becomes important as we get further into  
18 the compliance pathways is that say you had a coal  
19 plant shut down -- and you referenced a few of  
20 those -- depending on the size of that and the risk  
21 of the mix of the field that you've got, that may  
22 have a different impact on a mass-based system versus

1 a rate-based system; right? So we have to take all  
2 of that into account as we're developing our  
3 compliance pathway?

4 MR. JIM ROSS: That's absolutely correct. It  
5 will be a relatively straightforward accounting for  
6 under a mass-based, it's whatever CO2s were  
7 eliminated due to those shutdowns.

8 In a rate-based, you have to convert  
9 those CO2 reductions to the rate, so generation loss  
10 in the denominator or you can apply it -- CO2  
11 reductions in the numerator, but it will have a  
12 different impact in the end.

13 CHAIRMAN SCOTT: Okay. Thanks Jim. I  
14 really --

15 COMMISSIONER MAYE: Chairman?

16 CHAIRMAN SCOTT: -- appreciate it.

17 Commissioner Maye?

18 COMMISSIONER MAYE: Just very quick.

19 Thank you, Jim, for coming and for  
20 speaking to us. I had a quick question regarding  
21 your -- the nuclear, the adjustment that would be  
22 made for the nuclear regarding the offset. I know

1 that this was just an example, but you basically had  
2 here that you would have -- 69 percent of that  
3 13 percent adjustment was nuclear which equated to  
4 8.3 percent and I agree, obviously, that if all of  
5 our plants close -- I agree that that's unlikely, but  
6 let's say 50 percent of our nuclear plants close.  
7 Would that -- what kind of impact would that have?

8 MR. JIM ROSS: Well, I believe it's a  
9 straight-line relationship. So if 8.3 percent of all  
10 of them closed in the -- a little bit greater than 4  
11 percent if 50 percent of them closed -- regardless of  
12 how many closed, if any of them closed, then it  
13 impacts our ability to comply to some extent. It's  
14 just how large is that impact. So to the extent that  
15 we cannot preserve nuclear generation, some other  
16 policy, some other measure would need to make up for  
17 that difference.

18 COMMISSIONER MAYE: Okay. Thank you.

19 CHAIRMAN SCOTT: Commissioner Del Valle?

20 COMMISSIONER DEL VALLE: Well, can you tell us  
21 what other policies would be able to make up for that  
22 difference?

1 MR. JIM ROSS: Yeah. And there's many.

2 COMMISSIONER DEL VALLE: The main ones.

3 MR. JIM ROSS: Well, I think that that gets  
4 into our next presentation somewhat. There is demand  
5 response programs, I mean...

6 COMMISSIONER DEL VALLE: Okay. I understand  
7 and I don't want you to get into the next  
8 presentation, but the difference can be made up;  
9 right? And I'm not talking about --

10 MR. JIM ROSS: Yeah, there is a gamut of  
11 policies available, so wide-ranging and many. So  
12 some would say that -- and you're going to get into  
13 the -- differing opinions on compliance with the rule  
14 that some would say the goals are already pretty  
15 ambitious and difficult to meet and some would say  
16 that we can go beyond these goals, that these are  
17 relatively simple to meet. So it depends on who is  
18 speaking and what perspective they would have.

19 COMMISSIONER DEL VALLE: Okay. So the  
20 statement regarding there being assent is an opinion  
21 that is not necessarily going to be shared by  
22 everyone?

1           MR. JIM ROSS:  No, I believe that is kind of  
2 self-evident, to me, at least, that -- and I heard  
3 the U.S. EPA confirm that, yes, this does give a  
4 reason why states would want to preserve their  
5 nuclear generation so that they can make this amount  
6 of adjustment that was in the front-end calculations  
7 wash out the negligible impacts.

8                       So to that degree that you'd want this  
9 to be -- to wash out or to have a net impact, there  
10 is an incentive.  So there's probably a better way to  
11 phrase it -- the degree to -- as stated, you'd want  
12 that impact to be negligible.

13           COMMISSIONER DEL VALLE:  Thank you.

14           MR. JIM ROSS:  Sure.

15           CHAIRMAN SCOTT:  All right, Jim.  Thank you  
16 very much.  You'll be back a little bit later on to  
17 talk about Building Block 1 in even greater detail.

18                       But now let me turn to Franz Litz.  
19 Franz I've known for several years.  He's well-known  
20 as a clean air expert throughout the country, worked  
21 for the State of New York during the time that they  
22 were developing -- they and the other northeastern

1 states were developing the Regional Greenhouse Gas  
2 Initiative as well as responding to several other  
3 environmental initiatives.

4 He then worked for the World Resources  
5 Institute where he worked with us in Illinois on both  
6 our Climate Change Advisory Group and also on the  
7 Midwest Accord where we developed the framework from  
8 Midwestern Cap-in-Trade Program and now works for the  
9 Great Plains Institute. And in that capacity is  
10 actually working with the Midwestern states on a  
11 couple of different things that I mentioned earlier,  
12 that stakeholder group on 111(d) that's been going  
13 about two and a half years and the rather clumsily  
14 named MSEER which is the Mid-Continent States  
15 Environmental and Economy Regulators Committee,  
16 that's actually looking at multi-state options.

17 And so we're really pleased that Franz  
18 was able to come with us today and delve more into  
19 these -- into the compliance mechanisms.

20 So, Franz, thanks very much for being  
21 with us.

22

1 PRESENTATION

2 BY

3 MR. FRANZ LITZ:

4 Thanks, Chairman Scott. Thank you,  
5 Commissioners, and thank you to Jim Ross down in  
6 Springfield and if she's there, Director Bonnett.

7 It's -- I want to just remark that I'm  
8 working with a bunch of states now even apart from  
9 the two initiatives that the Chairman just mentioned  
10 and this is -- this state is showing tremendous  
11 leadership in part because the Chairman is so active  
12 and forward-thinking on these issues; but also  
13 because of what you're seeing here that -- the  
14 Environmental Agency and the Commission -- I don't  
15 think there is a state yet, I may be wrong, that has  
16 taken this kind of initiative on the Commission side  
17 to really understand things and that's really very,  
18 very important. So congratulations and it's an honor  
19 to be here.

20 So I am going to pick up a little bit  
21 where Jim took off and today's agenda, as you know,  
22 is focused on really digging deep into the building

1 blocks. My piece of it is to provide a little bit  
2 of -- a little bit of context and backdrop to the  
3 overall 111(d) planning and that's what I hope to do  
4 here for you. And the questions from the  
5 Commission -- from the Commissioners were dead-on and  
6 hopefully I'll address them as we go through.

7           So I just want to remind everyone that  
8 we have a -- this is a federal/state framework and we  
9 have EPA issuing standards for new sources. They're  
10 not final, but they came out in draft. Those would  
11 have to be made final. The finalization of those new  
12 source standards triggered the authority under 111(d)  
13 to cover the existing sources and Jim mentioned these  
14 things.

15           The one thing I do want to mention  
16 that Jim hadn't mentioned is that if a state fails to  
17 submit a plan or if the plan that a state submits is  
18 inadequate, the EPA is supposed to, under the Act,  
19 impose a federal plan. The guideline is very quiet  
20 on that fact, so we don't know exactly at this point  
21 what EPA would impose. We just know that it's --  
22 well, it's an unknown and we know that it's

1 something. So as states and the stakeholders  
2 thinking through these issues, we have to have that  
3 in the back of our mind.

4 The other sort of background issue I  
5 want to frame here is you'll hear a lot of people say  
6 that these rules will be challenged and that's almost  
7 certain to be the case. Every -- pretty much every  
8 rule that EPA puts out gets challenged and I just  
9 want to note that as we talk about different  
10 interpretations of the Clean Air Act, the real  
11 question is that the Court's apply -- the Supreme  
12 Court has reaffirmed -- even in this last session --  
13 is whether EPA's interpretation of the Act is  
14 reasonable.

15 So as you think about these issues, if  
16 something strikes you as funny, just ask yourself, is  
17 that a reasonable interpretation or is it -- you  
18 know, is it something that the Court is likely to  
19 follow and there are two cases in this last session  
20 that one -- that go each -- that go two different  
21 ways. If you want to -- for those of you who are  
22 really interested in that question and want to dig

1 through them, you can kind of see -- it's not a  
2 black-and-white test. We don't know when the bench  
3 of the Supreme Court or the DC Circuit are going to  
4 consider something reasonable or not. So there is  
5 some -- some legal uncertainty as a backdrop to this  
6 whole thing.

7 I'm going skip this slide because --  
8 and the building blocks slides. My slides will be  
9 available as well, like Jim's, but Jim did a much  
10 better job of diving into the building blocks.

11 I want to begin here with the slide  
12 entitled Beyond the Building Blocks and that is to  
13 address the question that Commission Del Valle -- I  
14 hope I got your name right -- posed and that is, Well  
15 how are we going to do it if we don't have nuclear?  
16 Here are some of the possible answers and the EPA in  
17 coming up with the stringency that applies to  
18 Illinois and each state used those top four building  
19 blocks, they did not use coal-firing with low carbon  
20 fuels, for example. They didn't take into account  
21 retirements -- at least not directly -- they did not  
22 include new natural gas plants, although they've

1 since said that new natural gas plants can be  
2 included by a state if they'd like.

3           There is a realm of generation that  
4 doesn't fall under this source and they would be  
5 small generators that you might see in the form of  
6 combined heat and power, other distributed generation  
7 that could come in and play a role in meeting the  
8 standard because generation would occur at other than  
9 the plants covered.

10           Carbon capture and storage was not  
11 part of the way they calculated the standard, but  
12 it's possible and some states have -- especially  
13 enhanced oil recovery related CCS that is economic in  
14 those cases. And so in those cases, the State would  
15 be very happy to -- would perhaps be well served to  
16 capture that in the plan.

17           And then, lastly, gains from trade or  
18 if you were to combine with another state, the EPA  
19 did not factor that in and it's generally thought by  
20 economists that the wider you spread your program,  
21 the better off you'll be in terms of cost. So that's  
22 another possible way to achieve the stringency that

1 was calculated using the four building blocks.

2                   Which brings us to the question, Well  
3 what will states do? And most -- most states are  
4 still in this process of really understanding the  
5 standards and listening to Jim's presentation, it was  
6 so clear and so thorough, it's very clear that this  
7 state understands the guidelines -- or at least Jim  
8 does -- and since you followed right along, Chairman,  
9 you also get it -- and that's -- that's really where  
10 most states have been focused; but in the lead up to  
11 the draft guidelines development, a lot of states  
12 asked for flexibility, all kinds of flexibility and  
13 the EPA pretty much said yes to every one in terms of  
14 what a state can do to achieve the reduction. They  
15 used the term "any efficacious means."

16                   It's so much flexibility that some  
17 state officials have said there are too many choices,  
18 we don't -- we really don't know what to do and the  
19 way I've been looking at it is, there may be not too  
20 many choices when you take a closer look. They said  
21 yes to everything, more or less, but there are issues  
22 that attach to certain choices that I think tend to

1     steer folks back, steer policymakers back to the  
2     simpler more direct approaches and here are some of  
3     the issues on this slide.

4                     The issue of federal enforceability,  
5     the program needs to be federally enforceable. So  
6     the EPA said, for example, you could use a state-run  
7     program to achieve part of the emission reductions,  
8     but most states are going to be leery, most likely,  
9     of subjecting a state-run program to federal  
10    enforceability especially traditionally state-run  
11    programs in the energy area.

12                    They draw a distinction between direct  
13    and indirect limitations and that's where emissions  
14    limitations is on the affected units itself versus on  
15    another third party, whether it's a state party or  
16    another entity. Perhaps, in some states a  
17    third-party entity will administer the Energy  
18    Efficiency Program, for example, not the utility.  
19    And so in those cases, the EPA says you could put the  
20    emissions limit on that third party, but, again, the  
21    federally enforceability piece and this question of  
22    self-correcting versus not self-correcting.

1                   So one of the things that's going to  
2 drive, I think, states to focus on direct emission's  
3 limitations that are self-correcting is if you can't  
4 look at the plan and say to yourself, I look at this  
5 plan and I can see that it's going to achieve the  
6 goal, then EPA is going to require you to have  
7 backstop mechanisms in place up front, those would be  
8 corrective measures they call them to make sure you  
9 adjust if you don't have it all in the initial plan.  
10 And that will tend, I think, to drive states and  
11 their stakeholders to want something simpler because  
12 there's more certainty in the self-correcting  
13 mechanism.

14                   And then the -- if states want  
15 regional action and there is some evidence already as  
16 the Chair mentioned -- and I'm going talk a little  
17 bit more about this -- if the states want to explore  
18 regional action, that -- that desire will also tend  
19 to steer states towards the simpler direct emission's  
20 limitations approaches and I'm going to talk about a  
21 few of those here.

22                   One -- an issue I do want to flag

1 because I mentioned the legal standard. The -- one  
2 thing that lawyers -- clean air lawyers have pointed  
3 to in reaction to the guideline is that the  
4 guidelines allows states to regulate entities other  
5 than the owners and operators of the units and some  
6 Clean Air Act lawyers have found that to really go  
7 beyond the reasonable bounds. It's not in the  
8 statute it requires an interpretation of the language  
9 that is, you know, somewhat broader than the other  
10 interpretations that the EPA makes. Whether it's  
11 reasonable or not, we'll only know if it gets -- if a  
12 state chooses to do that and it gets challenged.

13 So I want to talk about five  
14 approaches and then we're going rule out one right  
15 off the top and that is traditional plant-level  
16 performance standards. In the lead-up to the  
17 development of the draft guideline, a lot of states  
18 were saying, We want to do this at the plant level.  
19 We think the standard should be based at the plant  
20 level. The EPA did not opt for that approach and in  
21 the minds of most folks who have looked at the  
22 various state goals and how they might apply within

1 states, they're going require you to go beyond the  
2 fence line.

3 I think Jim's slide earlier was very  
4 illustrative of that point where he had the  
5 percentage that is achieved inside the fence line  
6 versus the percentage of the Illinois standard that  
7 would have to be achieved outside of this fence line.

8 To my knowledge, that's true for all  
9 states. At least I haven't heard a state say that  
10 they'd be able to do it with the just the heat rate  
11 improvement.

12 So that means we're looking at  
13 systems -- or we're looking at programs that will get  
14 for the state reductions from other arenas and here  
15 are four -- four proposals that have been floated  
16 and/or used in the past.

17 The second one -- number two on the  
18 slide is mass-based emissions budget with trading.  
19 I'm going to get into these a little bit more -- in a  
20 little bit more detail, but not a lot of detail today  
21 and you'll have my slides; rate-based with trading,  
22 mass-based utility portfolio approach which you can

1 think of for those of you who work in vertically  
2 integrated states as a kind of an IRP -- similar to  
3 an IRP kind of notion; and then, lastly, a carbon  
4 value, also referred to as a carbon adder approach  
5 and this was championed by the co-op, Great River  
6 Energy and it would be implemented -- I'll explain in  
7 a minute -- at the ISO level.

8           So mass-based budget with trading,  
9 you'd have a mass -- you'd have to take that  
10 rate-based standard that EPA puts in its guidelines,  
11 convert it to a mass-budget and -- as Jim mentioned  
12 towards the end of his talk -- and then once you have  
13 a budget, you have a number of tons that you can then  
14 allocate in your system.

15           So the State issues allowances, 1 per  
16 ton. Those allowances are distributed somehow into  
17 the system to the power plant owners or otherwise and  
18 the generators essentially do two things. They  
19 measure and monitor and report their emissions, like  
20 they do now on the one hand; and then at the end of a  
21 compliance period, they have to have enough  
22 allowances to cover all of the emissions that they've

1 reported. So it's a fairly simple compliance  
2 demonstration. You have -- you either have the  
3 allowances to cover your obligation or you don't.

4 This slide shows the states that have  
5 the cross-state air pollution rule on their books and  
6 so -- I used to be an air regulator like Jim, where I  
7 was a lawyer -- counselor to the air regulators and  
8 the Environmental Agency and I know that one thing we  
9 always tried not to do was reinvent the wheel and so  
10 those states up there would not be reinventing the  
11 wheel if they took that approach.

12 Rate-based standard with trading is  
13 another option. That's where you take the rate the  
14 EPA gives you and you say, Okay, we're going to  
15 implement that and any generator that generates  
16 megawatt hours at better than the standard would earn  
17 credits. Usually people are talking about those in  
18 terms of tons credits. Credits that they can sell to  
19 generators that operate at higher than the standard  
20 or put out more pounds per megawatt hour than the  
21 prescribed standard.

22 So you have a crediting mechanism and

1 then -- for a lot of states, their targets are more  
2 stringent than even a natural gas combined cycle  
3 plant which is pretty clean from a carbon perspective  
4 and in those states, they would absolutely have to  
5 have an energy efficiency and renewable energy  
6 mechanism -- crediting mechanism to go alongside the  
7 generation crediting mechanism.

8                   So you have plants, they generate  
9 power, they keep track of the emissions, they keep  
10 track of their generation and at the end of a period,  
11 you look at how much generation they put out, at what  
12 emission's rate and they either owe credits or they  
13 get -- they are awarded credits and those credits, if  
14 you owe them, could come from other plants that were  
15 awarded credits or they can come from a mechanism  
16 that credits energy efficiency and renewable energy.

17                   A mass-based utility portfolio  
18 standard, this is, perhaps, most associated with the  
19 utility in Colorado and in Minnesota, Excel Energy,  
20 y'all probably already know them. They have --  
21 they've proffered this. They were one of the  
22 utilities that have sort of been out talking about

1 this issue for years now. And essentially they would  
2 get a mass budget. So the State would convert their  
3 rate to a mass budget and then each utility would get  
4 their share of that mass budget and the utility would  
5 manage that budget on its own and the utility, you  
6 can already hear -- you can already see this, but  
7 those of you who are thinking deregulated or  
8 restructured electricity market, that this is more  
9 applicable in a vertically integrated state where the  
10 owner of the generation is also the distribution  
11 utility and that utility, you know, might have access  
12 to measures like end-use energy efficiency, heat rate  
13 improvements, the field switching, dispatch on its  
14 own system and that sort of thing; also purchasing  
15 renewables under a renewable portfolio standard.

16           So this kind of utility portfolio  
17 approach is like that. The utility looks at its  
18 portfolio, it measures the emissions from all other  
19 plants, they're already doing that. At the end of a  
20 period of time, it adds up all those emissions and  
21 says, Did I meet my budget or am I over my budget?  
22 As long as they've met their budget, they're in

1 compliance. If they're over their budget, then the  
2 State would need to work up how the enforcement would  
3 occur because in a -- typically in the past with  
4 Clean Air Programs, we -- we think about it in terms  
5 of the unit or the plant, we don't think about it as  
6 a portfolio, so we'd need to think if a utility  
7 exceeded its portfolio budget, then which plants are  
8 out of compliance? And maybe you'd make the utility  
9 file a compliance statement that would indicate which  
10 plants were the ones that went over the budget.

