LS Power ELCC CIR Proposal Overview

Sept 23, 2022

LS Power Group Overview

LS Power is at the leading edge of the industry's transition to low-carbon energy by commercializing new technologies and developing new markets

- LS Power is a **development, investment and operating company** focused on North American power and energy infrastructure
- Founded in 1990, LS Power has over 300 employees across offices in New York, New Jersey, Missouri, Texas and California
- In total, LS Power has developed, constructed, managed and acquired more than **45,000 MW** of competitive (conventional & renewable) power generation and over **660 miles of high voltage transmission** infrastructure, raising over **$48 billion** in debt and equity financing to invest in North American infrastructure
- Highlights include **Gateway, the world's largest battery** when energized in Aug 2020, utility-scale solar projects in AZ and CA, **2.6 GW operating portfolio of renewable generation and energy storage**, and flexible, deployable generation resources critical to grid reliability
- LS Power's approach to the energy transition is deliberately **focused on investments that will likely yield long-term reductions in greenhouse gas (GHG) emissions at the *system* level**

2021 Avoided GHG Emissions

(assets under LS Power control)

80,670,100

metric tons CO_2e avoided

EQUALS

17,550,629

passenger vehicles taken off the road for one year

OR

14,658,563

homes' electricity use for a year

OR

186,837,560

barrels of oil not consumed

OR

27,448,980

tons of waste recycled instead of landfilled

OR

98,871,825

acres of forest sequestering carbon for a year

Please see LS Power Sustainability for additional details including GHG emission avoidance calculation methodology.

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LS Power Energy Transition Platforms

National Leaders in Distributed Energy, Electric Vehicle Charging, Energy Storage and Renewable Generation/Fuels

- **CPower Energy Management is the leading demand-side energy management solutions provider in the U.S.,** that helps nearly 2,000 commercial, industrial and government organizations save on energy costs, earn revenue through energy curtailment, enhance their sustainability efforts, and support the decarbonization and reliability of the electric grid.

- **Endurant Energy is a leading provider of on-site energy and microgrid solutions in North America** that develops, builds, and owns a variety of technologies including combined heat and power, ground source heat pumps, batteries, fuel cells, and solar. Its blue chip customers span a wide range of sectors, including education, commercial, industrial, real estate, health care, hospitality and public utilities.

- **EVgo is the nation's largest and most reliable public fast charging network for electric vehicles**, powered 100% by renewable energy, with more than 850+ locations and 400,000+ retail and fleet customers across more than 30 states. EVgo has the best operating record in the industry – more than 98% uptime – and consistently earns the highest consumer scores for U.S. public charging networks on PlugShare.

- **REV Renewables is an industry leader in the development, acquisition and operation of renewables and energy storage.** REV's 2.6 GW operating portfolio includes 25 solar projects, 1 wind projects, and several battery projects including Gateway, the world's largest battery when energized in Aug 2020. REV represents one of the nation's largest non-utility portfolios of renewables and energy storage.

- **Primary Renewable Fuels partners with the Landfill Group, a leader in the Landfill Gas to Energy Industry.** With over 30 years of experience, the Landfill Group was created to answer a need expressed by the landfill gas market – the ability to build a project where all vendors come together and seamlessly connect all the parts by providing complete solutions from development, operations, construction, equipment manufacturing, and ownership of landfill gas projects to municipal and private landfill owners across the U.S.

- **BluSail Renewable Fuels represents a JV with BioStar Renewables and ARM Energy to develop, build, own and operate waste to energy projects.** BluSail uses anaerobic digestion (AD) to break down waste, isolating by-products such as ammonia and methane, to be converted into Renewable Natural Gas or Renewable Electricity. Through its AD Waste to Energy solutions, BluSail reduces Greenhouse Gas Emissions, provides Renewable Energy, and diverts waste from landfills to support farming and other government, commercial and industrial users with their waste management needs.

- **Rise Light & Power is a regional manager and developer of energy assets** which provides more than 20% of New York City's generating capacity and is making significant investments to enable the state to reach its clean energy goals. From modernizing facilities to investing in large-scale renewable energy projects, Rise Light & Power is working to light the future.

