



Control Number: 45624



Item Number: 307

Addendum StartPage: 0

SOAH DOCKET NO. 473-16-2751
PUC DOCKET NO. 45624

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BEFORE THE PUBLIC UTILITY COMMISSION
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STATE OFFICE OF

ADMINISTRATIVE HEARINGS

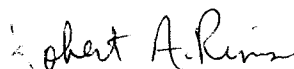
APPLICATION OF THE CITY OF §
GARLAND TO AMEND A §
CERTIFICATE OF CONVENIENCE §
AND NECESSITY FOR THE RUSK TO §
PANOLA DOUBLE-CIRCUIT 345-KV §
TRANSMISSION LINE IN RUSK AND §
PANOLA COUNTIES §

**SOUTHERN CROSS TRANSMISSION LLC'S SUPPLEMENTAL RESPONSE TO
TEXAS INDUSTRIAL ENERGY CONSUMERS' THIRD SET OF
REQUESTS FOR INFORMATION TO SOUTHERN CROSS TRANSMISSION LLC
QUESTION NO. TIEC 3-1**

Southern Cross Transmission LLC files this supplemental response to Texas Industrial Energy Consumers' Third Set of Requests for Information (RFI) Question No. 3-1 to Southern Cross Transmission LLC.

Southern Cross Transmission LLC reserves the right to object at the time of the hearing to the admissibility of the information provided herein.

Respectfully submitted,



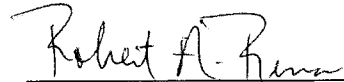
Robert A. Rima
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in w/permission

Attorney for Southern Cross Transmission LLC

CERTIFICATE OF SERVICE

I certify that a true and correct copy of this document was served by electronic mail, facsimile, hand-delivery, overnight delivery, or First Class U.S. Mail on TIEC on May 13, 2016.


Robert A. Rima *by u/pennisi*

**SOAH DOCKET NO. 473-16-2751
PUC DOCKET NO. 45624**

| | | |
|--------------------------------------|---|--------------------------------|
| APPLICATION OF THE CITY OF | § | |
| GARLAND TO AMEND A | § | BEFORE THE |
| CERTIFICATE OF CONVENIENCE | § | |
| AND NECESSITY FOR THE RUSK TO | § | STATE OFFICE OF |
| PANOLA DOUBLE-CIRCUIT 345-KV | § | |
| TRANSMISSION LINE IN RUSK AND | § | ADMINISTRATIVE HEARINGS |
| PANOLA COUNTIES | § | |

**SOUTHERN CROSS'S SUPPLEMENTAL RESPONSE TO COMMISSION TEXAS
INDUSTRIAL ENERGY CONSUMERS' THIRD SET
OF REQUESTS FOR INFORMATION TO
COMMISSION STAFF QUESTION NOS. TIEC 3-1**

Question No. TIEC 3-1

Please provide unredacted versions of all documents and communications produced in response to TIEC 2-12.

Objection

The material that is the subject of this Request is already the subject of a Motion to Compel filed by TIEC on April 20, 2016. Please see SCT's Response to TIEC's Motion to Compel filed on April 21, 2016 as well as SCT's Supplemental Response and attached affidavits filed on April 25, 2016. SCT objects to providing unreacted versions of all documents and communications produced in response to TIEC 2-12 because it would require SCT to (1) provide material that is outside the scope of TIEC's modified request and (2) it would require SCT to disclose privileged trade secret information that is competitively sensitive and would give a competitor an advantage if known.

Supplemental Response

Without waiving its objections, SCT has identified the attached emails that are relevant to the proceeding and not protected by the trade secret privilege.

Prepared by: Bob Rima
Sponsored by: Ellen Wolfe

Title: Counsel
Title: President – Resero Consulting

From: Sidart Deb
To: Ellen Wolfe
Cc: Lielong Hsue; Aarthi Asokkumar; Amirsaman Arabali
Subject: Re: [SCT] A/S Escalation
Date: Wednesday, November 18, 2015 8:15:11 AM
Attachments: image001.png

Ellen,

This is Jan. 1 through Oct. 31.

Exact cost is \$1.201/MWh

Regards,

Sidart

On Wed, Nov 18, 2015 at 7:12 AM, Ellen Wolfe <ewolfe@resero.com> wrote:

Sidart,

Is your \$1.10 in the figure you provided (below) year to date for 2015 or the last 12 months, or...?

