

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC 2021 INTEGRATED RESOURCE)	CASE NO.
PLAN OF DUKE ENERGY KENTUCKY, INC.)	2021-00245

NOTICE OF FILING

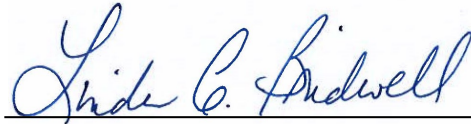
Notice is given to all parties that the following materials have been filed into the record of this proceeding:

- The digital video recording of the evidentiary hearing conducted on May 17, 2022 in this proceeding;
- Certification of the accuracy and correctness of the digital video recording;
- A written log listing, inter alia, the date and time of where each witness' testimony begins and ends on the digital video recording of the evidentiary hearing conducted on May 17, 2022.

A copy of this Notice, the certification of the digital video record, and hearing log have been served upon all persons listed at the end of this Notice. Parties desiring to view the digital video recording of the hearing may do so at https://youtu.be/ojY_XoH-KNA.

Parties wishing an annotated digital video recording may submit a written request by electronic mail to pscfilings@ky.gov. A minimal fee will be assessed for a copy of this recording.

Done at Frankfort, Kentucky, this 22nd day of June 2022.

A handwritten signature in blue ink that reads "Linda C. Bridwell". The signature is written in a cursive style with a horizontal line underneath it.

Linda C. Bridwell
Executive Director
Public Service Commission of Kentucky

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In the Matter of:

ELECTRONIC 2021 INTEGRATED RESOURCE)	CASE NO.
PLAN OF DUKE ENERGY KENTUCKY, INC.)	2021-00245

CERTIFICATION

I, Candace H. Sacre, hereby certify that:

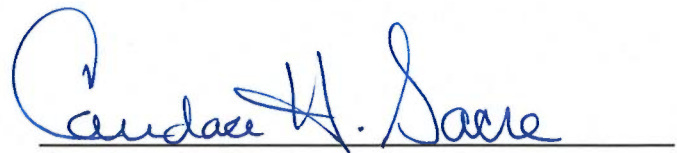
1. The attached flash drive contains a digital recording of the Formal Hearing conducted in the above-styled proceeding on May 17, 2022. The Formal Hearing Log is included with the recording on May 17, 2022;

2. I am responsible for the preparation of the digital recording;

3. The digital recording accurately and correctly depicts the Formal Hearing of May 17, 2022; and

4. The Formal Hearing Log attached to this Certificate accurately and correctly states the events that occurred at the Formal Hearing of May 17, 2022, and the time at which each occurred.

Signed this 20th day of June, 2022.



Candace H. Sacre
Administrative Specialist III



Stephanie Schweighardt
Notary Public State at Large
Commission Expires: January 14, 2023
ID# 614400



Session Report - Detail

2021-00245 17May2022

Duke Energy Kentucky, Inc. (Duke Kentucky)

Date:	Type:	Location:	Department:
5/17/2022	Public Hearing\Public Comments	Hearing Room 1	Hearing Room 1 (HR 1)

Witness: Brian Bak; Michael Geers; Jeff Gindling; Timothy Hohenstatt; Tim Huff; Matthew Kalemba; Sarah Lawler; Robert McMurry; Scott Park; Benjamin Passty; Brett Phipps; Tony Platz; Matt Ruscio; Vicky Sullivan; John Swez
 Judge: Kent Chandler
 Clerk: Candace Sacre

Event Time	Log Event	
9:06:19 AM	Session Started	
9:07:53 AM	Chairman Chandler Note: Sacre, Candace	Good morning. We are on the record in Case No. 2021-00245, the Electronic 2021 Integrated Resource Plan of Duke Energy Kentucky, Inc.
9:08:03 AM	Chairman Chandler Note: Sacre, Candace	My name is Kent Chandler. I am Chairman of the Kentucky Public Service Commission and am presiding over the hearing today.
9:08:09 AM	Chairman Chandler Note: Sacre, Candace	Hearing and videoconferencing recommendations. (Click on link for further comments.)
9:09:05 AM	Chairman Chandler Note: Sacre, Candace	The purpose of today's hearing is to take evidence on Duke's Integrated Resource Plan, their 2021 Integrated Resource Plan.
9:09:13 AM	Chairman Chandler Note: Sacre, Candace	Entry of appearance of counsel.
9:09:22 AM	Atty D'Ascenzo Duke Kentucky Note: Sacre, Candace	Rocco D'Ascenzo
9:09:32 AM	Atty Samford Duke Kentucky Note: Sacre, Candace	David Samford.
9:09:38 AM	Chairman Chandler Note: Sacre, Candace	Both presenting witnesses? (Click on link for further comments.)
9:09:48 AM	Asst Atty General Cook Note: Sacre, Candace	Lawrence Cook.
9:10:02 AM	Atty Miller Sierra Club Note: Sacre, Candace	Matthew Miller, Bethany Baxter, Joe Childers.
9:10:24 AM	Staff Atty Bellamy PSC Note: Sacre, Candace	Ben Bellamy joined by John Rogness and Mary Beth Purvis.
9:10:29 AM	Chairman Chandler Note: Sacre, Candace	Public notice. (Click on link for further comments.)
9:10:38 AM	Chairman Chandler Note: Sacre, Candace	Outstanding petitions and motions. (Click on link for further comments.)
9:11:10 AM	Chairman Chandler Note: Sacre, Candace	Public comments. (Click on link for further comments.)
9:12:17 AM	Chairman Chandler Note: Sacre, Candace	First witness?
9:12:20 AM	Atty D'Ascenzo Duke Kentucky Note: Sacre, Candace	Scott Park.
9:12:31 AM	Chairman Chandler Note: Sacre, Candace	Procedural discussions. (Click on link for further comments.)

9:14:22 AM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
9:14:31 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Examination. Name and address?
9:14:44 AM	Atty Samford Duke Kentucky - witness Park Note: Sacre, Candace	Direct Examination. Title?
9:14:51 AM	Atty Samford Duke Kentucky - witness Park Note: Sacre, Candace	Involved in preparation of IRP and responses?
9:14:57 AM	Atty Samford Duke Kentucky - witness Park Note: Sacre, Candace	If were to ask same questions, answers be same?
9:15:09 AM	Atty Samford Duke Kentucky - witness Park Note: Sacre, Candace	Edits or changes or corrections?
9:15:15 AM	Atty Samford Duke Kentucky - witness Park Note: Sacre, Candace	Desire and intent be filed into record?
9:15:33 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Cross Examination. Company see additional satellite industries added service territory as result of Amazon hub?
9:16:01 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Ben Passty?
9:16:16 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Company monitoring PJM transmission to determine if projects brought into or close to territory?
9:16:38 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Transmission?
9:16:51 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Who direct question to?
9:17:05 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Can you spell last name for me?
9:17:20 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Seen Staff Report issued few days ago?
9:17:31 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Report states at page 6, reading (click on link for further comments), same forecast used in other IRPs, or this one specific just to Duke Kentucky?
9:18:19 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Supply side resources likely include several hundred megawatts of renewable resources?
9:18:46 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Toward end of planning period or few years beyond?
9:19:21 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Know whether renewable resources count toward Duke Kentucky FRR reserve margin requirement?
9:19:51 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Given Woodsdale units dual fuel capability, also qualify as black start units?
9:20:10 AM	Chairman Chandler Note: Sacre, Candace	What is or is not the black start facilities, ahead of Swez examined, entertain a request confidential record getting into which resources black start and Duke Kentucky individual black start plan.
9:20:57 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Based on fuel scenarios in IRP, currently in high gas price scenario?
9:21:42 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	In event high gas price scenario continues to time frame when decisions made how replace East Bend, converting plant to gas firing viable option?

9:22:10 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Of four East Bend 2 replacement portfolio scenarios in IRP, only one with storage becomes replacement supply side resources appears be last option?
9:22:45 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Duke ascribe capacity factor solar or wind during winter?
9:23:15 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Anticipate electric vehicles make more inroad into service territory?
9:23:38 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Same question ask about space heating?
9:24:00 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Have access to Staff report?
9:24:09 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Counsel provide?
9:24:26 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Page 29, Staff reproduced chart found in IRP filing page 65, Figure 7.1, correct?
9:24:57 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Explain regarding, storage, each year cumulative addition resulting new total, or amount of storage identified 2025 ten brand new megawatts or cumulative total?
9:25:24 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Wonder if access to IRP filing, check at page 63, reading (click on link for further comments), read correctly?
9:26:19 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	True that fiscal generation asset provides hedge against price risk?
9:26:27 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Any scenario forced company rely heavily on market price versus actual asset more inherent risk?
9:27:08 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	True this summer MISO warning parts of footprint experience curtailments or other stages power cuts?
9:27:34 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Many load-serving entities MISO have no choice but rely on market purchases due to premature generation retirements in footprint?
9:28:03 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Duke Kentucky interconnected to Duke Indiana?
9:28:45 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Duke Indiana MISO member?
9:28:52 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Clear Duke Kentucky not capacity long?
9:29:06 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	Not word trying to look for, believe opportunities Duke Kentucky make off-system sales into MISO?
9:30:16 AM	Asst Atty General Cook - witness Park Note: Sacre, Candace	What about situations where market sales in MISO more advantageous than PJM, have choice or always obligated sell into PJM?
9:30:49 AM	Chairman Chandler Note: Sacre, Candace	Questions?
9:31:05 AM	Atty Miller Sierra Club - witness Park Note: Sacre, Candace	Cross Examination. Discovery responses, IRP Confidential Table H.2, not asking confidential figures but may need, page 167, at top, reading (click on link for further comments), same as base case?