11           Again, this is probably less  
12 applicable in Illinois and it also -- of the  
13 approaches that I'm talking about here today, it's  
14 the least amenable to regional or multi-state action  
15 because you -- it would -- if you had a multi-state  
16 utility, then the utility could sit down with the  
17 states where it operates and they could all  
18 coordinate; but beyond that, it's not so much a  
19 multi-state option.

20           So the carbon value approach works  
21 like this: You take the rate that Jim told us all  
22 about, you convert it to a mass budget and you figure

1 out how you could achieve that mass budget by adding  
2 a carbon charge to the electricity. So you'd have to  
3 do modeling. You'd have to say, All right. If the  
4 carbon charge is \$5 a ton, would that get us to the  
5 goal? And then you'd also have to have an adjustment  
6 mechanism where you'd have -- where the mechanism  
7 would increase the carbon charge; if you were  
8 shooting too high, you weren't really getting to the  
9 goal or you would lower the charge if it were too  
10 low.

11 This was inspired by a gentleman at  
12 Great River Energy, as I mentioned, and he wanted to  
13 come up with something that really fit the wholesale  
14 electricity market really well. And so this  
15 mechanism would be a -- something that would just be  
16 added right to the generator's bids and in terms of  
17 the state enforcement authority, the State Air Agency  
18 would essentially impose the permit condition on each  
19 of the generators, they would have to agree to follow  
20 this charge in their bids to the ISO and in Illinois'  
21 case, it would be PJM and MISO, depending on the  
22 operator and then that would -- that would factor

1 into the dispatch and would have the effect of  
2 relying on less carbon intensive generation. That's  
3 the idea any way.

4           And I want to turn quickly to  
5 multi-state collaboration. Why would you  
6 collaborate? The EPA is giving more time, as Jim  
7 mentioned, for multi-state plans. Most economists  
8 will point to gains from trade. If you can achieve  
9 the goals across the region, you have, presumably,  
10 more access as a region to the low hanging fruit at  
11 least cost reduction opportunities.

12           I mentioned the power markets, which  
13 was a driver in the GRE, the carbon value approach.  
14 The power markets are not, of course, limited to the  
15 state boundaries and so to the extent we can have the  
16 same kind of program applying to as many of the  
17 generators bidding into a particular power market,  
18 the better off that market is going to perform; and  
19 you have these issues of renewable energy produced in  
20 one state consumed in another; you have the issue of  
21 energy efficiency measures carried out in one state  
22 but showing up as reductions in a power plant outside

1 of the state and to the extent you can expand the  
2 boundary and incorporate more states, you make those  
3 accounting issues much more straightforward.

4 And then -- I want to say this because  
5 most people say, Ah, regional programs or multi-state  
6 programs are really hard, you can't do it; but I  
7 threw it in the last bullet which is they're  
8 relatively possible and straightforward and I'm going  
9 to try to come into that really quickly in the last  
10 few minutes that I have.

11 So what some of the states are doing  
12 now and the Chairman and the director are involved in  
13 a discussion that is a -- really on this path, a no  
14 regrets path where the State doesn't commit to  
15 anything; but says, We can -- we can prepare our  
16 individual state plans, we can think about what we do  
17 for our individual state while also exploring  
18 regional approaches and that's a very important  
19 notion.

20 So if one state can design its plan in  
21 a way that makes it more likely to be able to link  
22 with other states down the line, that's an option

1 that State keeps open. If the State on the other  
2 hand were to say, We're going to go a completely  
3 different route from other states, then that's  
4 essentially the equivalent of foreclosing the option  
5 of linking with other states.

6 And the way that the multi-state  
7 approaches so far have worked is that you have a  
8 common currency. A ton in one state is the  
9 equivalent of a ton in another state and that would  
10 work in both the rate-based trading approach and the  
11 emissions budget approach. It can also work in the  
12 carbon value adder approach because you presumably  
13 all use the same carbon adder; but you're looking for  
14 that simple common currency or that simple common  
15 action and by having these conversations, which are  
16 no regrets until a state decides to sign on  
17 presumably with the authorization of their  
18 legislature, you keep that option open -- sorry if  
19 I'm talking so fast.

20 Are you doing all right?

21 THE REPORTER: Yes.

22 MR. FRANZ LITZ: So this is -- these are the

1 states that are involved in the Mid-Continent States  
2 Environmental and Energy Regulators. It's 14 of the  
3 50 MISO states and part of these no regrets  
4 discussions, no commitments, but just seeing what  
5 benefits do you have and to the Commissioner's  
6 question, Well, how do we know what works or whether  
7 we can achieve it? One way you can know whether you  
8 can achieve it, an estimate of renewable cost, is to  
9 do modeling and to do an analysis.

10 So these states could decide to do an  
11 analysis that would look at the different approaches  
12 and what they save if they do it as a region versus  
13 what it would cost if they do it as individual  
14 states. It also tells them -- and here's where the  
15 no regrets piece is -- it will tell them whether --  
16 what the -- how it plays out in their own individual  
17 state even if they choose to not ever collaborate  
18 with our states, so you can pool your resources and  
19 get these an analyses done.

20 The Western states have started -- the  
21 MCR Group (phonetic) was the first that I'm aware of  
22 that they, in part, inspired this group of Western

1 states, which is most of the Western states who  
2 having a similar no regrets discussion through --  
3 facilitated by the Center for the New Energy Economy,  
4 Former Governor Bill Ritter at Colorado State  
5 University. And then, of course, you have the  
6 Northeast and Mid-Atlantic RGGI states which have a  
7 program up and running already. I show them, though,  
8 because Pennsylvania and Virginia have already  
9 started to indicate that maybe -- maybe joining the  
10 regional approach would be their way to approach  
11 111(d), not that they've made a decision, but it's  
12 something they're considering.

13                   So being multi-state ready, and  
14 here -- here is one of the closing thoughts. I'm  
15 going to skip all the process stuff because Jim  
16 covered it very, very well. In thinking about the  
17 approach that a state takes, you're, of course, going  
18 to be looking at your state, you're going to be  
19 looking at what does it do to my generation mix?  
20 What does it do for my cost for electricity? What  
21 does it do to reliability? Does it cause  
22 transmission concerns? You are going to do analyses

1 that tell you that; but the legal backdrop -- which I  
2 think plays directly into this multi-state thing --  
3 is that each state is a sovereign entity and as we  
4 talk about multi-state approaches and regional  
5 approaches, we have to keep in mind that there's no  
6 regional government, there's just the states and  
7 there's the Feds.

8           So when you're doing a multi-state  
9 arrangement, you're not creating a new government  
10 entity out of whole cloth. All you're doing is  
11 saying, Hey, Wisconsin -- I'll just hypothetically  
12 pick one -- we're doing this, our approach is this  
13 and it looks like your approach is relatively  
14 similar, it looks like we might be able to link up.

15           The way they do that is to say each  
16 individual state looks to the other and says, We will  
17 accept your tons -- we will let our sources use your  
18 tons for compliance if you let -- if you let your  
19 sources use our tons for compliance and that's the  
20 extent of it. That's how the Northeast Mid-Atlantic  
21 Program works. There's no further legal structure;  
22 there's no enforceability between states which raises

1 constitutional issues and so -- when I say it's  
2 straightforward and relatively simple, it can be. If  
3 you can get states to make the political decision to  
4 link and their programs are simple enough and have a  
5 fairly common currency, then it can be done and  
6 that's what makes a state multi-state ready.

7                   And that's all I'm going to say. I  
8 think I'll end there especially since we're over  
9 time.

10                   CHAIRMAN SCOTT: Commissioner Del Valle.

11                   COMMISSIONER DEL VALLE: You say there is no  
12 compact -- you don't have to worry about the compact  
13 class; right?

14                   MR. FRANZ LITZ: Right.

15                   COMMISSIONER DEL VALLE: But there is  
16 legislative action in the states that come together?

17                   MR. FRANZ LITZ: Presumably, most states either  
18 have the culture or the legal necessity of going to  
19 the legislature. A lot of states, it's a cultural  
20 thing, even if their Environmental Agency has the  
21 authority, they still have go to the legislature to  
22 get authority for the new program.

1                   What I'm saying is you don't need to  
2     subject yourself to enforcement by the other states.  
3     All you're doing is you're saying to your sources,  
4     We're going to let you use the tons that they have in  
5     Wisconsin and they're going to be good here, too.

6                   So when you file your compliance  
7     statement, you can use them. That's how you avoid a  
8     compact -- you would need a compact if you entered  
9     into an agreement and, let's say, Wisconsin could  
10    enforce against Illinois and Illinois could enforce  
11    against Wisconsin -- I can't imagine a state doing  
12    it, but, you know, hypothetically, that's what you --  
13    that's when you would need the compact approved by  
14    Congress.

15                  CHAIRMAN SCOTT: Let me ask a couple, Franz.  
16    Thanks very much for clearing up these issues and  
17    talking about them.

18                   So on the market issues, the  
19    mass-based with a trading program you talked about,  
20    so that, in essence, injects a value for the  
21    allowance that then would show up, theoretically,  
22    in -- because we're all part of regional -- we are

1 here in any way, part of the two regional  
2 transmission organizations, so that would  
3 theoretically show up in the bid prices then that the  
4 allowance costs would show up somehow in the bid  
5 prices then?

6 MR. FRANZ LITZ: Yes, it would and then it  
7 would affect dispatch. So you'd be covering that  
8 dispatch hook avenue by having a market price that  
9 gets added to the generator's bid.

10 CHAIRMAN SCOTT: Does that have to be  
11 established within the state or is that something  
12 where -- if the State just set up the trading  
13 platform for it, the individual power generators  
14 could find their own market for that; is that  
15 possible to do it that way? I'm trying to figure out  
16 how complicated this has to be.

17 MR. FRANZ LITZ: Yeah, well, if you think of  
18 the ISOs themselves or the PJM or -- they're  
19 essentially voluntary markets. You could,  
20 conceivably, set up a similar opt-in kind of process  
21 where, you know, you set up the -- it hasn't been  
22 done, but it would be following the ISO model in an

1 environmental context, it's an interesting idea. I  
2 think the -- the, as you point out, the emission's  
3 budget with trading approach is very similar to that  
4 approach. The rate-based trading approach isn't that  
5 different either because you are putting -- you're  
6 giving value to generation that is below, so they all  
7 put a price on carbon essentially which then gets  
8 incorporated into the bids.

9                   And then in terms of the wholesale  
10 electricity markets, I think coverage becomes the  
11 next issue because if you're just the only state in  
12 the RTO that has it then, you know, you're only  
13 affecting the bids of the generators in your states.  
14 So it may not have --- it may lead to uneven  
15 results -- it would lead to uneven results in the  
16 larger power market.

17                   CHAIRMAN SCOTT: And let me just ask, too, on  
18 the federal enforceability issues -- and this is  
19 something that will keep coming up in all this. It's  
20 been a big theme in NARUC and some of the other  
21 discussions that we've had. I think most usually in  
22 terms of the energy efficiency programming, which

1 is -- obviously, are near and dear to the heart of  
2 most economic regulators is that most states we're  
3 the folks that administer those programs, but when we  
4 talk about -- it goes back to Jim's presentation as  
5 well and you having been advisor for Clean Air Act  
6 programs in a major state as well, the enforceability  
7 comes back more -- back to the state.

8 I mean, it's not -- I just have  
9 difficulty comprehending U.S. EPA desiring to run  
10 energy efficiency programs in a number of states.  
11 Isn't it more likely that they'll just go back to the  
12 state and say, You're deficient X percent or in this  
13 amount, what are you guys going to do about it to  
14 close that gap or change it.

15 MR. FRANZ LITZ: Yeah, I mean, I think that's  
16 true. The enforceability starts with the states and  
17 if the EPA sees you're off target, they're going to  
18 come to you first and then if you're not doing  
19 anything -- all the plans get incorporated in federal  
20 regulations so they become essentially federal law  
21 and state law, so that gives the EPA the authority to  
22 also enforce.

1                   I've just noticed and that -- among  
2     state regulators that -- especially the energy side  
3     of things where the energy regulators are very  
4     accustomed to, this is a matter of state law and  
5     state prerogative to decide how much renewable energy  
6     and energy efficiency gets done and the notion that  
7     those budgeting questions and the way that the  
8     programs are administered would somehow come under  
9     the purview of U.S. EPA, which isn't even an energy  
10    agency is troubling to a lot.

11                   And I'm not saying that some states  
12    won't do it, I just think that it will be an  
13    inhibitor to a lot of states taking that path it  
14    seems.

15                   CHAIRMAN SCOTT: And just to follow up on the  
16    question that Commissioner McCabe asked of Jim Ross  
17    and it follows into Commissioner Del Valle's question  
18    on the chart that you had -- I forget what slide it  
19    was, but the slide where you had all the different  
20    mechanisms for compliance listed -- Slide No. 7 of  
21    yours, so just to reenforce this point -- because I  
22    think it's important as we go forward -- so that the

1 building blocks set up essentially what EPA thinks  
2 that -- on an individual basis, looking at each  
3 state, what each individual state can accomplish  
4 using those four building blocks; but the compliance  
5 mechanisms -- as long as you can convince the EPA  
6 that your compliance mechanism will reach the  
7 reduction target that you've got -- target that  
8 you've got don't necessarily have to find their way  
9 through the building blocks at all, it could be all  
10 of the extra things that you suggested on here, you  
11 know, just for -- just so everybody is clear, we  
12 don't have to do exactly what is in the building  
13 blocks; am I reading that correctly?

14 MR. FRANZ LITZ: Yeah, you're reading that  
15 right and that's a hugely important point to  
16 remember, that you are not stuck with those four  
17 approaches to getting -- to getting the reduction.

18 And one of the tricks, I think, or one  
19 of the difficulties with this rule is it's all about  
20 the building blocks and it doesn't include any  
21 analysis of different ways you might achieve the  
22 reductions. So if you're a state leader, as you all

1 are, you are kind of scratching your head and saying,  
2 Well, what does that mean? What does it mean for my  
3 generation mix? What does it mean for my electricity  
4 prices, my imports, my exports, my renewables and  
5 energy efficiency? You won't know that until you  
6 actually do some analysis yourself.

7                   You say, All right. I like this  
8 subset of approaches and then you do some modeling  
9 and you'd say -- and you looked at the analysis and  
10 you'd say, Oh, it looks like if we took that  
11 approach, this is what's going to happen to price,  
12 this is what's going to happen to generation mix and  
13 so on. That's not in this rule. This is all just  
14 about how they set the stringency.

15           CHAIRMAN SCOTT: Okay. Franz, thank you very  
16 much, much. We really appreciate it.

17           MR. FRANZ LITZ: You're welcome. My pleasure.

18           CHAIRMAN SCOTT: As part of our health at the  
19 ICC, we're going to shorten the lunch period and come  
20 back at 20 after so we'll take 45 minutes instead of  
21 the full hour, so we will be back at 20 after 1:00  
22 and go from there. Thanks very much.

1                   (Whereupon, a luncheon  
2                   recess was taken to resume  
3                   at 1:20 p.m.)

4                   All right. If you could find your  
5                   seats, we're going to get started in just a moment  
6                   here.

7                   If you could find your seats, we're  
8                   going to get started again. Don't make me use the  
9                   gavel I don't have. Very good. I'll start  
10                  pounding -- take my shoe off and pound it on the  
11                  podium.

12                  All right. Thank you very much. We  
13                  are very honored and pleased to have with us for this  
14                  second session of our day-to-day with Joe Goffman who  
15                  is the associate assistant administrator and senior  
16                  counsel for U.S. EPA and, as I mentioned early on,  
17                  has been instrumental in not only -- in the  
18                  composition of the Clean Power Plan that we've been  
19                  talking about, but also in the outreach that U.S. EPA  
20                  has done.

21                  Having spent five and a half years  
22                  with Illinois EPA before and looking at the outreach

1 on a number of rules, I can truly say that the  
2 outreach for this has been unprecedented and we  
3 really appreciate that not only from Joe but other  
4 members of U.S. EPA, I think participated for at  
5 least over a year in lots of meetings where the EPA  
6 was talking to various groups, whether it was utility  
7 commissioners or environmental commissioners or other  
8 stakeholders, basically asking them, you know, Tell  
9 us about your state and tell us about the fuel mix in  
10 your state, tell us about the energy efficiency and  
11 renewable resource opportunities in your state and  
12 tell us which way your state is trending and, really,  
13 what are the things you'd like to see in the bill.  
14 And we talked a lot about the flexibility of the bill  
15 this morning and we will as we continue to go on and  
16 I think a lot of that is due to the EPA actually  
17 listening to the people who said they wanted a lot of  
18 flexibility in the proposed rules.

19 So I'm going to attribute a lot of  
20 that to our next speaker, Mr. Goffman. I really  
21 appreciate him coming here to be with us today. I  
22 look forward to his remarks and then we'll have some

1 questions for him afterwards.

2 So, Joe, welcome to Chicago. Thanks  
3 very much for being here.

4 PRESENTATION

5 BY

6 MR. JOE GOFFMAN:

7 Well, thank you. Thank you very much.  
8 Thank you to the entire Commission for not only  
9 having this day about what's -- the implementation  
10 ultimately of important priority to the Agency and  
11 its mission to implement the Clean Air Act, but also  
12 to the administration and thank you especially for  
13 making time during the course of your agenda today  
14 For the U.S. EPA to participate directly.

15 Apropos of that and apropos the  
16 Chairman's comment about outreach, one of the things  
17 that has probably been under-appreciated is the fact  
18 that in doing that outreach and public engagement, we  
19 have to be outreaching to and engaging with somebody  
20 and it turns out we outreached to and engaged with a  
21 lot of somebodies, not the least of which were the  
22 states and state government officials from a variety

1 of parts of state governments, including Commissions  
2 like the ICC.

3                   During that outreach process, it  
4 seemed to us that we were asking, not just the state  
5 government personnel and leadership officials, but  
6 also stakeholders in the sector and from the public  
7 at large to be doing an awful lot of work because for  
8 every -- again, every hour we spend in discussion or  
9 in considering submittals that have been transferred  
10 to us -- or transmitted to us, we knew that an awful  
11 lot of work and an awful lot of thought went into the  
12 contributions and interventions and proposals of the  
13 organizations and state government entities and  
14 stakeholders with whom we were interacting.

15                   So, you know, the gratitude certainly  
16 runs from the agency to you all. Particularly  
17 because, as you know, from days before this and from  
18 the earlier presentations, there's a lot more work in  
19 store for the states. That's what Congress had in  
20 mind when it wrote the applicable provision of the  
21 Clean Air Act, Section 111(d), and that's what we  
22 heard again and again from the states and from the

1 regulated sector, that it was absolutely critical for  
2 us to ensure that it was the states who were the lead  
3 in not just providing us with information in terms of  
4 what will be the ultimate or final standards, but in  
5 devising the com- -- requiring the required  
6 compliance plans to meet those standards.

