

**BEFORE THE STATE CORPORATION COMMISSION
OF THE STATE OF KANSAS**

DIRECT TESTIMONY

OF

GREG A. GREENWOOD

WESTAR ENERGY

STATE CORPORATION COMMISSION

NOV 10 2010

Susan K. Duffe

DOCKET NO. 11-WSEE-377-PRE

I. INTRODUCTION

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2

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

3

A. Greg A. Greenwood, 818 South Kansas Avenue, Topeka, Kansas
4 66612.

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Q. BY WHOM AND IN WHAT CAPACITY ARE YOU EMPLOYED?

6

A. Westar Energy, Inc. I am Vice President, Major Construction Projects.

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**Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND
8 BUSINESS EXPERIENCE.**

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A. In 1988, I graduated magna cum laude with a Bachelor of Business
10 Administration degree in Accounting from Washburn University. I am
11 also a certified public accountant, with five years of public accounting
12 experience prior to my joining Westar. I joined Westar in April 1993 as
13 a staff accountant in the corporate tax department. In September
14 1995, I joined the finance department as a financial analyst. I held a

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1 variety of positions of increasing responsibility within the finance
2 organization until 2006, focusing primarily on financial forecasting and
3 analysis and strategic business planning, as well as raising funds for
4 Westar in the capital markets. I was Westar's Treasurer from February
5 2003 through August 2006 before being named Vice President, Major
6 Construction Projects in August 2006.

7 **Q. GIVEN THAT MOST OF YOUR EXPERIENCE PRIOR TO YOUR**
8 **PRESENT POSITION WAS IN FINANCE, WHAT QUALIFIES YOU**
9 **FOR YOUR PRESENT ROLE?**

10 A. When I began in this role, I already possessed extensive accounting,
11 budgeting, project management and regulatory experience.
12 Additionally, Westar hired a consultant in major power plant
13 construction project management to further train and assist me in my
14 new duties. The consultant, Charlie Huston, of Eagle Enterprises, has
15 over 40 years of related experience including 15 years at Bechtel
16 Corporation and six years as a college professor teaching courses
17 related to project management, contracts and procurement. Mr.
18 Huston has also authored textbooks related to construction project
19 management

20 Mr. Huston and I met face-to-face and/or by phone at least
21 weekly during my first year in this position. These sessions were
22 focused on further development of my construction management skills,
23 assistance in building the construction management organization

1 within Westar, assisting with the development of specific key contracts,
2 and general consulting on construction project management issues.
3 After the first year, I continued to work with Mr. Huston, but on a less
4 scheduled, or as-needed basis.

5 **Q. WHAT PROJECTS HAVE YOU AND YOUR GROUP MANAGED**
6 **FOR WESTAR?**

7 A. Since the creation of the major projects group at Westar over four
8 years ago, I have led a group of employees in managing over \$1 billion
9 of capital projects. The projects include the rebuilding of the SO₂
10 removal system (scrubber system) at our three unit coal station, Jeffrey
11 Energy Center, the building of the seven-unit 650 MW gas-fired
12 Emporia Energy Center, and the completion of nearly 300 MW of wind
13 generation on our system.

14 We completed all of these projects successfully. As an
15 example, the owned portion of the wind projects referenced above
16 were completed for \$9 million less than the KCC pre-approved cost of
17 \$282 million, with no delays that impaired our plans or increased costs
18 to customers. Additionally, the Emporia Energy Center was not only
19 completed for approximately \$13 million less than the \$318 million
20 amount pre-approved by the KCC, the final result of the project was a
21 plant capable of producing more energy than originally planned. The
22 plant was also completed ahead of schedule and was recognized by
23 the editors of Power Engineering magazine as one of three finalists for

1 the best gas fired project in the world in 2009. We also completed the
2 scrubber project at Jeffrey Energy Center on time and at a very
3 attractive cost.