9:32:46 AM	Atty Miller Sierra Club - witness Park Note: Sacre, Candace	Base gas prices not high or low with carbon regulation scenario?
9:32:58 AM	Atty Miller Sierra Club - witness Park Note: Sacre, Candace	Duke believes, if has to choose, this most likely scenario but not necessarily greater than 51 percent, accurate?
9:33:26 AM	Atty Miller Sierra Club - witness Park Note: Sacre, Candace	Capacity factors displayed in table represent what Duke projects each resource perform like under base case?
9:34:00 AM	Atty Miller Sierra Club - witness Park Note: Sacre, Candace	Remind me when East Bend 2 be retired base case scenario?
9:34:11 AM	Atty Miller Sierra Club Note: Sacre, Candace	Out of abundance of caution, go confidential mode?
9:34:29 AM	Chairman Chandler Note: Sacre, Candace	Move over discuss this confidential session.
9:34:38 AM	Private Mode Activated	
9:34:38 AM	Private Recording Activated	
10:27:25 AM	Normal Mode Activated	
10:27:25 AM	Public Recording Activated	
10:27:34 AM	Chairman Chandler Note: Sacre, Candace	Back on public record in Case No. 2021-00245.
10:27:36 AM	Chairman Chandler Note: Sacre, Candace	Short recess until 10:45.
10:27:50 AM	Session Paused	
10:47:38 AM	Session Resumed	
10:47:48 AM	Chairman Chandler Note: Sacre, Candace	Back on record, continue cross examination.
10:47:56 AM	Atty Miller Sierra Club - witness Park Note: Sacre, Candace	Cross Examination (cont'd). Environmental law compliance, Casper update, and SCR, page 141, IRP, bottom of the page, able speak to that?
10:48:36 AM	Atty Miller Sierra Club - witness Park Note: Sacre, Candace	Mike Geers?
10:48:56 AM	Chairman Chandler Note: Sacre, Candace	Mr. Bellamy?
10:48:59 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Cross Examination. In IRP, six optimized portfolios, each scenario developed optimized portfolio for scenario?
10:49:24 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Then six alternative scenarios had transition A and transition B and then four showing variations retirement of East Bend?
10:49:39 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Wanted further explanation how get from six scenario optimized portfolios to preferred portfolio, thought process and just process?
10:52:21 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Had six scenarios, six optimal portfolios based on least cost based on projected revenue requirement in future?
10:52:41 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Once had optimized plans, took those, analyzed, and reached preferred portfolio, how get from optimized plans under scenarios and get to preferred portfolio?
10:55:12 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Least disruptive, mean least costly or rate changes less dramatically?
10:56:07 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Have written formal policy regarding goals?

10:56:29 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Mentioned general things, have nailed down specific way, or just discuss until reach preferred portfolio?
10:57:22 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Biggest thing driving preferred optimized portfolio under six scenarios?
10:58:03 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	When coming up with scenarios, indicated six included some of biggest variables affect prices, why applying six scenarios not most important factor?
10:59:35 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Optimized portfolios, Figure 6.2, page 46 of IRP, at top, without carbon regulation, mistake top 2035?
11:01:07 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	If no carbon regulation, East Bend continue be economic under optimized scenarios high and base gas cost, but if low gas cost East Bend uneconomic?
11:01:40 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Assuming accurate figure 6.1, page 44, East Bend under high gas with carbon regulation East Bend closing 2035, economic closure under that scenario?
11:02:04 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Figure 6.1, first time solar added in 2025, then optimized play solar 2021 also battery and then wind in 2024, applying optimized portfolios for six scenarios, none showing renewable resources in 2021?
11:02:51 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	What thinking behind adding those in preferred plan early at higher volumes than show in any optimized?
11:04:35 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Preferred portfolio assume carbon regulation, or just taking all info and deciding what think be best?
11:05:19 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Examination. Possibility of carbon regulation, possibility or likelihood?
11:05:51 AM	Chairman Chandler - witness Park Note: Sacre, Candace	CO2 regulation a possibility, answer chosen based off possibility of CO2 regulation, is it possibility or likelihood?
11:06:10 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Likelihood have ascribed qualitative expectation of possibilities modeled scenarios most likely preferred fleet or resource mix against scenario considered to be most likely, base gas CO2 regulation, exclusively qualitative, yes and no, ascribe values as one scenario likely over separate scenario?
11:07:30 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Response to Bellamy possible likelihoods, what distinguishes this scenario to make it either one applied against?
11:08:41 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Recross Examination (cont'd). Figure 6.8, market percentage various portfolios, when ran optimized portfolios under six scenarios, constraint on capacity purchases all capacity natively generated or through PPA or did it allow capacity purchases?
11:10:03 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	For actual capacity, assume owned by Duke or purchased through large contract?

11:10:27 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Examination. Effectively presumed FRR in place entirety of planning period and have to have FRR plan in which owned contract enough capacity meet UCAP requirements?
11:10:43 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Recross Examination (cont'd). Figure 6.0, market purchases of energy, possible provide spreadsheet shows total projected energy use each year and total projected energy purchases each year, ask as post-hearing data request?
11:10:44 AM	POST-HEARING DATA REQUEST Note: Sacre, Candace Note: Sacre, Candace	STAFF ATTY BELLAMY PSC - WITNESS PARK TOTAL PROJECTED ENERGY USE EACH YEAR AND TOTAL PROJECTED ENERGY PURCHASES EACH YEAR
11:11:26 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	How level market purchases play into selection of optimal portfolios under six scenarios?
11:12:48 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Question more how modeled, just let model select energy purchases or place constraint in model limited energy purchases?
11:13:24 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Want to see and make determination if relying too much on market purchases and too risky proceed?
11:13:36 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Figure 8, two graphs, one without carbon regulation and one with carbon regulation, assuming both base gas costs?
11:14:03 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	It depends on the portfolio?
11:14:16 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	With and without, but transition A and transition B, high gas, base gas, or low gas?
11:14:43 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Gas price affect extent relies on market purchases?
11:15:11 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	When did graphs, transition A preferred portfolio?
11:15:20 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	When did graphs transition A, done assuming base gas costs or done assuming high gas costs?
11:15:56 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Trying to figure out what this chart is for transition A, is it base gas cost, high gas cost, or low?
11:16:24 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Base gas cost used for price of market energy and for transition A?
11:16:41 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Cost of gas affect extent transition A relied on market purchases?
11:17:01 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	With CO2 regulation and at base gas, transition A relying in 2028 on 80 percent?
11:18:32 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	With CO2 regulation, transition A showing starting in 2028 80 percent or higher reliance on market purchases, why transition A be preferred portfolio with level of reliance?
11:20:04 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	How high gas cost affect market exposure, decrease under transition A?

11:21:14 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Post-hearing data request total energy and amount of energy purchased, provide average cost per megawatt hour in each year of market purchases, average cost of megawatt hour each year of market purchases on figure 6.8?
11:22:05 AM	POST-HEARING DATA REQUEST Note: Sacre, Candace Note: Sacre, Candace	STAFF ATTY BELLAMY PSC - WITNESS PARK TOTAL ENERGY AND AMOUNT OF ENERGY PURCHASED, PROVIDE AVERAGE COST PER MEGAWATT HOUR IN EACH YEAR OF MARKET PURCHASES AND AVERAGE COST OF MEGAWATT OUR EACH YEAR OF MARKET PURCHASES IN FIGURE 6.8.
11:22:34 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Would be imposition obtain on monthly basis, export on monthly basis, annual is fine?
11:23:00 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Constraint optimized models required minimum UCAP reserve margin of 8.7 percent?
11:23:19 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	When ran model, look at UCAP capacity each generation resource selected under optimized portfolio?
11:23:43 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	When model selecting whether sufficient capacity, selecting based on UCAP capacity values of resources?
11:24:39 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	By using UCAP values ensure adequate capacity, IRP really looking at optimal way satisfy PJM requirements as opposed optimal way ensure sufficient capacity serve Kentucky customers?
11:25:32 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	If doing modeling based on satisfying PJM requirements, does assume PJM requirements sufficient ensure adequate capacity for Kentucky customers?
11:26:57 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Ever model ensure have capacity some future date meet needs of Duke Kentucky customers, indicated do, what circumstances do that in, only do it before build generation asset, or does Duke Kentucky do long-term forecasts look more at reliability?
11:29:25 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Not go into details what in confidential H.2 Table, availability mentioned on there, not PJM UCAP capacity value, projected availability projected separately?
11:29:55 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Know what changed projecting that availability versus what look at determine UCAP capacity value generation resource within PJM?
11:30:28 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Not know how distinguish availability in H.2 and UCAP?
11:31:10 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Examination. Know what availability percentages are in H.2?
11:31:23 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Know approximately UCAP PJM ascribes solar ELCC basis, are they close?
11:32:32 AM	Chairman Chandler - witness Park Note: Sacre, Candace	When you did model ended up H.2, portfolio ends up in H.2, what percent nameplate of limited duration resources contribution to peak did you use?

11:33:16 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Provided that because think resource contribution to peak or what PJM allow use?
11:33:38 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Agree thermal resources your calculation availability factor as relates to UCAP seems be within neighborhood?
11:33:53 AM	Chairman Chandler - witness Park Note: Sacre, Candace	For limited duration resources, not seem same relationship?
11:34:09 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Availability limited duration resources related to entire number of hours in year, contribution to peak not looking all hours, at significantly less, agree?
11:34:30 AM	Chairman Chandler - witness Park Note: Sacre, Candace	Which is difference between limited duration and thermal resources for modeling purposes?
11:34:41 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Cross Examination (cont'd). Response, Staff Second, Item 5, looking at chart page 4, asked about UCAP reserve margin under each scenario optimized portfolios and other six, that is the UCAP reserve margin under each of scenarios?
11:36:13 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	If minimum reserve set at 8.7 and model optimizing for costs, why scenarios in optimized select generation exceeds UCAP reserve margin nearly every year?
11:37:04 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Driven by fact East Bend and Woodsdale still open, reflecting significant capacity?
11:37:17 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Selecting purely for energy is what saying?
11:37:45 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	In beginning most models 20+ percent, under optimized scenarios start going down, decreases reflecting closure of East Bend?
11:38:21 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Transition A, preferred portfolio, maintaining reserve margin 25 percent plus every year, also adding resources throughout that time?
11:38:51 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	How carbon tax reflected, assumed five percent per ton beginning in 2025, increase \$5 each year ending 2035?
11:39:26 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	By 2035, approximately \$55 per ton?
11:39:34 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Gradual implementation done reflect Duke projection any carbon regulation implemented gradually?
11:40:36 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Projecting how think be implemented for those reasons?
11:41:09 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Duke project whether carbon tax or other carbon regulation \$55 per ton approximation of cost in 2035?
11:41:57 AM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Representing whole multitude of scenarios, assuming various scenarios, reach \$55 figure or whatever number is, Duke any kind of projections if carbon tax or total carbon can emit, actual projections of cost backing up \$55 figure?