514,814

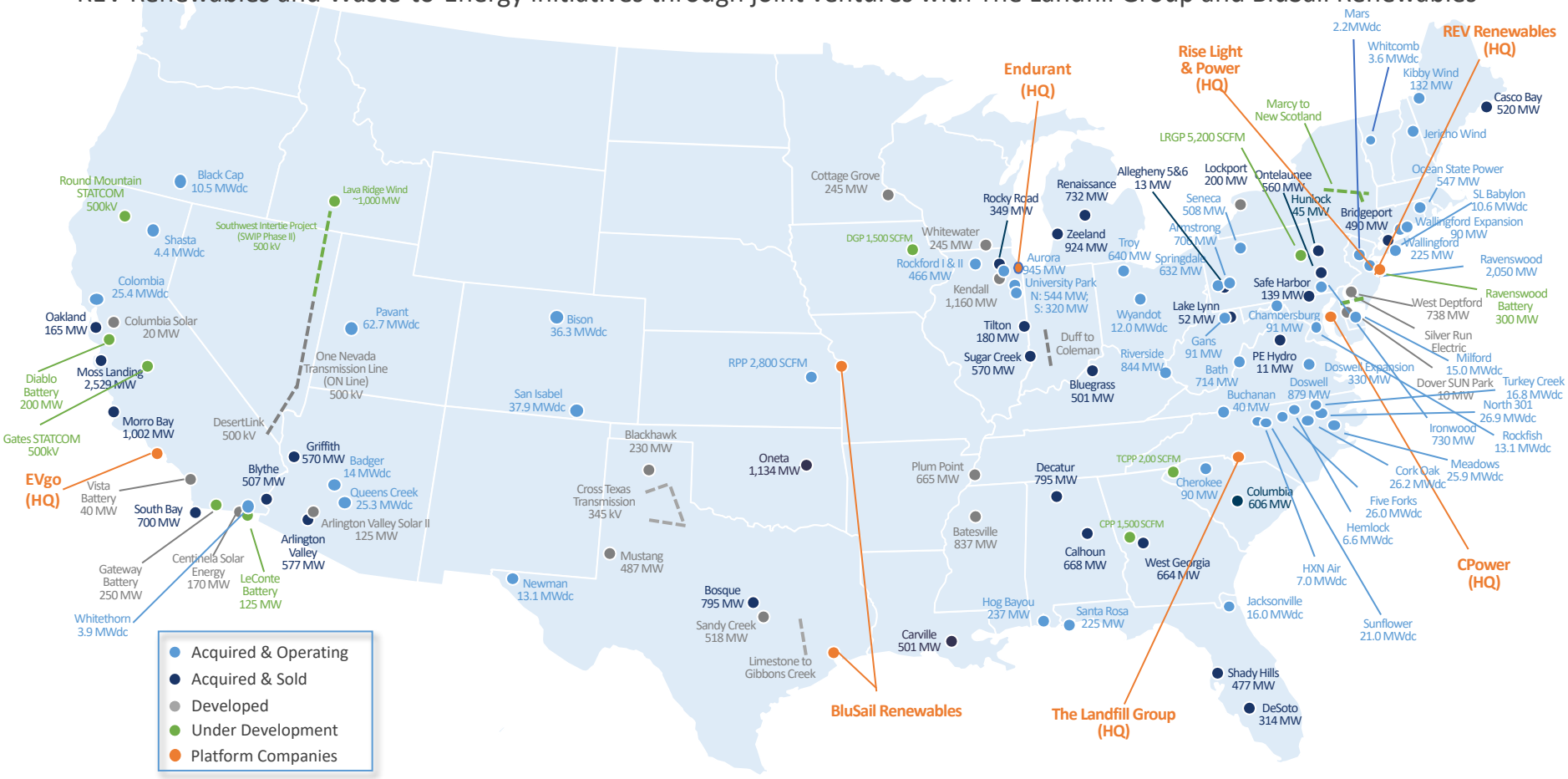
metric tons of CO_2e collectively avoided across LS Power's Energy Transition Platforms in 2021

Please see LS Power Sustainability for additional details including GHG emission avoidance calculation methodology.