7                   And it's interesting that you all went  
8 from the freshman version of this course to the  
9 graduate version of this course already this morning  
10 because when you think about the presentation that  
11 Jim Ross at the IEPA made and the presentation that  
12 Franz Litz made, you know, you heard not only the  
13 basics and some of the fine details of the technical  
14 elements of the EPA proposal, but you also heard a  
15 lot of fairly sophisticated discussion about what  
16 choice of instrument as the academic -- academics  
17 would put it in terms of how you would achieve the  
18 different ways of meeting the standard as proposed  
19 and ultimately finalized by the EPA.

20                   And what I'd like to do with my time  
21 is go fairly quickly through this sort of  
22 intermediate level -- not necessarily spend all my

1 time rehashing what you all probably already know and  
2 what you heard from Jim Ross this morning about  
3 what's in the EPA proposal, but not necessarily go so  
4 far as to respond to some of the choices that Franz  
5 identified in terms of how to design the program, but  
6 to sort of focus on something that when we wrote the  
7 proposal, we, the Federal EPA, thought would  
8 ultimately be of greatest interest to the states and  
9 to the regulated industry and to the public, which is  
10 beyond just the question of how we came up with the  
11 numbers.

12 That is, how we came up with each state's carbon  
13 intensity target; what it is that the different  
14 decision-makers, be they the owners and operators of  
15 the EGUs, the regulated entities, that is, or the  
16 system operators or public commerce or utility  
17 commissions -- all of the things that could be done  
18 to align compliance with state-level carbon intensity  
19 improvement requirements and driving investment into  
20 the system that had the greatest, if you will,  
21 societal benefit, strengthen the asset base of the  
22 electricity sector, not just from the perspective of

1 individual generating units, but encompassing  
2 transmission and distribution efficiency improvements  
3 and end-use energy efficiency improvements and other  
4 changes in the system that in the course of the next  
5 15 years that the proposal at least encompasses, will  
6 be in front of a variety of decision-makers, in any  
7 event.

8                   So if you looked at the handout that I  
9 think we distributed before today, what you don't see  
10 is the standard layout of the way we put the  
11 standards -- or the proposed standards together, but  
12 rather a fair degree of emphasis on what we thought  
13 was a pretty broad menu of actions that could be  
14 taken by the different participants and the ultimate  
15 decisions here.

16                   But let me -- before I jump further  
17 into that, let me take a step back and just remind  
18 everybody about the underlying premises or logic of  
19 the EPA's approach.

20                   During the outreach process, we heard  
21 countless times from people, states and companies  
22 with real-world experience about the things that they

1 had to have been doing, whether over on the public  
2 sector policy side or on the company side, that  
3 either by design or by happenstance had the effect of  
4 reducing CO2 intensity and we came to the  
5 conclusion -- at least a proposed conclusion -- that  
6 to do the task that the Clean Air Act gives us, the  
7 U.S. EPA, of making a determination as to what the  
8 best system of emission reduction adequately  
9 demonstrated -- and that's a term of art in this  
10 statute -- what that BSER, Best System Emission  
11 Reduction, adequately demonstrated is is nothing more  
12 than the fundamental elements that we had been told  
13 again and again, that the system -- that power plant  
14 operators and state decision-makers and energy users  
15 had been already engaged in and that this set of rich  
16 experience that had the re- -- that encompassed  
17 activities that had the result of reducing CO2  
18 emissions really was a commonsense answer to the  
19 question, What does the best system emission  
20 reduction adequately demonstrate?

21 And with that conclusion and that, if you  
22 will, commonsense answer, what we had to do was

1 translate that BSER determination into, essentially,  
2 a numerical standard and this is absolutely in many  
3 ways typical of what we've been doing under this part  
4 of the Clean Air Act for 30 or 40 years.

5 Normally we're looking at end-use --  
6 or I should say end-of-stack emission reduction  
7 technology making a careful assessment as to how that  
8 technology operates and then basing a numerical  
9 standard on that demonstrated, to be available,  
10 technology. So usually it's a widget. It's  
11 something you put on a smokestack.

12 Here what we saw is that the -- there  
13 was no one widget that the system had experience  
14 with. There were a number of small widget or  
15 widget-like activities that together could produce or  
16 indeed were already being demonstrated to reduce  
17 reduction of CO2 emissions. We distilled that  
18 universe of action and strategies and, if you will,  
19 widgets to three or four basic building blocks on  
20 facility operational efficiency improvements: The  
21 greater use of lower carbon intensity generation in  
22 the form of both natural -- the existing natural gas

1 fleet and renewable generation and, last, but  
2 certainly not least, improving end-use energy  
3 efficiency.

4                   We took those three or four basic  
5 concepts, which really just reflected what we had  
6 heard again and again in the outreach process,  
7 resolved them, if you will, into numerical factors  
8 and then applied the numerical factors to each  
9 state's fleet as it -- or electricity system as it  
10 existed in 2012 which is the year -- the most recent  
11 year for which we have complete data.

12                   We then turned around and defined  
13 compliance in the same way we defined the standard as  
14 a simple fraction: CO2 emissions expressed in pounds  
15 per megawatt -- per kilowatt hour generated. And we  
16 identified a range of actions that demonstrably  
17 improved that fraction by shrinking the numerator,  
18 the CO2, relative to the denominator, the kilowatt  
19 hours generated or avoided and that menu is much  
20 broader than what we referred to and Jim and Franz  
21 referred to as the four basic building blocks.

22                   You know, the four basic building blocks

1 answered the question, What's the best system of  
2 emission reduction adequately demonstrated and how do  
3 you turn it into a number? But once you've -- as  
4 we've proposed to do -- established the CO2 per  
5 generation created or avoided ratio, then literally,  
6 anything that improves that ratio or improves that  
7 fraction counts towards compliance

8           And the reason we thought that was  
9 important was we thought that was the -- one of the  
10 most effective ways to capture the broad consensus in  
11 favor of flexibility that we'd been hearing from the  
12 stakeholder community and from the states.

13           And it aligned with that other  
14 consideration that I mentioned already, which is that  
15 in the next 10 to 15 years when you think about the  
16 current age of, say, the fossil fleet, particularly  
17 the coal fleet and where it's going to be on its time  
18 line, say, 5, 10 or 15 years from now, it's highly  
19 likely that even without further regulation from the  
20 Federal EPA, there are going to be a number of  
21 changes that are going to be subject to consideration  
22 just because of the aging of the fleet and the

1 continued economic need for that fleet to be enhanced  
2 and improved.

3                   And so what we were trying to do was  
4 to ensure that as those inevitable decisions or what  
5 we surmise are inevitable decisions are being made,  
6 those decisions can be made in a way that not just --  
7 not only incorporates CO2 intensity improvement, but  
8 tees up that those kinds of CO2 intensity  
9 improvement, that also aligns with strengthening the  
10 fleet and the electricity system overall.

11                   And if you were -- if you had a moment  
12 to look at, say, the handout slides, starting on  
13 Slide 7, you know, you'll see a lengthy menu of  
14 possible actions that, you know, depending on the  
15 state and its priorities and its policies could make  
16 eminently good economic sense and deliver performance  
17 that's demonstrable in terms of CO2 intensity  
18 improvements.

19                   And that's really in a way the -- what  
20 we think will be where the major work will be and,  
21 indeed, the major opportunity will be for -- you  
22 know, for folks sitting where you all are sitting and

1 for the public whose industry you represent and  
2 for -- and for the regulated community.

3 I'm assuming that the way to make the  
4 balance of our time together useful is to give you  
5 all the opportunity to ask specific questions and so  
6 I think that -- I suggest that we go to that phase.

7 CHAIRMAN SCOTT: Sure. Just so folks know, the  
8 handout to which Mr. Goffman is referring, we will go  
9 with the other slide decks that were up there. He  
10 wasn't going to go through a whole slide  
11 presentation, so we didn't put it up on the screen;  
12 but his slide deck as well as everyone else's will be  
13 available on our Web site sometime in the next two  
14 days -- by Wednesday -- we'll say late Wednesday just  
15 to give ourselves a chance. So all those will be  
16 available.

17 Let me start with a couple of  
18 questions and then others just join in. So the  
19 question that came up this morning -- and you  
20 clarified that very nicely again for us -- is that  
21 even though the building blocks were -- if I can  
22 paraphrase -- your best assessment of where -- of

1 looking at those four things -- those four different  
2 building blocks where Illinois could go, so our  
3 number is derived from that, just as it is for every  
4 state, which is why every state has a different  
5 end -- end figure; but that we don't have -- we have  
6 to accept the end number -- I'm assuming that the  
7 rule that goes into effect like it is -- like it is  
8 now, we have to accept the end number, but we don't  
9 have to get there the same way that you got to that  
10 number in the first place?

11 So maybe just a little bit on that and  
12 then I have one other question on that.

13 MR. JOE GOFFMAN: I think what you said is  
14 right. I doubt that the number of words I'm about to  
15 add to it will actually improve it, but nevertheless,  
16 I'll add a bunch of words.

17 The four building blocks really are  
18 only to answer the question of what's -- what's  
19 doable for each state as that term has been used  
20 whenever the EPA uses Section 111, not just (d) as in  
21 dog, but (b) as in boy, to set standards.

22 And what we -- you know, so, for

1 example, we looked at national data including  
2 historic data going back to 2001 in terms of  
3 demonstrable improvement in coal plant carbon  
4 intensity performance and we essentially said that  
5 the data is telling us that there -- either because  
6 we can identify them or because we can identify their  
7 effect in the data of the kinds of widgets you can  
8 apply to a coal-fired power plant to improve its  
9 operational efficiency. So we came up with -- we  
10 think the data tells us that that's -- on a national  
11 level can be expressed as a 6 percent improvement,  
12 but that's not necessarily Illinois' number.

13 We then looked at the specific fleet  
14 that Illinois has and, in particular, its coal fleet  
15 and then applied that number to its coal fleet. We  
16 did a similar thing in terms of doing a national  
17 analysis of the -- as yet unused capacity of existing  
18 natural gas combined cycle generation; but then took  
19 the national assessment and applied it to --  
20 specifically to what's on the ground here in Illinois  
21 as we did to the 47 other states that have affected  
22 units and we did the same thing with renewables and

1 reduced energy efficiency. I mean, we used a  
2 different approach to each of the national  
3 determinations.

4 In fact, with respect to renewable  
5 energy, we looked at regions rather than national  
6 opportunities to improve -- or to build out renewable  
7 energy; but it all -- we concluded that we were  
8 obliged by law and common sense to apply those  
9 national numbers to each state's situation, you know,  
10 as of today and that's how we came up with the  
11 different numbers.

12 But to continue adding words, the  
13 numbers are just a number. Once you've got the  
14 number, the actual steps taken to comply with that  
15 number are up to the State as long as they have the  
16 demonstrable effect of achieving that ratio of CO2  
17 emissions to a generation created plus generation  
18 avoided.

19 CHAIRMAN SCOTT: Let me just ask then, too,  
20 kind of a follow-up based on the discussion we had  
21 with Mr. Litz this morning. The whole issue, at the  
22 risk of walking in the minefield, federal

1 enforceability, that's been such a huge issue and,  
2 frankly, I mean, you've been in a lot of the same  
3 meetings I've been in where people have raised this  
4 and are concerned -- as Franz described it this  
5 morning -- they're concerned about essentially the  
6 Federal Government assuming responsibility for state  
7 programs.

8                   Could you maybe tell us more how you  
9 guys look at -- look at that because I've heard you  
10 describe it before and I've heard others talk about  
11 it and it's not quite -- not quite the same as some  
12 of the concerns that are raised.

13                   MR. JOE GOFFMAN: I think you said something  
14 this morning about -- about -- you sort of surmised  
15 that the EPA was not wanting to put itself in the  
16 business of running programs that had never been run  
17 before by anybody other than state entities or the  
18 utilities themselves in a nonregulatory context and I  
19 think that is absolutely correct.

20                   You also said that you surmise that  
21 what we define as enforceable -- what would be the  
22 enforceable event would be the detection of

1 underperformance of the state program and that the  
2 response would be not for the EPA -- you know, not  
3 for the state program to go into federal receivership  
4 to be run by the EPA, but rather for the EPA to look  
5 at what counts, which is ultimately ensuring that the  
6 program that the State has identified performs up to  
7 the level that the State projected it perform.

8           That's, you know, I think in practical  
9 terms the way you put it or the surmise, as you  
10 offered, are pretty -- a pretty good representation  
11 of how we're thinking about that as well.

12           The reason it got complicated in the  
13 proposal is that we wanted to give the states and  
14 utilities at least a couple of choices in how they  
15 put their compliance plans together. This was  
16 implied in Franz Litz's presentation which is that  
17 compliance plans could operate simply by allocating  
18 or assigning to each affected EGU some portion, as  
19 determined by the State, of achievement of the  
20 State's target and then leave it at that or a state  
21 could do that, but simultaneously outside of the  
22 compliance plan adopt certain programs that would

1 facilitate the ability of the affected EGUs to meet  
2 the target or a State could take a third approach,  
3 which we also identified in the proposal, of telling  
4 the EPA that within its compliance plan was a mixture  
5 of requirements that applied directly to the affected  
6 generating and emitting units and other requirements  
7 that the State was going to, if you will, obligate  
8 itself to undertake so that together these two sets  
9 of requirements would add up to the state target.  
10 And what we proposed is that it be up to the states  
11 to choose which of those approaches to take.

12                   Now, we're going to get reams of  
13 comment about some of the legal issues from the  
14 perspective of Federal Clean Air Act enforceability  
15 requirements vis-à-vis the affected entities which  
16 are electricity-generated units and some of that  
17 comment may cut against that last option and that's  
18 really where all the consternation about states  
19 ending up in a position where they put into  
20 compliance plans elements of state programs or  
21 straight policies which somehow become federally  
22 enforceable.

1                   But that's -- that's the kind of --  
2     that's what -- notwithstanding that, we think that --  
3     where we ended up in the proposal included giving  
4     states a valid choice in determining the mix of  
5     directly applicable -- or requirements that apply  
6     directly to the sources and other requirements that  
7     the State puts in place that together meet the state  
8     target. So that's what that enforceability issue is  
9     all about.

10                  CHAIRMAN SCOTT: One last follow-up to that and  
11     I don't want to dominate -- so my colleagues can ask  
12     questions, too. So if we'd been doing this plan  
13     10 years ago, we probably would have missed this side  
14     of the barn by about 40 yards in terms of  
15     availability of gas and the impact that that's had.

16                   And so is there -- what's the thought  
17     process, too, especially as it ties into the last  
18     dialogue we've been having about the enforceability  
19     and if something is not measuring up, the ability to  
20     amend programs as they go forward, the ability to  
21     say, Yeah, I know we said this in 2016, but here's a  
22     change in circumstance and -- now that it's 2021 and

1 what's the ability to do amendments.

2 MR. JOE GOFFMAN: I don't believe we actually  
3 pro- -- addressed that question. I don't think we  
4 specifically said that statement: Plans once  
5 approved are amendable. I'm going to guess -- and  
6 it's just one person's guess -- that if we get  
7 comment suggesting that we describe the State plan  
8 amending process, that we'll respond favorably to  
9 that. You know, where it gets more fraught, I guess,  
10 is whether the State comes back after its plan is  
11 approved and starts to implement it and asked us to  
12 not just amend -- approve an amended plan, but amend  
13 the target.

14 And I think those are two different  
15 questions, actually; but certainly the question you  
16 asked, which is amending the plans, is something that  
17 we're anticipating getting comment on, not -- my  
18 guess -- my individual guess would be that we would  
19 want to find a way to accommodate that.

20 CHAIRMAN SCOTT: Commissioner Maye?

21 COMMISSIONER MAYE: Thank you so much for your  
22 commentary and for coming into town. We really

1 appreciate it. I have a couple of questions and I  
2 guess it has to do with the fact that -- I think,  
3 first of all, it's clear that the EPA is flexible,  
4 you know, they want states to get it right, there is  
5 a lot of flexibility here -- you know, whether or not  
6 a state decides to do its own plan or work in a  
7 multi-state or regional plan, there are those  
8 options. So it's clear that the EPA wants states to  
9 get this. They don't want states to fail.

10                   However, in the event that a state is  
11 not able to meet -- to meet the plans, what are the  
12 ramifications and in that event, who is -- who is up  
13 on the chopping block? Is it the state? Is it the  
14 utilities? Is it stakeholders? Who, particularly,  
15 are the parties that are, you know, I guess up for a  
16 challenge from the EPA?

17                   And then in the event of a regional  
18 plan and one of the states don't meet, you know,  
19 their goals, who then is responsible in a regional  
20 plan.

21                   MR. JOE GOFFMAN: Well, thank you for those two  
22 questions.

1           COMMISSIONER MAYE:    You're welcome.

2           MR. JOE GOFFMAN:    We've definitely reached the  
3 graduate seminar level pretty quickly.

4                            The first question, which is what  
5 happens if a state doesn't submit its plan or submit  
6 a plan that's approvable -- actually, maybe there are  
7 three questions.   That would be one form of the  
8 question.   And we didn't speak to that at all.   The  
9 statute says that if a state fails to submit an  
10 approvable plan, then the Federal EPA has the  
11 authority to write a plan for the State and we --  
12 other than acknowledging that statutory provision, we  
13 didn't speak further to this issue.

14                           The second -- another way to apply  
15 your question is what happens if a state does submit  
16 a plan?   We approve it and then over time, the State  
17 clearly -- or the State's carbon intensity -- actual  
18 carbon intensity isn't on the trajectory that the  
19 State said it would be on in the plan, what we  
20 propose is that the State plan itself and, therefore,  
21 the State identify, at least in the first instance,  
22 what happens in those circumstances.

1           COMMISSIONER MAYE:  Oh, in the plan.

2           MR. JOE GOFFMAN:  What are the corrective  
3 measures that the State wants to put in place, you  
4 know, in other words, what -- what are you putting --  
5 what are you, the State, plan -- the State putting on  
6 the table in terms of a remedy in a circumstance like  
7 that.

8                           And then I think the third question is  
9 the enforceability question --

10          COMMISSIONER MAYE:  Right.

11          MR. JOE GOFFMAN:  -- which -- which I guess  
12 sort of goes back to the same answer.  What we're  
13 proposing is to give the states at least the right of  
14 first refusal to construct their respective plans in  
15 ways that anticipates some of these questions and  
16 anticipates some of the contingent remedies.  The  
17 same would apply for the other part of your question  
18 which is what happens when one state doesn't --  
19 doesn't deliver and it's part of a multi-state plan  
20 that everybody -- that several other states are  
21 dependent on?  Presumably, the same answer.  Since  
22 that's an easy to hypothesize possibility, we would

1 want -- we propose the state plans address what  
2 happens in those cases.