11:43:17 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	How reasonable value reached then?
11:44:41 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Think are assumptions behind it but not know what they are offhand?
11:45:00 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Work on IRPs other jurisdictions?
11:45:05 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Use same methodology every other jurisdiction or use other methodologies?
11:45:18 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Any other methodology have used to look at resource planning?
11:45:38 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Recently, not going back over career?
11:46:17 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Look at cost of carbon sequestration?
11:46:26 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Briefly explain what done?
11:47:22 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Given Duke geography, easier implement carbon tax or actual restrictions on carbon something possible comply with in Kentucky?
11:48:40 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Carbon cost applied to PJM prices when projecting energy purchases in model?
11:49:04 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Applied to coal units and natural gas units?
11:49:23 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Page 20-25 of IRP, PJM purchase prices, for periods that are historical, capacity prices also generation prices, gigawatt hour, looked at how historical portions performed?
11:51:35 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Showing capacity in market, not showing cost?
11:51:50 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Energy mix shown here based on prices of various generation each year?
11:52:47 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Each scenario based on assumed price?
11:53:03 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Possible get for historical periods monthly cost of generation used in tables and comparison with actual prices to date same period, market purchases, megawatt hour?
11:53:33 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	Projected out mix generation resources, when ran models PJM market match projection in models, the compare market purchases in model on same bases?
11:54:54 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	When projecting for scenario optimized portfolios, particular market price?
11:55:53 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	If look at off-shore wind selected in 2025 with carbon regulation, increases over years, on-shore wind constant throughout, explanation?
11:57:31 AM	Staff Atty Bellamy PSC - witness Park	Note: Sacre, Candace	When Duke projecting change in generation mix, take into account all announced coal generation retirements?

11:58:43 AM	Chairman Chandler Note: Sacre, Candace	Recess until 1.
11:58:51 AM	Session Paused	
1:04:52 PM	Session Resumed	
1:05:10 PM	Chairman Chandler Note: Sacre, Candace	Back on the record in Case No. 2021-00245.
1:05:14 PM	Chairman Chandler Note: Sacre, Candace	Mr. Bellamy?
1:05:21 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Cross Examination (cont'd). Agree some generation options require more grid upgrades than other options?
1:05:49 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Solar and wind require additional upgrades than if built CT unit at existing site?
1:06:21 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Anything in IRP look at how transmission costs affected by different selections of generation resources?
1:07:00 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Seen IRPs other states/utilities taken transmission upgrades into account selecting different resources?
1:07:20 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Be any logical way to do when looking at generic resources, picking without site, adding ten percent solar/ten percent wind or combined cycle unit, way incorporate those costs into generation selection?
1:08:12 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Not have site in mind, any kind of projected/average figures use, (click on link for further comments), incorporate statistical cost into model, any way do that?
1:09:04 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Combined cycle unit, modeled cost based on being 1157 megawatt unit create economies of scale?
1:09:24 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Assumes have partner for combined cycle unit?
1:09:38 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Do modeling of smaller combined cycle unit?
1:10:09 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Duke done anything look potential partners for larger unit?
1:10:35 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Looking to site such unit in Kentucky or Duke Kentucky service territory or thinking of siting outside and have energy transmitted in?
1:11:15 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Looking to put in territory or close as possible, potential partners be other Kentucky utilities or other affiliates of Duke Kentucky?
1:11:55 PM	Staff Atty Bellamy PSC - witness Park Note: Sacre, Candace	Any environmental regulation changes since completed IRP have effect on any costs, things didn't consider?
1:12:37 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Examination. Preferred portfolio, Transition A, shown on 7.1, how add ten megawatt tranches of renewables?
1:13:20 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Ten megawatt tranches, answer earlier having more certainty closer to time remodel as part of CPCN?

1:13:37 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Aware smaller tranches of solar megawatts not require CPCN ordinary course of business?
1:13:50 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Plan add tranches of solar not be restudied prior to built, same way two- or three- or 400-megawatt single unit might?
1:14:32 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Have data set for overnight capital cost for each different types of resources?
1:14:44 PM	Chairman Chandler - witness Park Note: Sacre, Candace	On per kW basis?
1:14:54 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Agree differences between dollar per kW for 10-megawatt versus 100-megawatt solar facility?
1:15:06 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Model dollar per kW for solar, not a dollar per kW for 10-megawatt tranche verse 20-megawatt tranche verse an 80-megawatt facility?
1:15:32 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Where is that in model shows each of scenarios for each portfolio considers different tranche solar based off scenarios?
1:16:15 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Preferred portfolio adds 10-megawatts solar over years, ten megawatts of constraint, could have added 11 or nine on its own?
1:16:44 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Where confused, keep saying the model choose but number of portfolios not chosen by model but chosen by you all based on what saw in model?
1:17:22 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Constraints around amount of solar can be added any year optimized portfolios?
1:17:28 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Constraint for when?
1:17:32 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Constraints identified in IRP?
1:17:44 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Post-hearing data request identify constraints for each of portfolios, optimized and personal constraints placed on company-identified portfolios?
1:17:45 PM	POST-HEARING DATA REQUEST Note: Sacre, Candace Note: Sacre, Candace	CHAIRMAN CHANDLER - WITNESS PARK IDENTIFY CONSTRAINTS FOR EACH PORTFOLIO, OPTIMIZED AND PERSONAL CONSTRAINTS PLACED ON COMPANY-IDENTIFIED PORTFOLIOS
1:18:09 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Model interconnection costs of any of facilities?
1:18:26 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Mean all different generators, generation only or presume some cost of interconnection?
1:18:54 PM	Chairman Chandler - witness Park Note: Sacre, Candace	McMurry discuss different issues like CIRs and interconnection rights and deliverability issues around transaction connections?
1:19:18 PM	Chairman Chandler - witness Park Note: Sacre, Candace	For energy efficiency, IRP notes what avoided energy value is, what avoided energy did you use?

1:19:41 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Regardless whether portfolio produces 80 percent of energy or buy 80 percent energy needs from market, whatever market rate is is avoided energy value?
1:20:00 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Would not avoided energy value depend on what portfolio chosen is?
1:20:38 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Does risk being disconnect between own marginal cost and market LMPs?
1:20:49 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Energy slightly because of pure volume and liquidity, marginal difference may be 1/100th of a cent, but for capacity significant differences?
1:21:42 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Not find in IRP identified avoided capacity values DSM and energy efficiency, saying avoided capacity value CT cone or cone which is a CT?
1:21:58 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Carrying cost of CT, but not net against energy revenues like combined cycle expect have significant amounts of energy sold?
1:22:17 PM	Chairman Chandler - witness Park Note: Sacre, Candace	That CT, is that PJM cone calculation done by Brattle, or internal overnight dollar-per-kW NREL amount?
1:22:42 PM	Chairman Chandler - witness Park Note: Sacre, Candace	All of overnight capital costs from Burns-McDonald, chart on page 35 of IRP, confidential version, one of columns redacted overnight capital costs different resources, amounts received from Burns-McDonald?
1:23:36 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Know anywhere in IRP identify reference documents got amounts?
1:23:49 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Post-hearing data request which amounts came from where?
1:23:50 PM	POST-HEARING DATA REQUEST Note: Sacre, Candace Note: Sacre, Candace	CHAIRMAN CHANDLER - WITNESS PARK IDENTIFY REFERENCE DOCUMENTS FROM WHERE CAME AMOUNTS ON CHART PAGE 35 OF IRP
1:23:55 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Compare to NREL numbers updated every year whether amounts from contractors are public amounts other people using for resource planning?
1:24:35 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Know whether Burns-McDonald amount for CTs and CCs, know what shape frame use, get description, post-hearing data request provide description what actual CT and CC are?
1:24:36 PM	POST-HEARING DATA REQUEST Note: Sacre, Candace Note: Sacre, Candace	CHAIRMAN CHANDLER - WITNESS PARK PROVIDE DESCRIPTION OF CT AND CC
1:25:04 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Factor in expected environmental costs other than CO2 regulation into any of scenarios?
1:25:27 PM	Chairman Chandler - witness Park Note: Sacre, Candace	When say current, include in calculation environmental controls may have ongoing O&M reflected other cost spaces used as input?

1:25:57 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Filed in July last year, around time contemplating CCR and ELG updates, IRP East Bend includes capital costs to comply ELG and CCR?
1:26:15 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Geers?
1:26:19 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Assume downstream methane regulation?
1:26:35 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Carrying costs, avoided capacity costs and present value revenue requirement calculation, use same carrying cost both?
1:26:50 PM	Chairman Chandler - witness Park Note: Sacre, Candace	How calculate carrying cost?
1:27:30 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Percentage carrying cost using, what representative of, current weighted average cost of capital, expected weighted average cost of capital over planning horizon, or some other value cost of capital or investment?
1:28:07 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Documents have present value revenue requirement calculation, static input calculate what carrying charge is, have calculations or inputs used calculation carrying charge?
1:28:34 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Ask in post-hearing data request whether high or low?
1:28:50 PM	POST-HEARING DATA REQUEST Note: Sacre, Candace Note: Sacre, Candace	CHAIRMAN CHANDLER - WITNESS PARK CALCULATIONS OR INPUTS USED IN CALCULATION OF CARRYING CHARGE
1:28:54 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Aware Duke spent millions on smart meters?
1:29:10 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Case 2016-00152, Commission granted Duke CPCN full smart meter rollout gas and electric, complete, take into account programs implementable have smart meters, second user data, take into account opportunities information from smart meters as part of IRP?
1:30:18 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Aware of any use smart meter information or technology they enable part of IRP?
1:30:25 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Use in other jurisdictions?
1:30:35 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Electrification, lot of discussion transportation electrification, heating electrification, expectation or probability greater economy-wide electrification taken into account in IRP?
1:31:01 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Defer whether was any taken into account or to extent was taken into account?
1:31:16 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Take into account in other jurisdictions IRPs?
1:31:35 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Gentleman used to work at Duke, doctor, Dr. Sasha Weintraub?
1:32:01 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Used to do smart people things when get data from smart meters, what do it, anybody at Duke that has worked on taking data from smart meters as input to enable additional technology?