LS Power Project Portfolio

Extensive development/operating experience across multiple markets and technologies

- With over **$48 billion** in equity and debt raised, LS Power has developed and acquired **over 100 Power Generation projects** (renewable and conventional), 7 Transmission projects, and 7 Battery Energy Storage projects
- LS Power's **Energy Transition Platforms** include CPower Energy Management, Endurant Energy, EVgo, Rise Light & Power, REV Renewables and Waste-to-Energy initiatives through joint ventures with The Landfill Group and BluSail Renewables



HOW WE GOT HERE – RESPONSE TO STAKEHOLDER REQUESTS

- LS Power first raised the concern with CIRs for Existing Variable Resources (executed ISAs) in the LS Power comments filed in the ELCC Dockets (ER21-278, 2020 and ER21-2043, 2021)
- FERC chose not to address the issues raised by LS Power and deferred to what is this stakeholder process
- The first meeting of the PS Special Session-ELCC CIRs was April 20, 2021
- At the June 22, 2021 meeting, PJM introduced Package A for the first time
  - Package A did not include any Transition Requirements for Existing Variable Resources (with executed ISAs)

		Solution Options[2]		
Sub-Component #	Design Sub-Components	Priority	Status Quo	A
5A	Existing Units		N/A	None
5B	Existing Queue Units		N/A	None
5C	New Queue Units		N/A	None

HOW WE GOT HERE – RESPONSE TO STAKEHOLDER REQUESTS

- At the Aug 13, 2021 meeting, PJM revised Package A that included a Transition Mechanism for Existing Variable Resources

#	Design	Sub- Component	Design Sub-Component	Status Quo	A
5	Transition mechanism	5A	Existing Units	N/A	Additional CIRs can be requested through the PJM Queue Process immediately upon necessary approvals/endorsements (including FERC if applicable) of the the solution developed in this stakeholder process. CIRs will be established as an upper limit for the 24/25 Delivery Year.
		5B	Existing Queue Units	N/A	Additional CIRs can be requested through the PJM Queue Process immediately upon necessary approvals/endorsements (including FERC if applicable) of the the solution developed in this stakeholder process. CIRs will be established as an upper limit for the 24/25 Delivery Year.
		5C	New Queue Units	N/A	Additional CIRs can be requested through the PJM Queue Process immediately upon necessary approvals/endorsements (including FERC if applicable) of the the solution developed in this stakeholder process. CIRs will be established as an upper limit for the 24/25 Delivery Year.

HOW WE GOT HERE – RESPONSE TO STAKEHOLDER REQUESTS

- At the Aug 20, 2021 meeting, PJM provided the document titled "Summary of Solution Options for CIRs for ELCC Resources Issue Charge for PJM". In this document, PJM stated that

  "[t]he purpose of this change is address concerns that the status quo approach does not adequately ensure the UCAP for Variable Resources is deliverable."

- The document also stated the following:

  "Design Component #3: CIRs should be applied to cap hourly outputs in the ELCC calculations and set an upper limit on AUCAP. This approach will ensure that **only** certified deliverable MW are counted toward resource adequacy and UCAP accreditation."

- Package A also included the following:

  i) lower the current accreditation to correctly reflect both the existing tariff and RAA provisions for deliverability, and the CIRs granted in the executed ISAs for Variable Resources, and

  ii) ii) change the deliverability test for Variable Resources to [*correctly reflect using only energy up to the CIRs and to adjust the default CIRs for wind and solar resources from 13% MFO to either 38% in MAAC or 52% in RTO]*

This was the Package A that LS Power supported at the time

HOW WE GOT HERE – RESPONSE TO STAKEHOLDER REQUESTS

- PJM made a drastic change between Aug 20, 2021 and Oct 2021
- At the Oct 20 2021 meeting, PJM introduced Package D without the matrix through a presentation
- The only explanation PJM provided at the time was:
  - On October 5 (PC Meeting), PJM presented a broad set of changes to the generator deliverability test to the Planning Committee
    - One aspect of the proposed changes is higher deliverability requirements for wind and solar over the summer period
  - "PJM feels confident that some of the primary concerns being discussed as part of this Special PC Session can be addressed through the proposed modifications to the generator deliverability test being discussed at the PC.
    - No need for major changes to CIR request and retention polices since the driver for such changes can best be handled through appropriately chosen deliverability requirements"

LS Power could not and does not support Package D because it did not and does not address AUCAP for Existing Variable Resources that was included in Package A