Thanks,

Ellen

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Friday, November 13, 2015 5:21 PM
To: Ellen Wolfe <ewolfe@resero.com>
Cc: Lielong Hsue <llh@energyonline.com>; Aarthi Asokkumar <aarthi.akumar@energyonline.com>; Amirsaman Arabali <aarabali@energyonline.com>
Subject: [SCT] A/S Escalation

Ellen,

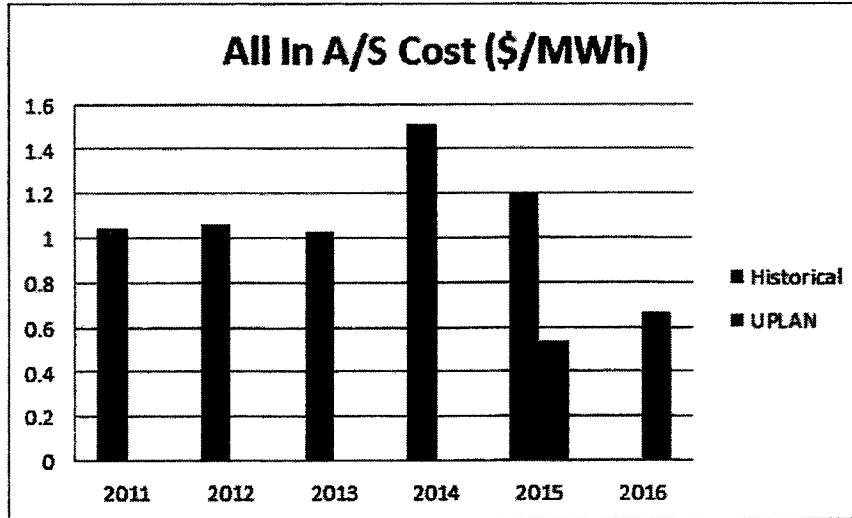
We will put together something or other for the data questions between now and Monday.

In the meantime, there is a bit of an issue I'm just realizing:

In order to be able to stand on the moral high ground when discussing production cost savings, we shouldn't do much in the way of bid/offer manipulation. However, without it you cannot get realistic ancillary service prices.

I just slogged to get together all the historical data to put together this graph which was

meant to get us ready to solve this escalation problem, but I'm not sure that it does. What it does show is that these costs are somewhat volatile. It also shows that \$1.50 for 2015 seems to be high.



--
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From: Sidart Deb
To: Ellen Wolfe
Subject: Re: [SCT] Assumptions - Iteration 1
Date: Tuesday, November 10, 2015 8:53:38 AM

Ellen,

Let me chew on this a little bit.

If we do wind up going for the 2020 model run to determine the A/S escalation, I see two issues:

1. we wouldn't be able to include it in our assumptions book that we are trying to lock down ASAP.
2. we'd need to decide whether that 2020 "look" includes SCT and the East or not.

Sidart

On Tue, Nov 10, 2015 at 7:16 AM, Ellen Wolfe <ewolfe@resero.com> wrote:

Sidart,

The point I think is that Dave explicitly asked for a fundamental analysis from us on how AS prices would escalate. You and I talked about this and agreed we would do something, although we hadn't quite figured out what that something was. But Dave wants more than just a simple extrapolation or cost of living increase.

Do you have any 2015 ERCOT model available? If you did I'd say run a 2015 year and then run the 2020 year and see how the AS cost or AS price paid to suppliers (if different) changes, and then we could use that change to adjust the \$1.50. Do you have any way to do that or something like that?

Thanks,

Ellen

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Monday, November 9, 2015 8:43 PM

To: Ellen Wolfe <ewolfe@resero.com>
Subject: Re: [SCT] Assumptions - Iteration 1

Ellen,

Just had a quick look at the presentation, thanks for sending it. It isn't clear to me where the \$1.50 came from really, but they seem to rely on historical data through 2013. In there, the A/S cost is more like \$1.09/MWh "all in" so there is definitely some additional magic going on -- although they do have 2014 on the last slide at \$1.57. I was hoping to better understand the \$1.50 so that we could use some similar logic to expand out. We could pretty easily do an analysis on average A/S prices, but it would be a little more involved to get the all-in averages using hourly quantities etc.

I wonder if it wouldn't be ridiculous to simply ask stratus how they got the \$1.50 and ask what they think is appropriate to use for 2020...

Sidart

On Mon, Nov 9, 2015 at 2:58 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

Sidart,

Attached is the ppt from which I got the AS and wheeling charge assumptions as per Pattern's direction.

With respect to AS I understand that the model may yield AS costs/prices. But here's the challenge as I see it. Stratus has the AS costs as \$1.50 for 2015. If you run 2020 and get some level of AS costs how will you know to adjust the \$1.50? For example, say you run 2020 and find out that AS costs are some tens of millions of dollars. I can see if you had a similarly calibrated 2015 model and ran it, and got -- for example -- for example a number that was 10% lower. Then we could take the \$1.50 and increase it by % for use in our 2020 run. We could an extra step and re-run the model and make sure the AS cost doesn't change as a result.

But, since you aren't running 2015, how will we know what to do with the result that comes out of your 2020 case in terms of adjusting the \$1.50?

Ellen

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Sunday, November 8, 2015 10:54 PM

To: Ellen Wolfe <ewolfe@resero.com>
Subject: Re: [SCT] Assumptions - Iteration 1

Ellen,

There is some indication that ancillary service prices are going to increase faster than any kind of cost of living index, but I'm not sure how we handle that exactly since that is what the model run itself will likely tell us.

For the Stratus info, I just can't seem to find a copy of the report. If you have one handy, please send it. Otherwise I'll do some more searching tomorrow.