1:33:13 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Getting information around what utilities doing around DSM and energy efficiency as input to IRP, or determining things like avoided cost calculations, cost of replacement capacity, cost of expected power purchases in future and providing to DSM and energy efficiency folks?
1:33:51 PM	Chairman Chandler - witness Park Note: Sacre, Candace	All of this in same planning department or across multiple departments?
1:34:19 PM	Chairman Chandler - witness Park Note: Sacre, Candace	East End 2 retirement moved to 2035 from 2041?
1:34:25 PM	Chairman Chandler - witness Park Note: Sacre, Candace	IRP states doing this better positions the portfolio, other than low gas prices and risk of CO2 regulation, what other risks referring to?
1:35:03 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Identified in scenarios?
1:35:33 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Do IRPs in jurisdictions in which nuclear facilities?
1:35:39 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Know whether IRPs other states identify fuel risk as risk whether retire nuclear?
1:35:53 PM	Chairman Chandler - witness Park Note: Sacre, Candace	East Bend 2 moved 2035, have expectation based upon IRP Duke proposing change depreciation East Bend 2 to 2035?
1:36:31 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Operable life is operable life, moved retirement to 2035 based off qualitative measures?
1:36:51 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Highest risks low gas and CO2 regulation?
1:37:03 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Today's gas price higher than high gas price of 2035, at high gas price today?
1:37:13 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Is no current CO2 regulation?
1:37:22 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Depreciation and process working across divisions, Duke IRP filed in July 2021 retirement East Bend moved from 2041 to 2035, in February Duke indicated fully exit coal by 2035, East Bend final coal unit expected be retired?
1:37:56 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Be retired final year Duke intends to have coal?
1:38:05 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Planning assumption, earlier talking about changing depreciation rate to 2035 for operations purposes, not two different things?
1:38:25 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Significant questions probable occurrence CO2 regulation, appreciation what informs expectation of likelihood, understand not necessarily included because you think going to be CO2 regulation, Duke qualified opinion CO2 regulation in 15-year planning period?
1:39:16 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Vicky Sullivan?
1:39:38 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Electrification, anybody at Duke dealt with electrification or transportation electrification?

1:39:51 PM	Chairman Chandler - witness Park Note: Sacre, Candace	Passty is the person talked to, had interactions with anybody at Duke expert or spends time on issue?
1:40:46 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
1:40:50 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
1:41:16 PM	Chairman Chandler Note: Sacre, Candace	Another witness?
1:41:19 PM	Atty Samford Duke Kentucky Note: Sacre, Candace	Tony Platz.
1:41:42 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
1:41:51 PM	Chairman Chandler - witness Platz Note: Sacre, Candace	Examination. Name and address?
1:42:12 PM	Atty Samford Duke Kentucky - witness Platz Note: Sacre, Candace	Direct Examination. Title?
1:42:22 PM	Atty Samford Duke Kentucky - witness Platz Note: Sacre, Candace	Cause responses be filed?
1:42:32 PM	Atty Samford Duke Kentucky - witness Platz Note: Sacre, Candace	If ask same question, answer be same?
1:42:38 PM	Atty Samford Duke Kentucky - witness Platz Note: Sacre, Candace	Corrections?
1:42:45 PM	Atty Samford Duke Kentucky - witness Platz Note: Sacre, Candace	Desire have incorporated into record?
1:42:58 PM	Chairman Chandler Note: Sacre, Candace	Questions? (Click on link for further comments.)
1:43:18 PM	Staff Atty Bellamy PSC - witness Platz Note: Sacre, Candace	Cross Examination. See distributed generation presenting major issues in planning period having to build out additional distribution assets?
1:44:25 PM	Staff Atty Bellamy PSC - witness Platz Note: Sacre, Candace	At this point not know, not enough create material issue?
1:44:44 PM	Staff Atty Bellamy PSC - witness Platz Note: Sacre, Candace	In process of studying, what anticipate penetration being in light of FERC Order?
1:44:55 PM	Staff Atty Bellamy PSC - witness Platz Note: Sacre, Candace	When results completed?
1:45:20 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
1:45:45 PM	Chairman Chandler Note: Sacre, Candace	Objection Taylor, Gurganus, and Fleener be excused? (Click on link for further comments.)
1:46:39 PM	Chairman Chandler Note: Sacre, Candace	Next witness?
1:46:42 PM	Atty Samford Duke Kentucky Note: Sacre, Candace	Dr. Ben Passty.
1:47:12 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
1:47:20 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Examination. Name and address?
1:47:38 PM	Atty Samford Duke Kentucky - witness Passty Note: Sacre, Candace	Direct Examination. Title?

1:47:46 PM Atty Samford Duke Kentucky - witness Passty
Note: Sacre, Candace Cause responses be filed?

1:47:53 PM Atty Samford Duke Kentucky - witness Passty
Note: Sacre, Candace Any edits or changes or corrections?

1:48:00 PM Atty Samford Duke Kentucky - witness Passty
Note: Sacre, Candace If ask same questions, answers be same?

1:48:04 PM Atty Samford Duke Kentucky - witness Passty
Note: Sacre, Candace Intent have incorporated into record?

1:48:12 PM Chairman Chandler
Note: Sacre, Candace Mr. Cook?

1:48:20 PM Asst Atty General Cook - witness Passty
Note: Sacre, Candace Cross Examination. Load forecast, Duke Kentucky see any additional satellite industries as result of Amazon hub at Northern Ky Airport?

1:49:29 PM Asst Atty General Cook - witness Passty
Note: Sacre, Candace Access to Staff report?

1:49:57 PM Asst Atty General Cook - witness Passty
Note: Sacre, Candace Page 6, reading (click on link for further comments), same forecast used in other two operating company IRPs?

1:51:14 PM Asst Atty General Cook - witness Passty
Note: Sacre, Candace Does Duke ascribe capacity factor to solar or wind during winter?

1:51:54 PM Asst Atty General Cook - witness Passty
Note: Sacre, Candace Does Duke foresee greater penetration electric vehicles in service area?

1:52:16 PM Asst Atty General Cook - witness Passty
Note: Sacre, Candace Same for electric space heating?

1:52:48 PM Asst Atty General Cook - witness Passty
Note: Sacre, Candace How Duke expect able satisfy expected penetration during winter from more load EVs and space heating if company moving towards greater use of renewables?

1:54:17 PM Asst Atty General Cook - witness Passty
Note: Sacre, Candace When you say triple, not quite three percent?

1:54:46 PM Chairman Chandler
Note: Sacre, Candace Mr. Miller?

1:54:54 PM Atty Miller Sierra Club - witness Passty
Note: Sacre, Candace Cross Examination. Duke forecasting for 2022 EV charging less than one-tenth of one percent total load, by 2030 projected over one percent total load, sound about right to you?

1:56:11 PM Chairman Chandler
Note: Sacre, Candace Mr. Bellamy?

1:56:28 PM Staff Atty Bellamy PSC - witness Passty
Note: Sacre, Candace Cross Examination. Response, Staff Second, Item 8, read response, page 41 IRP, total demand response programs starting at 22.1 and down to 22.2, other chart, explanation difference between those two charts and basis for difference?

1:59:34 PM Staff Atty Bellamy PSC - witness Passty
Note: Sacre, Candace Numbers being used for time of peak effect for these programs?

2:00:34 PM Staff Atty Bellamy PSC - witness Passty
Note: Sacre, Candace Project energy efficiency and demand response bigger effect at peak period, these numbers larger?

2:01:22 PM Staff Atty Bellamy PSC - witness Passty
Note: Sacre, Candace Response provided, when projected load, project it and then remove the EE and DR numbers to get summer load in column next to it?

2:02:04 PM Staff Atty Bellamy PSC - witness Passty
Note: Sacre, Candace Negative 2 and negative 32?

2:03:09 PM	Staff Atty Bellamy PSC - witness Passty Note: Sacre, Candace	Chart is from report, got more updated information before responded to first?
2:03:34 PM	Staff Atty Bellamy PSC - witness Passty Note: Sacre, Candace	Projected Duke load each year of IRP planning period, when optimum portfolios chosen only variables gas costs and carbon regulation, load used to project optimum portfolio, most likely load during those years?
2:04:56 PM	Staff Atty Bellamy PSC - witness Passty Note: Sacre, Candace	If have probability curve, could be in middle?
2:05:04 PM	Staff Atty Bellamy PSC - witness Passty Note: Sacre, Candace	What consider when projecting peak demand, what consider be variables most risky or likely to change in projection of demand?
2:06:25 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Examination. Aware Duke has smart meters?
2:06:36 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	AMI does provide utility with more information than previous meters?
2:06:52 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	How used to form basis of IRP?
2:07:25 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Modified prior being used in that manner or provided to you in raw form?
2:07:42 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Not know if getting load information or getting normalized/edited information from utility?
2:07:56 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Authority or not sure?
2:08:04 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Few million dollars of smart meters, do this in other states' IRPs to the one doing in this case?
2:08:50 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Know all jurisdictions have smart meters similar to Duke Kentucky?
2:09:05 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Know whether information on aggregate basis or sample basis?
2:09:22 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	If know have granular real-time data for every customer, why before determining load shapes would you use sample data?
2:10:27 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Agree greater degree of error/risk using a sample instead entirety of data set?
2:11:02 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	No incremental cost, rather have entire data set?
2:11:18 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Aware Duke peak time rebate pilot program?
2:11:32 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Not seem DSM/EE portion IRP referenced any use of AMI meters for purposes of creating different programs, technologies?
2:12:01 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	174-page document, smart meters not show up single time, aware of any use inputs/programs enabled by smart meters or sample data Duke Kentucky has AMI taken into account in IRP, have personal knowledge?

2:12:34 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Have knowledge data for AMI used other jurisdictions for IRPs, enabling programs reduce energy, demand response, or inputs into data used forecasted?
2:13:06 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Agree within Duke companies Duke Kentucky fairly small geographically also in aggregate demand fairly small utility?
2:13:31 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Generally aware of term and application of fleet electrification?
2:13:47 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Other jurisdictions, those utilities taking into account possibility and planning of fleet electrification?
2:15:13 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Agree matter of math five megawatt/ten megawatt increase in demand fleet electrification greater risk be able meet peak demand as opposed to other Duke territories?
2:16:06 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Demand response programs only model programs used to satisfy fixed resource requirement plan pursuant to PJM membership?
2:17:03 PM	Chairman Chandler - witness Passty Note: Sacre, Candace	Demand response accredited by PJM used as resource in FRR plan demand response program behind meter to you make no difference?
2:17:36 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
2:17:53 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
2:17:59 PM	Chairman Chandler Note: Sacre, Candace	Next witness?
2:18:05 PM	Atty D'Ascenzo Duke Kentucky Note: Sacre, Candace	Sarah Lawler.
2:18:23 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
2:18:29 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Examination. Name and address?
2:18:41 PM	Atty D'Ascenzo Duke Kentucky - witness Lawler Note: Sacre, Candace	Direct Examination. Title?
2:18:52 PM	Atty D'Ascenzo Duke Kentucky - witness Lawler Note: Sacre, Candace	Business address?
2:18:59 PM	Atty D'Ascenzo Duke Kentucky - witness Lawler Note: Sacre, Candace	Cause file responses?
2:19:03 PM	Atty D'Ascenzo Duke Kentucky - witness Lawler Note: Sacre, Candace	Changes or corrections?
2:19:07 PM	Atty D'Ascenzo Duke Kentucky - witness Lawler Note: Sacre, Candace	Intent incorporated into record?
2:19:17 PM	Chairman Chandler Note: Sacre, Candace	Questions?
2:19:26 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Examination. Input into carrying charge?
2:19:35 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Know what represents, agree or disagree with inputs into carrying charges relates to Duke cost of capital?
2:19:57 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Not know either way or know whether agree or disagree?