HOW WE GOT HERE – RESPONSE TO STAKEHOLDER REQUESTS

- At the Nov 8, 2021 meeting, PJM introduced Package D into the matrix and withdrew Package A
- The cell dealing with the Transition Mechanisms for Existing Variable Resources (as well as the other categories) indicated "None"

#	Design Components	Component	Design Sub-Component	Priority	Status Quo	A	D
5	Transition mechanism	5A	Existing Units		N/A	~~Additional CIRs can be requested through the PJM Queue Process immediately upon necessary approvals/endorsements (including FERC if applicable) of the the solution developed in this stakeholder process.~~ ~~CIRs will be established as an upper limit for the 24/25 Delivery Year.~~	None
5	Transition mechanism	5B	Existing Queue Units		N/A	~~Additional CIRs can be requested through the PJM Queue Process immediately upon necessary approvals/endorsements (including FERC if applicable) of the the solution developed in this stakeholder process.~~ ~~CIRs will be established as an upper limit for the 24/25 Delivery Year.~~	None
5	Transition mechanism	5C	New Queue Units		N/A	~~Additional CIRs can be requested through the PJM Queue Process immediately upon necessary approvals/endorsements (including FERC if applicable) of the the solution developed in this stakeholder process.~~ ~~CIRs will be established as an upper limit for the 24/25 Delivery Year.~~	None

HOW WE GOT HERE – RESPONSE TO STAKEHOLDER REQUESTS

- At the Nov 23, 2021 meeting, LS Power made a presentation of a proposal to be included in the matrix that was basically PJM's former Package A
  - This became new Package E and was included in the matrix for the Dec 20, 2021 meeting – note that PJM's former Package A was completely removed from the matrix at this time
  - Also, Package D still not have anything entered for Transition
- Sometime between the Nov 23, 2021 meeting and the April 28, 2022 meeting, PJM again changed their methodology for deliverability and accrediting UCAP for Existing Variable Resources by introducing a "multiplier" to make the existing AUCAP "deliverable." LS Power took issue with that approach and after discussion with PJM, PJM abandoned the multiplier and revised their methodology to what LS Power proposed: 1MW CIR = 1 MW Deliverability

At this point PJM and LS Power were in agreement with how the "end state" should be analyzed and AUCAP awarded – the only disagreement remained Transition

- Also in the matrix for the April 28, 2022 meeting, PJM included a Transition mechanism for Existing Variable Resources that raised interaction and cost allocation issues with the new interconnection queue process currently at FERC

HOW WE GOT HERE – RESPONSE TO STAKEHOLDER REQUESTS

- PJM, for the April 28, 2022 meeting, also posted responses to LS Power questions. Included in the answers was that Existing Variable Resources are deliverable using the existing transmission system headroom plus an additional 5 MW of transmission upgrades paid for by load. LS Power disagreed with PJM assigning the headroom because the tariff does not provide PJM the right to assign the headroom except through the interconnection process (i.e., request interconnection, PJM complete the studies, execute ISAs, etc.)
  - No such process was every initiated and the ISAs have not been amended to increase the granted CIRs based on assigning the headroom, as explained below the Tariff simply does not allow this.
- March 4, 2022, the PJM Board responded to a letter by P3 questioning the deliverability and AUCAP of Existing Variable Resources stating they are deliverable "using the proposed new generator deliverability test" (which has yet to be approved by stakeholders and FERC). (To our knowledge none of these resources have submitted requests for modified ISA or CIRs).
- In a call with PJM on Aug 16, 2022, PJM suggested LS Power file a complaint with FERC regarding the disagreement with the tariff interpretations for deliverability and accreditations and that the stakeholder process is not the proper venue to resolve tariff interpretations
  - LS Power did not file a complaint hoping to be able to work it out in the stakeholder process
  - LS Power was amazed that PJM believed explaining their interpretation of the tariff was out of scope in terms of addressing the status quo versus proposed changes
- LS Power is now resurrecting PJM's former Package A and including it in the matrix as Package E Alternative 4 (all other LS Power previous packages have been withdrawn)

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Tariff Compliance is a Requisite of RTO Operations – Response to Stakeholder Requests