Take care,

Sidart

On Sun, Nov 8, 2015 at 10:23 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

Hi Sidart,

The stratus report was printed in 2015. So I have no reason to believe they are not 2015 numbers.

I think you're right for the most part on the assumptions, but the one part I need you to do is to propose how to escalate the uplift charges, and Pattern was hoping for us to come up with a basis for how the ancillary service costs would likely change by 2020 based on other model fundamentals.

Can you please clarify what you need from Stratus still?

Thanks,

Ellen

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Sunday, November 8, 2015 7:16 PM
To: Ellen Wolfe <ewolfe@resero.com>
Subject: Re: [SCT] Assumptions - Iteration 1

Ellen,

We'll put this in and get back to you. From what I can tell it seems you have already done the work and we need only to past these tables in. Perhaps I'm missing something.

In any case, I had meant to respond earlier, but we got swamped with the resurfacing of two old projects, so I'll need to follow up with our guys on Monday or Tuesday. In the meantime, I was looking for the Stratus Executive summary and for some reason I cannot find it. Do you have a link?

Also, moving forward what kind of \$\$ are we using? Are the numbers in the export charges table included here in 2015 dollars? Should we do the study in 2015\$?

Best,

Sidart

On Fri, Nov 6, 2015 at 12:01 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

Sidart,

These look very professional! (Which is about all that I'm qualified to say about them.) I'll ask Stan the extent to which he'd like to review these. Can you add the export fees and transmission charge assumptions, and Pattern's wind assumptions to the ERCOT assumption set please. If you recall we have a task to escalate the export fees (ancillary services etc.). So we really have three elements from the Pattern end thus far to deal with for ERCOT. Transmission fees, other export fees that include ancillary services, and high wind cases. I'll address these in order. It would be great if you could fold these into your assumptions workbooks. Let me know if that is or isn't reasonable. And if you give me a sense of by when that could be done I'd consider offering other parts of your assumptions to Pattern (e.g., coal retirements

separately or possibly waiting for the whole set of assumptions and offering those.) Thanks, Ellen

Transmission fees ("TCOS").

From Mark Bruce – Pattern's expert we have the following.

TCOS Oct – May in current dollar is \$5.31/MWh, and June – Sept is \$6.90. These are to be escalated by \$0.75 to reach 2020 values, again based on analysis from Mark Bruce.

Other Export fees:

Currently predicted to be \$3.49. (May 18, 2015 Stratus Executive Summary Working Paper, "Charges applicable to exports of electrical energy from ERCOT over DC Ties".) These are made up of the following. We agreed as part of the scope of work to try to model how the AS part of this will change over time. That's \$1.50 of it. We can discuss how to do that. The rest it seems we should escalate too. I'd suggest applying cost of living to the ERCOT admin fee, black start and misc uplift. And to applying gas price escalations to T&D losses and UFE. And I may be persuaded to put misc uplift in this last category for which we do a fuel adjustment rather than a cost of living adjustment. Please offer your feedback.

| | | |
|----------------------------|----------------------|---|
| Ancillary Services | 1.500 | Estimated avg/MWh in 2015; may be self-arranged |
| ERCOT Admin Fee | 0.465 | Set annually by ERCOT; approved by PUCT |
| T&D Losses | 0.500 | |
| UFE | 0.155 | May be a charge or a credit (positive/negative UFE) |
| Black Start Service | 0.019 | Rate set every two years based upon BS awards |
| Misc. Uplift | 0.850 | Placeholder for various charge types allowed by the Protocols (LSE default, RMR costs, etc. Will be the same for all Loads except Wholesale Storage Load) |
| TOTAL ERCOT Charges | \$ 3.49 / MWh | |

Wind.

For the two high wind cases, Pattern asks that we add the respective 2,000MW and 4,000MWs as allocated to the regions based on the following table's "Base Wind NCF %". (This percentage is intended to reflect the energy deliveries from these resources.) Please confirm that this makes sense to you, and that you have some hourly profiles that would allocate such energy across the year.

| Panhandle | 1,800 | 45% | 52.4 |
|--------------------------|-------------|-------------|--------------|
| Caprock | 391 | 10% | 50.4% |
| I-20 | 852 | 21% | 47.3% |
| Western North Texas | 0 | 0% | 44.8% |
| South Texas ¹ | 957 | 24% | 35.4% |
| TOTAL | 4000 | 100% | 47.1% |

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Friday, October 30, 2015 6:27 PM
To: Ellen Wolfe <ewolfe@resero.com>
Subject: [SCT] Assumptions - Iteration 1

Hi Ellen,

Really happy I got to spend some time with you at the symposium. Kind of feel like you took care of us out there...

Anyway, I wanted to get these assumptions out to you before leaving for the weekend. As I mentioned before, it isn't totally clear what kind of assumptions will be relevant for the East. For now we have put in MISO and SERC, where SERC really means TVA and SOCO.

Not sure what your schedule looks like next week, but we'll be around generally speaking.

Enjoy the weekend & Happy Halloween.