2:20:06 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Take big step back, responsibility for profit and loss at Duke Kentucky is who?
2:20:23 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Individual person reports Duke headquarters around profit and loss for Duke Kentucky?
2:20:37 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Subsidiary basis, Spiller ultimately responsible operating Duke Ohio and Duke Kentucky?
2:20:49 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	People report to on rates, work with in your role, know whether direct input determining carrying charge for IRP?
2:21:21 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Aware of present value revenue requirement outcomes modeled in different scenarios/portfolios?
2:21:40 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Duke Kentucky chooses preferred portfolio in reality, what show up to request CPCN for?
2:21:55 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Aware of anybody at Duke input into preferred portfolio chosen in 7.1 of IRP?
2:22:40 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Only regulate Duke Kentucky, not regulate corporate, when comes to running plan, Park good at creating IRP, determining for planning purposes, who takes responsibility for choosing preferred portfolio?
2:23:31 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Involve anybody from your group?
2:23:40 PM	Chairman Chandler - witness Lawler Note: Sacre, Candace	Involved in choosing this preferred portfolio?
2:24:25 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
2:24:28 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
2:24:32 PM	Chairman Chandler Note: Sacre, Candace	Next witness?
2:24:35 PM	Atty D'Ascenzo Duke Kentucky Note: Sacre, Candace	John Swez.
2:24:50 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
2:24:57 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Examination. Name and address?
2:25:08 PM	Atty D'Ascenzo Duke Kentucky - witness Swez Note: Sacre, Candace	Direct Examination. Position?
2:25:17 PM	Atty D'Ascenzo Duke Kentucky - witness Swez Note: Sacre, Candace	Cause file responses?
2:25:22 PM	Atty D'Ascenzo Duke Kentucky - witness Swez Note: Sacre, Candace	Changes or corrections?
2:25:27 PM	Atty D'Ascenzo Duke Kentucky - witness Swez Note: Sacre, Candace	Walk us through that?
2:26:11 PM	Atty D'Ascenzo Duke Kentucky - witness Swez Note: Sacre, Candace	Only correction?
2:26:18 PM	Atty D'Ascenzo Duke Kentucky - witness Swez Note: Sacre, Candace	Intent responses be incorporated into record?

2:26:31 PM	Chairman Chandler Note: Sacre, Candace	Mr. Cook?
2:26:33 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	Cross Examination. Safe to assume by end of planning period supply side resources include significant quantities of renewable resources?
2:27:07 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	Already referred to you once, passing the buck again?
2:27:33 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	Safe to assume by end of current IRP planning period supply side resources likely include significant quantities of renewable resources?
2:27:56 PM	Atty D'Ascenzo Duke Kentucky Note: Sacre, Candace	Question related to company's FRR plan, Mr. Swez is witness; related to amount of renewables, question for Park. (Click on link for further comments.)
2:29:14 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	In event towards end IRP planning period Duke building significant renewable resources, know whether count toward FRR reserve margin requirement?
2:30:36 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	Percentage of renewable resources be located within PJM DEOK zone?
2:31:12 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	Know what that is without pulling up amended response?
2:31:42 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	Looking at Staff report, appears percentage of resources be located within DEOK zone diminishes as time goes on?
2:32:33 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	Will renewable resources comply with PJM capacity performance requirements?
2:33:27 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	Duke carry some sort of hedging product/insurance product hedge against that risk?
2:33:55 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	Included in CPCN analysis?
2:34:14 PM	Asst Atty General Cook Note: Sacre, Candace	Black start questions, confidential. (Click on link for further comments.)
2:35:33 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	Given Woodsdale units dual fuel capabilities, all qualify as black start units?
2:36:02 PM	Asst Atty General Cook - witness Swez Note: Sacre, Candace	What about East Bend?
2:36:14 PM	Chairman Chandler Note: Sacre, Candace	Questions?
2:36:28 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Cross Examination. Duke Response, Staff First, Item 4, first bullet, reading (click on link for further comments), what is rest of RTO, everything other than DEOK?
2:38:21 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Explain, is there one number is 76.53 number or average certain numbers get that figure?
2:38:43 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Number produced for rest of RTO?

2:38:50 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Explain implications of clearing price disparity between DEOK zone and rest of RTO how affect Duke actions and implications respect Duke customers?
2:39:53 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Because in zone potentially short on capacity?
2:40:24 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Constrained such that capacity not enter zone from outside?
2:40:45 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	If not get energy outside-in, then left with just what there so price would go up, function of both?
2:41:00 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Response, Staff First, Item 25, capacity performance requirement, East Bend meets fuel stored on site, what amount of coal Duke believe be stored on site meet PJM requirements for coal generation facility?
2:42:50 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Phipps would be?
2:43:21 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Think need ten days to meet capacity performance requirement, meet it without trying?
2:44:08 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Ten days start looking might not be able to perform?
2:44:31 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	IRP projected in number of optimum plans and preferred portfolio combined cycle unit, in order combined cycle unit to meet capacity performance requirement, would need be done?
2:45:40 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Fed with natural gas line and to meet capacity performance have fuel oil stored there?
2:46:01 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Any idea whether that cost factored in when IRP looked at cost of combined cycle unit?
2:46:22 PM	Staff Atty Bellamy PSC - witness Swez Note: Sacre, Candace	Mentioned in response no bright line set of guidelines, PJM working towards that, or guideline vague risk overbuild ensure not out of compliance, something PJM or members seeking resolve meet capacity performance requirement?
2:47:51 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Examination. Aware any performance assessment intervals called last five years by PJM?
2:48:12 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Couple of years ago, few mostly in AEP zone?
2:48:18 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Not RTOI?
2:48:26 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	If not have to include limited duration resources as part of FRR plan and thus are not capacity resources, in event any resources not capacity resources do provide energy and during performance assessment intervals be paid bonuses?
2:49:12 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	In event have resources have no variable expenses and can produce electricity on levelized, cheap basis and keep from running stuff more expensive, could be benefit to utility?

2:49:53 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Last nine months, certainly lot of value in energy market?
2:50:03 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Using resources as physical hedge, expectation generally Commission interest utility enough generation meet own demands?
2:50:30 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	In event all utility generation \$50 megawatt hour, available net/net, customers not paying more than \$50 megawatt hour?
2:51:16 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Difference between load LMP and generator LMP?
2:52:12 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Assuming offered into market a day ahead real time, even if haven't, even if self-schedule, never worse off than marginal cost can generate electricity?
2:52:43 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Own generation, demand not exceed available capacity, acts as hedge?
2:53:04 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Pure single amount, benefit to customers upside prevailing prices more expensive than how much company can generate as hedge for customers?
2:53:35 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Have resources able to use part of FRR plan, also have generation not part of FRR plan?
2:53:59 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Solar, dozen megawatts solar behind meter, not using as part of FRR plan?
2:54:25 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Behind meter as relates to PJM, producing in those hours PJM using backwards looking, reduced aggregate demand, benefit one to one basis?
2:55:19 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	In event produce more in those hours used determine FRR plan moving forward, getting extra five percent out of resources?
2:55:44 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Any concerns about that on retail basis?
2:56:34 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Think Duke Kentucky should be looking how much benefit getting in RTO from behind the meter resources, not depend on production of behind meter generating units at level for eternity, happenstance what produced on half dozen days?
2:57:20 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Know if anybody at Duke Kentucky does and has enough generation meet Duke Kentucky customer demands any given hour?
2:58:36 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Not know if issue at 8 megawatts, agree changes at 18 or 80 megawatts?
2:58:59 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	If distribution level, not doing load deliverability studies on distribution system, outage on other side may not be able to deliver to that load?
2:59:18 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Ask about constraints, interconnection costs, CIRs, whether studied in IRP, that would be you?

2:59:49 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Limited duration resources, any have CIRs or all behind the meter?
3:00:09 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Same thing behind the meter demand response, as long as reduce aggregate demand, one to one megawatt benefit?
3:00:45 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Two PJM demand response programs, proceeding 2017-2018 getting rid of DSM programs, in event not have demand response PJM approved, in event those people reduce demand during peak times, agree have same impact on aggregate demand as behind the meter solar?
3:02:11 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	No reserve margin, no D rate value, get full impact whatever reduced hours, get benefit in FRR plan moving forward?
3:02:59 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Minimum IRR provided update to at 22.1 percent, tell me what calculation is?
3:03:37 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Similar to new MISO proposal, more narrow how much capacity required each internal LDA?
3:04:02 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Zonal credits in MISO or something like that?
3:04:08 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Lowered amount of requirement in DEOK zone or know if same MIRR in all zones?
3:04:21 PM	Chairman Chandler - witness Swez Note: Sacre, Candace	Indicate to you expectation in next BRA not break out?
3:04:39 PM	Chairman Chandler Note: Sacre, Candace	Mr. D'Ascenzo?
3:04:43 PM	Atty D'Ascenzo Duke Kentucky - witness Swez Note: Sacre, Candace	Redirect Examination. Conversations with Cook about Woodsdale and dual fuel system there in relation to black start?
3:04:53 PM	Atty D'Ascenzo Duke Kentucky - witness Swez Note: Sacre, Candace	Two units black start capable, those only two units able to take advantage of dual fuel capability of Woodsdale?
3:05:18 PM	Atty D'Ascenzo Duke Kentucky - witness Swez Note: Sacre, Candace	Driver of dual fuel system black start capability or something else?
3:05:46 PM	Chairman Chandler Note: Sacre, Candace	Witness excused, meeting request next few weeks.
3:07:33 PM	Chairman Chandler Note: Sacre, Candace	Recess until 3:15.
3:07:39 PM	Session Paused	
3:18:03 PM	Session Resumed	
3:18:16 PM	Chairman Chandler Note: Sacre, Candace	Back on the record in Case No. 2021-00245.
3:18:20 PM	Chairman Chandler Note: Sacre, Candace	Next witness?
3:18:23 PM	Atty D'Ascenzo Duke Kentucky Note: Sacre, Candace	Brian Bak.
3:18:36 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
3:18:44 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	Examination. Name and address?
3:18:56 PM	Atty D'Ascenzo Duke Kentucky - witness Bak Note: Sacre, Candace	Direct Examination. State position?