- PJM and LS Power agree that the UCAP accreditation for existing Variable Resources (Variable Resources with executed ISAs) is overstated relative to the quantity of CIRs granted in the executed ISAs but disagree on the tariff interpretations (i.e. ~1300 MW) and the CIRs have to be increased to support the current AUCAP for these resources
  - LS Power has provided and includes in this presentation the ***existing*** tariff provisions and RAA provisions reviewed by LS Power to conclude these resources are over-accredited
  - PJM has stated these resources are "deliverable" and therefore the accreditation is not overstated, but has yet to provide the tariff/RAA provisions to support that conclusion. The only statement from PJM was from the Board in their letter of March 4, 2022 where the Board states these resources are deliverable "using the proposed new generator deliverability test." LS Power notes that the "proposed new generator deliverability test" is just that, proposed, and therefore is not applicable in determining their current deliverability. Further, while deliverability is a necessary condition, it is not sufficient for any accreditation as a Capacity Resource.
    - The Board letter is silent on *both* the deliverability of these units under the existing deliverability test and the other necessary conditions required to be recognized as a Capacity Resource
- This over-accreditation forces the BRA to clear MWs that provide no reliability to the system while forcing out of the Capacity Market those resources that are in fact reliable and capable of delivering all the MWs for which they are accredited and/or reduces payments for MWs that are deliverable and actually providing reliability

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LS Power / PJM Tariff Analysis Supporting Conclusions

LS Power - Why Resources are Over-Accredited		PJM - Why Resources are NOT Over-Accredited	
OATT/RAA Provisions	**Discussion**	**OATT/RAA Provisions**	**Discussion**
RAA Schedule 10	–Generation Capacity Resources must be deliverable…Certification of deliverability means that the physical capability of the transmission network has been tested by the Office of the Interconnection and found to provide that service consistent with the assessment of available transfer capability as set forth in the PJM Tariff	None provided to date	Board lette dated March 4, 2022: "these resources are deliverable "using the proposed new generator deliverability test…"
OATT Part VI §230.2	When a Generation Interconnection Customer's generation is accredited as deliverable through the applicable procedures in Part VI and Part VI [*sic*] of the Tariff, the Generation Interconnection Customer also shall receive [CIRs] commensurate with the size in [MWs} of the generation as identified in the [ISA].		
OATT Part VI, ATT O - Form of Pro Forma ISA , §2.1	Pursuant to and subject to the applicable terms of the Tariff, the Interconnection Customer shall have Capacity Interconnection Rights at the Point(s) of Interconnection specified in this Interconnection Service Agreement in the amount of ___ MW. {Instructions: this number is the total of the Capacity Interconnection Rights that are granted as a result of the Interconnection Request}		
OATT Part VI, ATT O - Form of Pro Forma ISA , §2.1a	To the extent that any portion of the Customer Facility ... is not a Capacity Resource with Capacity Interconnection Rights, such portion of the Customer Facility shall be an Energy Resource		
OATT Definitions - Energy Resource	"Energy Resource" shall mean a Generating Facility that is not a Capacity Resource		

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Summary: Why LS Power Believes that the Current Variable Resource Accreditation Must Be Modified

- Relevant PJM Documents: OATT, Pro Forma ISA, RAA as previously identified

- The underlying source of the problem is PJM used energy above CIR level (defined as being from an Energy Resource), to accredit Capacity for intermittent resources. We believe this is inconsistent with the current PJM Documents.
  - RAA Schedule 10 states a Capacity Resource must be deliverable and that is established by appropriate testing etc.