4 **Q. ARE THERE OTHER PROJECTS YOUR GROUP IS CURRENTLY**
5 **WORKING ON THAT HAVE YET TO BE COMPLETED?**

6 A. Yes. In addition to the renewable energy projects that are the subject
7 of this case, our major projects group is currently managing
8 environmental upgrade projects at both Lawrence and Jeffrey Energy
9 Centers and two major transmission line projects. We are focused on
10 making these projects just as successful.

11 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

12 A. In my testimony I will:

- 13 1. Explain why Westar seeks a determination of ratemaking
14 principles under K.S.A. 66-1239;
- 15 2. State what ratemaking principles Westar is requesting the
16 Commission predetermine;
- 17 3. Describe the results of the renewable Request for Proposal
18 (RFP) processes conducted by Westar in 2007 and 2009;
- 19 4. Explain the rationale for the 2010 RFP process requesting only
20 pricing of renewable energy through a power purchase
21 agreement (PPA);

- 1 5. Discuss the process used in the 2010 renewable RFP to select
2 the renewable energy projects for which Westar is requesting
3 determination of ratemaking principles; and
4 6. Summarize the major attributes of the projects selected by
5 Westar and the timing of the update to this testimony for
6 providing the actual signed PPA documents.

7 **Q. WHAT IS THE BASIS FOR YOUR FILING IN THIS DOCKET?**

8 A. In 2003, the Kansas legislature enacted K.S.A. 66-1239. The
9 statute allows utilities to seek and the Commission to provide an
10 advance determination of ratemaking principles to be used to
11 recognize the cost of any proposed generating facility or contract to
12 purchase power in retail rates.

13 **Q. WHY IS WESTAR SEEKING A DETERMINATION OF RATEMAKING**
14 **PRICIPLES UNDER K.S.A. 66-1239?**

15 A. Given the magnitude of the financial commitment required to meet the
16 recently enacted Kansas renewable energy standard (RES) and its
17 likely impact on customers' rates, it is appropriate for Westar to request
18 the Commission to predetermine how these resource commitments will
19 be treated in retail rates before we commit our company and our
20 customers to the additional resources. This process will give the
21 Commission, its Staff, our customers and the company an opportunity
22 to develop a common understanding of what the additional resources

1 might mean for the parties before we commit our company and our
2 customers to the additional resources.

3 **Q. WHAT BENEFITS DOES THE PREDETERMINATION PROCESS**
4 **PROVIDE FOR THE IMPACTED PARTIES?**

5 A. Predetermination of ratemaking principles benefits customers by giving
6 them advance notification of the future impact on their rates of adding
7 new generating resources. If they or their advocates are opposed to
8 the planned course of action, they get the opportunity to be heard prior
9 to their utility taking that particular course of action. For investors, this
10 process provides assurance that Kansas continues to be a place
11 where the investment model of a basic regulated utility continues to be
12 viable. Investors will continue to provide capital to utilities with
13 predictable, consistent and constructive regulation and seek to avoid
14 investing capital where the rules of the road might be unclear. K.S.A.
15 66-1239 provides a framework to demonstrate that Kansas regulation
16 has the important qualities of predictability and consistency.

17 **Q. WHAT IS WESTAR REQUESTING IN THIS DOCKET?**

18 A. Westar requests the Commission's ruling that it is a prudent course of
19 action for Westar to enter into the wind PPAs and that the associated
20 costs are approved for recovery through Westar's Retail Energy Cost
21 Adjustment.

22 **Q. PLEASE DESCRIBE WESTAR'S CURRENT RENEWABLE**
23 **GENERATING RESOURCES.**

1 A. Today, we have 301 MW of generation from renewable sources.
2 These resources consist of 295 MW of wind generation and 6 MW of
3 generation powered by landfill gas. All of these resources are in
4 Kansas and began commercial operations from 2008 to 2010.