Sidart

-

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From: Sidart Deb
To: Ellen Wolfe
Subject: Re: SCT flows, Losses
Date: Sunday, December 13, 2015 4:38:49 PM
Attachments: image001.png

I was hoping we could avoid that one

It's a combination of factors:

- Losses are compensated for prior to performing the main optimization based on estimated power flows
- only phase angles at the buses are actually in the optimization and rounding of very small differences at that level can create some small percent of extra flow

On Sun, Dec 13, 2015 at 3:57 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

But why do they exceed 2100 MWs?

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Sunday, December 13, 2015 3:55 PM

To: Ellen Wolfe <ewolfe@resero.com>
Cc: Aarthi Asokkumar <aarthi.akumar@energyonline.com>
Subject: Re: SCT flows, Losses

yes these are "goes ins"

On Sun, Dec 13, 2015 at 3:54 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

I feel like we must be talking past each other because it's taking us more than one iteration to solve this question. Maybe it's as simple as you answering the question of where the flows are measured. Are the flows reported at Rusk such that the values > 2000 MW are goes ins and not goes out?

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Sunday, December 13, 2015 2:54 PM

To: Ellen Wolfe <ewolfe@resero.com>
Cc: Aarthi Asokkumar <aarthi.akumar@energyonline.com>
Subject: Re: SCT flows, Losses

Had a quick look at the old cases (2014). In those the line capacity was 1000, not 1050. There is a writeup I found which states:

Transmission Losses on the Southern Cross phase 1 project were based on the physical characteristics of the transmission line and were approximately 0.24% at full (1000 MW) flow.

I've attached it here.

Sidart

On Sun, Dec 13, 2015 at 9:36 AM, Sidart Deb <sdeb@energyonline.com> wrote:

I see. It's possible we reported the flow on the other side of the line last time, but I'm not sure. I'll see if I can figure that out this afternoon. I know we were pretty careful this time because that language actually made its way into the SOW, so I assumed that Pattern wanted it this way.

Sidart

On Sun, Dec 13, 2015 at 9:13 AM, Ellen Wolfe <ewolfe@resero.com> wrote:

But here's what I don't yet know. The other times we ran we never exceeded the capacity of the line. So however you modeled losses ensured that. Now we are exceeding the 2000MW which tells me that you're modeling the line differently. When we discussed I asked that you try to model the line like you did in the prior studies. But I still haven't heard how you did it in those cases and how you're doing it now.

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Sunday, December 13, 2015 9:02 AM
To: Ellen Wolfe <ewolfe@resero.com>
Cc: Aarthi Asokkumar <aarthi.akumar@energyonline.com>
Subject: Re: SCT flows, Losses

Yes, in this case the flow is measured as the power that is coming into the Southern Cross. Roughly 5% less will come out the other side due to losses. As we set up the project, we discussed 2100MW coming in and 2000MW going out.

Because in our model the losses are a function of flow, we set it up so the average losses were 5%. When the flow is very high, losses will be slightly less than 5% and when flows are low, they will be slightly higher.

This should be fine, right?

What bothers me more is that the Southern Cross is rarely used for importing anymore, which is what we showed a lot of last time around.

Sidart

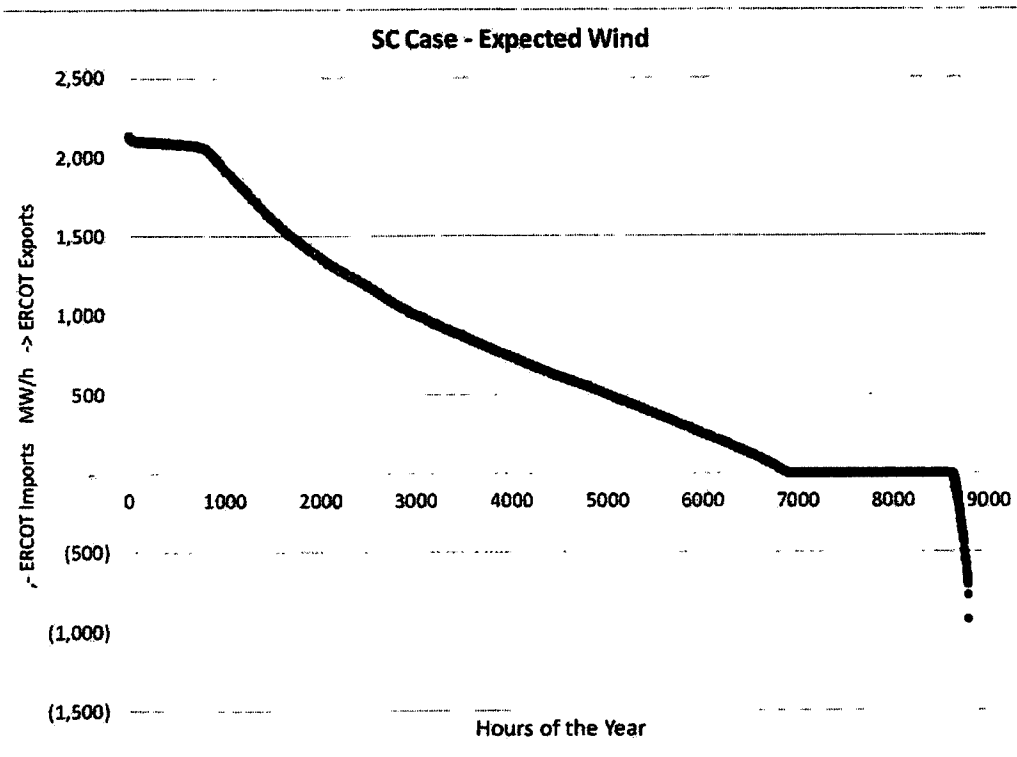
On Sun, Dec 13, 2015 at 7:31 AM, Ellen Wolfe <ewolfe@rescro.com> wrote:

Sidart,

I'm wondering what you ended up doing with losses. I'm concerned that Pattern is going to balk at the flows that exceed 2000 MW (See chart below). I expect that the area between the curve and 2000 MW represents a non-trivial amount of energy that would tend to overstate the SCT benefits. Since we didn't see flows exceeding the line rating in prior studies, I'd like to be able to tell Pattern what we chose to do differently this time that we hadn't done in prior studies with respect to losses. Can you comment on the approaches used in each study?

Thanks,

Ellen



Ellen Wolfe

Rescro

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From: Ellen Wolfe
To: Sidart Deb
Subject: Re: Pattern
Date: Thursday, September 10, 2015 9:24:35 AM

2:30 is good. Thanks.

Sent from my BlackBerry 10 smartphone on the Verizon Wireless 4G LTE network.

From: Sidart Deb
Sent: Thursday, September 10, 2015 9:23 AM
To: Ellen Wolfe
Subject: Re: Pattern

Ellen,

I delayed my response, because it looked for a while that my whole afternoon would be shot. Now that "problem" went away and I'm pretty available. I can propose 2:30 today if that works, but feel free to shift to whatever works best between 2 and 5:30.

Sidart

On Wed, Sep 9, 2015 at 10:35 AM, Ellen Wolfe <ewolfe@resero.com> wrote:

I have a 10 am mtg in sacramento. Probably that means I can't reasonably do the 9:30 to 11 window. Can you pick a time in the afternoon that's best for you?

Thanks!

From: Sidart Deb [<mailto:sdeb@energyonline.com>]
Sent: Wednesday, September 9, 2015 10:32 AM

To: Ellen Wolfe <ewolfe@resero.com>
Subject: Re: Pattern

Best would be 9:30 - 11. I can also make something in the afternoon (after 1:30) work, if that's better for you.

On Wed, Sep 9, 2015 at 10:23 AM, Ellen Wolfe <ewolfe@resero.com> wrote:

Sorry. I'm booked straight with calls through 12:30.

What time(s) tomorrow work?

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Wednesday, September 9, 2015 10:18 AM

To: Ellen Wolfe <ewolfe@resero.com>
Subject: Re: Pattern

Just tried to give you a call. Something came up and I won't be around this afternoon.

I'm available now or tomorrow I'm pretty flexible.

Sorry about that. Sidart

On Tue, Sep 8, 2015 at 10:45 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

Yes. Should work. Thanks.

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Tuesday, September 8, 2015 9:30 PM
To: Ellen Wolfe <ewolfe@resero.com>
Subject: Re: Pattern

Crazy day today, I meant to get back to you, but didn't get a chance until now.
Tomorrow I'm free from 3 to 5. Would that work?

Sidart

On Fri, Sep 4, 2015 at 5:37 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

Sidart,

As for a more thorough note...

Pattern now has a hard deadline and requirement to file a report with the PUCT with the CCN (permitting process to build the line). Dave said we could start as soon as he has the task order returned to him. I just spent an hour on the phone with him reviewing a mark up Dave did of the last draft scope I prepared for him when they last asked us to do so.

Can we find a time next week to discuss technical details and pricing? I'll try to work between now and then to get the scope sorted out and get our last budget located.

Perhaps we can talk this and SPP at the same time.

Let me know when would be good next week.

Thanks,

Ellen

Ellen Wolfe

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From: Sidart Deb
To: Ellen Wolfe
Subject: Re: Pattern scope - more
Date: Wednesday, September 23, 2015 10:31:01 AM

Even better. Thanks Ellen.

On Wed, Sep 23, 2015 at 10:22 AM, Ellen Wolfe <ewolfe@resero.com> wrote:

I don't think so. I made the scope with Pattern as generic as I could – like use ERCOT data or ERCOT-like methodologies.

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Wednesday, September 23, 2015 9:22 AM

To: Ellen Wolfe <ewolfe@resero.com>
Subject: Re: Pattern scope - more

Great! So do you still need dataset assumption language?

Regards,

Sidart

On Wed, Sep 23, 2015 at 7:36 AM, Ellen Wolfe <ewolfe@resero.com> wrote:

How you got that answer from "MMWG" I don't know, but I'll take it!