3           As an aside, one of the things that --  
4 some of the mechanisms that Franz Litz identified --  
5 and, again, this is an aside -- have something of a  
6 self-enforcing quality or self-enforcing property  
7 that if you basically say, you know, an EGU, you  
8 know, has to hold enough emission reduction credits  
9 to offset any, you know, emission rate that's higher  
10 than it's required or has to hold a number of  
11 allowances equal to the number of tons it's emitting,  
12 whether that's in a one-state-only context or  
13 multi-state context, that gives you something much  
14 closer than an automatic remedy because somebody has  
15 got to go find the allowances of the extra reductions  
16 or the emission reduction credits.

17           COMMISSIONER MAYE: Thank you.

18           CHAIRMAN SCOTT: Commissioner Del Valle?

19           COMMISSIONER DEL VALLE: Some have said there's  
20 too much flexibility and then in listening to you, I  
21 keep waiting to hear you talk about the teeth and it  
22 sounds like there aren't any teeth here. I don't

1 know how -- that's a general statement, but the  
2 flexibility is there. States are able to  
3 self-correct as they go along.

4 So the EPA is just kind of holding up  
5 a mirror to the states over a long period of time  
6 saying, This is what you said you were going to do;  
7 this is where you're at; and tell us -- if you're not  
8 on target, tell us what you're going to do to be on  
9 target. And then we'll check again in the future.

10 Is that a fair description?

11 MR. JOE GOFFMAN: Well, it's not unfair. You  
12 know, I'll give you a response sort of in terms of  
13 contrasting it with another provision of the Clean  
14 Air Act which obtains -- when we were talking about the  
15 ambient air quality standards for ozone, smog or  
16 foreign particles. There, the statute was very --  
17 Congress really was very detailed and prescriptive in  
18 determin- -- in saying what would happen to a state  
19 if it, you know, missed -- you know, if its  
20 monitors -- if its air quality monitors were showing  
21 not meeting -- you know, not on its trajectory or not  
22 in compliance and there's, you know, relatively

1 speaking, a pretty detailed statutory menu of what  
2 happens.

3                   This section of the Clean Air Act is  
4 less -- let's say is less well defined in terms of  
5 what happens if states go off target or go off their  
6 trajectory. I don't think we brought this out as  
7 much as we're doing in this discussion or have been  
8 doing in the last several minutes; but let me project  
9 that if commenters raise the kinds of issues that you  
10 just raised, we may end up needing to include in the  
11 definition of what an approvable State plan is, you  
12 know, at least some sense of an answer what happens  
13 if a state is off -- off target and persistently off  
14 target.

15                   You know, again, we can't provide an  
16 answer to that question -- at least we don't think we  
17 can provide an answer to that question -- if Congress  
18 didn't give us the authority, you know, to put, you  
19 know, more than a certain number of teeth in the  
20 program; but if we get comments saying, you know,  
21 there's got to be -- you know, you can't just allow  
22 states to put themselves and the Federal EPA in this

1 endless do-loop of catching up to the states tra- --  
2 you know, proposed trajectory, then, you know --  
3 then, you know, we may -- we may use that as an  
4 opportunity for some creative thinking about what --  
5 what has to be in a State plan up front for us to be  
6 able to improve it.

7 COMMISSIONER DEL VALLE: Thank you.

8 CHAIRMAN SCOTT: Let me ask about a couple --  
9 let me ask about a couple of -- shifting gears on  
10 you -- sorry to do this -- like a couple of -- kind  
11 of the practical application of how we're unpacking  
12 all of this and Jim Ross was doing that this morning  
13 talking about the actual numbers and what they mean  
14 on a rate-base standard.

15 A lot of the question becomes the  
16 conversion of rate-base into mass-base and I know  
17 there's -- one of the many papers that's out there  
18 that talks about this, but is there any thought that  
19 EPA would have toward -- again, if enough comments  
20 asked for that, to doing that themselves to make sure  
21 that we're -- if we're looking at a mass-based  
22 program that we're starting from the same assumption

1 that you guys would be.

2 MR. JOE GOFFMAN: We've heard that -- different  
3 forms of that request relatively frequently since  
4 June 2nd. What -- you know, perhaps, to illustrate  
5 your point that there may be too much flexibility,  
6 what we wanted to do was acknowledge that a state's  
7 ultimate emissions would potentially vary -- the way  
8 it got to the equivalent of its carbon intensity in  
9 terms of the actual emissions would vary depending on  
10 what kinds of programs the State decided to adopt, in  
11 other words, how heavily they were going to -- a  
12 state would rely on renewable energy or reduced  
13 energy efficiency.

14 So our technical documents were a  
15 little bit circumspect because we wanted to give  
16 states that latitude. What we heard is that, you  
17 know, we could end up -- what we've heard is that  
18 states are anxious about ending up in a situation  
19 where they are sort of chasing their own tails and,  
20 you know, trying to come up with a number and not  
21 knowing whether we're going to improve it.

22 So we're entertaining an off

1 therapeutic request at this point to put out at least  
2 some illustrative numbers for each state that a state  
3 could either choose as its number, in other words,  
4 essentially incorporate in its -- you know, by  
5 reference the number we calculated or exercise the  
6 option of coming up with its own number; but at least  
7 the former would give states a demonstration as to  
8 what we were anticipating the calculations were going  
9 to look like.

10 CHAIRMAN SCOTT: Okay. Thank you.

11 And, again, in regard to kind of  
12 practical compliance with this, there's a lot of  
13 discussion about multi-state programs and you know  
14 we're involved with a lot of other states at least  
15 exploring that to see what might make some sense for  
16 us, if anything, and one of the things that's come  
17 up -- and this question I know has been raised here  
18 before about the -- kind of the technical platforms  
19 for doing some of the multi-state trading, whether  
20 that's on GHGs, allowances or on things like  
21 renewable energy credits of some kind.

22 Is that something that either the

1 Agency or under the Agency's auspices could be --  
2 could be created to -- rather than states having to  
3 come up with -- you know, you might have 15 different  
4 multi-state options and they're all coming up with  
5 different trading platforms. Would it make sense  
6 for -- for the agency to do something along that  
7 regard? You've done that before.

8 MR. JOE GOFFMAN: Yeah. There's -- you know,  
9 there is precedent for our -- essentially using our  
10 information technology resources to create the  
11 tracking and training platforms that states could use  
12 or even individual emitters could use and if  
13 that's -- if there's an interest in that, then I  
14 can't -- we haven't identi- -- you know, all the  
15 precedent so far comes down to the side of our  
16 finding a way to do that.

17 CHAIRMAN SCOTT: I have one more and I'll let  
18 you go. Again, we really appreciate it. It means a  
19 lot to us to have you here and to answer all the  
20 questions -- and this is more philosophical, I think,  
21 more so than kind of the practical questions -- but  
22 in terms of multi-state plans and a lot of discussion

1 about that and obviously we've got RGGI as a  
2 precedent and other groups of states have thought  
3 about and worked on, you know, different ways to do  
4 that before -- including with other Clean Air Act  
5 Compliance Programs.

6           So, could you maybe -- just more going  
7 back to your presentation about the philosophy behind  
8 the rule, maybe talk about how you view multi-state  
9 and what are -- if you want to talk about it in terms  
10 of benefits or downsides to it, that's fine too; but  
11 just more the philosophy of the Agency toward  
12 multi-state programs as you were putting this  
13 together.

14           MR. JOE GOFFMAN: Well, we -- we're really, on  
15 some level, studiously neutral on -- on what's a  
16 threshold question for the states and the states  
17 alone to answer. With that said, we certainly  
18 repeatedly at length acknowledged in the preamble the  
19 high degree of interest in multi-state compliance  
20 programs and, you know, we're pretty forthright in  
21 talking about the fact that operating systems,  
22 organized markets, you know, in -- almost invariably

1     tend to operate multi-state footprints.  You know, we  
2     certainly acknowledged the RGGI Program, because of  
3     its attributes that is, you know, converted from --  
4     essentially converted from rate to mass and being a  
5     multi-state program.

6                     And I think in our discussions before  
7     June 2nd and since, we've -- and I believe we  
8     observed this in the preamble as well -- that nothing  
9     about the legal or administrative mechanics of  
10    implementing Section 111(d) that we had any control  
11    of would be an obstacle to states setting up  
12    multi-state programs, whether they were emission rate  
13    trading programs or allowance-based programs or  
14    something like the Great River approach.

15                    Whatever the principles those programs  
16    came up with, we would find a way to make basic  
17    mechanics of filing State plans and defining --  
18    defining what made them approvable not be an obstacle  
19    to that.

20                    I guess the last thing I would observe  
21    is that when we were given a chance ourselves to make  
22    an analogous decision was when we did the Cross-State

1 Air Pollution Rule which was finalized in 2011 and  
2 which was recently, if you will, affirmed by the  
3 Supreme Court. And it's -- the analogy is very  
4 rough, but because we thought that as both reflective  
5 of the way the electricity system operates and of,  
6 you know, atmospheric physics, we thought that a  
7 multi- -- that a multi-state regional-based program  
8 for dealing with socks and knocks, you know, met all  
9 the -- you know, all the applicable legal tests of  
10 110(a), 110(a)2(d) and so when we were given the  
11 chance to make that decision, we promulgated a  
12 multi-state -- a series of multi-state socks and  
13 knocks programs.

14 CHAIRMAN SCOTT: Well thank you very much. We  
15 really are respectful of your time. We appreciate  
16 you being here. Thank you very, very much.

17 MR. JOE GOFFMAN: Thank you very much for the  
18 opportunity.

19 CHAIRMAN SCOTT: We're going to move right into  
20 Building Block 1 now and our discussion on that we're  
21 going to hear from three folks on this and I'm just  
22 going to very briefly introduce them. Jim Ross, back

1 on the screen -- we've heard from him before -- and  
2 Barry Matchett, director of external affairs of NRG.  
3 I've worked with Barry for a long time as well as  
4 with the Veteran Law and Policy Center and, as you  
5 know, the NRG two weeks ago now devised -- let us  
6 know about some of their plans with respect to the  
7 units that they have acquired in Illinois, the  
8 coal-fired units that they've acquired here and we're  
9 interested in hearing about that and specifically  
10 with respect to Building Block 1 how that plays in.

11 And then from Dean Ellis, managing  
12 director of regulatory affairs of Dynegy. Dynegy had  
13 a number of coal-fired units in the state and then  
14 acquired the units that were formerly held by Ameren  
15 in this state and so a major player in terms of power  
16 generation in the state and so we really want to  
17 hear maybe 10 minutes or so from each of you and then  
18 we'll get to questions and try to stay on schedule as  
19 much as we can.

20 So we're going to start with Jim again  
21 and take it away.

22

1 PRESENTATION

2 BY

3 MR. JIM ROSS:

4 Okay. Thanks again and, as you  
5 mentioned, I'll go through Building Block No. 1 here  
6 which is heat rate improvement and my mission -- I'll  
7 keep it short -- is to point out the U.S. EPA has  
8 decided to use heat wave as a building block and then  
9 how the U.S. EPA came up with the amount doable for  
10 coal-fired -- (inaudible due to coughing) -- kind of  
11 a setup presentation for the next two speakers and  
12 it's much more straightforward and hopefully easy to  
13 understand here.

14 I start off by taking a slide from my  
15 previous presentation for those who saw that. As we  
16 see here, the Building Block 1, adjustment to the  
17 baseline downward of 6 percent. So that 6 percent is  
18 a key number to remember and referring to the black  
19 rectangle again -- we've heard this repeatedly  
20 throughout the day, so I don't want to talk about it  
21 too much -- but coal-fired energy use, take actions  
22 to increase their heat rate efficiency -- heat rate

1 or efficiency. Those are two different terms that  
2 I'll explain a little later and this, in turn,  
3 results in lower emissions while they're in the same  
4 line of coal.

5 So what is heat rate? Heat rate 101,  
6 I have it defined here is the efficiency of  
7 conversion from coal input to energy output. So HR,  
8 or heat rate, is the equation or fraction of heat  
9 energy input supplied by coal in BTUs over the energy  
10 output from the EGU in kilowatt hours, so the  
11 generation.

12 So you have heat input over generation  
13 and the efficiency is another way of expressing heat  
14 rate is calculated by dividing the equivalent BTU  
15 content of a kilowatt of electricity by a constant  
16 and that constant is 3,412 BTUs.

17 So, again, an example here, if you  
18 have a heat rate -- and these are realistic  
19 numbers -- if you have a heat rate of 10,140 BTUs per  
20 kilowatt hour, you divide that by 2,412, you come up  
21 with an efficiency of 34 percent.

22 Then the next bullet point down refers

1 to the heat content because there's two factors.  
2 Heat rate is not the only factor that plays a role in  
3 the emission for how much coal -- heat content of  
4 coal also plays a role, so I'm also giving you its  
5 due here.

6                   The heat content is measured by a  
7 million BTUs per ton of coal and it varies by coal  
8 type and the two common types in Illinois are  
9 sub-bituminous and bituminous coal and then the  
10 second bullet point at the bottom, the amount of coal  
11 used to generate electricity heat depends on the  
12 efficiency or heat rate of the EGU, and as I  
13 mentioned, the heat content. So those two factors  
14 come into play. And then the bottom bullet point is  
15 EGU efficiencies or heat rates -- kind of use them  
16 interchangeably throughout -- not only vary by the  
17 heat content, but vary by the type and size of the  
18 EGUs, the age of the EGU, the coal type, of course,  
19 emission controls and other factors.

20                   So why would U.S. EPA use heat rates  
21 as a policy or as a building block? Just quickly,  
22 changes can be made they uncovered that increase the

1 efficiency of an EGU and converting coal to energy.  
2 As I mentioned, a low amount of coal burned to  
3 produce the same amount of electricity is yellow and  
4 bolded is -- the main takeaway from this slide is  
5 it's desirable because it results in less pollution  
6 per the amount of coal burned with less carbon  
7 intensity. You heard that term and you see that term  
8 used throughout the Clean Power Plan.

9           The lower the heat rate, the better.  
10 The more power produced per the amount of coal  
11 burned -- and we've referred often to numerator and  
12 the denominator in our fraction and equation -- so  
13 the lower the heat rate, the better and lower the  
14 heat rate equals higher efficiency. So somewhat  
15 counterintuitive, that the lower the heat rate, the  
16 better is much more easily understood, I believe, in  
17 light -- it's equal and more play -- when we talk  
18 about heat rate improvements, everybody can relate to  
19 the higher efficiency the better. So, again, that's  
20 easily understood.

21           So the takeaway from this slide is  
22 heat rate can affect CO2 emission. So U.S. EPA

1 looked at heat rate and decided to make it building  
2 block, again, why? What was this based on? It was  
3 primarily based on two things. They reviewed several  
4 studies and in particular the 2009 Sargent and Lundy  
5 study that looked at best practices and equipment  
6 upgrades, upgrades to boilers, steam turbines and  
7 control systems in particular and they came up  
8 with -- the study concluded that 4 to 12 percent  
9 improvement in heat rates or efficiencies are  
10 possible.

11 And then the second item they looked  
12 at, they reviewed -- and Joe Goffman had referred to  
13 this -- they looked at historical heat rate data and  
14 they had this data available to them. Existing EGUs  
15 are required to report this data to the U.S. EPA or  
16 report emission and generation data from which heat  
17 rate inefficiencies can be calculated.

18 So they looked at the data and they  
19 had data evidence where it became apparent through  
20 reviewing the data that there were 3 to 8 percent  
21 improvements possible to heat rate -- so they saw a  
22 heat rate improvements from one year to the next in

1 the data.

2                   So they concluded in -- somewhat  
3 logical and reasonable -- that there's a strong basis  
4 for considering heat rate improvements as an approach  
5 to the carbon intensity or the CO2 emissions from  
6 EGUs.

7                   So the heat rate can be improved, that  
8 was from the last slide; but what's a reasonable  
9 amount? And -- so they looked at two principal areas  
10 here after they made a decision that heat rate could  
11 be used as a building block. They looked at best  
12 practices for operation and maintenance and they  
13 looked at equipment upgrades -- and I'll take each of  
14 these one at a time in the next two slides.

15                   So best practices to operating and  
16 maintenance procedures, so they assessed the  
17 variability in hourly heat rates of around 900 EGUs,  
18 over a decade so they looked at a heck of a lot of  
19 EGU and data and they noticed the heat rate  
20 variability, so the heat rate and all this data for  
21 these EGUs is going up and down over the years and  
22 they concluded that if you reduce the variability, it

1 more often than not was associated with improved heat  
2 rate.

3                   So quantifying that, looking at 1.3  
4 percent to 6.7 percent was the potential for  
5 improvement in the average heat rate by reducing this  
6 variability and that's, again, stated in the  
7 conclusion at the bottom. So the conclusion is  
8 reasonable estimates for purposes of developing the  
9 goals was at a 4 percent improvement in heat rate and  
10 this is the key, through best practices to reduce  
11 hourly heat rate variability. So reduce the heat  
12 rate variability at the EGUs and you can expect a  
13 4 percent improvement in the efficiency of the heat  
14 rate.

15                   The second item I looked at were  
16 equipment upgrades. And, again, they referred back  
17 to the 2009 Sargent and Lundy study and they saw that  
18 there was a whole set of measures that could be taken  
19 in the way of equipment upgrades and equipment  
20 upgrades, for example, new control systems, new  
21 computer controls -- they often refer to these as  
22 Neural Networks is my understanding -- can be

1 installed. That -- facilities are not cheap, they're  
2 upwards of half a million dollars, but they can  
3 result in fairly significant improvements to heat  
4 rates and that's just one example. In other words,  
5 the air heaters -- so including the transfer of heat  
6 between combustion air and the affluent through gas  
7 air. So measures taken to reduce the air heater  
8 leakages could also result in increased heat rates.  
9 So they looked at some of these equipment upgrades  
10 and they said there was a 4 percent improvement to  
11 heat rate or efficiency possible there.

12 Now, they recognize that some of these  
13 measures may have already been taken, so they did a  
14 fairly simple thing. They -- you know, they made an  
15 estimate or an assumption that about half of these  
16 may have already been taken, so they multiplied the  
17 4 percent by one-half and they came up with 2  
18 percent. So that's pretty straightforward there.

19 So this is a simple slide. So looking  
20 at the two measures that they looked at, again, they  
21 decided 4 percent and best practices to operation and  
22 maintenance and about 2 percent from equipment

1 upgrades, you add those together, you get 6 percent  
2 and that is, in fact, what they used for Building  
3 Block 1.

4           And if you want more information -- I  
5 went over this fairly quick -- but it's discussed in  
6 more detail. They actually list out the studies that  
7 they looked at and talked more about the data that  
8 they analyzed to come up with what can be done and  
9 why it's appropriate to do in the technical support  
10 document. In particular, the one you want to look at  
11 here is their Greenhouse Gas Maintenance Measures.