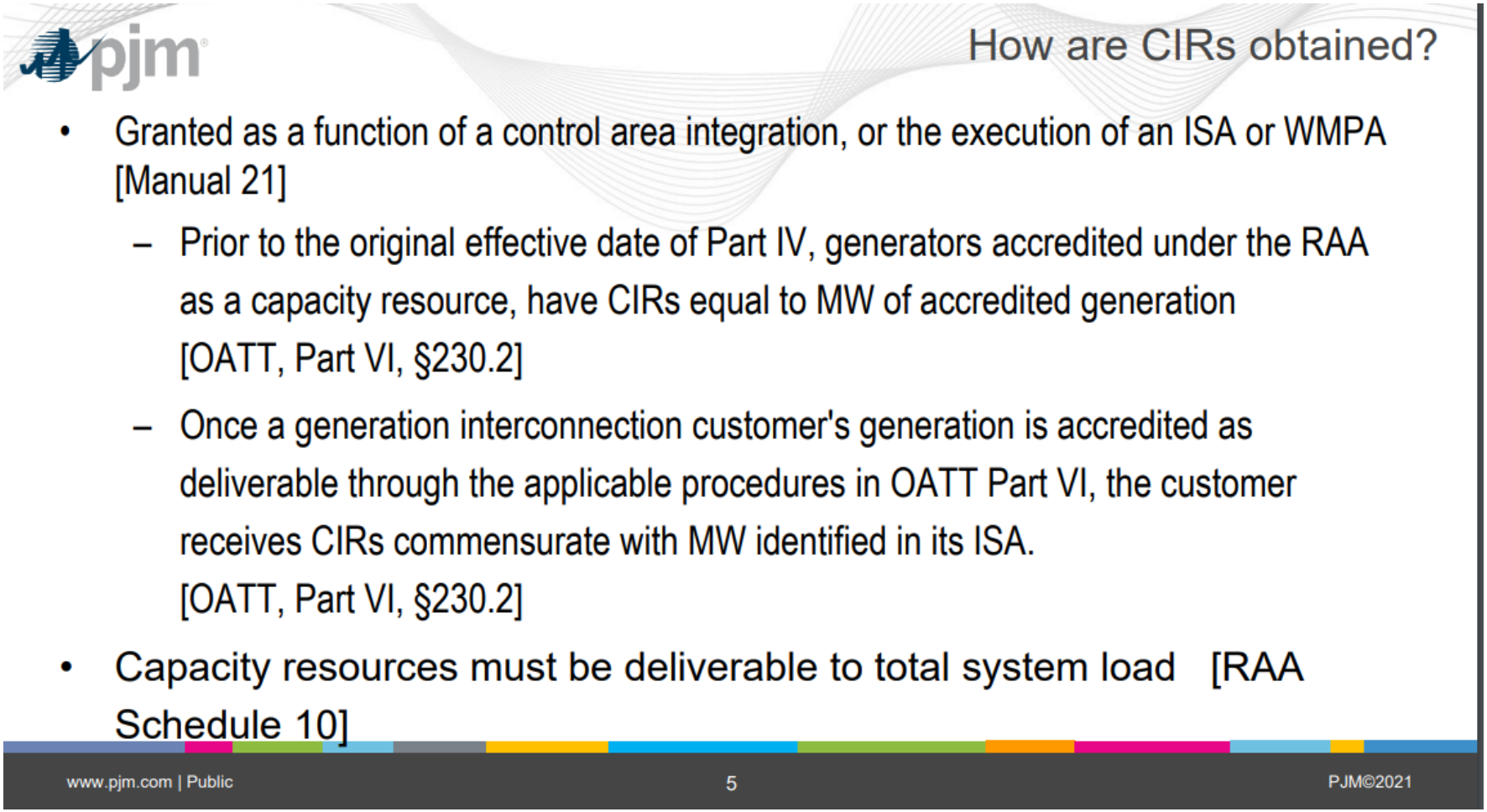
1) Section 230.2 of Tariff explains that deliverability is a necessary but not sufficient condition to get CIRs
2) The same section of the Tariff makes clear that deliverability is used to get CIR via the execution of an ISA.

   Deliverability and the granting of CIRs via an Executed ISA in combination are both required for sufficiency

4) PJM presentations make exact same interpretations - See Slide 5 https://www.pjm.com/-/media/committees-groups/committees/pc/2021/20210420-special/20210420-item-03a-cir-education.ashx (next page)
5) ISA awards CIR quantity (Tariff Pro-forma ISA Section 2).
6) ISA Section 2.1.a makes it explicitly clear that ANY output in excess of CIR is Energy Resource and not Capacity
7) ISA definitions explicitly defines Energy Resource as Not Capacity.
8) RAA Schedule 9.1 describes accreditation of Variable Resources under ELCC
9) RAA schedule 9.1 (H) explicitly says that it does not apply to Energy Resources (e.g. energy output above the CIR level).

