

**Southwest Power Pool**  
**ECONOMIC STUDIES WORKING GROUP**  
**May 30, 2012**  
**Web Conference**

**• SUMMARY OF ACTIONS TAKEN •**

1. The ESWG verified that the 2012 Policy Survey provided the best estimate of renewable generation expectations as of March, 2012.
2. The ESWG approved the use of Department of Energy's Energy Information Administration unit technologies and parameters, additionally requesting the consideration of advanced battery technologies.

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• MINUTES •

**Agenda Item 1 – Administrative Items**

**Agenda Item 1a – Call to Order, Introductions**

Chair Alan Myers (ITC Great Plains, LLC) called the meeting of the Economic Studies Working Group (ESWG) to order at 9:34 a.m., welcomed those in attendance, and asked for introductions (Attachment – Attendance List).

There were 29 web conference participants representing 12 of 13 members.

**Agenda Item 1b – Receipt of Proxies**

Tim Miller (SPP staff) requested notification of any proxy statements. None were provided.

**Agenda Item 1c – Review of Agenda**

Chair Alan Myers (ITC Great Plains, LLC) presented the agenda for review and asked for any additions or corrections. No changes were made to the agenda (Attachment – Agenda).

**Agenda Item 2 – 2012 Policy Survey Memorandum, next steps**

Juliano Freitas (SPP staff) requested the group's decision regarding the 2012 Policy Survey responses and memorandum (Attachment –Policy Survey memorandum). The group accepted the numbers and requested an opportunity to review the presentation material pertaining to the survey that will be discussed at the June Cost Allocation Working Group meeting (CAWG).

**ACTION ITEM:** SPP staff to provide ESWG with a draft presentation regarding the 2012 Policy Survey for the CAWG for feedback.

**A motion to reflect that the ESWG looked at the numbers in the 2012 Policy Survey and verified the values submitted by each organization provided the best estimate as of March, 2012 was made by Kip Fox (AEP) and seconded. The motion was approved unanimously.**

**Agenda Item 3 – 2013 ITP20**

**Agenda Item 3a – data review package update**

Tim McGinnis (SPP staff) updated the group regarding the completion of the generation data review and thanked the group for their thorough responsiveness (Attachment – Gen Data Review)

**Agenda Item 3b – generation resource expansion plan**

Tim Miller (SPP staff) and Matt Lind (Burns & McDonnell Engineering) requested the group's approval of potential unit technologies and parameters (Attachment – Potential Unit Parameters) for use in the 2013 ITP20 generation resource expansion plan. Charles Cates (SPP staff) requested the groups immediate action siting the scheduling constraints of the ITP process. The group approved a separate recommendation and identified the following action items:

**ACTION ITEM:** Kip Fox (AEP) will provide feedback regarding the appropriate size of solar PV for use in the 2013 ITP20 resource expansion plan.

**ACTION ITEM:** SPP staff & Burns & McDonnell Engineering to add an advanced battery option to the candidate units for the 2013 ITP20 resource expansion plan if data is available.

**A motion to use and accept the 2012 Annual Energy Outlook EIA (Energy Information Agency) data for the resource planning process was made by Leon Howell (OGE) and seconded. The motion was approved with one abstention.**

**Kip Fox (AEP) commented that he hasn't had time to look at the EIA data to compare it to the recommendation provided by staff to see which makes more sense.**

**An amendment to the motion was proposed to include advanced battery if the data was available. The amendment and the original motion with the amendment added were approved unanimously.**

### **Closing Items**

Chair Alan Myers (ITC Great Plains, LLC) recapped the meeting. The meeting was adjourned at 11:21 a.m.

Respectfully Submitted,

Tim Miller,  
Secretary

**ECONOMIC STUDIES WORKING GROUP**

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**• ATTENDANCE LIST •**

<b>Participant</b>	<b>Company</b>
Al Tamimi	Sunflower
Alan Myers	ITC Great Plains
Bennie Weeks	Xcel Energy
David Ried	OPPD
Greg Sweet	Empire
Kip Fox	AEP
Kurt Stradley	LES
Leon Howell	OGE
Michael Watt	OMPA
Randy Collier	City Utilities Springfield, MO
Tim Miller	SPP staff
Bill Leung	Consultant
Bill Reid	Climate Energy Project
Charles Cates	SPP staff
Dan Lenihan	OPPD
Deral Danis	Clean Line Energy
Jim Krajecki	CES-LTD
Josh Ross	SPP staff
Juliano Freitas	SPP staff
Matt Lind	Burns & McDonnell
Mitch Williams	WFEC
Nathan McNeil	Midwest Energy
Roy Boyer	Xcel Energy
Ted Bell	SPP staff
Tessie Ketner	SPP staff
Tim McGinnis	SPP staff
Tim Owens	NPPD
Tom Hestermann	Sunflower
Tony Gott (AECI)	AECI