12           And, again, another segue slide, so  
13 the U.S. EPA believes there are four primary ways to  
14 improve the heat rate and I list them out here:  
15 Minimizing heat loss, I mentioned earlier about the  
16 air heaters, I did that intentionally because that's  
17 one of the primary ways to improve the heat rate;  
18 equipment refurbishment, when I think of  
19 refurbishment, it's to make old equipment operate  
20 better; plant upgrades, I believe that refers to the  
21 new equipment, so install new boilers and --  
22 et cetera; and improved operation and maintenance

1 schedules. So check more often for those leaks and  
2 improve your heat transfer.

3 And that's about it.

4 CHAIRMAN SCOTT: Okay. Thanks, Jim. I think  
5 we're going to save questions until we've heard from  
6 the other two gentlemen, so let's start with Barry  
7 Matchett and then go on to Dean Ellis.

8 Welcome, Barry.

9 PRESENTATION

10 BY

11 MR. BARRY MATCHETT:

12 Thanks, Mr. Chairman, Commissioners.

13 It's an honor to be here to present to  
14 you today. Good afternoon. I'm Barry Matchett. I'm  
15 director of external affairs for NRG Energy. NRG  
16 Energy is a Fortune 250 and S&P 500 Index company.  
17 We have about 10,000 employees in 47 states. We are  
18 leading the nation in customer-driven change in the  
19 U.S. energy industry by delivering cleaner and  
20 smarter energy choices by building one of the  
21 nation's largest and most diverse competitive power  
22 portfolios.

1                   Our power-generated facilities  
2     generate about 53,000 megawatts from solar, wind,  
3     fossil and nuclear, enough to power 42 million homes.

4                   NRG is the largest owner of solar  
5     energy and the third largest owner of renewable  
6     energy in the nation.

7                   Our resale electric companies serve  
8     almost 3 million industrial, commercial and  
9     residential customers throughout the country,  
10    including more than 25,000 right here in Illinois.

11                  I've been asked today to offer  
12    testimony on our position relative to Building  
13    Block 1, coal plant heat rate improvement; but to do  
14    that, I need to give you a quick overview of our  
15    assets in Illinois, today, as that informs our  
16    position on this policy proposal.

17                  So NRG Energy has been operating  
18    power-generated facilities in Illinois' wholesale  
19    energy market since 2001 and we acquired Edison  
20    Mission Energy's Midwest Generation Power Plant fleet  
21    on April 1st of this year, 2014. That includes four  
22    operating coal plants in Joliet, Pekin -- that plant

1 is known as Powerton -- Romeoville -- that plant is  
2 known as Will County -- and in Waukegan, and we also  
3 own three retired coal plants in and around Chicago,  
4 Fisk, Crawford and Collins.

5 NRG conducted an intensive analysis of  
6 Midwest Generation coal plants which culminated with  
7 our announcement on August 7th of this year where we  
8 announced plans to invest \$567 million in  
9 improvements to that fleet.

10 As I will describe, the plans for the  
11 four operating stations will significantly reduce  
12 carbon and other emissions through a combination of  
13 repowering and fuel conversions, environmental  
14 controls and unit retirements.

15 At Will County, Romeoville, we will  
16 cease coal operations at Unit 3 in the first quarter  
17 of 2015.

18 At Joliet, we will convert all Joliet  
19 units from coal to natural gas by mid 2016.

20 At Powerton in Waukegan, we will  
21 invest significantly in emission control technology  
22 at both of these units -- both of these stations.

1                   These investments will ensure full  
2 compliance with Illinois and federal emission  
3 requirements. NRG is making an additional investment  
4 of \$3 million in clean energy in the City of  
5 Waukegan.

6                   It's important to note that these  
7 projects will be funded entirely by NRG without any  
8 financial support from Illinois ratepayers. We view  
9 our announcement as the first step in NRG's long-term  
10 commitment to lead Illinois to clean energy sources.

11                   The emission reductions associated  
12 with these changes to our fleet are dramatic,  
13 especially as they relate to carbon dioxide.

14                   In 2013, the Midwest Generation fleet  
15 emitted approximately 27 million tons of carbon  
16 dioxide. In 2020, we estimate that this fleet will  
17 emit 11 million tons of carbon dioxide, a  
18 16-million-ton or 60 percent reduction.

19                   Another coupled salient comparison.  
20 The carbon dioxide reductions are equivalent to  
21 taking 3.4 million cars off the road each year, which  
22 is about 70 percent of all the autos registered in

1 Illinois; the emission reductions are four times  
2 greater than those that occurred when we closed Fisk  
3 and Crawford; and, finally, the carbon reductions  
4 represent more than 50 percent of the total carbon  
5 reductions necessary by 2030 to meet EPA's proposed  
6 carbon dioxide emission reduction requirements for  
7 existing EGUs.

8                   This plan represents a move to  
9 reliance on less carbon-intense resources while  
10 maintaining the appropriate diversity needed for  
11 reliability in a cost-effective manner.

12                   And this brings us to our position on  
13 Building Block 1. Our plants have been operating in  
14 this deregulated market for 17 years. Our plant  
15 managers are charged with maintaining reliability and  
16 safe operations while operating as efficiently as  
17 possible in compliance with environmental  
18 regulations.

19                   So there are three key points to  
20 consider when contemplating heat rate improvements to  
21 our fleet:

22                   Number one, competitive market

1 operations have strongly incentivized economic heat  
2 rate improvements in merchant coal fleets.

3                   Number two, not all heat rate  
4 improvements work on all plants as the EPA appears to  
5 have assumed and as Mr. Ross just noted.

6                   And, number three, many more expensive  
7 heat rate improvements remain risky, from our  
8 perspective, especially in light of the relatively  
9 aggressive goals of the draft 111(d) rule which will  
10 require significant reductions in output and, hence,  
11 push less economic coal plants into retirement.

12                   It would be imprudent to install a  
13 heat rate improvement at a facility that would likely  
14 shut down or be replaced before that investment is  
15 paid back. Thus, we think, at least in Illinois,  
16 that EPA's Building Block No. 1 overstates the amount  
17 of CO2 reductions that heat rate improvements can  
18 actually deliver here.

19                   We recommend that the State plan  
20 Illinois regulators developed in response to EPA's  
21 final rule should not rely on this building block for  
22 actually delivering substantial emission reductions.

1     However, retirements and repowering of substantial  
2     amounts of less economic coal plants should be  
3     expected in Illinois.

4                   Such voluntary retirements coupled  
5     with effective state laws like the Renewable Energy  
6     Standard supporting the growth of renewables and  
7     competitive distributed energy resources, including  
8     competitive energy efficiency, demand response and  
9     distributed solar identifies what we think is a much  
10    more powerful and low-cost path towards Illinois  
11    achieving the emission reductions called for under  
12    the EPA's proposed rule.

13                   As I mentioned, NRG's repowering plan  
14    will achieve more than 50 percent of the reduction  
15    that EPA requires in Illinois by 2030 without the  
16    imposition of additional regulatory costs on Illinois  
17    ratepayers.

18                   While fuel diversity remains an  
19    important key to maintaining reliability, we believe  
20    that in a carbon-constrained future, heavy emphasis  
21    needs to be placed on investing in cost-effective  
22    demand side energy efficiency and renewable energy.

1                   As this Commission well knows,  
2     Illinois has seen robust growth in both renewable  
3     energy and energy efficiency in the last decade. We  
4     know renewables in energy efficiency work extremely  
5     well in Illinois today and we strongly believe that  
6     Illinois, by supporting policies that unleash  
7     competitive forces to drive both customer side and  
8     grid side renewable energy and energy efficiency  
9     solutions lead the Midwest, if not the nation, in a  
10    lower carbon energy future.

11                   So to close, our view is that EPA  
12    Building Block No. 1 is likely to overestimate the  
13    amount of emission reductions that can be achieved  
14    through heat rate improvements at Illinois coal  
15    plants.

16                   As a result, we recommend that  
17    Illinois regulators not develop a State plan that  
18    relies on heat rate improvements to produce the  
19    emission reductions U.S. EPA has targeted in their  
20    proposed rule from this building block.

21                   Instead, we believe that replacement  
22    and repowering of existing coal plants, coupled with

1 significant increases in competitively provided  
2 renewable energy, energy efficiency and demand  
3 response represents the most cost-effective path for  
4 achieving the decarbonization goals of the rule in  
5 Illinois.

6 NRG looks forward to working with the  
7 State and other stakeholders to craft such an  
8 approach. Thank you.

9 CHAIRMAN SCOTT: Thanks, Mr. Matchett.

10 Mr. Ellis?

11 PRESENTATION

12 BY

13 MR. DEAN ELLIS:

14 Chairman Scott, Commissioners, thank  
15 you for the invite to come in today to talk with you  
16 about the Clean Power Plan as proposed. I have a  
17 presentation that I've prepared and I'll largely work  
18 from that. I also include the presentation as a  
19 leave-behind, an included reference -- to leave as  
20 reference material also. So I'll touch on a number  
21 of points in the presentation.

22 Beginning with the first slide, again,

1 Dynegy operates a diverse fleet of coal and natural  
2 -- natural gas generators across the country. The  
3 photo here on the front slide is of our  
4 1,200-megawatt natural gas-fired combined cycle plant  
5 in Minooka just down the road.

6 Slide 2, just to briefly lay out the  
7 presentation, I'll give a brief introduction to  
8 Dynegy, touch on, very shortly, the four building  
9 blocks, not dwelling on any of it because we've  
10 already discussed them; touch on, specifically,  
11 Building Block 1. Building Block 2, I'll defer most  
12 of the discussion until the next panel discussion and  
13 then I'd like to touch on a number of other  
14 considerations that -- while may not necessarily be  
15 directly under Building Blocks 1 or 2, they are very  
16 much -- they very much can affect the outcome of the  
17 State's compliance with Building Block -- or using  
18 Building Blocks 1 and 2 for compliance.

19 Slide 3, again, introduction to  
20 Dynegy. Dynegy operates from the Northeast to the  
21 West Coast. We, of course, operate in two of the  
22 RGGI states and also California under it's AB32

1 regime. Our coal fleet is located exclusively in  
2 Illinois. We do have 10 plants in Illinois. Again,  
3 the 1,200-megawatt natural gas-fired at Kendall  
4 Station and then the nine plants -- and, Chairman  
5 Scott, you referred to the Ameren acquisition which  
6 we've showed here.

7 Slide 4, just a closer view of  
8 Dynegy's operations in Illinois. Again, we have  
9 10 plants, nine of which are coal plants. That  
10 represents nine of, roughly, the 17 plants statewide  
11 that Mr. Ross referred to earlier.

12 The one thing that I'd like to stress,  
13 similar to NRG is Dynegy a merchant generator owner  
14 and operator, otherwise known as an independent power  
15 producer. We are not a utility. We do not have  
16 captive rate customers. We're a -- rate-based.  
17 We're beholden to the market. We do sell our power  
18 into the market either directly or through bilateral  
19 contracts.

20 Our next slide, Slide 4, just an  
21 overview, I won't go into it; but Dynegy largely  
22 views Building Block 1, as Mr. Ross had said, inside

1 the fence and within our control. Building Block 2  
2 will significantly affect our operations. So while  
3 not inside the fence, it is something that we have  
4 taken a close look at and then Building Blocks 3 and  
5 4 we'll discuss at a later date.

6 Slide 6, Building Block 1, heat rate  
7 improvements. What I've done here is I've attempted  
8 to illustrate projects that Dynegy has either  
9 recently completed or that we're currently working on  
10 or that we're considering for the future. And what I  
11 tried to do here was give three concrete examples of  
12 projects and the result in heat rate improvements.

13 As Mr. Matchett had said, we think  
14 that the 6 percent goal is fairly aggressive. It may  
15 be more aspirational than practical. As an  
16 independent power producer, we continuously strive to  
17 improve the efficiency of our plant. It's -- part of  
18 our survival is to continuously improve and we've  
19 made a number of improvements over the past 10 to 15  
20 years in these facilities.

21 So the first example is a turbine  
22 upgrade. As I mentioned -- mention on the slide,

1 it's replacing all three sections of the turbine.  
2 Keep in mind there's two main components to a  
3 generator: The turbine and the generator. The  
4 generator makes the electricity; the turbine turns  
5 the generator.

6 This particular project that's under  
7 consideration is a complete replacement of the  
8 turbine upgrade. It's the only turbine on our fleet  
9 that has not yet been upgraded. So of the nine  
10 plants, this is the only one left to do the  
11 upgrade -- or to evaluate the upgrade on. It has an  
12 approximate capital cost of 30 to \$40 million just to  
13 give you some idea of the magnitude of the project  
14 and this project will result in a 1.5 percent heat  
15 rate improvement or efficiency improvement.

16 The next project is an efficiency --  
17 what we term an efficiency project at our combined  
18 cycle plant. Again, while the 6 percent goal is more  
19 geared towards -- or intended to be applied to coal  
20 plants, of course, as Mr. Ross walked through the  
21 formula, efficiency improvements at the combined  
22 cycle fleet will also help the State achieve its

1 targets.

2                   So this particular efficiency project,  
3 which is called an Advanced Gas Path Project -- an  
4 Advanced Gas Upgrade -- I'm sorry -- again, has a  
5 capital cost very similar to a turbine upgrade,  
6 approximately \$30 million, and it also results in,  
7 just coincidentally, a 1.5 percent heat rate  
8 improvement. We have made two of these upgrades  
9 already. They resulted in a 1.4 and a 1.6 percent  
10 heat rate improvement or efficiency improvement  
11 respectively, so I split it down the middle and  
12 called it 1.5.

13                   One important note that I'd like to  
14 make is the degradation of the efficiency and heat  
15 rate of the coal generation fleet in Illinois.  
16 Illinois, of course, has some of the strictest air  
17 pollution, air emission standards on the books  
18 through the Multi-Pollutant Standard and the Combined  
19 Pollutant Standard and this has required a number of  
20 controls already installed on the fleet, controls  
21 that reduce the amount of sulfur dioxide, nitrogen  
22 oxide, particulate matter.

1                   And in this particular case, I took  
2 what's termed a scrubber -- that's an SO2 control  
3 that was installed at one of our plants. This  
4 actually degraded the heat rate at the plant by 1.8  
5 percent. A scrubber is a very large project at a  
6 plant. Scrubbers can cost anywhere from several  
7 hundreds of millions of dollars up to half a billion  
8 dollars on a plant and they consume a tremendous  
9 amount of energy. So by consuming energy, they  
10 actually degrade the efficiency or the heat rate of  
11 the plant.

12                   So as we move forward in the future  
13 and we continue to install emission controls on the  
14 plants, they can have this countervailing effect on  
15 the heat rate.

16                   So in conclusion, on this particular  
17 slide, just I implore the U.S. EPA and the State to  
18 respect the past improvements that have been made in  
19 the fleet; further improvements, when and where  
20 possible, will require a significant investment.

21                   The next slide that I've included here  
22 is related to Building Block 2. I won't go into any

1 level of detail because on the next panel discussion,  
2 we'll get into it more; but there are a number of  
3 issues around Building Block 2, at least one of which  
4 we can think of what will impact Building Block 1 and  
5 I'll illustrate that on the next slide.

6                   On Slide No. 8, I show what's termed  
7 in our industry as heat rate curve. This is an  
8 efficiency curve. The horizontal axis and the bottom  
9 show you the output of the plant; in this particular  
10 case from zero to about 500 megawatts; the vertical  
11 axis of the curve is the heat input, which Mr. Ross  
12 alluded to before. The higher you are on this curve,  
13 the less efficient the plant is; the lower you are on  
14 the curve, the higher the efficiency of the plant.  
15 It's not unlike your vehicle. It's designed to be  
16 most fuel efficient at a certain speed, generally  
17 highway speed. Power plants are much the same.  
18 They're designed to operate at peak output and most  
19 efficiently at that peak output.

20                   As you reduce the output of a power  
21 plant, it tends to degrade the efficiency. So in  
22 this particular case, as you slide down this curve

1 and you lower the output of the plant, it does  
2 degrade the efficiency of it and in this particular  
3 case -- and this is an actual heat rate curve that we  
4 grabbed from one of our plants, so it's derived from  
5 actual data. The low -- operating at the lowest  
6 level compared to the highest degrades the efficiency  
7 by 25 percent.

8                   So this comes back to the discussion  
9 that we'll have in the next panel about increasing  
10 the combined cycle fleet to a 70 percent capacity  
11 factor. That will offset the output and the capacity  
12 factors of the existing fossil coal fleet thereby  
13 further degrading the efficiencies of the coal fleet.  
14 I say this simply to illustrate the point that there  
15 are a number of countervailing effects that these  
16 different rules and intricacies of the rule itself  
17 can have.

18                   Just a couple of other related issues,  
19 again, perhaps not directly related to Building  
20 Block 1, but things that will have some effect. Coal  
21 to gas conversion. A number of previous speakers  
22 alluded to the coal to gas conversion plants. It's

1 something that Dynegy is evaluating very seriously.

2 I've displayed here on Slide 9 what's  
3 called in our industry, dispatch stack. It shows  
4 that cost to turn on effectively generators as the  
5 load in the state comes up. So the state has,  
6 approximately, 30-plus gigawatts or 30,000 megawatts  
7 of loads. So as the load cycles through the day, as  
8 people turn it on and off, lights, and use  
9 electricity, the load comes up and falls off  
10 throughout the day and over the course of a year.

11 So in this particular case, I've  
12 illustrated -- this is an actual dispatch stack that  
13 we've produced based on real cost. I've assumed the  
14 cost of a coal unit at \$2 per MMBTU. That same coal  
15 unit, if simply converted straight up to natural gas,  
16 assume \$4 per MMBTU natural gas, it effectively  
17 doubles its dispatch cost.

18 And you can't necessarily see it in  
19 the room here, but on the presentation, I've shown  
20 three units that have been announced to be converted  
21 from coal to natural gas and those plants have moved  
22 from the blue range on the curve, that is, the coal

1 dispatch curve, to the higher end of the gas dispatch  
2 curve. So what this shows is the coal to gas  
3 conversion will effectively push these plants further  
4 up the dispatch stack.

5                   Also, conversion from coal to natural  
6 gas degrades the efficiency. In this particular  
7 case, we took a look at actual test data that we had  
8 from one of our plants where we ran it on natural  
9 gas, we took the output -- the data output, compared  
10 it before and after, and the degradation was 1.5  
11 percent.

12                   So, again, these are some  
13 countervailing effects buried within the rule, things  
14 that we're looking at seriously and we're thoroughly  
15 evaluating.

16                   The one thing that I do want to  
17 mention -- and this relates to some comments  
18 Mr. Matchett made -- is that while the conversion  
19 from coal to natural gas can be costly, leveraging  
20 the existing sites can be the most effective -- or  
21 cost-effective means of meeting the State -- helping  
22 the State meet its goal because the existing sites,

1 of course, are already connected to the power grid,  
2 presumably no transmission would be needed and a  
3 number of the sites already do have some gas.  
4 It's -- typically in a coal plant, gas is used as  
5 start-up fuel only so, again, there would be upgrades  
6 that would be required; but in some cases, there  
7 already is gas to -- in some form or another to the  
8 sites.