I think Pattern and I am converging. We have two scopes – one with the main base and change case and one with all the sensitivities and extra analysis. Thus far they didn't give me a hard time about budget. Hopefully I'll get the okay and I can send you a final scope to execute.

Thanks,

Ellen

From: Sidart Deb [mailto:sdeb@energyonline.com]
Sent: Wednesday, September 23, 2015 12:38 AM
To: Ellen Wolfe <ewolfe@resero.com>

Subject: Re: Pattern scope - more

Eastern Interconnection Reliability Assessment Group (ERAG)

Sent from my iPhone

On Sep 22, 2015, at 8:38 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

Thanks. What's MMWG again please?

Sent from my BlackBerry 10 smartphone on the Verizon Wireless 4G LTE network.

From: Sidart Deb

Sent: Tuesday, September 22, 2015 6:32 PM

To: Ellen Wolfe

Subject: Re: Pattern scope - more

Oops, too late to ask people around here about this before I go. I'll need to respond tomorrow. In the meantime:

ERCOT's 2020 base case construction would be following the the same methodology that ERCOT uses for planning and the same data when it is available. (I'm assuming that's what they want)

For the SERC side, we'll be using MMWG transmission data and I think to some extent it could be accurate to say we will be using the same strategy as PJM for developing the planning case. Is the Pattern language somehow implying that we should use ERCOT assumptions in SERC? We probably could do that if we understood what it meant...

On Tue, Sep 22, 2015 at 4:52 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

Sidart,

Pattern revised part of my proposed scope to read as follows:

"Base Case – ERCOT's 2020 case. SERC Case to be Provided by LCG. This case shall include ERCOT's assumptions for installed generation capacity (including wind and other renewables), gas price, load, grid topology, market parameters/conditions (e.g. for ERCOT, price caps, Operating Reserve Demand Curve ("ORDC"), etc.) ."

Could you please rewrite this to be clearer about what ERCOT case you'll use, what SERC case you plan to use and where you plan to get the assumptions shown, including articulating which you're getting from ERCOT and which you're getting from other sources?

Thanks,

Ellen

Ellen Wolfe

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David Parquet

From: Ellen Wolfe <ewolfe@resero.com>
Sent: Friday, November 06, 2015 11:35 AM
To: Stan Gray
Cc: David Parquet
Subject: RE: SCT Scenarios

Stan,
Just to confirm we'll escalate the \$3.49/MWh export fee toward the 2020 simulation year but I gather we should do so such that it is on a \$3.59/MWh trajectory in 2016. Do you have a data source for the \$0.10/MWh escalation that we should reference?

Thanks,
Ellen

From: Stan Gray [mailto:stan.gray@patternenergy.com]
Sent: Wednesday, November 4, 2015 7:33 AM
To: Ellen Wolfe <ewolfe@resero.com>
Cc: David Parquet <david.parquet@patternenergy.com>
Subject: RE: SCT Scenarios

I was told that Jan 1 ERCOT will increase the ERCOT service fee by \$0.10. We should increase the ERCOT service fee from \$3.49 to \$3.59 as per Mark Bruce.

Stan Gray

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stan.gray@patternenergy.com
www.patternenergy.com



From: Ellen Wolfe [mailto:ewolfe@resero.com]
Sent: Wednesday, November 04, 2015 7:29 AM
To: Stan Gray
Subject: RE: SCT Scenarios

Ok. I'll pass this along to LCG, confirm whether they have from ERCOT the wind profiles for those areas and that it's workable for them to take the energy values as allocations. I'll get back if we have any questions.

Thanks,
Ellen

From: Stan Gray [mailto:stan.gray@patternenergy.com]
Sent: Wednesday, November 4, 2015 7:24 AM

From: Sidart Deb
To: Ellen Wolfe
Cc: Aarthi Asokkumar
Subject: [SouthernCross] ERCOT Load Weighted Average Prices
Date: Monday, December 14, 2015 1:13:30 PM

Case1: \$32.43
Case2: \$31.63
Case3: \$32.02
Case4: \$31.28

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David Parquet

From: Ellen Wolfe <ewolfe@resero.com>
Sent: Wednesday, November 18, 2015 1:42 PM
To: David Parquet
Cc: Stan Gray; Mark Bruce
Subject: RE: SCT study - AS export fees and TCOS costs

Dave,
That's exactly the guidance I needed. ...just making sure. Sidart's crew already did a lot of analysis to indicate that YTD the estimated \$1.5 for AS is \$1.201/MWh. If it's a lot of work for Mark to redo that either (1) perhaps LCG could share their analysis, or (2) you could direct us to use Mark's table but updated based on the best information and prediction of 2020 values. (You've almost already asked us to do that already.) Let me know if this latter approach is acceptable. It'd save you labor budget and us project delay.