**ECONOMIC STUDIES WORKING GROUP**

**May 30, 2012**

**Web conference**

**• A G E N D A •**

**9:30 am – 11:30 am**

1. Administrative items
  - a. Call to Order, Introductions..... Alan Myers (10 minutes)
  - b. Receipt of Proxies ..... Tim Miller (1 minute)
  - c. Review of Agenda ..... Alan Myers (5 minutes)
2. 2012 Policy Survey Memorandum, next steps..... Juliano Freitas (30 minutes)
3. 2013 ITP20
  - a. Data Review Package update ..... Tim McGinnis (15 minutes)
  - b. Generation Resource Expansion Plan
    - i. Potential unit technologies & parameters..... Tim Miller (30 minutes)
4. Closing Items ..... Alan Myers (10 minutes)

# Memorandum

**To:** ESWG  
**From:** SPP Staff  
**CC:**  
**Date:** 04/12/2012  
**Re:** Policy Survey Justification

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## EXECUTIVE SUMMARY

During the ESGW call on 04/05/2012 two action items were created:

- 1) Staff should provide redraft instructions/questions for the policy survey renewable section to clarify what is being asked. This should be sent to the ESWG as soon as possible Friday morning so that the group members can respond by Monday COB with questions and/or changes.
- 2) ESWG members should provide explanation of the differences in renewable targets/mandates they are showing in this survey compared to the 2010 ITP20 survey.

On April 9, 2012 SPP staff received the justification from the members about the difference between Mandates/Targets regarding 2010 ITP20 and 2013 ITP20 Policy Survey. Also members sent the confirmation/modification regarding the current Policy Survey.

- EMPIRE DISTRICT (Greg Sweet) – no changes currently to the 2013 ITP20 survey. Responses are not significantly different from the 2010 survey, they tried to reflect some flexibility in location of the wind resources once current wind farms reach the end of their assumed useful lives. They may re-invest in the same locations or possibly in another state, but the renewable output for Empire remains relatively constant.
  - OMPA (Michael Watt) – no changes currently to the 2013 ITP20 survey. No justification about the difference between 2010 and 2012 survey.
  - SWEPCO/AEP (Kip Fox)- no changes currently to the 2013 ITP20 survey.
1. SWEPCO was in negotiations for potential wind project in Arkansas that was included in the 2010 survey which never materialized (553 GWh) and was not included in our 2012 survey.
  2. The requirements in Arkansas, Louisiana were estimated at 10% for the 2010 survey those requirements are no longer there. With the cost of natural gas dropping, AEP sees natural gas as more logical energy replacement over wind without a state mandate or settlement agreement and took those numbers out of our 2012 estimate. Therefore only mandated wind is in Arkansas, Louisiana, and Texas numbers for SWEPCO. The PSO numbers are a target and based on the



lack of a state mandate PSO have lowered estimate to reflect the lower price of gas as a replacement.

3. Additional contributing factors include a lower growth rate than what was used in 2010.

In Summary, AEP lowered estimate based on changes in mandates not materializing in various states, lower load growth, lower natural gas prices, and potential wind projects no longer being considered. AEP have no changes currently to the 2013 ITP20 survey but may revise estimates if the 2013 ITP20 survey definitions change.

- LES (Kurt Stradley) – no changes currently to the 2013 ITP20 survey. Originally LES had thought would have some MWh targets which was shown in the CAWG survey but have since done away with that.
- AECC (Bruce Walkup) – AECC have changed the 200,800 MWh of wind in the “Renewable TARGETS’ tab is officially to be made up by 51 MW of the Flat Ridge 2 project in Kansas in the ‘Existing Wind in Models’ tab, previously they had no target.
- City Utilities of Springfield, Missouri (Kenneth Hale) – no changes currently to the 2013 ITP20 survey. Their current survey submission would be the latest forecast based on existing renewable mandates. The earlier survey response would have been based on a future with a 20% Federal RES mandate.
- OGE (Leon Howell) – no changes currently to the 2013 ITP20 survey. OG&E lowered its expectations on wind total from 6 million MWh in the 2010 survey to 5 million MWh in the 2012 survey. In the 2010, OG&E had expectations that legislation regulating carbon would be passed through legislation similar to Waxman Markey. That legislation would have caused utilities to reduce carbon output every year for several years to come. It now appears that type of legislation will not be passed. In fact SPP’s scenarios assume a carbon tax will be applied not a reduction in carbon output.
- NPPD (Timothy Owens) – no changes currently to the 2013 ITP20 survey. The vast majority of the reduction in renewable energy targets between the 2010 and 2013 ITP20 surveys is due to a reduction in NPPD’s forecast for native load energy over that same time period.
- SUNFLOWER (Tom Hestermann) – no changes currently to the 2013 ITP20 survey. Changes from the 2010 survey were due to changes in the load forecast which precipitated changes in the amount of wind mandated.
- SPS (Bennie Weeks) – no changes currently to the 2013 ITP20 survey. In the ‘Existing Wind in Models’ tab on the third table the Majestic Wind II project is being counted twice. The project is in the SPS zone but will be going to AEP. SPS called Majestic Wind Phase 2 and AEP called it High Majestic II. The 2010 ITP20 survey included a tab for Existing Wind. The instructions stated that the existing wind in the first table would be used in the 2030 model. SPS interpreted the instructions to