3:19:02 PM	Atty D'Ascenzo Duke Kentucky - witness Bak Note: Sacre, Candace	Cause file responses data requests?
3:19:09 PM	Atty D'Ascenzo Duke Kentucky - witness Bak Note: Sacre, Candace	Changes or corrections?
3:19:14 PM	Atty D'Ascenzo Duke Kentucky - witness Bak Note: Sacre, Candace	Intention be incorporated into record?
3:19:22 PM	Chairman Chandler Note: Sacre, Candace	Questions?
3:19:43 PM	Staff Atty Bellamy PSC - witness Bak Note: Sacre, Candace	Cross Examination. Agree investment in energy efficiency and demand response programs was to offset cost increasing energy generation?
3:20:47 PM	Staff Atty Bellamy PSC - witness Bak Note: Sacre, Candace	How determine whether offer particular energy efficiency or DSM?
3:21:11 PM	Staff Atty Bellamy PSC - witness Bak Note: Sacre, Candace	Responsible for analyzing effectiveness of programs after fact?
3:21:47 PM	Staff Atty Bellamy PSC - witness Bak Note: Sacre, Candace	Familiar with Duke Kentucky efforts determine whether AMI meters and demand rates used to reduce residential peak demand?
3:22:10 PM	Staff Atty Bellamy PSC - witness Bak Note: Sacre, Candace	Done any projections outside Duke Kentucky other IRPs or other Duke affiliates?
3:23:20 PM	Staff Atty Bellamy PSC - witness Bak Note: Sacre, Candace	What study find with effectiveness other rates reduce peak demand?
3:24:40 PM	Staff Atty Bellamy PSC - witness Bak Note: Sacre, Candace	When did IRP, include any kind of peak time rate or rate to produce peak demand considered specific in IRP or wait until after get study back on peak time rebate program?
3:25:36 PM	Staff Atty Bellamy PSC - witness Bak Note: Sacre, Candace	North Carolina IRP filed yesterday or equivalent?
3:25:50 PM	Staff Atty Bellamy PSC - witness Bak Note: Sacre, Candace	First time did it, start including in future?
3:26:28 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	Examination. Four phases to Carolina carbon plan, four portfolios?
3:26:47 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	There are thousands of megawatts of contribution from Grid Edge and customer programs including CTP, peak time rebate, and Vol/Var optimization?
3:27:07 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	Only seen Section 3, peak time rebate, CPT, peak time rebate actual rebate program where customers get credit reducing usage base line, demand response program that is carrot?
3:27:46 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	Agree CPT different, raises prices during critical events, more of a stick?
3:28:04 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	Vol/Var control different, not depending on customers doing anything, optimization of distribution system and minimum voltage required on distribution system?
3:28:19 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	Vol/Var control, in Carolinas call it integrated Vol/Var control, PPL companies call it VVO, Vol/Var optimization, effectively same thing?

3:28:41 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	Run distribution system certain level voltage, given fact thousands or tens of thousands sensors determine voltage each home AMI meter reduce cushion down and have fuel savings?
3:29:32 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	Should make utility indifferent, fuel savings?
3:30:27 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	One takes away optionality?
3:30:31 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	Avoid transmission/distribution expenses may have to have lower replacement, smaller transformers on distribution system, looking at that in North Carolina?
3:31:18 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	In room when Park on stand, heard talk avoided capacity values and avoided energy values, agree prevailing LMP effectively avoided energy value DSM and energy efficiency programs?
3:31:47 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	For DSM programs, what is avoided capacity value DEOK will be using?
3:32:09 PM	Chairman Chandler - witness Bak Note: Sacre, Candace	Hypothetical next CT, some sort of base line amount?
3:32:26 PM	Chairman Chandler Note: Sacre, Candace	Mr. D'Ascenzo?
3:32:29 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
3:32:33 PM	Chairman Chandler Note: Sacre, Candace	Procedural discussion. (Click on link for further comments.)
3:33:45 PM	Chairman Chandler Note: Sacre, Candace	Next witness?
3:33:48 PM	Atty Samford Duke Kentucky Note: Sacre, Candace	Matt Ruscio.
3:34:05 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
3:34:12 PM	Chairman Chandler - witness Ruscio Note: Sacre, Candace	Examination. Name and address?
3:34:25 PM	Atty Samford Duke Kentucky - witness Ruscio Note: Sacre, Candace	Direct Examination. Title?
3:34:32 PM	Atty Samford Duke Kentucky - witness Ruscio Note: Sacre, Candace	Cause response filed?
3:34:36 PM	Atty Samford Duke Kentucky - witness Ruscio Note: Sacre, Candace	Edits, corrections, or changes?
3:34:42 PM	Atty Samford Duke Kentucky - witness Ruscio Note: Sacre, Candace	Point that out, please?
3:35:03 PM	Atty Samford Duke Kentucky - witness Ruscio Note: Sacre, Candace	Ask same questions, answers be same?
3:35:08 PM	Atty Samford Duke Kentucky - witness Ruscio Note: Sacre, Candace	Intent responses incorporated into record?
3:35:22 PM	Chairman Chandler Note: Sacre, Candace	Questions?
3:35:34 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	Cross Examination. Responses efficiency of solar and wind over time, degrades, useful life most solar panels 30 years, percentage would degrade over 30-year period?

3:36:26 PM	Chairman Chandler - witness Ruscio Note: Sacre, Candace	Examination. Expected be by year or annualized value over 30-year period?
3:36:38 PM	Chairman Chandler - witness Ruscio Note: Sacre, Candace	Accelerate towards end of 30 years?
3:36:54 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	Cross Examination (cont'd). First couple years, not half percent, lower than that, get to end on average half percent 30-year period?
3:37:07 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	Projecting efficiency solar generation facilities over 15-year planning period, see decrease in efficiency within that period?
3:37:36 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	Use half percent in IRP modeling, half percent per year actually used?
3:37:53 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	Availability of solar and wind, opinion how often available for use?
3:38:41 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	For solar, Figure 4.1 in IRP, 50 percent PJM UCAP capacity value, 13 percent consistent with availabilities seen with wind generation?
3:39:21 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	Thirteen percent for wind consistent with what consider wind asset, how consider be available?
3:39:51 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	Assuming that varied based on where wind located?
3:39:57 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	In PJM projections showing land-based wind staying same but off-shore wind increasing, thoughts on why that would be?
3:40:49 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	Because wind blowing more where constructing facilities?
3:40:56 PM	Staff Atty Bellamy PSC - witness Ruscio Note: Sacre, Candace	Familiar with wind development within Kentucky?
3:41:25 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
3:41:27 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
3:41:30 PM	Chairman Chandler Note: Sacre, Candace	Call next witness?
3:41:34 PM	Atty Samford Duke Kentucky Note: Sacre, Candace	Brett Phipps.
3:43:18 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
3:43:24 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Examination. Name and address?
3:43:36 PM	Atty Samford Duke Kentucky - witness Phipps Note: Sacre, Candace	Direct Examination. Title?
3:43:44 PM	Atty Samford Duke Kentucky - witness Phipps Note: Sacre, Candace	Cause responses be filed?
3:43:50 PM	Atty Samford Duke Kentucky - witness Phipps Note: Sacre, Candace	Corrections, changes, or edits?
3:43:56 PM	Atty Samford Duke Kentucky - witness Phipps Note: Sacre, Candace	Ask same questions, answers be same?
3:44:01 PM	Atty Samford Duke Kentucky - witness Phipps Note: Sacre, Candace	Intent have incorporated into record?

3:44:10 PM	Chairman Chandler Note: Sacre, Candace	Questions?
3:44:21 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Examination. Generally aware Carolinas carbon plan recently filed?
3:44:48 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	One thing it notes, expectation for planning for in-service date for SMR for 2032 have to begin next year or two?
3:45:28 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Expertise in planning periods other types of generation that were modeled in IRP?
3:46:00 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Three-year contract for coal unreasonable, been expectation three-year contract for coal something commercially reasonable, unheard of?
3:46:28 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	How about five years?
3:46:56 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Do you work in Indiana, Ohio, and Kentucky?
3:47:08 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Decreased fuel risk for coal operator or coal generator operating in or near Illinois basin opposed other places in mid-Atlantic or Eastern U.S.?
3:47:27 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Geographically, coal plants Ohio, Indiana, Kentucky have less fuel risk as opposed to other states in mid-Atlantic, Eastern U.S.?
3:48:06 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Even with reduced risk, agree delivery PRB coal still cheaper than Illinois basin coal?
3:48:58 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Qualitative side makes difference, not necessarily dollar per ton?
3:49:07 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	It's heat content, sulphur content certain degree, certain generators need a specific type of coal?
3:49:20 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Play into decreased fuel risk, some coal units less specific about type coal used, some more specific, been your experience as well?
3:50:05 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Along that spectrum, know where East Bend facility falls for specific coal requirements?
3:50:57 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Relative other generating units, East Bend more or less particular about type of coal used?
3:51:33 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Aware other coal plants in Duke Kentucky portfolio?
3:51:40 PM	Chairman Chandler - witness Phipps Note: Sacre, Candace	Relative to those units, how describe East Bend particularity in terms coal input?
3:52:34 PM	Chairman Chandler Note: Sacre, Candace	Questions?
3:52:53 PM	Atty Samford Duke Kentucky Note: Sacre, Candace	Tim Hohenstatt.
3:53:09 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
3:53:19 PM	Chairman Chandler - witness Hohenstatt Note: Sacre, Candace	Examination. Name and address?