Thanks,
Ellen

From: David Parquet [mailto:david.parquet@patternenergy.com]
Sent: Wednesday, November 18, 2015 11:33 AM
To: Ellen Wolfe <ewolfe@resero.com>
Cc: Stan Gray <stan.gray@patternenergy.com>; Mark Bruce <mark.bruce@cratyl.us>
Subject: RE: SCT study - AS export fees and TCOS costs

In the previous studies (2011 and MISO in 2014) we included an allocation for export charges. I remember asking the question a couple of months ago, but I think in both we used about \$6/MWh. Not zero. No matter.

In the upcoming study, we have decided to use the full charge, inclusive of ERCOT Settlement Charges and TCOS, with a basis per Marks table. You have that table, right? There were/ are two changes that we asked you to make to those two costs. To ERCOT Settlement Charges, we asked you to update the Ancillary Services component to a higher number. To the TCOS, Mark asked you to add (I think) \$0.75/MWh to that. The result is over \$10/MWh.

If your question is if we should revert to \$0/MWh of the sum of both charges, my answer is no. We should use the full amount of over \$10/MWh, just as we have discussed. The PUCT is really focusing in on the fact that, even though they have rules that require the full charges, no one is appropriately charging. Indeed, in Marks materials that you have, you will see a "business as usual" case of \$0/MWh. Although that is reflective of present day reality, we do not see that continuing. And, although it will be enormously complicated to get all TSPs to appropriately and fully bill, we think by the year 2020 that that will be done.

I agree that +\$10/MWh vs \$0/MWh will very much change the results, the PUCT has found, and is focusing on, this problem.

Having said all of that, Mark and I had a meeting with Jeff Billo a couple weeks ago and Mark and Jeff discussed some of the components of the ERCOT Settlement Charges. I think Mark would agree that we could adjust the numbers a bit for your study. Mark – could you please redo your table for Ellen, and include your new thoughts on ERCOT Settlement Charges and TCOS (with TCOS including full charging by all TSPs, plus the \$0.75/MWh you assumed. Thanks.

Could be we want to run a sensitivity once we see the result. That is, frankly, if I see your flow duration curve being grossly limiting exports during off peak periods, exactly when ERCOT would be helped by exporting the problem causing wind, then it would be interesting to see the result if we did a sensitivity for \$0/MWh export charge.

David Parquet
Senior Vice President – Special Projects

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From: Ellen Wolfe [<mailto:ewolfe@resero.com>]
Sent: Wednesday, November 18, 2015 9:16 AM
To: David Parquet
Cc: Stan Gray; Mark Bruce
Subject: RE: SCT study - AS export fees and TCOS costs

Regarding #2...

Previously I think we had performed the SCT simulations without a transmission revenue recovery export fee. I gather from prior discussions with you and from Mark's document that there is some chance that no transmission export fees will be applied to SCT's flows. If that is the case and we model with the full fees applied then there is some chance we're overstating the fees and thereby understating the benefits.

Is that any clearer?

Ellen

From: David Parquet [<mailto:david.parquet@patternenergy.com>]
Sent: Wednesday, November 18, 2015 8:59 AM
To: Ellen Wolfe <ewolfe@resero.com>
Cc: Stan Gray <stan.gray@patternenergy.com>; Mark Bruce <mark.bruce@cratyl.us>
Subject: Re: SCT study - AS export fees and TCOS costs

Re 1, I leave to mark and stan. Re 2, I frankly do not understand your question.

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Sent from my iPhone

On Nov 18, 2015, at 7:25 AM, Ellen Wolfe <ewolfe@resero.com> wrote:

Dave, Stan and Mark,

We have two questions on the TCOS that we'd like to confirm before starting the simulations.

1. I know we specified in the TOs that we'd use export rates that Mark calculated and that we'd adjust the AS rates based on our determined 2015 to 2020 adjustments.

Mark predicted that the AS part of the export fees would be \$1.50/MWh in 2015. ERCOT market results in 2015 suggest however that the market has cleared something more like \$1.10 per MWh of load for Ancillary Services. Do you agree we should start with the \$1.10 as a 2015 proxy and adjust the price to 2020 based on our analysis of what AS prices are likely to be in year 2020?

2. Secondly, I just want to confirm that you want us to only simulate for TCOS costs for SCT. If we use full TCOS fees for all the runs and there is a chance that the full TCOS fees will not be applied we will underestimate the value of SCT and this impact can be significant given the high TCOS fees and the relatively low gas prices. So I just want to confirm before we start generating results.

Thanks,
Ellen

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David Parquet

From: David Parquet
Sent: Wednesday, November 18, 2015 3:49 PM
To: Ellen Wolfe
Cc: Stan Gray; Brett Rollow
Subject: Re: Question behind our ERCOT questions

My comment. I would use your assumptions. A few reasons. First, your assumptions are likely logical. And, whatever are your assumptions will be listed in your report for people to review. Second, "approximately right is close enough". Third, the denominator in a benefit/cost determination for sct is zero, meaning an infinite b/c, regardless of benefit. Ercot does benefit/cost studies. Therefore, fourth, a subtle point, only the benefit number is of interest to what you are doing. Fifth, based on the past two studies, the benefit you calc will likely be very, very large in absolute terms. For example, you determined for the miso study last year that the benefit would be \$1.4billion per year to consumers. For the use/purpose of that study, even a tenth of that number would have been significant. So, go back and think about "approximately right".