mean they should show the amount of wind that it "thought" would be online in the year 2030. The 2010 survey also included a Renewable Energy Target (RET) tab that included state mandates and utility targets (one number) to be used for the year 2022 and 2017. SPS's interpretation of the instructions was that they should include the amount of wind that it "thought" would be online within the SPS BA in the year 2022. Therefore, the amount of wind provided in the survey was a projection that included new wind that SPS thought would be on the transmission system. The 2012 ITP20 survey instructions have been updated to clarify what information is needed for existing wind and the mandated and targeted renewable requirements. The existing wind should include facilities that are currently in operation plus any new wind that may be online by December 2013. SPS's jurisdictions have renewable mandates and SPS has provided the minimum mandate requirements for SPS in TX and NM. SPS does not operate in a jurisdiction that has a renewable "target (goal)" therefore the target is zero. Clarification of the intent of the survey has resulted in a large reduction in the existing wind from the 2010 ITP20 survey.





## Generation Review Recap

- **ITP10 economic modeling data used as data source**
  - Updated with EPA Rules Impact feedback
- **Items Surveyed**
  - Capacity
  - Gen Type
  - Ownership
- **Reviewed by stakeholders**
  - 17 members provided updates
- **SPP Future 1 Capacity Needs**
  - 2023: 5.7 GW
  - 2033: 13.2 GW



Southwest Power Pool, Inc.

2013 INTEGRATED TRANSMISSION PLANNING 20-YEAR ASSESSMENT

Potential Unit Technologies and Prototypes

ESWG

May 30<sup>th</sup>, 2012

**Generating Unit Alternatives**

Table 3-1 shows the generating alternatives studied in the 2010 ITP20. Burns & McDonnell Engineering is reviewing this list, looking for gaps, and developing recommendations for any additional alternatives. Additionally, Burns & McDonnell is adjusting the costs of each resource to account for material and labor cost increases since 2010 (while maintaining their relative bias). Expect an update at the May 30<sup>th</sup> ESGW meeting.

Asset Type	Combined Cycle		Combustion Turbine			Nuclear	Coal Steam	Coal IGCC		Wind	Solar Thermal	Biomass Standalone	LFG (Recip)
	1x1 7FA.05	2x1 7FA.05	7FA.05	LM6000	LMS100P A			SCPC (PRB)	IGCC wo CCS				
Model Designation	Gas	Gas	Gas	Gas	Gas	uranium	Coal	Coal	Coal	n/a	n/a	Biomass	Landfill Gas
Generation Fuel	Gas	Gas	Gas	Gas	Gas	n/a	Gas	Gas	Gas	n/a	n/a	Biomass	Landfill Gas
Start Fuel	Gas	Gas	Gas	Gas	Gas	n/a	Gas	Gas	Gas	n/a	n/a	Biomass	Landfill Gas
Total installed Cost (including Owner's Cost and IDC, \$000s)	440,000	710,000	160,000	60,000	130,000	9,000,000	2,520,000	2,605,000	3,255,000	210,000	682,000	248,000	13,000
Total installed Cost (including Owner's Cost and IDC, \$/kW)	1,571	1,291	889	1,594	1,820	7,826	3,150	4,736	6,142	2,100	5,456	7,086	4,333
Summer Ratings [Summer = 95F]													
Capacity (average degradation, MW)	280	550	180	38	71	1150	800	530	520	100	125	35	3
Heat Rate (degraded, HHV, Btu/kWh)	7,000	6,970	10,400	10,000	12,340	10,680	9,610	9,220	11,080	--	--	12,900	13000
Winter Ratings [Winter = 20 F]													
Capacity (average degradation, MW)	304	617.5	210	45	96	1150	800	550	530	100	125	35	3
Heat Rate (degraded, HHV, Btu/kWh)	6,960	6,930	10,080	9,460	8,950	10,680	9,610	9,270	11,200	--	--	12,850	13000
Variable O&M (\$/MWh)	4.00	4.00	16.00	3.70	3.30	0	2.10	4.50	5.00	0.00	0	3.00	17.00
Variable O&M (\$/MWh) without MM	1.00	1.00	0.80										
Fixed O&M (\$/kW-year)	8.10	6.90	6.80	12.50	18.50	60.00	26.50	30.00	45.00	51.00	59.00	100.00	27.00

Table 3-1. Generating Unit Alternatives