9           The next slide, the market design in  
10 Illinois between Northern Illinois and Southern  
11 Illinois is dramatically different and until we get  
12 the market design correct in Southern Illinois, a lot  
13 of these discussions about upgrades and,  
14 specifically, the cost to make the upgrades will be  
15 moot.

16           And I gave this example -- we have two  
17 plants in this state that are only 3.5 miles apart as  
18 the crow flies in the Peoria area. One is what's  
19 called -- is located in what's call the MISO market,  
20 the Mid-Continent Independent System Operator market;  
21 the other is in PJM market. And I took the clearing  
22 price of the last auctions that were run in both

1 markets and I just picked a 500 megawatt proxy plant  
2 at each location.

3                   The capacity revenue in -- for the  
4 plant in the PJM market in this particular case for  
5 that particular size would be about \$22 million a  
6 year. That same plant, if located just 3.5 miles  
7 away and in the MISO market, would be \$3 million a  
8 year. Only 14 percent of the revenue of a similar  
9 situated plant and when you take those numbers and  
10 you put them against the backdrop of some of the  
11 efficiency improvements that I gave before, you could  
12 see that the revenue in the MISO market is most  
13 likely going to be insufficient to support the  
14 upgrades.

15                   The Clean Power Plan as currently  
16 drafted specifically excludes offsets. Offsets, if  
17 you're not familiar, are simply measures that can be  
18 taken to reduce the amount of CO2 in the atmosphere  
19 elsewhere, so outside the fence projects and I've  
20 given two examples over the next two slides.

21                   Dynergy, nearly 15 years ago, planted  
22 about 9 million trees across eight states in the

1 Mississippi River Valley. This is a certified,  
2 verified carbon offset project. It reduces about  
3 101,000 metric tons of CO2 per year. And at the time  
4 of the planting, about 15 years ago, it was the  
5 largest private forestation project developed  
6 exclusively for reducing CO2 and I just picked some  
7 numbers, tried to compare it to the size of a  
8 windfarm. It offsets approximately the same amount  
9 of CO2 as a 60-megawatt windfarm would.

10                   Unfortunately, the Clean Power Plan,  
11 as it exists now as proposed specifically excludes  
12 these cross-sector offsets. And despite the fact  
13 that RGGI, California's AB32 and the Energy Policy  
14 Act of 2005 also recognized the need for offsets.

15                   On the next slide, Slide 12, I give  
16 another example of an offset project. Fly ash from  
17 coal production is recycled for beneficial reuse in  
18 concrete and in our particular case, we beneficially  
19 recycled the fly ash for this purpose: We're looking  
20 at a new technology that will significantly reduce --  
21 further reduce the amount of Portland cement that  
22 needs to be produced; and in this particular case,

1 this project, if successful, has the potential to  
2 offset the amount of CO2 equal to about a  
3 200-megawatt windfarm.

4 So the beneficial reuse of fly ash, as  
5 an example, has many benefits in addition to reducing  
6 CO2. Of course, it reduces the need for further  
7 development or infrastructure or disturbing natural  
8 resources and, again, it's something that Dynegy  
9 would like to see the Clean Power Plan consider and  
10 we think that it would significantly help the State  
11 of Illinois and the other states meet their goals.

12 The second to last slide, Slide  
13 No. 13, compliance, I tried to give a very simple  
14 illustrative example, but I don't think I did as good  
15 a job explaining this as Mr. Litz did of compliance.  
16 We do advocate for a mass-based Cap-in-Trade Program.  
17 We believe this is the least cost and most flexible  
18 means for the State to reach its goal. I've actually  
19 mixed a couple of the concepts here that Mr. Litz  
20 referred to before.

21 The illustration that I put up there,  
22 it's the easiest to put in a simple graph. It's a

1 rate-based Cap-in-Trade Program where you have an  
2 emission's target -- an emission's rate target and  
3 facilities subject to the Rule, affected sources that  
4 is -- that produce under that emission's target would  
5 generate credits for sale to the affected sources  
6 that generate in excess of that target.

7                   That's a rate- -- an example of a  
8 rate-based Cap-in-Trade Program. We actually feel  
9 that a mass-based program probably would work a  
10 little bit better in Illinois just because of the  
11 relatively low -- little output from the existing gas  
12 fleet in Illinois. As Mr. Ross put up the megawatt  
13 hours that are produced each year by the different  
14 fuel types, there may not just be enough flexibility  
15 in Illinois to adopt a rate-based limit such as the  
16 example here; but the two are very similar.

17                   So the last slide, Slide 14, the  
18 market design in Southern/Central Illinois must be  
19 improved in order to incent the investments that both  
20 the U.S. EPA and the State will depend upon. The  
21 U.S. EPA building blocks should recognize a lot of  
22 practical limitations that we feel are out there and

1 also the increased use of natural gas which we'll  
2 talk about in the next panel.

3 Carbon dioxide can also be  
4 significantly reduced through offset programs and  
5 these offset programs have numerous benefits  
6 outside -- outside the reduction of CO2 and then,  
7 lastly, we do support, at this point, it looks like  
8 implementation of a mass-based Cap-in-Trade Program  
9 will most likely provide the lowest cost compliance  
10 pathway and, hence, the least cost to consumers.

11 And then I'll just close and say that  
12 over \$2 billion has been invested in environmental  
13 upgrades at the Dynegy fleet and we have another \$250  
14 million planned over the next several years.

15 Thank you.

16 CHAIRMAN SCOTT: Questions? Any Commissioners?

17 COMMISSIONER McCABE: Sure.

18 CHAIRMAN SCOTT: Commissioner McCabe.

19 COMMISSIONER McCABE: We've heard statistics  
20 that roughly 8 percent of the generation called on in  
21 the polar vortex is due to retire. Just any thoughts  
22 from you on how the change in both of the retirements

1 and the increased reliance on natural gas will affect  
2 reliability?

3 MR. DEAN ELLIS: Commissioner, I think that's a  
4 very valid question and it's something that  
5 internally we've wrestled with. Clearly the  
6 statistics have shown that there were a number of  
7 plants called on during the polar vortex that are  
8 slated for retirement. This rule, like a number of  
9 the environmental rules, compound the likelihood of  
10 retirement. So this rule would only exacerbate --  
11 presumably exacerbate the pressure on the existing  
12 fleet to perform during those extreme weather events.

13 MR. BARRY MATCHETT: In discussions leading up  
14 to the announcement made a week ago relative to our  
15 fleets, it was clear that the effect of the polar  
16 vortex on our operations guise was profound. They --  
17 when looking at the adjustments that were necessary  
18 to make to the fleet at each location, the effect of  
19 the polar vortex was considered.

20 So the premise of your question is  
21 exactly right, at least from our perspective and  
22 Dynegy's perspective, that there needs to be

1 consideration going forward in how to deal with  
2 extreme events and I would actually argue extreme  
3 events on both ends of the spectrum, both extreme  
4 cold and extreme heat, both of which are predicted  
5 under all climate models.

6           So from our perspective -- and you  
7 heard me use the term "fuel diversity." There's an  
8 emphasis in fuel diversity in our going-forward  
9 plans. We will continue to provide reliable power as  
10 possible and I know that we have discussions going on  
11 to ensure that we're able to back that up. Beyond  
12 that -- I don't know that we're ready to announce  
13 anything beyond that; but clearly the operators of  
14 our units are keenly aware of reliability as a  
15 critical piece for repairs.

16           CHAIRMAN SCOTT: Let me ask a question going  
17 back to something you said, Mr. Matchett, 3.2 of  
18 which were kind of two sides of the same coin one of  
19 which being that some of the heat rate improvements  
20 don't necessarily work on all the plants as EPA  
21 assumed that they do and then the second point is  
22 that even if it did, it may not make any sense

1 economically for you to do it. You -- can you give  
2 me a breakdown as to -- as to where that sits with  
3 your fleet -- and I'm going to ask the same question  
4 of Mr. Ellis. I mean, are we dealing with more of an  
5 economic issue or are we dealing with more of a, This  
6 flat out can't work? Because the responses that we  
7 might have to that might be very different.

8 MR. BARRY MATCHETT: Sure. I think I'd -- I'd  
9 like to answer it this way: It's a little bit of  
10 both.

11 CHAIRMAN SCOTT: Okay.

12 MR. BARRY MATCHETT: My understanding -- and I  
13 think Mr. Ellis's various slides that we can use also  
14 in the next panel, that relates to the effect of  
15 investment -- any investment unit at a site and  
16 it's -- it's a perception by management of being able  
17 to pay for that.

18 At the end of the day, the decisions  
19 that are being made have to make economic sense.  
20 And, so, if you make an investment like the ones that  
21 Dynegy and I know that we've made, similar  
22 calculations -- and I would be happy to provide the

1 Commission with a summary of those when I go back and  
2 get such a summary -- but we're interested in -- you  
3 know, I think as Mr. Ellis said -- is spot-on. If  
4 you make an investment that is a significant  
5 multi-million dollar investment, it has to pencil out  
6 and if the economics don't work, then there's no  
7 incentive for merchant generators.

8           If we were in a state that was fully  
9 regulated, I think the answer would be very  
10 different; but as a merchant generator -- as an  
11 independent power producer, we have to be able to  
12 recover our costs through sales and those efficiency  
13 investments for heat rate, in our analysis, are not  
14 such that at this time that we should expect a 6  
15 percent improvement vis-à-vis the EPA's proposed --  
16 proposed rule.

17           CHAIRMAN SCOTT: Understanding the reluctance  
18 of about 6 percent, I think the EPA has taken  
19 comments on 4 percent as well as an alternative  
20 measure; but let me ask it this way then: The 567  
21 million in improvements that you've got planned, I  
22 realize a lot of that is based on Mr. Ellis talking

1 about the CPS process that we went through a few  
2 years ago, how much of it is that and then how much  
3 of it is -- is there anything that's planned with  
4 respect to heat rate improvements?

5 MR. BARRY MATCHETT: I'll find out. I don't  
6 know sitting here today.

7 CHAIRMAN SCOTT: Okay. That's fine. Thank  
8 you.

9 Mr. Ellis?

10 MR. DEAN ELLIS: Chairman Scott, the way we  
11 think of it right now, our initial view is, there's  
12 just practical limitations. There's just not much  
13 that can be further squeezed out of the plant, so  
14 it's not just a cost issue. In some cases it is a  
15 cost issue, but there's just a practical limitation  
16 to how much more we can get out of the plant.

17 One of the fundamental tenants of the  
18 electricity deregulation years ago was to drive  
19 efficiencies in the generation fleet through  
20 competition and to force the generation owners to  
21 continually improve efficiency as a means to survive  
22 and compete. So we continuously embark on this

1 process of whether it's upgrading software or  
2 controls or other improvements at the plant just  
3 simply to compete.

4 So, again, there's just -- there's  
5 practical limitation that at this point we just don't  
6 see the room left in the fleet and that's why we  
7 think some of the goals are probably more  
8 aspirational.

9 Some of the goals may not necessarily  
10 apply to certain fleets in certain states as they do  
11 in others. 4 and 2 percent targets are, of course,  
12 blanket across the 49 states and, obviously, some  
13 states probably have taken measures that other states  
14 haven't. Again, coming back to deregulation, I think  
15 deregulation has forced a number of improvements in  
16 the fleet in the states that have fully restructured  
17 and deregulated.

18 COMMISSIONER McCABE: I just wanted to get your  
19 thoughts. You both operate in multiple states on  
20 multi-state solutions.

21 MR. DEAN ELLIS: Having operated in two of the  
22 regions that have existing carbon regulations, one of

1 the problems that we see is this issue of leakage  
2 of -- both electricity production leakage and CO2  
3 leakage.

4 So first and foremost, it makes sense  
5 to get the country on a level playing field. These  
6 regional and one off state approaches do nothing but  
7 disadvantage the states that are in the programs with  
8 little overall effect on the CO2 and across the  
9 globe.

10 So first and foremost, we'd like to  
11 see, again, an approach across the country that puts  
12 the states on more of a level playing field. How  
13 each of the states gets there may not necessarily be  
14 problematic.

15 Each state could adopt a different  
16 mechanism to get there; but I think as long as the  
17 states are being -- at the end of the day -- measured  
18 and treated somewhat equitably, that would be most  
19 favorable, I think, to the states and the generators  
20 and ultimately the consumers in each of the states.

21 But as far as multi-state versus  
22 single state, at this point, again, as long as a

1 state doesn't just up and do something on its own  
2 that its neighboring states -- and its neighboring  
3 states do nothing, we don't see that as particularly  
4 helpful for the state itself.

5 MR. BARRY MATCHETT: You're right, we operate  
6 in a number of states that have existing multi-state  
7 cooperation on this issue, we have a lot of assets in  
8 the northeast and kind of are involved there, a lot  
9 of assets in the Southwest and in California, and we  
10 are operating -- and in conversations with  
11 decision-makers in those states as well.

12 I think, again, the key here is  
13 balance. Right? There are things to be done at a  
14 state level that you want to make sure if you're  
15 thinking multi-state, that your state is advantaged  
16 and at -- for sure not disadvantaged as Mr. Ellis hit  
17 the nail on the head.

18 So we need to be very careful when you  
19 think about Illinois relative to other states. There  
20 are -- we are early in this process. Our perception  
21 is we're early in this process. We have a number of  
22 states that surround Illinois that aren't being as

1 aggressive. I think previous speakers alluded to  
2 this. They aren't being aggressive in their approach  
3 to thinking about how we deal with this issue and how  
4 we deal with this draft rule.

5                   It would be unfortunate to, you know,  
6 sort of hang our hat on hoping that states that are  
7 currently, for whatever reason, not inclined to be as  
8 forward and as progressive as Illinois is, to hang  
9 our hat on some perceived cooperation at a future  
10 date with them when there are things that we can be  
11 doing immediately in Illinois to ensure that we are  
12 doing -- getting down the path.

13                   And, again, I recite back to things  
14 like renewable energy, which is in Building Block 3,  
15 energy efficiency, which is in Building Block 4 -- I  
16 know we're talking about those in September, but  
17 those are low hanging fruit on the activity that a  
18 state can undertake today -- that Illinois can  
19 undertake today that help get us moving down the  
20 path, whatever the ultimate outcome is, vis-à-vis  
21 interstate cooperation; whether it's Midwest  
22 Regional, whether it's Illinois cooperating with --

1 one of the systems is operating, one of the Coasts,  
2 there are certain things we can be doing now and we  
3 should be doing now here in Illinois. So I think  
4 it's a balance.

5 CHAIRMAN SCOTT: All right. Thank you very  
6 much.

7 We're going to take 5 here. I'll give  
8 the court reporter a break and then ask -- these two  
9 gentlemen will be on the next panel. So if they want  
10 to -- free to leave, but they can stay there if  
11 they'd like to and ask the other two panelists to  
12 come forward. I think you can take those two chairs  
13 right there or sit along the side, Mr. Ellis and  
14 Mr. Matchett, but we'll be back in 5. Thanks.

15 (Recess taken.)

16 Okay. If you can find your seats,  
17 we'll get the last panel going. Okay. Can we get  
18 going again?

19 Okay. Our final panel of the day --  
20 we're going to ask the -- if I could get folks to  
21 quiet down, please. Thanks very much.

22 We've got our last panel of the day.

1 We're going to talk about Building Block 2 and we've  
2 touched on it a little bit already. We've got four  
3 folks that are going to present. Again, we ask  
4 everybody to do 10 minutes or so to talk about their  
5 respective areas and then we'll have a few minutes  
6 left for short questions.

7 We're going to have two presentations  
8 that are more national in scope talking about the gas  
9 industry. First is Michelle Bloodworth, the senior  
10 director of Power Generation, America's Natural Gas  
11 Association (sic) or ANGA, and Michelle has talked on  
12 many, many occasions with many conferences that we've  
13 been part of talking about this and others. I know  
14 she's been at the IRDS before.

15 So we really appreciate you being  
16 here, Michelle.

17 And then Lynn Cannon who is business  
18 development manager from TransCanada Pipeline and,  
19 obviously, we're talking about ramping up natural  
20 gas, availability of natural gas and the ability to  
21 get it to the various plants that need to do the ramp  
22 up, it becomes very important. So I want to talk

1 about that more in terms of a national or a more  
2 general basis and the market perspective of that and  
3 then we'll go back to Mr. Matchett and Mr. Ellis and  
4 we'll talk about it on Illinois -- more Illinois  
5 specific-basis.

6 So with that, I turn it over to  
7 Michelle Bloodworth. Thank you very, very much for  
8 being here and traveling to get here and the floor is  
9 yours.

10 PRESENTATION

11 BY

12 MS. MICHELLE BLOODWORTH:

13 Well, thank you, Chairman Scott.

14 Certainly -- everyone will remember me after my  
15 accent, so I apologize. That's the only reason he  
16 remembers me.

17 We certainly appreciate -- ANGA does  
18 and myself -- the opportunity to participate in this  
19 policy session and let me first start off by saying  
20 that ANGA, as a whole, does not have an official  
21 position on 111(d). We certainly know the  
22 stakeholders within this state will make the right

1 decisions and we certainly respect their right to do.  
2 I'm really here on behalf of the producers,  
3 certainly, who have been at the forefront on the  
4 surge of U.S. natural gas production and what that  
5 really means for economy and the environment.

6 As ANGA looks at Illinois, it  
7 certainly is a large gas-consuming state. However,  
8 at the same time, it certainly -- as you look at it  
9 compared to the national average, relating to the use  
10 of gas and electricity, it has used a very small  
11 amount. We'll kind of talk about why, obviously,  
12 with the vintage of Simple Cycle Combustion Turbines.  
13 I guess my overarching message is no matter what  
14 plans that you make as it relates to increased  
15 utilization of natural gas, there certainly is a  
16 wealth of an abundance that can come on very quickly  
17 to meet whatever increase you guys look at within  
18 this state regarding the power generation sector.

19 I'm going to cover just a quick update  
20 on the size of the resource space, the availability  
21 as it relates to clean and reliable power, the unique  
22 position that Illinois has -- very different from

1 many of the states, especially when I go to the  
2 northeast -- and, really, the wealth of options that  
3 are very different to the state of Illinois as it  
4 relates to the power generation sector.

5                   For those of you who may not be  
6 familiar with ANGA, we do represent the largest  
7 independent natural gas producers. It's really those  
8 21 companies driving the shale gas revolution. Our  
9 members collectively represent about a third of all  
10 US gas supply, about 8 Tcf per year. We're kind of a  
11 very unique association and by that I mean our  
12 efforts are very policy-oriented, but they're  
13 market-focused.

14                   So our job at ANGA is to focus on  
15 growing the demand for natural gas. As you can  
16 expect, power generation is the largest market. We,  
17 of course, focus on transportation, the use of  
18 natural gas and the industrial market and also we are  
19 supportive of LNG exports.