Summary: Why LS Power Believes that the Current Variable Resource Accreditation Must Be Modified (continued)

- Source: PC Special Session, April 20, 2021, Item 3a "CIR Education"



LS POWER PACKAGE E ALTERNATIVE 4

- Package E Alternative 4 (PJM former Package A)
  - This Package is PJM's former Package A, which first appeared in the matrix with the June 22, 2021 PC Special Session and was revised for the Aug 26, 2021 PC Special Session

    Note that Package A was withdrawn at the Nov 8, 2021 PC Session and completely removed from the matrix starting with the Feb 23, 2022 PC Special Session without explanation
  - LS Power supported Package A in Aug 2021 and supports it now
    - It should be noted that in the presentation titled "Item 2 - Summary of Solution Options for CIRs for ELCC Resources Issue Charge for PJM" posted for the Aug 26, 2021 PC Special Session, PJM stated, in part [emphasis added] –

      "The purpose of this change is to address concerns that the status quo approach does not adequately ensure the UCAP for Variable Resources is deliverable."

      - Package E Alternative 4 is also consistent with PJM's Package D except for Transition
    - LS Power only clarifies that upon stakeholder approval, PJM will adjust the accreditation for Existing Units (defined as Variable Resources with executed ISAs) to reflect not using any Energy above the CIRs (per existing ISAs), and without using any available headroom in the transmission system, in accordance the existing Tariff and the RAA, without reentering the interconnection queue.

      - This adjustment does not require FERC approval nor any Tariff/RAA/ISA changes

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LS POWER PACKAGE E ALTERNATIVE 4 (continued)

- Package E Alternative 4 (PJM former Package A)
  - This package, as described by PJM for Package A, includes
    - Output Above CIRs Not Counted Towards Accreditation, and
    - Implementation and Transition
      - New ELCC modeling and AUCAP calculations take effect with 24/25 Delivery Year
      - Higher CIR request/retention eligibility takes effect as soon as PJM and FERC review/approvals/endorsements complete
      - Require Existing Variable Resources and non-commercial Variable Resources in the PJM queue to re-enter the queue if they would like additional CIRs. (And pay for upgrades)
    - Due to delays, the new ELCC modeling and AUCAP calculations, if approved by stakeholders will not be approved by FERC until after the 24/25 BRA
  - Package E therefore recognizes this delay in new ELCC modeling and AUCAP calculations and therefore requires the AUCAP for the Existing Variables Resources to be corrected to reflect deliverability up the ISA CIR level upon approval by the stakeholders but in no case later than necessary for proper accreditation for the 24/25 BRA in Dec, 2022

ADVANTAGES OF THE LS POWER PACKAGE E ALTERNATIVE 4

- Maintains the competitiveness of the PJM markets –
  - Does not provide additional subsidies as the other proposals
  - Does not create "phantom" MW of Capacity Resources nor distort Capacity prices.
- Proposal does not discriminate among resources
- Consistent with the Tariff/RAA provisions for accreditation, it resolves the tariff interpretation disagreement which according to PJM we are not permitted to resolve in this process
- Maintains the current interconnection cost-causation principal
- Does not impose additional costs on load or other Interconnection Customers in the queue
- It is workable under the current interconnection rules as well as the proposed interconnection rules awaiting FERC action
- It is simple and not complex as PJM noted for the other packages
- There is no question surrounding who "owns" the CIRs and therefore they can be transferred under the existing rules
- It does not establish a dangerous precedent of the Board interpreting the tariff without explanation

PJM'S TRANSITION FIX IS NOT PERMITTED UNDER ITS CURRENT TARIFF

- First, NO EXISTING PJM tariff or rules permit allocation of headroom on the transmission system to select resources; PJM essentially wants to "wave a wand" and declare the over-accredited resources deliverable because headroom exists that other generators and load have previously paid for without going through required studies and executing a new ISA.
- This fact is supported by precedent: several years ago stakeholders did not approve assigning winter CIRs to wind resources but PJM then submitted the change to FERC;
  - PJM did not just "assign" the winter headroom as they are proposing to do now because they could not under the tariff provisions and found it necessary to get FERC approval (which they did before implementing)
  - It is difficult to understand how PJM determined these resources are currently deliverable without giving them the transmission capacity (headroom), which is not permitted under the exiting tariff and confirmed with past practices.
- They might be deliverable had PJM performed the required tests (*which PJM suggested they have done absent any consideration for those already in the queue*). However, that is true for any Capacity Resource with Capacity potentially above their CURRENT CIRs. But that ignores the required award of CIRs via an executed ISA, and the associated participation required in the queue process to receive such awards and an executed agreement