3:53:36 PM	Atty Samford Duke Kentucky - witness Hohenstatt Note: Sacre, Candace	Direct Examination. Title?
3:53:46 PM	Atty Samford Duke Kentucky - witness Hohenstatt Note: Sacre, Candace	Cause certain responses be filed?
3:53:55 PM	Atty Samford Duke Kentucky - witness Hohenstatt Note: Sacre, Candace	Changes, edits, or anything need fixed or changed?
3:54:04 PM	Atty Samford Duke Kentucky - witness Hohenstatt Note: Sacre, Candace	Ask same questions, answers be same?
3:54:09 PM	Atty Samford Duke Kentucky - witness Hohenstatt Note: Sacre, Candace	Intent incorporate into record?
3:54:19 PM	Chairman Chandler Note: Sacre, Candace	Questions?
3:54:43 PM	Chairman Chandler - witness Hohenstatt Note: Sacre, Candace	Examination. Provide inputs what interconnection costs are per kW basis for resources in IRP?
3:54:59 PM	Chairman Chandler - witness Hohenstatt Note: Sacre, Candace	Questions related to whether/to what degree certain costs modeled for each of different resources, around for those questions?
3:55:35 PM	Chairman Chandler - witness Hohenstatt Note: Sacre, Candace	Are you aware of disparity between interconnection costs thermal generators verse limited duration resources?
3:55:59 PM	Chairman Chandler - witness Hohenstatt Note: Sacre, Candace	Aware of disparity between capacity interconnection rights between thermal generators and limited duration resources?
3:56:18 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
3:56:34 PM	Chairman Chandler Note: Sacre, Candace	Next witness?
3:56:42 PM	Atty D'Ascenzo Duke Kentucky Note: Sacre, Candace	Jeff Gindling.
3:58:13 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
3:58:23 PM	Chairman Chandler - witness Gindling Note: Sacre, Candace	Examination. Name and address?
3:58:39 PM	Atty D'Ascenzo Duke Kentucky - witness Gindling Note: Sacre, Candace	Direct Examination. Position?
3:58:50 PM	Atty D'Ascenzo Duke Kentucky - witness Gindling Note: Sacre, Candace	Cause to file responses?
3:58:57 PM	Atty D'Ascenzo Duke Kentucky - witness Gindling Note: Sacre, Candace	Changes or corrections?
3:59:04 PM	Atty D'Ascenzo Duke Kentucky - witness Gindling Note: Sacre, Candace	Adopt as your testimony?
3:59:10 PM	Atty D'Ascenzo Duke Kentucky - witness Gindling Note: Sacre, Candace	Intent be incorporated into record?
3:59:27 PM	Asst Atty General Cook - witness Gindling Note: Sacre, Candace	Cross Examination. Aware PJM transmission expansion plans have impact on DEOK zone?
4:00:10 PM	Asst Atty General Cook - witness Gindling Note: Sacre, Candace	Are any of those included in the RTEP?
4:00:23 PM	Asst Atty General Cook - witness Gindling Note: Sacre, Candace	Ask in post-hearing data request for a brief explanation of those projects and cost estimates, if known?
4:01:08 PM	POST-HEARING DATA REQUEST Note: Sacre, Candace	ASST ATTY GENERAL COOK - WITNESS GINDLING

Note: Sacre, Candace PJM TRANSMISSION EXPANSION PLANS AND COST ESTIMATES FOR EACH PROJECT

4:01:16 PM Chairman Chandler
Note: Sacre, Candace Questions?

4:01:24 PM Staff Atty Bellamy PSC - witness Gindling
Note: Sacre, Candace Cross Examination. Familiar with potential costs related to connecting intermittent resources versus thermal resources?

4:02:02 PM Staff Atty Bellamy PSC - witness Gindling
Note: Sacre, Candace What are relative costs, is one more expensive than other?

4:02:20 PM Staff Atty Bellamy PSC - witness Gindling
Note: Sacre, Candace Certain level intermittent resources require grid upgrades prevent voltage fluctuations?

4:02:46 PM Staff Atty Bellamy PSC - witness Gindling
Note: Sacre, Candace Percentage adoption at which would need significant upgrades to ensure able maintain consistent voltage on system?

4:03:27 PM Staff Atty Bellamy PSC - witness Gindling
Note: Sacre, Candace Way to project cost, actually include transmission cost relative generation assets into something like IRP, standard cost look at as engineer capital planning and apply that?

4:04:12 PM Staff Atty Bellamy PSC - witness Gindling
Note: Sacre, Candace Network upgrades, anything need to interconnect generation resource to Duke system?

4:05:15 PM Staff Atty Bellamy PSC - witness Gindling
Note: Sacre, Candace In IRP, if had IRP selecting particular generation resource at particular size, able estimate what costs be under that scenario?

4:06:06 PM Chairman Chandler - witness Gindling
Note: Sacre, Candace Examination. 180,000 megawatts generation in PJM interconnection queue, vying for multiple things, trying to be resources chosen base residual auction, all also hoping be able use headroom available so not pay for network upgrades?

4:06:49 PM Chairman Chandler - witness Gindling
Note: Sacre, Candace One of reasons people drop out of generation interconnection queue?

4:07:08 PM Chairman Chandler - witness Gindling
Note: Sacre, Candace Already have units with CIRs?

4:07:19 PM Chairman Chandler - witness Gindling
Note: Sacre, Candace If in preferred Transition Plan A, called FDR, combined cycle expected go in service 2035, if placed at East Bend, retired in 2034, Duke use property rights has in capacity interconnection rights East Bend and use reduce or negate work of going through interconnection queue for replacement facility?

4:08:16 PM Chairman Chandler - witness Gindling
Note: Sacre, Candace Valuable and becoming more valuable all the time?

4:08:25 PM Chairman Chandler - witness Gindling
Note: Sacre, Candace Of preferred portfolio, think preferred plan minimizes interconnection costs for Duke Kentucky assuming what know today?

4:09:21 PM Chairman Chandler - witness Gindling
Note: Sacre, Candace Likelihood of incur significant network upgrade greater for 80- or 100-megawatt solar facility than 10-megawatt solar facility?

4:09:31 PM Chairman Chandler - witness Gindling
Note: Sacre, Candace If spread out ten megawatt tranches able take advantage of incremental headroom in transmission system across PJM or DEOK area?

4:10:00 PM	Chairman Chandler - witness Gindling Note: Sacre, Candace	What kind of scale miss by spreading out facilities instead of building centralized facility?
4:10:38 PM	Chairman Chandler - witness Gindling Note: Sacre, Candace	What talking about be incurred ten times for ten 10-megawatt facilities incurred once for 100-megawatt facility?
4:11:16 PM	Chairman Chandler - witness Gindling Note: Sacre, Candace	Really significant difference cost of studies for 100-megawatt facility verse 10-megawatt facility when talking about generation interconnection queue?
4:12:04 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
4:12:16 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
4:12:20 PM	Chairman Chandler Note: Sacre, Candace	Next witness?
4:12:22 PM	Atty D'Ascenzo Duke Kentucky Note: Sacre, Candace	Vicky Sullivan.
4:12:31 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
4:13:11 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	Examination. Name and address?
4:13:42 PM	Atty D'Ascenzo Duke Kentucky - witness Sullivan Note: Sacre, Candace	Direct Examination. Position?
4:14:17 PM	Atty D'Ascenzo Duke Kentucky - witness Sullivan Note: Sacre, Candace	Cause file responses?
4:14:24 PM	Atty D'Ascenzo Duke Kentucky - witness Sullivan Note: Sacre, Candace	Changes or corrections?
4:14:33 PM	Atty D'Ascenzo Duke Kentucky - witness Sullivan Note: Sacre, Candace	Asked same questions, answers be same?
4:14:40 PM	Atty D'Ascenzo Duke Kentucky - witness Sullivan Note: Sacre, Candace	Intention responses be incorporated into record?
4:14:55 PM	Chairman Chandler Note: Sacre, Candace	Questions?
4:15:08 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	Examination. One of people have input expectation likelihood CO2 regulation is?
4:15:27 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	What informs opinion of likelihood of CO2 regulation with knowledge for years IRPs have assumed CO2 regulation yet to materialize?
4:16:31 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	Ascribe numerical value likelihood CO2 regulation over planning period in IRP between now and 2035?
4:17:03 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	Expert expectation more likely than not before planning horizon have some sort of CO2 regulation for power production?
4:17:27 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	Perspective on expectation or likelihood of having downstream methane regulation for power production economy?
4:17:54 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	That's right, and even frankly from the use of natural gas for other home purposes?
4:18:27 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	Hard to justify given precedent regulating CO2 and not regulating other greenhouse gases like methane?

4:19:10 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	Ascribe same expectation with methane emissions as do CO2?
4:19:10 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	Ascribe same expectation regards methane emissions for residential/commercial purposes as well as power production as you do CO2?
4:21:05 PM	Chairman Chandler - witness Sullivan Note: Sacre, Candace	If agree likelihood methane emissions similar to CO2 at least for power production, expect more likely than not be regulated, recommend in formulation of IRPs risk of methane regulation be included as well as CO2 regulation?
4:23:04 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
4:23:07 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
4:23:15 PM	Atty Samford Duke Kentucky Note: Sacre, Candace	Matthew Kalemba.
4:23:46 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
4:23:55 PM	Chairman Chandler - witness Kalemba Note: Sacre, Candace	Examination. Name and address?
4:24:07 PM	Atty Samford Duke Kentucky - witness Kalemba Note: Sacre, Candace	Direct Examination. Title?
4:24:15 PM	Atty Samford Duke Kentucky - witness Kalemba Note: Sacre, Candace	Cause responses be filed?
4:24:21 PM	Atty Samford Duke Kentucky - witness Kalemba Note: Sacre, Candace	Corrections, edits, or changes?
4:24:26 PM	Atty Samford Duke Kentucky - witness Kalemba Note: Sacre, Candace	Ask same questions, answers be same?
4:24:32 PM	Atty Samford Duke Kentucky - witness Kalemba Note: Sacre, Candace	Intent to have incorporated into record?
4:24:40 PM	Chairman Chandler Note: Sacre, Candace	Questions?
4:29:07 PM	Atty Miller Sierra Club - witness Kalemba Note: Sacre, Candace	Cross Examination. Future IRPs include further discussion on impacts, did I miss discussion of EVs in this IRP or omitted for this one?
4:30:02 PM	Atty Miller Sierra Club - witness Kalemba Note: Sacre, Candace	Any special reason behind omission, whether oversight or not think material?
4:30:20 PM	Atty Miller Sierra Club - witness Kalemba Note: Sacre, Candace	Last paragraph, reading (click on link for further comments), over one percent, interpret one percent and change or significantly over one percent?
4:31:07 PM	Atty Miller Sierra Club - witness Kalemba Note: Sacre, Candace	Could talk us through how Duke Kentucky go about thinking dynamic role utilities offering charging station and maybe certain rates/rebates, how think about role actively fostering demand versus reacting changes in vehicle ownership?
4:33:56 PM	Chairman Chandler Note: Sacre, Candace	Questions?
4:34:06 PM	Chairman Chandler - witness Kalemba Note: Sacre, Candace	Examination. Include EV discussion in other IRPs?