5 Our currently operating wind resources are the projects that
6 resulted from the 2007 RFP process. The agreements under which we
7 acquired these resources were signed in late 2007 after the
8 Commission's order in our previous wind generation predetermination
9 docket (Docket No. 08-WSEE-309-PRE). The 295 MWs consist of the
10 three wind projects shown in Table 1.

TABLE 1

Wind Farm	MW	Location	Structure
Central Plains Wind Farm	99	Wichita Co.	Owned
Meridian Way Wind Farm	96	Cloud Co.	PPA
Flat Ridge Wind Farm	50 / 50	Barber Co.	Owned/PPA
TOTAL	295		

11 The net cost of energy on a levelized revenue requirement for the
12 portfolio was determined to be about \$42.00 per MWh (net of the value
13 of the production tax credits (PTCs) and before any value was
14 assigned to the renewable energy credits (RECs)).

15 **Q. WHEN DID YOU NEXT SEEK TO ADD RENEWABLE RESOURCES**
16 **TO YOUR GENERATING FLEET?**

1 A. In 2009, we embarked on another renewable RFP process continuing
2 our efforts to fulfill what at the time was our voluntary effort to obtain
3 additional renewable resources. We were hopeful that the soft
4 economy might help us obtain a bargain for our customers.
5 Unfortunately, any softness in the market was offset by the fact that
6 world financial markets were in turmoil and wind companies were
7 having a difficult time financing their operations. As a result, we found
8 the terms and conditions they were offering at the time to be
9 unattractive.

10 **Q. DID OTHER FACTORS AFFECT WESTAR'S DECISION TO**
11 **ACQUIRE ADDITIONAL WIND RESOURCES?**

12 A. Yes. During our 2009 RFP process, Kansas adopted an RES that
13 requires each affected utility by 2011 to serve its loads with renewable
14 energy resources with a name plate capacity equal to 10% of the
15 utility's most recent three-year average retail peak demand. Under the
16 regulations the Commission has approved to implement the RES, the
17 determination of compliance would be based on generation in place as
18 of July 1 of each year. Under the statute and recently approved
19 regulations, we estimate that we would have to add approximately 160
20 MW of additional renewable resources by July 1, 2011 to meet the
21 initial 10% requirement. Based on our projections of peak demand
22 growth, we expect the additions needed to remain in compliance with
23 the 10% requirement to increase to about 200 MW by 2015. The RES

1 requirement grows to 15% at July 1, 2016 – requiring us to add about
2 260 MW of incremental renewable resources – and 20% at July 1,
3 2020 – requiring us to add another 270 MW of incremental renewable
4 resources. This would result in just over 1,000 MW of total renewable
5 energy resources for Westar by July 1, 2020. While these levels were
6 ultimately higher than what we were pursuing on a voluntary basis, the
7 schedule adopted by the legislature gave us another year to meet the
8 initial 10% requirement.

9 **Q. WHAT WERE THE RESULTS OF THE 2009 RFP PROCESS?**

10 A. Renewable energy costs averaged 9 – 17% higher than in the previous
11 RFP process in 2007. Due to the higher than expected bids and the
12 fact that we now had an additional year in our planning horizon, we
13 decided to reject all of the bids submitted in response to the 2009 RFP.
14 We went back to the drawing board to seek a better solution for our
15 customers and our company.

16 **Q. WHAT APPROACH DID YOU ULTIMATELY TAKE?**

17 A. My team and I negotiated the purchase of development rights to the
18 Ironwood Wind Farm near Spearville, Kansas and we issued a new
19 renewables RFP in 2010 for purchased power.

20 **Q. WHY DID WESTAR PURCHASE DEVELOPMENT RIGHTS FOR THE**
21 **IRONWOOD SITE?**

22 A. Because it is an excellent site and was available under reasonable
23 terms.

1 The site is capable of supporting up to 500 MW of wind energy
2 and is located in one of the best, proven wind regions in the United
3 States. And we were able to negotiate a purchase of the development
4 rights for a relatively small upfront payment plus future cash payments
5 to be based on the energy actually produced at the site over the next
6 40 years. This agreement allowed us to secure the rights to one of the
7 highest quality wind sites available, but defer payment of the majority
8 of the cost to the period when the site is actually producing renewable
9 energy for our customers.