20                   As it relates to Illinois, certainly  
21 first and foremost, there is plenty of natural gas  
22 supply for a broad range of markets. There's a huge

1 ability of our industry to produce what is needed  
2 without the increases in prices. Obviously, that's  
3 been a large part of the discussion relative to the  
4 polar vortex, but there is a lot of low-cost -- i'm  
5 going to talk about gas yet to be -- waiting to be  
6 developed for now and for decades at stable prices.

7                   Illinois is very interesting and when  
8 I say -- it certainly is at the crossroads from the  
9 destination of supplies. This state has the ability  
10 to access gas from the Rockies, from Canada, from  
11 Texas, from the Gulf Coast, from the Mid-Continent  
12 and now from the East.

13                   There are a significant amount of  
14 pipelines. What's kind of the granddaddy of them all  
15 in the Marcellus and Utica. We have many members who  
16 are investing in producer push pipelines, as we call  
17 them, taking positions on pipelines, making the  
18 investment because obviously if they can't move their  
19 natural gas out of the ground, don't have the  
20 transportation network in place, then they can't sell  
21 that natural gas.

22                   The upside of the Instate (sic)

1 Pipeline Network coupled with storage, this state is  
2 blessed with a lot of storage capability which is  
3 really a huge advantage when it relates to either  
4 serving intermittent, peaking or baseload capacity,  
5 which I'm going to talk a little bit more in depth  
6 about today.

7 Price behavior and forecasts certainly  
8 have reflected the low-cost abundance. If you look  
9 at the graph on the left, that is really kind of a  
10 prediction by EIA post- and pre-shale gas. So on the  
11 left side is production and on the right side -- I'm  
12 sorry -- it's not really showing up very well -- is a  
13 graph of corresponding prices.

14 As you can see on the left side, the  
15 shading really represents at the bottom of the range  
16 is the forecast in 2009, really, kind of pre-shale  
17 gas, of course, at the bottom of the estimate and the  
18 size of the resource space and production.

19 Year after year, the dotted line in  
20 the middle of the graph on the left is the 2013  
21 forecast of production. You can see just the jump  
22 even between 213 and 214. There is a lot of

1 confidence in these production numbers. There are  
2 many resource estimates.

3 On the right side, we have pretty much  
4 a different story. As you can see, the wellhead  
5 prices have certainly marched downward at the top of  
6 that curve. As an example, in 2009, AEO EIA's  
7 estimate, we were all predicting gas prices to be \$13  
8 per dekatherm in 2035. That number in the AEO 2014  
9 release is now \$6 and those numbers continue to go  
10 down given the increase and the size of the  
11 production and the size of that resource space.

12 I won't spend a lot of time on this  
13 slide -- many of you have seen it before -- but there  
14 certainly has been rapid progression of the potential  
15 Gas Committee estimates and the fact that other  
16 analysts, whether that's CERA, MIT, NPC, ANGA, ICF,  
17 they're pretty much all saying the same thing, that  
18 there certainly is enough natural gas to power this  
19 economy and to support expanding -- whether that's  
20 exports, industrial, high-case scenarios of power  
21 generation and we still have a lot of natural gas yet  
22 to be developed.

1                   We get asked the question all the  
2     time, Will production be able to respond to many of  
3     the estimates of increase as it relates to demand in  
4     the power generation sector? And a lot of people --  
5     obviously shale gas and those rock formations have  
6     been 10, 13,000 feet beneath the ground for a very  
7     long time. What is allowing this ability and why  
8     you're seeing these production numbers go up is  
9     really being driven by technology and that  
10    technology, just over the past five years, has  
11    increased significantly.

12                   If you look at this curve, you can see  
13    the blue line represents production; the red line is  
14    the 12 months rolling average for demand; and the  
15    green line, which is really the technology story, is  
16    rig counts. So rig counts continue to go down even  
17    though demand and production are at all-time highs  
18    and this is really because we're getting more and  
19    more efficient at tapping the gas. We've gone in  
20    recent years from 30 days to complete a well. It  
21    takes us about eight. Goldman Sachs is now  
22    predicting that number is probably going to go down

1 to two. We're seeing 15 to 20 percent increase in  
2 efficiency in just bringing on new wells and many of  
3 the new shale clays including the Marcellus. We've  
4 also had -- obviously, we can develop multiple wells  
5 from a pad. We've been able to extend our horizontal  
6 laterals. We've got multiple frac jobs. We  
7 certainly are focused on reducing that environmental  
8 footprint, whether that's reducing, recycling or  
9 reusing water; but the good news is, there certainly  
10 is plenty of gas at reliable and stable prices.

11           There are lots of questions, as many  
12 of our members -- as many of you may know, given the  
13 economics and where the low gas prices are right now,  
14 we have a lot of members moving to more oily clay and  
15 so I thought this chart was pretty relative, just to  
16 give you an idea when we just look at dry shale gas,  
17 there's about 1,500 Tcf available at less than \$5.  
18 ICF estimates over 3,500 Tcf as to the size of the  
19 reserves and the resource space and that's just with  
20 current technology. Again, just really backing up  
21 the point that many analysts are really predicting  
22 gas prices between now and 2035 to really stay

1       beneath that 4 to \$6 window.

2                               Lynn is going to cover it a lot more  
3       in-depth as it relates to pipeline infrastructure,  
4       but a very huge impact of the shale gas development  
5       has really been the change in the way that gas flows  
6       in a way that very much benefits the State of  
7       Illinois.

8                               So, really, pre-shale gas, things  
9       historically flowed from the big producing fields,  
10      which are the three circles on the map; gas flowed  
11      from the Southwest, from the Mid-Continent and  
12      primarily from the Gulf to the two largest consuming  
13      areas which were the Northeast and also the Midwest.  
14      We anticipated, as many of you know, big supplies  
15      coming in from LNG, from Maryland, from Georgia, from  
16      the Gulf of Mexico obviously still relying on imports  
17      also from Canada.

18                              Now, looking at kind of post-shale  
19      gas, now that we developed natural gas in 32 out of  
20      the 50 states, it certainly is -- provides a lot more  
21      diversity of the shale clays, but also the  
22      multi-directional opportunity for how gas flows.

1 Right now, expectations of the Marcellus and the  
2 Utica, there's probably in upwards of 8 Bcf per day  
3 yet to be developed. We just released a study --  
4 Bentack (phonetic) -- for the Northeast market -- way  
5 more than even with a great amount of coal conversion  
6 in that region that they can support.

7           So now what you're seeing is a lot of  
8 gas from the Northeast flowing both east to west and  
9 also north to south. There are probably more  
10 expansion projects in the Northeast that are being  
11 proposed permanent and built than any other part of  
12 the country all trying to move that gas from the  
13 Marcellus and the Utica up to other regions like the  
14 Southeast and the Midwest who have a lot of  
15 opportunities as it relates to coal conversions and  
16 to industrial growth.

17           MISO just completed a couple months  
18 ago their Phase 3 study. It certainly recognized the  
19 shale basins, how much available capacity was  
20 available in the MISO footprint in Illinois for a lot  
21 more expanded use of gas for power generation because  
22 there's a lot of capacity and large interstate

1 pipelines that now have available capacity because  
2 it -- gas from the Northeast is displacing some of  
3 what they were having to send up creating excess  
4 capacity in many of the pipelines in the MISO  
5 footprint.

6                   At the same time, we certainly  
7 recognize and are working very close -- Illinois sits  
8 in both PJM and MISO. We certainly agree that from a  
9 market rule in these organized markets -- and  
10 although our members are investing and building  
11 pipeline to the liquid trading point, they're not  
12 able to get it to the last mile and it really ought  
13 to be the market rules that send the right price  
14 signals, allow the generators like Dynegy and NRG to  
15 recoup their costs for firm transportation and even  
16 for storage.

17                   It is something that PJM has  
18 recognized. They are in a huge rulemaking right now  
19 to redefine capacity. On their last stakeholder  
20 call, they recognize that their tariff right now does  
21 not allow for the recovery of firm transportation and  
22 that certainly is something that they're looking at

1 changing and we're very supportive of.

2 As we look at Illinois, it certainly  
3 is at the crossroads of the gas industry. Regs is  
4 now being reversed from the Marcellus projected to  
5 move 1.2 Bcf per day from Illinois into the east.  
6 ANR's Lebanon project is about to add 350 dekatherms  
7 per day from the Utica. It's very noteworthy that  
8 the three large utilities, Integris, Nicor and  
9 Ameren, certainly control much of the capacity in the  
10 state. They have a lot of their own storage as well.

11 When we look at Chicago, it probably  
12 is the most competitive and flexible market in the  
13 country, which from a customer rate perspective,  
14 certainly is something that this state should be  
15 taking advantage of. And, again, just the fact that  
16 you have the ability to access from all the parts of  
17 the country. All of these shale basins pretty much  
18 come through the State of Illinois.

19 Looking specifically at Illinois, you  
20 have about 22 interstate pipelines, four intrastate,  
21 nine major LDCs -- over 12,000 miles of interstate  
22 and intrastate pipelines. You've got two major

1 trading hubs, obviously, which is important as it  
2 relates to the contracting for natural gas and pretty  
3 much feeds their supply from every part of the  
4 country.

5 In terms of the generation fuel mix,  
6 when you look at the -- the United States, of course,  
7 has made major commitments to natural gas. On the  
8 top left of this graph, gas is now at 40 percent of  
9 generation installed capacity versus coal at 29.

10 However, in terms of actual use,  
11 nationally -- sorry for my accent -- gas is still  
12 behind coal at 28 percent versus 39 percent as shown  
13 in the market share on the right; but in Illinois, it  
14 certainly is a very different story. At the two  
15 bottom charts, while gas represents 30 percent of  
16 installed capacity, 10 percent less than the national  
17 average, when you look at how often that generation  
18 is being used, when you look at the capacity factor  
19 of that generation, it is significantly much less  
20 than the national average.

21 And that is because this state has not  
22 made the decision to take advantage, except for some

1 of the new announced plants, and combined cycle  
2 technology, most of the generation within this state  
3 is peaking capacity. It does have a higher plant  
4 heat rate. It's not as efficient as the combined  
5 cycle units and so, therefore, it dispatches and runs  
6 less.

7                               Really, the generation trend  
8 throughout the United States is really looking at  
9 using gas in a much different way. The opportunity  
10 to baseload natural gas, when you ask my producers  
11 that I represent, what's the best use of natural  
12 gas -- they produce gas in rateable -- in rateable  
13 floods. And so once they bring a well on-line,  
14 they're not going to turn that well off-line. It's  
15 going to continue to produce at that that same hourly  
16 rate and so it is much better from a production  
17 standpoint to operate natural gas generation at much  
18 higher combined cycle factors; efficiencies can be  
19 achieved as high as 60 percent.

20                               That technology even continues to go  
21 higher. It continues to get better. Where your  
22 simple cycle peaking turbines usually have an

1 efficiency of about 25 to 30 percent, there's been a  
2 lot of questions about, you know, can combined cycle  
3 units operate at a 70 percent-plus capacity factor?

4                   Certainly from a technology  
5 standpoint, as long as those units -- which I'm going  
6 to talk about in a minute -- have the right physical  
7 assets and the right contracting assets to support  
8 more firm transportation and storage, they have great  
9 reliabilities, GE estimating about 98 percent; and  
10 according to a recent DOE lab, combined cycle  
11 availability certainly can achieve 87 percent and  
12 even higher.

13                   From a delivery point of view, this is  
14 probably the largest discussion right now taking  
15 place in the United States, as we're all -- want to  
16 make sure we have the correct reliability to make  
17 sure we all keep the lights on for all consumers  
18 within the United States. From a delivery point,  
19 most fuel buyers and suppliers are certainly  
20 comfortable with coal. You know, you can -- you  
21 know, obviously the Railroad takes the supply of  
22 coal -- you can see the coal pile on site -- and so

1 it gives people a lot of comfort over security of  
2 supply.

3 As it relates to natural gas, it  
4 certainly can be mimicked and so I'd really like for  
5 you to visualize, instead of having storage above  
6 ground, that coal pile being above ground. Basically  
7 underground storage provides the same type of  
8 function. It's just stored underground. And so ANGA  
9 really believes that firm transportation paired with  
10 some type of storage or portfolio management service  
11 really can provide the same type of reliability and  
12 so the big discussion is the cost recovery.

13 In order to incent generators to be  
14 able to secure or contract for firm transportation in  
15 some of the other portfolio management services, it  
16 does tend to be more difficult and has been in the  
17 past in the organized markets. As you can tell from  
18 my accent, in the area of which I reside, which is in  
19 the Southeast as an example and more of a vertically  
20 integrated market, Southern companies -- pretty much  
21 all of their plants has 100 percent firm.

22 They have more storage then probably

1 anybody within the Southeast, but that's because the  
2 regulatory ability to recoup those costs is very  
3 different than an independent power producer who is  
4 competing on the open market who obviously is going  
5 to be looking at every cent as it relates to their  
6 plant's clearing the auction.

7                   The good news is, there are a lot of  
8 discussions taking place in the country -- from FERC  
9 to PJM to MISO -- are really trying to look at those  
10 market rules. There have already been changes that  
11 have been made and then I would say on top of that,  
12 the fact that you have a lot of producers now making  
13 investment in pipelines.

14                   It used to be -- I would say, 10 --  
15 10, 15 years ago, the shippers on the pipeline who  
16 would contract with Lynn over here would be your LDCs  
17 because they're still regulated under the regulated  
18 world and can recoup those costs. And now we have a  
19 lot of producers who are taking those positions on  
20 the pipeline and even making equity investments in  
21 those pipelines all trying to get more natural gas,  
22 primarily for the power generation sector.

1                   So with that, I will open it up to any  
2 questions and I very much appreciate the opportunity,  
3 Chairman Scott.

4                   CHAIRMAN SCOTT: Thank you, Miss Bloodworth.

5                   Mr. Cannon, go ahead.

6                   PRESENTATION

7                   BY

8                   MR. LYNN CANNON:

9                   Thank you, Chairman, for having us  
10 today. Thank you, Michelle, because you probably  
11 covered half my stuff. It's always good to see it  
12 the second time because maybe it sinks in a little  
13 better.

14                   Just briefly, ANR Pipeline -- to tell  
15 you a little bit about ANR Pipeline, in 1945,  
16 Michigan-Wisconsin Pipe Line Company was formed and  
17 that has evolved into the current ANR Pipeline System  
18 and ANR was acquired by TransCanada Corporation in  
19 2007 which is where it resides now and that is our  
20 parent.

21                   ANR operates over 10,600 miles of  
22 high-pressure pipeline across the United States and

1 it delivers over 1 trillion cubic feet annually. ANR  
2 operates over 250 Bcf of underground storage and it's  
3 connected, virtually, to every major supply basin in  
4 North America. ANR also has interconnects with other  
5 major interstate pipelines that we'll see a little  
6 bit later in this presentation.

7           Before I begin, I'd like to remind you  
8 that my remarks will include forward-looking  
9 statements that are subject to important risks and  
10 uncertainties. For more information on these risks  
11 and uncertainties, please see the reports filed by  
12 TransCanada with the Canadian Security Regulators as  
13 well as the US Securities and Exchange Commission.

14           So I'm going to briefly cover these  
15 topics: I'll look a little bit more at gas demand  
16 trends, pipeline flow trends -- which will be very  
17 similar to what Michelle just showed -- and then a  
18 little bit more detailed look at the natural gas  
19 pipeline transmission grid within the State of  
20 Illinois and then specifically about the ANR Pipeline  
21 System in Illinois and then touch on a project that  
22 ANR Pipeline is developing right now to bring Utica

1 gas toward the Midwest and other markets.

2 Now, this -- this slide actually  
3 has -- is a very telling story. We can't see the  
4 legend as well in here in the room in the upper  
5 left-hand side, but I'll just try and explain to you  
6 what's on this slide. It's got four colors and the  
7 dark green represents imports, the lighter green  
8 represents supply -- and so we're talking gas  
9 supply -- and the dark orange represents demand and  
10 the lighter orange color represents exports.

11 So this slide has the United States  
12 broken up into various regions and you've got the  
13 Western, the Rocky Mountain Region, you've got the  
14 Gulf Coast and Mid Continent Region. Here in  
15 Illinois, we're in what's considered the Midwest  
16 region. Adjacent to Illinois is the Ohio  
17 Valley/Mid-Atlantic Region. So what I want to focus  
18 the group's attention on is the Midwest and the  
19 adjacent region, the Ohio Valley/Mid-Atlantic Region.

20 Each one of these bars represents  
21 different years. So the first bar on the left is the  
22 year of 2010, the next one is 2015, the third one is

1 2025 and -- or 20, and then the last one is 2025.  
2 Just taking a look at the Midwest, one of the things  
3 it's telling us is that it only contains dark green  
4 and the darker orange, which basically means it  
5 imports all of its energy in terms of natural gas  
6 supply and, of course, that has to match the demand  
7 as represented in the lower part of the bars. You  
8 can see the growth and even the prediction, what the  
9 growth is, that you still would be importing  
10 everything you need in this Midwest Region.

11 Now, contrasting that with the region  
12 next door that starts in Ohio and goes through  
13 Pennsylvania and the West Virginias, you can see --  
14 for 2010 it pretty much looked the same way. It had  
15 both supply and demand. Its supply was -- a portion  
16 of it was imported, but it also had some negative  
17 supply.

18 Now, as you go through 2015 on up to  
19 2025, you can see how that supply just continues to  
20 grow and it's outstripping the demand in terms of  
21 growth such that on the very bottom there is a little  
22 circle there that represents the export. That is

1 what is driving the activity in terms of pipeline  
2 projects as Michelle alluded to earlier in terms of  
3 the producer push or pipeline transmission expansion.

4           And the other thing I'd like to point  
5 out is that traditionally, the Midwest received most  
6 of its gas from either the Gulf Coast or the Western  
7 Canadian supply basin as well as, to a lesser extent,  
8 the Rocky Mountain area. In the transmission  
9 business it's all about, you know, how far you're  
10 taking the energy just like almost anything else.

11           So the supplies that are emerging in  
12 this Mid-Atlantic area will probably push out a lot  
13 of the supplies that were historically brought into  
14 this area. So you're going to see a lot of -- on a  
15 couple other slides why we think the pipeline grid is  
16 changing and it's going to find more efficiencies  
17 from some of these changes.

18           So this is very similar to a slide  
19 that Michelle showed a little earlier. Represented  
20 with the white arrows are the traditional flows of  
21 the transmission pipeline grid in North America. The  
22 darker arrows represent what's taking place today.

1                   So to the extent pipeline companies  
2     have had existing infrastructure, what they've  
3     done -- and especially people employed like me --  
4     what we've been tasked to do is figure out how do we  
5     get more efficiencies out of our existing footprints  
6     and the beauty of this in certain instances is that  
7     it's minimized how much infrastructure -- we've  
8     actually had to put additional infrastructure in the  
9     ground.

10                   A lot of times you can take a system  
11     and do some piping at a compressor station and  
12     essentially be able to reverse the flow and get those  
13     efficiencies up and so if other representatives from  
14     other major pipelines were sitting here, they would  
15     pretty much tell you the same story.