Sent from my iPad

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On Nov 18, 2015, at 3:04 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

Dave, Stan, and Bret,

I'm still working with LCG to get our questions articulated and we're finding that there is a fundamental question that we're unclear about. I think it requires you to answer it and not ERCOT per se. Here it is:

Do you want us to as a priority use assumptions that match the assumptions that ERCOT would use if they were assessing this project as an economic project through the RPG? Or do you want us to use our best assumptions?

There are times when ERCOT uses very straightforward assumptions that are pretty black and white. But there are a couple instances in which we could use what we as independent experts believe are better assumptions. (Take for example that ERCOT uses in its planning models a single gas price for all of ERCOT whereas we come up with gas prices that differ by zone. Another example is that ERCOT only assumes generation additions for generators that have interconnection agreements already, yet we know of some generators that are likely to site by have no interconnection agreements.)

Given that the RPG is not actually going to study this project, it is not clear to us whether you want to opt for consistency or accuracy. If you can weigh in on this I can reduce the extensiveness of the questions we pose to you and to ERCOT.

Thanks,
Ellen

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David Parquet

From: Ellen Wolfe <ewolfe@resero.com>
Sent: Friday, November 20, 2015 2:58 PM
To: Mark Bruce
Cc: Stan Gray; David Parquet; Brett Rollow; Sidart Deb
Subject: RE: SCT modeling assumptions and questions

Thank you. We will plan to use an ERCOT wide price. We'll have to just run with the gas price we have unless you can get any feedback otherwise in the next week or so.
Ellen

From: Mark Bruce [mailto:mark.bruce@cratyl.us]
Sent: Friday, November 20, 2015 2:57 PM
To: Ellen Wolfe <ewolfe@resero.com>
Cc: Stan Gray <stan.gray@patternenergy.com>; David Parquet <david.parquet@patternenergy.com>; Brett Rollow <Brett.Rollow@patternenergy.com>; Sidart Deb <sdeb@energyonline.com>
Subject: Re: SCT modeling assumptions and questions

Just a few observations on the gas price discussion here:

1. I am pretty sure that for most applications (certainly on the system planning side of the house), ERCOT uses one gas price for the whole system. I am not aware of any functions or applications (settlement formula, recent CPP impact studies, economic analysis of transmission, etc.) where ERCOT uses multiple gas prices for various regions.

2. As for the gas price assumptions ERCOT and MISO will agree to use in their joint study - Jeff Billo said today at RPG that they are starting to discuss that now and hope to reach agreement on that and other fundamental modeling assumptions by March 2016. So we won't really know about differences in assumed gas prices for many weeks it seems.

^^

On Fri, Nov 20, 2015 at 1:44 PM, Ellen Wolfe <ewolfe@resero.com> wrote:

I don't know the answer to the constraint question. I'll have to get Sidart's answer on that one. Regarding gas, I didn't change the table when you gave me the instruction to use ERCOT assumptions, but I expect that we'd use an ERCOT-wide gas price. We'd especially do that I suspect if ERCOT would offer theirs.

From: Stan Gray [mailto:stan.gray@patternenergy.com]
Sent: Friday, November 20, 2015 8:58 AM
To: Ellen Wolfe <ewolfe@resero.com>; David Parquet <david.parquet@patternenergy.com>; Brett Rollow <Brett.Rollow@patternenergy.com>; Mark Bruce <mark.bruce@cratyl.us>
Cc: Sidart Deb <sdeb@energyonline.com>
Subject: RE: SCT modeling assumptions and questions

A couple of questions:

Constraints- Could we miss an overload or constraint using monitored line list from the old topology. We are reconfiguring ERCOT lines at least at Rusk and we are adding new sources and sinks at both ends?

Gas Prices-you listed zonal gas prices in ERCOT. Is the ERCOT way to use a flat gas price across the region or do they use gas process by zone in cost modeling?

I didn't check wheeling rates in your table.

Stan Gray

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From: Ellen Wolfe [<mailto:ewolfe@resero.com>]
Sent: Thursday, November 19, 2015 1:21 PM
To: David Parquet; Stan Gray; Brett Rollow; Mark Bruce
Cc: Sidart Deb
Subject: SCT modeling assumptions and questions

Gentlemen,

Please find attached a workbook containing major assumptions for the SCT modeling project, as well as a document containing a list of questions. Please feel free to vet these with ERCOT staff. The questions contain ERCOT-Related questions and Eastern Interconnect questions. We are hopeful that you have other contacts that may lend input to the Eastern Interconnect questions. I'll leave it up to you as to whether you see any value in sharing them with ERCOT.

The assumptions can also be shared with ERCOT. We would release a higher-level version of this for public consumption, and as such we would recommend that it be kept within the confines of our team and the ERCOT experts.

Please let me know if you have any questions or if you see any errors in our capturing of the assumptions.

Thank you.

Ellen

Ellen Wolfe

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