10 **Q. HOW DOES THE IRONWOOD AGREEMENT FIT WITH WESTAR'S**
11 **PLANNING PROCESSES?**

12 A. One of the planning and management approaches we have embraced,
13 and which we have shared publicly in our Comprehensive Energy
14 Plan, is the principle of maintaining flexibility in an uncertain
15 environment. We believe this approach serves our customers and our
16 company well and that acquisition of rights to the Ironwood site fit well
17 with that approach. By securing this site, we obtained a number of
18 benefits: first, we obtained the ability to build on the site or allow
19 someone else to; second, we obtained the flexibility to develop the site
20 in stages as opposed to all at once; and third, by holding this site, we
21 can keep bidders honest about the value of their bids that might use
22 other sites.

1 **Q. WHY DID YOU ELECT TO ENTER INTO ANOTHER BROAD RFP**
2 **PROCESS IN 2010 RATHER THAN SIMPLY CONSTRUCT ALL OR**
3 **A PORTION OF GENERATION AT THE IRONWOOD SITE?**

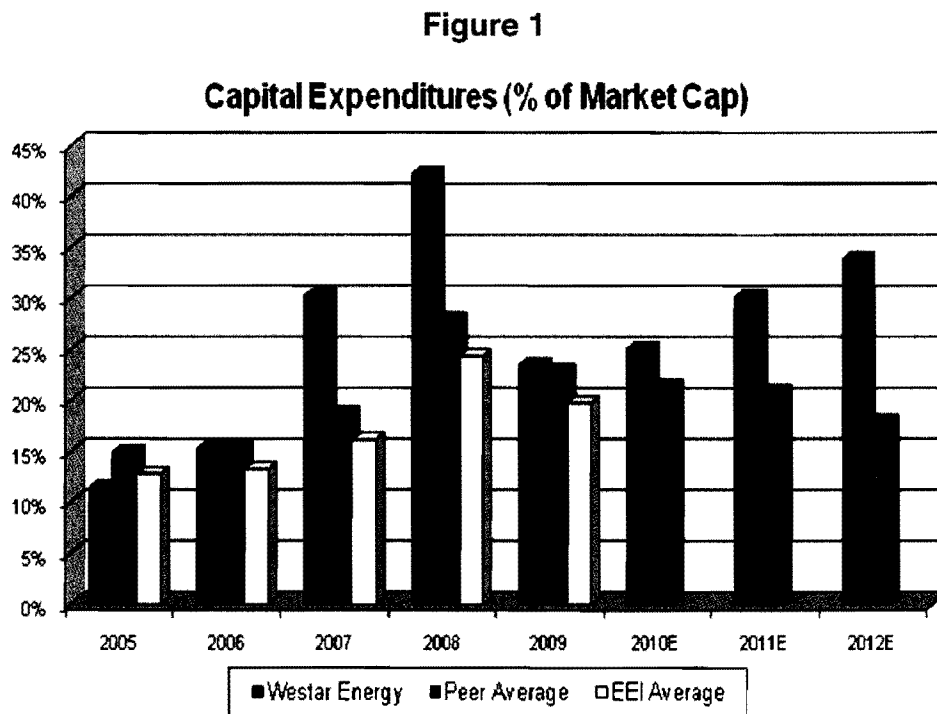
4 A. The Ironwood site, like many good wind sites, is currently subject to
5 some transmission constraints that should be remedied as additional
6 transmission line projects are completed over the next few years.
7 Consequently, given the current risk at Ironwood that transmission
8 constraints might prevent some of the minimum 200MW of production
9 needed from getting to our customers, we wanted to be able to
10 evaluate proposals at alternative sites that might have better access to
11 transmission and compare those to development at Ironwood.