16                   Okay. So this is a very busy slide  
17     here. We actually took the time to color-code this.  
18     It represents all of the major pipeline  
19     infrastructure -- and these are interstates that  
20     deliver into the State of Illinois. And on the right  
21     side here, we've listed the companies alphabetically  
22     and their capacities and this capacity is capacity

1 into the State of Illinois.

2 So it may not represent the total  
3 capacity of a system, but it does represent what they  
4 can actually deliver within the State of Illinois.  
5 And these are estimates, so it won't be exact. I  
6 have not totaled it at the bottom for you, but I have  
7 a total here. It's about 20 Bcf a day.

8 And to put that 20 Bcf a day number in  
9 perspective, if you had a thousand megawatt combined  
10 cycle plant running for 12 hours a day, it would  
11 require about 100,000 dekatherms a day and so with  
12 the infrastructure that's in place here,  
13 hypothetically, you could probably run 200 combined  
14 cycle plants. This is specifically the  
15 infrastructure of the ANR Pipeline System in the  
16 Illinois region. Our system itself circles the area  
17 in Chicago and we provide service to a great -- or a  
18 large area of Northern Illinois.

19 The other thing I'd like to point out  
20 is that while we don't own any underground storage  
21 here in the State of Illinois, we do operate a very,  
22 very large integrated storage system in the State of

1 Michigan and it's directly connected through the  
2 pipeline system.

3 And, in fact, there are distribution  
4 customers that we serve in the State of Illinois that  
5 buy storage from us and it works quite well and  
6 actually performed very well this past winter when we  
7 had kind of a 100-year winter design.

8 I want to come back to this slide.  
9 This slide here is what we call our ANR Joliet hub  
10 and this traverses an area from Sandwich, Illinois,  
11 all the way over to -- and across the state line in  
12 Indiana going east. There is a number of  
13 interconnects that we have here. Every other major  
14 pipeline that comes into this Northern Illinois  
15 market is connected to us there.

16 We actually have some statistics at  
17 the bottom. This system has total receipt capability  
18 of over 4 Bcf a day and -- or 2 Bcf per day and  
19 actually delivery capability of over 4 Bcf a day.  
20 There are -- as well as pipeline companies, there are  
21 distribution companies that are connected and I  
22 believe at my last count, there were about four power

1 plants that are connected to this system directly.

2 This slide here just shows an  
3 illustration of a project that ANR Pipeline is  
4 looking at right now. That's the Utica and Marcellus  
5 supply region in Eastern Ohio and Western  
6 Pennsylvania. Michelle spoke about a couple projects  
7 that we have already placed into service or are  
8 completing infrastructure for.

9 This is a new Greenfield project  
10 that's designed to move large quantities out of this  
11 basin toward various markets. ANR completed its open  
12 season on this project -- it's called ANR East --  
13 July 28th and currently we are working with the  
14 bidding and potential customers working on our  
15 scoping efforts. And so there is not a lot more  
16 information I can give you now other than to tell you  
17 that it is capable of bringing up to 1.5 or 1.15 Bcf  
18 a day of incremental capacity into this Chicago  
19 region.

20 So in conclusion for my remarks,  
21 this -- we think it's a robust time for the natural  
22 gas industry. New technologies have led the way in

1 supply growth for regions that we couldn't imagine  
2 that we'd get supply growth in 15 years ago. We  
3 believe that the power generators and industrials are  
4 looking to natural gas to fuel the future and  
5 pipelines will continue to meet this challenge of the  
6 emerging opportunities to serve these markets in this  
7 changing environment.

8 Thank you.

9 CHAIRMAN SCOTT: Thank you.

10 Mr. Matchett, you are back up.

11 PRESENTATION

12 BY

13 MR. BARRY MATCHETT:

14 Well, thank you again for the  
15 opportunity to speak, Mr. Chairman and Commissioners.  
16 I'm Barry Matchett, Director of External Affairs for  
17 NRG Energy. I'm going to offer shorter testimony  
18 here on this second building block because I think  
19 previous witnesses have offered a lot of background  
20 with which I think informs a lot of this debate here  
21 in Illinois.

22 The second building block the EPA has

1 used to develop its emission reduction targets is the  
2 redispatch of existing and under-construction  
3 combined cycle gas plants. And that is in plain  
4 English, to run them instead of coal plants. While  
5 in theory such a redispatch could reduce CO2  
6 emissions, in practice, it is likely to be a very  
7 expensive way of achieving those reductions.

8           We see there being two key problems in  
9 using such a reduced dispatch approach in Illinois.  
10 First, as a technical matter, Illinois has 2,230  
11 megawatts of combined cycle natural gas plants today  
12 which operated at an average capacity factor of  
13 29 percent in 2012. Mr. Ross testified to these  
14 exact same numbers this morning. Our internal  
15 analysis indicates that these combined cycle plants,  
16 if operated at a 70 percent capacity, what the EPA  
17 Building Block 2 envisions, would reduce CO2  
18 emissions from coal plants by about 8 million tons  
19 per year. Also, we reached a similar conclusion to  
20 that of Mr. Ross and that's using the methodology in  
21 the EPA's proposed rule.

22           I think it's important to note that

1 that amount is far less than the 16 million tons of  
2 reductions that will be created at no cost to  
3 ratepayers by our recent announcement to transition  
4 our coal units.

5                   Second, as an economic matter, there  
6 are very few steps that Illinois can take to create  
7 such a coal to gas redispatch and they would also be  
8 costly. One, the EPA most clearly contemplates in  
9 the proposed rule that states impose a carbon price,  
10 either through a Cap-in-Trade System or emission rate  
11 credit trading system, although carbon tax at the  
12 same price level would have the exact same effect.  
13 These policies work by making the operating costs of  
14 the coal plants higher than those of gas plants.

15                   Economic dispatch would then cause the  
16 gas plants to be dispatched at higher levels and the  
17 coal plants to be dispatched less.

18                   Our modeling finds that current coal  
19 and gas prices, it would take a carbon tax or a  
20 Cap-in-Trade price or a rate credit differential  
21 price between 10 and \$15 per ton of carbon dioxide to  
22 create this kind of redispatch for typical coal and

1 gas combined cycle plants.

2                   At slightly higher natural gas prices,  
3 in our modeling, it's \$5 per million cubic feet or  
4 above. The amount -- the carbon price necessary to  
5 achieve gas redispatch in Illinois would need to be  
6 greater than \$20 per ton. Many recent forecasts and  
7 projections -- I think we just heard some testimony  
8 to this effect -- of gas prices exceeds \$5 per Mcf  
9 over the next decade. Such high carbon taxes or  
10 prices would raise electric costs to Illinois  
11 customers and put the State at an economic  
12 disadvantage relative to other states. They may  
13 choose more cost-effective approaches to meeting  
14 their EPA emission reductions.

15                   A more cost-effective approach for  
16 Illinois is likely to include the voluntary  
17 retirement and new powering of less efficient coal  
18 plants augmented by competitively developed renewable  
19 energy and energy efficiency including distributed  
20 energy resources. This approach will be fully  
21 consistent with our actions in Illinois and our  
22 vision for clean power in the State.

1                   Let me close with two points. First,  
2     the EPA's proposed rule specifically envisions a  
3     portfolio approach under which compliance is achieved  
4     through -- and I'll quote here from the preamble of  
5     the EPA's proposed rule -- a combination of  
6     repowering or retirement of one or more electric  
7     generating units as well as renewable energy and  
8     demand side energy efficiency measures that avoid  
9     electric generating unit carbon dioxide emissions.  
10    That's the quote.

11                   Second, as evidenced by your own  
12    actions today, we believe Illinois is well suited to  
13    benefit from such a portfolio approach which we  
14    believe can produce the lowest cost path for Illinois  
15    to achieve the required emission reductions for  
16    ratepayers.

17                   So Building Block 2, we don't believe  
18    would have a significant benefit to ratepayers in  
19    Illinois. There are other paths which produce lower  
20    cost options for achieving those carbon reductions.

21                   NRG looks forward to working with this  
22    State and stakeholders to craft such an approach.

1 Thank you.

2 CHAIRMAN SCOTT: Thank you, Mr. Matchett.

3 Mr. Ellis?

4 PRESENTATION

5 BY

6 MR. DEAN ELLIS:

7 Slide 7 of my presentation that I  
8 displayed before -- we'll try to pull it up in a  
9 second, please -- Dynegy attempted to discuss several  
10 issues that we foresee will need to be addressed  
11 under Building Block No. 2. Again, as a combined  
12 cycle fleet owner, we can speak to this building  
13 block because it directly impacts inside the fence.  
14 As it affects us outside of the fence, we can only  
15 speak anecdotally. So I have a combination here as  
16 practical as possible and also any anecdotal examples  
17 as possible.

18 With regard to the infrastructure, the  
19 panel has discussed it quite a bit. Obviously,  
20 significant gas infrastructure build-out will be  
21 required, at least to the plants and pipelines may  
22 exist the area; but some of our plants require

1 laterals in excess of \$5 million per mile in  
2 locations where there's significant lockout problems  
3 or other obstacles to bringing gas pipelines to the  
4 facilities.

5                   Additionally, as this panel discussed,  
6 there needs to be a cost recovery mechanism in the  
7 deregulated or restructured electricity markets for  
8 firm gas contracts. Currently, of course, there is  
9 no mechanism in the markets for those and the gas  
10 pipeline business model requires firm gas contracts  
11 in order to justify the bill.

12                   With regards to renewables, there is a  
13 bit of countervailing effect with Building Block  
14 No. 3. As we ramp up the capacity factor using  
15 Illinois as an example from the 20 to 30 percent  
16 existing to the proposed 70 percent and at the same  
17 time, significantly increase use of renewables, there  
18 will be less room by the combined cycle fleet to  
19 actually balance the intermediacy of the renewables  
20 on the system.

21                   Cost impacts, again, we talked about  
22 the significant increase in the use of the combined

1 cycle fleet going from 20 to 30 percent up to  
2 70 percent will significantly increase operating  
3 maintenance and capital costs on the combined cycle  
4 fleet. Combined cycles will effectively become  
5 baseloaded at 70 percent capacity factor.

6 And then, lastly, as I touched on  
7 before, the interaction between Building Blocks 1 and  
8 2, the heat rate efficiency of the existing fossil  
9 plants is inversely correlated with loading capacity  
10 factors. So as we look at the combined cycle fleet,  
11 we offload the coal plants -- the coal efficiency  
12 with rates.

13 CHAIRMAN SCOTT: Any questions here?

14 (No response.)

15 Let me ask, Mr. Matchett, with respect  
16 to -- as we heard the presentation and -- from  
17 Mr. Ross earlier this morning, we're in a little  
18 different position than a lot of other states in  
19 terms of the amount that we're going have to ramp up  
20 at. I'm just going back to your last point.

21 Doesn't that theoretically put us in a  
22 better position with respect to other states in that

1 other states are going to have to ramp up that  
2 much -- that much more, so relatively speaking to us?

3 So would that put them in a more  
4 difficult position than it would in Illinois.

5 MR. BARRY MATCHETT: Ramp up that much more  
6 gas?

7 CHAIRMAN SCOTT: Yeah.

8 MR. BARRY MATCHETT: Yeah, I think I would --  
9 my reaction to that question would be sort of  
10 balance, again, sort of, you know, if Indiana fully  
11 regulated, is -- it would fully recover costs. And,  
12 you know, operators in Illinois, I guess I'm -- you  
13 know, our view would be we're looking at a world  
14 where there would be -- Mr. Ellis just said it  
15 well -- there is no -- currently, there is no way for  
16 a new combined cycle gas plant -- an entrepreneur  
17 wants to build a gas plant -- to go out and say to  
18 investors that, I have a known buyer for the output  
19 of my project. In this state, that's just not how we  
20 go about doing that.

21 And so while there may be an ability  
22 to go out and sell the idea of there being increased

1 demand for that particular product, there is little  
2 likelihood short of a significant change to the way  
3 we regulate in this state, that that dynamic would  
4 change relative to how combined cycle, which is what  
5 our understanding of Building Block 2 envisions,  
6 would -- would be utilized in Illinois going forward.

7 I think there's -- so that's kind of  
8 part of the answer, which is if you're building a new  
9 combined cycle to go above and beyond what we have  
10 installed which, clearly, one would need to do to  
11 fully implement that building block, that structure  
12 problem exists.

13 I think as far as dispatching the  
14 existing fleet, you know, my comments spoke to that.  
15 Again, our calculus is we're looking at something to  
16 really change the -- and, again, there are many -- I  
17 qualify that by saying there are many, many factors  
18 that go into what the -- you know, the future price  
19 of power might be; but we see in our modeling, coal  
20 and carbon needing to be taxed at something around 20  
21 bucks a ton to be able to actually cause an economic  
22 redispatch order as the draft plan envisions. That

1 has a profound impact, you know, on costs in the  
2 electric sector and so we have concerns about that.

3 I think that if we were to convert --  
4 and so let me just speak freely for a moment on the  
5 cost issue -- if you look at the EPA -- if you  
6 convert their number to mass -- or baseline to mass,  
7 it's 87 million tons and say you avoid 33 percent of  
8 that, you're going to need to avoid about 28 million  
9 tons, okay, and that would still have our emissions  
10 around 58, 59 million tons. Well, if all of those  
11 tons of CO2 were taxed at 20 bucks, well, you'd be  
12 at -- somewhere around \$1.2 billion a year; right?  
13 Just doing simple math, and that's very, very  
14 simplistic.

15 So, again, I'm not wedded to that  
16 other than to just pursue this -- this thought  
17 process. That's an awful lot of money to be spending  
18 on gas redispatch and I think the appropriate  
19 question to be thinking about when thinking about how  
20 to most effectively comply with the carbon  
21 constraints envisioned by 111(d) would be to look at  
22 whether or not that money would be better spent in

1 other building blocks, whether that's renewable  
2 energy or energy efficiency. The bang for the buck  
3 in those building blocks is bigger and I think the  
4 gentleman from the Great Plains Institute noted,  
5 there are a whole variety of other policy options not  
6 explicitly considered in the original draft, but  
7 which U.S. EPA has indicated there's an openness to.

8                   And I think that we in Illinois --  
9 because of our position in the market -- and because  
10 of our -- frankly, the decision-makers I think are  
11 very keen of exploring a variety of options and I  
12 think we have the flexibility in our power markets to  
13 be much more robust than just looking at the four  
14 building blocks and NRG is very strongly in favor of  
15 looking at the whole scheme of opportunities in  
16 Illinois.

17                   CHAIRMAN SCOTT: Miss Bloodworth, let me ask  
18 you something and -- because this is something that  
19 you probably heard -- that's come up many times in  
20 different forums that I know you've attended; but the  
21 whole idea of the environmental versus economic  
22 dispatch and Mr. Matchett talked about in terms of if

1 you put a price -- if there's some kind of price  
2 associated with carbon, then that will, in essence,  
3 push the gas to be dispatched first -- or at least  
4 ahead of coal theoretically from that and then  
5 there's some question legally about whether that gets  
6 the RTOs in one area that they haven't been to  
7 before -- we'll explore that with them in the next  
8 session -- but this whole idea of them dispatching  
9 more on an environmental basis than they are an  
10 economic basis, is that something that, as an  
11 industry, you're looking at, either legally or just  
12 from a practical standpoint?

13 MS. MICHELLE BLOODWORTH: Since ANGA really  
14 hasn't formulated its specific position on 111(d), I  
15 can't speak more to a policy position. What I can  
16 say is we've had a lot of conversations with PJM, you  
17 know, many of them will put that right now that we're  
18 already doing environmental dispatch, I mean, either  
19 in RGGI states or you've got states that have RPS  
20 standards.

21 Obviously, there is a chunk, no matter  
22 what the economics are, that they're already

1     dispatching, so when we talk to MISO and PJM they  
2     very much believe that -- you know, and I think they  
3     all want to be a part of, obviously, helping states  
4     come up with a solution; but they seem to think that  
5     it's very doable as they look at it from how they  
6     dispatch generation.

7                     The other point that I would make, I  
8     just wanted to clarify, you know, when we look at  
9     firm transportation versus interruptible -- and I  
10    would not submit to you that every plant needs to  
11    have 100 percent firm, just like you don't size, you  
12    know, your air-conditioning unit for worst-case  
13    summer because, obviously, you'd be paying a lot and  
14    the efficiency wouldn't be as great.

15                    However, when you run a combined cycle  
16    unit at a 70 percent load fracture, then you're  
17    getting closer to what the fully loaded cost of firm  
18    transportation is and so the more that you run units  
19    at baseload, it really justifies a lot more firm  
20    transportation because the economics get to be closer  
21    to being the same for interruptible versus firm.

22                    So that's kind of one advantage of

1 using combined cycle and a baseload. And the only  
2 other questions that we've been studying in  
3 Illinois -- and, again, I don't know, you know, how  
4 it will work out, you know, within the building  
5 blocks, because it kind of runs in 111(b) and (d),  
6 but you've got a lot of simple cycle units and so,  
7 obviously, it's a lot more efficient than repowering  
8 an older coal plant.

9           You know, they mentioned, obviously,  
10 the efficiency is not -- not as great when you turn  
11 to steam unit -- a coal unit into natural gas, but if  
12 you were to add a heat recovery steam generator to a  
13 lot of -- you know, you've got a lot of big stock of  
14 simple cycle turbines -- we haven't done the  
15 analysis, that may be something that the State, you  
16 know, wants to inquire further because you've already  
17 got gas -- you know, typically, it's sized for that  
18 peaking capacity as Lynn can speak to. So that would  
19 be something that, you know, you may want to inquire  
20 further with EPA about how that will qualify because  
21 as the gentleman from NRG mentioned, it -- you know,  
22 it does state specifically in Building Block 2

1 existing combined cycle units, what happens if you  
2 turn a peaking into a combined cycle unit, just  
3 something to think about within the State.

4 CHAIRMAN SCOTT: Lynn, did you have anything  
5 you wanted to add to that?

6 MR. LYNN CANNON: No. Well stated.

7 CHAIRMAN SCOTT: All right. Any other  
8 questions?

9 (No response.)

10 I know we're a couple minutes over.

11 So I want to thank our panel for the  
12 presentations. It's very helpful to us and we really  
13 appreciate that I want to thank all the panelists,  
14 all of the Commissioners. Thank you to Nicole and  
15 Suzanne, our IT folks who did all of this work and to  
16 our court reporter and all the audience, you guys  
17 mostly hung in there all day, which is great.

18 Hopefully our presentations will be on  
19 our Web site by close of business on Wednesday and  
20 obviously, we've got a lot of work to do and we're  
21 doing it and taking it all very seriously and we'll  
22 be back on September 23rd with the second of these

1 three meetings.

2 The agenda for that one likely this  
3 week, next week, in the near future. Thanks very  
4 much. The meeting is adjourned.

5 (Whereupon, the meeting was  
6 continued until September 23, 2014.)

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