4:34:41 PM	Chairman Chandler - witness Kalembo Note: Sacre, Candace	In these discussions, include separate or related discussion fleet electrification?
4:35:32 PM	Chairman Chandler - witness Kalembo Note: Sacre, Candace	Heard questions/responses Sullivan about methane regulation, heating and other residential use, something currently being taken into account in Duke IRPs that possibility?
4:36:33 PM	Chairman Chandler - witness Kalembo Note: Sacre, Candace	Had any significant fleet electrification across any Duke territories three megawatts and larger?
4:37:38 PM	Chairman Chandler Note: Sacre, Candace	Redirect?
4:37:43 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
4:40:19 PM	Atty Samford Duke Kentucky Note: Sacre, Candace	Robert McMurry.
4:40:57 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
4:41:05 PM	Chairman Chandler - witness McMurry Note: Sacre, Candace	Examination. Name and address?
4:41:19 PM	Atty Samford Duke Kentucky - witness McMurry Note: Sacre, Candace	Cross Examination. Title?
4:41:28 PM	Atty Samford Duke Kentucky - witness McMurry Note: Sacre, Candace	Cause certain responses be filed?
4:41:34 PM	Atty Samford Duke Kentucky - witness McMurry Note: Sacre, Candace	Changes, edits, or corrections?
4:41:41 PM	Atty Samford Duke Kentucky - witness McMurry Note: Sacre, Candace	Ask same questions, answers be same?
4:41:46 PM	Atty Samford Duke Kentucky - witness McMurry Note: Sacre, Candace	Intent have incorporated into record?
4:41:56 PM	Chairman Chandler Note: Sacre, Candace	Questions?
4:42:13 PM	Chairman Chandler - witness McMurry Note: Sacre, Candace	Examination. Post-hearing data request planning constraints put into plan, actual physical constraints, will you be able to answer questions related physical constraints transmission system interconnections with new facilities?
4:42:14 PM	POST-HEARING DATA REQUEST Note: Sacre, Candace Note: Sacre, Candace	CHAIRMAN CHANDLER - WITNESS McMURRY PHYSICAL CONSTRAINTS TRANSMISSION SYSTEM INTERCONNECTIONS WITH NEW FACILITIES
4:43:49 PM	Chairman Chandler Note: Sacre, Candace	Witness excused.
4:43:53 PM	Atty Samford Duke Kentucky Note: Sacre, Candace	Tim Duff.
4:44:24 PM	Chairman Chandler Note: Sacre, Candace	Witness is sworn.
4:44:31 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Examination. Name and address?
4:44:45 PM	Atty Samford Duke Kentucky - witness Duff Note: Sacre, Candace	Direct Examination. Title?
4:44:55 PM	Atty Samford Duke Kentucky - witness Duff Note: Sacre, Candace	Cause certain responses be filed?

4:45:03 PM	Atty Samford Duke Kentucky - witness Duff Note: Sacre, Candace	Corrections, edits, or changes?
4:45:08 PM	Atty Samford Duke Kentucky - witness Duff Note: Sacre, Candace	Ask same questions, answers be same?
4:45:14 PM	Atty Samford Duke Kentucky - witness Duff Note: Sacre, Candace	Intent have incorporated into record?
4:45:23 PM	Chairman Chandler Note: Sacre, Candace	Questions?
4:45:35 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Examination. Aware Duke has advance meter infrastructure?
4:45:44 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Aware of Duke Kentucky peak time rebate program?
4:45:58 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Peak time rebate program carry on of a settlement in case related to AMI?
4:46:09 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Looking at peak time rebate in other jurisdictions?
4:46:24 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Recently hired Huber?
4:46:33 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Knows about these things, too, in addition to you?
4:46:45 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Point is, Duke Energy making inroads these types of issues outside of just Kentucky jurisdiction?
4:47:15 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Expectation peak time rebate programs other jurisdictions help inform pilot here or vice versa?
4:48:32 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Agree other than energy efficiency and two demand response programs resources PJM FRR plan no other DSM or EE programs enabled by AMI modeled as part of IRP?
4:49:34 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	On other side, providing load information current programs, asking for programs otherwise not implemented without having AMI meters?
4:50:26 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Planning on having specific programs?
4:50:56 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	What initiative to actually do that?
4:51:29 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Looked at IBBC?
4:52:07 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	All utility programs, only able propose EE or DSM programs for your utility?
4:52:32 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Whose job is it at Duke Energy Kentucky to propose things like Vol/Var optimization or IBCC to reduce overall bills for customers if not fall under your umbrella?
4:52:53 PM	Chairman Chandler - witness Duff Note: Sacre, Candace	Post-hearing data request whose responsibility or obligation is it to enable those meters to be used for the program?
4:52:54 PM	POST-HEARING DATA REQUEST Note: Sacre, Candace	CHAIRMAN CHANDLER - WITNESS DUFF

	Note: Sacre, Candace	EMPLOYEE AT DUKE KENTUCKY WHOSE OBLIGATION IS TO ENABLE AMI METERS TO BE USED FOR ENERGY SAVINGS PROGRAMS
4:54:11 PM	Chairman Chandler - witness Duff	
	Note: Sacre, Candace	When last time had DSM collaborative in Kentucky?
4:54:24 PM	Chairman Chandler - witness Duff	
	Note: Sacre, Candace	When next one be?
4:54:38 PM	Chairman Chandler	
	Note: Sacre, Candace	Mr. Samford?
4:54:40 PM	Chairman Chandler	
	Note: Sacre, Candace	Witness excused.
4:54:49 PM	Chairman Chandler	
	Note: Sacre, Candace	Mr. D'Ascenzo?
4:54:53 PM	Atty D'Ascenzo Duke Kentucky	
	Note: Sacre, Candace	Michael Geers.
4:55:14 PM	Chairman Chandler	
	Note: Sacre, Candace	Witness is sworn.
4:55:24 PM	Chairman Chandler - witness Geers	
	Note: Sacre, Candace	Examination. Name and address?
4:55:38 PM	Atty D'Ascenzo Duke Kentucky - witness Geers	
	Note: Sacre, Candace	Direct Examination. Position with company?
4:55:49 PM	Atty D'Ascenzo Duke Kentucky - witness Geers	
	Note: Sacre, Candace	Cause file responses?
4:55:57 PM	Atty D'Ascenzo Duke Kentucky - witness Geers	
	Note: Sacre, Candace	Changes or corrections?
4:57:35 PM	Atty D'Ascenzo Duke Kentucky - witness Geers	
	Note: Sacre, Candace	Adopt as testimony?
4:57:43 PM	Atty D'Ascenzo Duke Kentucky - witness Geers	
	Note: Sacre, Candace	Intention incorporated into record?
4:57:54 PM	Chairman Chandler	
	Note: Sacre, Candace	Questions?
4:58:02 PM	Atty Miller Sierra Club - witness Geers	
	Note: Sacre, Candace	Cross Examination. IRP, page 141, environmental regulation, last paragraph, 2021 revision, reading (click on link for further comments), remind us what 2021 revision to CSAPR was?
4:59:40 PM	Atty Miller Sierra Club - witness Geers	
	Note: Sacre, Candace	Familiar with proposed rule EPA published on April 6, federal implementation plan addressing regional ozone transport for 2015 ozone NAAQS?
5:00:15 PM	Atty Miller Sierra Club - witness Geers	
	Note: Sacre, Candace	Obligations envisioned by proposed rule, already accounted for by what describe opening remarks and what described bottom page 141 IRP?
5:01:18 PM	Atty Miller Sierra Club - witness Geers	
	Note: Sacre, Candace	Question then possibly more stringent emissions reductions contemplated by proposed rule 2015 ozone NAAQS not accounted for in IRP?
5:02:15 PM	Atty Miller Sierra Club - witness Geers	
	Note: Sacre, Candace	Emissions reductions for operating practices more expensive envisioned by proposed rule not envisioned by 2021 CSAPR amendments such that IRP place holder and plan might not reflect SCR obligations going forward?

5:03:33 PM	Atty Miller Sierra Club - witness Geers Note: Sacre, Candace	Any other environmental regulatory developments that were not discussed in IRP when finalized come about since then would note as potentially material?
5:04:17 PM	Chairman Chandler Note: Sacre, Candace	Mr. Bellamy?
5:04:21 PM	Staff Atty Bellamy PSC - witness Geers Note: Sacre, Candace	Cross Examination. Duke looked into cost or feasibility of carbon capture and sequestration in Kentucky/other jurisdictions?
5:04:53 PM	Chairman Chandler - witness Geers Note: Sacre, Candace	Examination. Know whether IRP accounted for continued expected environmental control as function of levelized historical environmental control costs for thermal generation?
5:05:23 PM	Chairman Chandler - witness Geers Note: Sacre, Candace	Assume any going-forward environmental control costs for presumed but not yet known environmental controls in IRP?
5:05:57 PM	Chairman Chandler - witness Geers Note: Sacre, Candace	Does your calculation presume environmental controls any year between now and 2035 for unknown environmental rules?
5:06:26 PM	Chairman Chandler Note: Sacre, Candace	Mr. D'Ascenzo?
5:06:30 PM	Chairman Chandler Note: Sacre, Candace	Procedural discussion. (Click on link for further comments.)
5:06:55 PM	Chairman Chandler Note: Sacre, Candace	Post-hearing data requests. (Click on link for further comments.)
5:07:51 PM	Chairman Chandler Note: Sacre, Candace	Anything else?
5:08:03 PM	Chairman Chandler Note: Sacre, Candace	Hearing adjourned.
5:08:16 PM	Session Ended	

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