12 **Q. WHAT DID THIS APPROACH ACCOMPLISH FOR WESTAR?**

13 A. It allowed us to evaluate the raw cost of purchasing wind energy from
14 various sites across the state and to layer into our evaluation the near-
15 term risk of transmission curtailment. The process allowed us to
16 compare sites with stronger wind dynamics in western Kansas, but
17 with more transmission risk compared to sites in eastern Kansas
18 without transmission constraints, but with weaker wind dynamics.

19 **Q. WHY DID WESTAR CHANGE ITS APPROACH IN THE 2010**
20 **RENEWABLES RFP BY ASKING RESPONDENTS FOR ONLY PPA**
21 **PRICING RATHER THAN BOTH PPA PRICING AND COSTS FOR**
22 **DIRECT OWNERSHIP OF THE PROJECT?**

1 A. Another important element of our comprehensive approach to planning
2 is never to bite off more than we can chew, and thereby put our
3 customers or company at greater financial risk than necessary.
4 Presently – without even considering additional renewable energy
5 generation – we have one of the largest capital expenditure programs
6 in the industry relative to our size. This is represented in Figure 1
7 below.



Sources

- Bloomberg, accessed on 9/06/10
- Individual company's 10Ks

8 Most of this investment stems from the cost of compliance with
9 environmental mandates so that we can continue to operate our low-
10 cost coal fleet and from the need to build the transmission necessary
11 for regional planning and to accommodate more renewable energy.

1 Fortunately, investments in renewable energy are ones that others are
2 ready, willing and able to undertake. So, rather than try to do this all
3 ourselves, with emission controls, transmission and renewables all
4 competing for limited funding, we determined it would be more prudent
5 to seek out power purchase agreements from those eager to pursue
6 these developments rather than expand an already aggressive capital
7 expenditure program.

8 **Q. DOES THE ISSUANCE OF AN RFP ONLY FOR PPA INDICATE A**
9 **CHANGE IN WESTAR'S PHILOSOPHY CONCERNING OWNED**
10 **VERSUS PPA WIND?**

11 A. No. We still believe a balanced approach between renewable asset
12 ownership and PPAs makes good sense for our customers, and that in
13 most market conditions utility ownership remains a reasonable option.

14 **Q. WHAT DID YOU DO TO ASSURE A ROBUST AND COMPETITIVE**
15 **RFP?**

16 A. We issued the RFP on our web site and issued a news release
17 describing the RFP and inviting all participants. We also notified a
18 large number of known possible respondents and encouraged their
19 participation.

20 **Q. WAS THE RFP SUCCESSFUL?**

21 A. Yes. We were very pleased with the number, quality and diversity of
22 responses.

1 **Q. PLEASE DESCRIBE THE RESPONSES THAT YOU RECEIVED IN**
2 **THE 2010 RENEWABLES RFP.**

3 A. We received 56 responses from 35 developers. The RFP was for all
4 types of renewable energy, but wind dominated the responses. In
5 addition to proposals to provide wind energy, we received one solar,
6 one hydrogen, and two biomass proposals.

7 **Q. WHAT CRITERIA DID YOU USE TO SCREEN THE RESPONSES**
8 **DOWN TO A MANAGABLE SHORT LIST FOR FURTHER**
9 **EVALUATION?**

10 A. Consistent with the possibility of transmission constraints, we placed
11 the projects into three different categories and performed an initial
12 screening based on proposed price. The three categories were:
13 (1) projects using our Ironwood site; (2) other western Kansas wind
14 sites; and (3) eastern Kansas renewable energy sites. By identifying
15 the best projects in each of these three categories, we were able to
16 avoid prematurely eliminating a site (particularly in eastern Kansas)
17 based upon a higher energy price before further evaluating how
18 transmission availability might impact the total delivered cost of energy
19 to customers. This process narrowed the projects to 19. We
20 evaluated the remaining projects based upon the following criteria: cost
21 of energy, transmission availability, environmental impact,
22 public/community acceptance, exceptions to our pro forma PPA, wind
23 data quality, and wind turbine evaluation.

1 For each of the criteria listed above, we scored each project
2 according to its attributes, with a good (green), neutral (yellow) or poor
3 (red) classification system. After completing this evaluation, five
4 projects remained on our short-list.

5 **Q. HOW DID YOU EVALUATE THE SHORT-LISTED PROJECTS?**

6 A. The team invited the three developers representing the five projects to
7 Topeka for more detailed due diligence. Each session covered all
8 aspects of the RFP and the developers' responses. Similar to the first
9 phase of the review, but now with more refinement, we scored each
10 project according to a series of attributes, with weights (in parentheses
11 below) assigned to each of the attributes based on the team's input,
12 including: public and environmental acceptance (5%), financial viability
13 and credit risk (5%), cost (55%), transmission and interconnection
14 (25%), turbine evaluation (5%), and qualifications of the developer as
15 determined by the team during the due diligence session (5%). We
16 scored each proposal for each attribute on a 1 – 10 scale, with 10
17 being the best possible score.

18 **Q. HOW DID YOU ARRIVE AT THE EVALUATION WEIGHTS?**

19 A. As in any evaluation process, we believed that the most important
20 considerations should receive the heaviest weighting. Because cost is
21 a primary consideration to both our customers and the company, we
22 gave it the largest weight – 55%. And, because generation is
23 worthless if its output cannot be brought to our customers, we gave

1 transmission and interconnection considerations the second-highest
2 weighting of 25%. The 20% remaining was spread equally across the
3 other factors we considered.

4 **Q. WHY DO TRANSMISSION AND INTERCONNECTION**
5 **CONSIDERATIONS AFFECT YOUR CHOICE OF PROJECT?**

6 A. The existing transmission system has limitations that must be
7 recognized and addressed. If an area of the transmission grid is only
8 physically capable of handling the interconnection of an additional 100
9 MW of generation, attempting to add 300 MW of generation in that
10 area is likely to greatly change the economics of the project due to the
11 high cost of upgrading the transmission system to accommodate the
12 generation.

13 **Q. HOW CERTAIN ARE YOU THAT YOUR RATINGS OF**
14 **TRANSMISSION AND INTERCONNECTION CONSIDERATIONS**
15 **ARE ACCURATE?**

16 A. We believe that our ratings are reasonable. As the Commission is
17 aware, moving power from western Kansas to eastern Kansas is
18 limited by the existing transmission system and will continue to be until
19 additional transmission lines are constructed. And, although
20 transmission and interconnection considerations were critically
21 important in our evaluation, the process of reaching a conclusion today
22 about transmission availability for a wind farm that will not be

1 completed for more than two years is, like ratemaking, not an exact
2 science.

3 As the Commission knows, the transmission planning process
4 at the SPP and at other Regional Transmission Organizations across
5 the country is an iterative process that includes numerous studies with
6 a host of proposed new sources of generation that may or may not
7 ever be constructed. We, like others, must rely on the professional
8 judgment of our transmission planning experts and those experts at the
9 power pool to try to predict the actual availability of future transmission
10 paths.

11 **Q. WHAT WAS THE NEXT STEP IN YOUR EVALUATION PROCESS?**

12 A. We calculated a weighted composite score for each short-list project.
13 We used these scores to determine with whom we would attempt to
14 negotiate contracts.

15 **Q. PLEASE DESCRIBE THE PROJECTS FOR WHICH WESTAR IS**
16 **REQUESTING A DETERMINATION IN THIS FILING.**

17 A. Pending completion of final negotiations of PPAs with two developers,
18 Westar is requesting the Commission approve a total of 369 MW of
19 wind resources with prices less than \$35 per MWH. The terms of
20 these agreements extend 20 years from the date of project completion
21 which is targeted to be in the latter half of 2012. The agreements also
22 give Westar the option to extend the agreements for an additional five
23 years. The executed term sheets for each individual transaction have

1 actual pricing and other major terms and are included as confidential
2 Exhibits GAG – 1 and GAG – 2.

3 **Q. IF AN ADDITIONAL 160 MW OF CAPACITY WILL MEET THE**
4 **KANSAS RES REQUIREMENT FOR 2011, WHY WOULD YOU**
5 **ELECT TO PURCHASE RENEWABLE RESOURCES IN EXCESS OF**
6 **THIS AMOUNT?**

7 A. The pricing we achieved is very favorable to pricing received in both
8 our 2007 and 2009 RFP processes. On average our current PPA
9 pricing is 20% lower than pricing in our 2007 RFP process and 30%
10 lower than the PPA pricing received last year. And while I am the first
11 to admit I cannot predict the future, in our opinion, there are far more
12 influences that might drive prices up in the future than to suggest they
13 may be lower, particularly as we all hope for an improving world
14 economy. Additionally, the Federal Production Tax Credit (PTC),
15 currently valued at \$22/MWH and reflected in the contract prices, is
16 slated to expire at the end of 2012. While it is possible that Congress
17 might again extend these tax credits as it has in the past, there is of
18 course no assurance that it will, particularly as Congress addresses
19 mounting federal funding challenges.

20 We believe the combination of these factors makes it prudent to
21 explore additional wind power acquisition now in order to capture what
22 we believe may be significant cost advantages for our customers. The
23 additional renewable generation will also help us move toward meeting

1 our 2016 and 2020 Kansas RES requirements. Even with approval of
2 our request in this filing, Westar would still need to add an
3 estimated 100 and 275 MW of additional renewable resources by 2015
4 and 2020, respectively, based on our predicted system peak demands.

5 **Q. HAVE YOU ENTERED INTO FINAL CONTRACTS?**

6 A. No. We are very close to final agreements, but negotiations are still
7 being completed.

8 **Q. WHEN DOES WESTAR PLAN TO SUBMIT TO THE COMMISSION
9 FULLY EXECUTED CONTRACTS SUPPORTING THE PPAS?**

10 A. Westar will file the full PPA documents as soon as the negotiations are
11 completed. We expect that to occur no later than December 15, 2010.
12 This two-step process was required to allow for some certainty of
13 completing projects prior to the potential federal PTC expiration and to
14 meet developers' demands related to the timeframe during which they
15 were willing to honor the pricing in their responses to the RFP.

16 **Q. SEVERAL ATTRIBUTES OF THESE PROJECTS HAVE BEEN
17 CLASSIFIED AS CONFIDENTIAL IN THIS FILING. WHEN FINAL
18 PPA'S HAVE BEEN NEGOTIATED AND FILED IN THIS DOCKET
19 WILL YOU BE ABLE TO MAKE MORE INFORMATION ON THESE
20 AGREEMENTS PUBLIC?**

21 A. Yes. With negotiations continuing between the parties it would not be
22 fair to either the developers or us to disclose their names, their projects
23 or general terms of the nearly final agreements. However, once we file

1 the full agreement, we will make significantly more information
2 available in a public manner.

3 **Q. WHAT WILL HAPPEN IF YOU ARE UNABLE TO REACH**
4 **AGREEMENT CONCERNING ONE OR BOTH OF THE PROJECTS**
5 **PRESENTED?**

6 A. We have a high degree of confidence that we can reach agreements
7 with the parties, however, if we ultimately cannot reach agreement we
8 would either: 1.) present only one PPA for Commission ruling, or 2.)
9 substitute the next most attractive project for the Commission to
10 consider. Again, we plan to complete this work and submit the full
11 PPAs no later than December 15, 2010.

12 **Q. THANK YOU.**