PJM HAS NOT DEMONSTRATED THERE IS NO ADVERSE IMPACT TO LOAD OR TO OTHER INTERCONNECTION CUSTOMERS FROM ITS CURRENT IMPLENTATION OR PROPOSAL

- Second, PJM is proposing to increase the CIRs for these select resources (to make the Accredited UCAP "deliverable") by assigning ~7200 – ~7300 MW of existing transmission system headroom (plus an additional $5 million in network upgrades to be paid by load) to make the existing accreditation compliant with the Tariff and RAA. This would be placing these resources in front of existing queue positions. (PJM needs to further explain priority for new proposals.)

- The existing headroom is currently available to ALL resources in PJM based on their priority in the interconnection queues. As proposed, this ~7200 -~7300 MW allocation would "jump over" current parties in the queue, denying them access to this capability and increasing their network upgrade costs by a minimum of [$2] billion (Fast Track and TC1 only were considered by PJM)
  - To prevent the waterfall effect of discriminately assigning the existing headroom to certain preferred resources and harming resources in the existing queues, to date, PJM has proposed that all network upgrades required to make the resources in the existing queue "whole" ***will be paid for by load or by some combination of charges to load and new generation.*** (The new options proposed by PJM are unclear to us on this point)

- The cost of this is estimated to be [$2] billion at the very least and doesn't reflect impacts on Transition Cycle 2. These impacts could also increase costs by potentially additional billions of dollars. (LS has requested estimates of this increase and has not received them)

PJM'S PROPOSALS ARE THE WRONG APPROACH AND STAKEHOLDERS SHOULD NOT SUPPORT IT

- For all of these reasons, PJM's proposals are an end-run around current, clear Tariff rules, and a clear discriminatory intent to favor existing (not new) intermittent resources.
- Load interests should be concerned that they are picking-up the tab for PJM's proposal when load has already paid a portion of the headroom PJM is giving away in a discriminatory manner
- Load interests should be concerned that they have already paid for, and will continue to pay for non-existent capacity
- New resources (including new and more efficient wind and solar) should be concerned that they will face higher interconnection costs to subsidize existing variable resources
- All other suppliers should be concerned about the price suppression of having non-existent generation included in the Capacity auctions
- Stakeholders should be concerned with the potential reliability issues with these undeliverable resources clearing the auctions pushing out deployable, reliable resources
- All stakeholders should be concerned of the dangerous precedent PJM is establishing by giving away headroom without stakeholder approval and interpreting the tariff to justify what amounts to a previous mistake

PJM'S PROPOSALS ARE THE WRONG APPROACH AND STAKEHOLDERS SHOULD NOT SUPPORT IT

- In addition, PJM's approach is highly inefficient in allocating transmission headroom (to be clear – as previously stated, LS Power concludes that PJM does **NOT** have the authority in the Tariff to allocate transmission)
  - PJM is allocating ~7,200 to ~7,300 MW of headroom to obtain ~1,300 MW of intermittent, non-deployable/dispatchable wind capacity
  - PJM could allocate the headroom to resources with much higher accredited Capacity
    - E.g., PJM could allocate the headroom to 8-10 hr batteries and receive ~6,500MW of deployable capacity versus ~1300 MW of stochastic supply
  - Stakeholders and not PJM should determine how transmission headroom is allocated to resources outside of the interconnection process if the status quo queue priorities are to be changed.
    - E.g., lottery system, bid system or other priorities **rather than PJM's preference**

Tariff and RAA Provisions

This information is in Response to specific stakeholder Requests in prior meetings.

OATT Definitions

- Capacity: "Capacity" shall mean the installed capacity requirement of the Reliability Assurance Agreement or similar such requirements as may be established.
- Capacity Interconnection Rights: "Capacity Interconnection Rights" shall mean the rights to input generation as a Generation Capacity Resource into the Transmission System at the Point of Interconnection where the generating facilities connect to the Transmission System.
- Capacity Resource: "Capacity Resource" shall have the meaning provided in the Reliability Assurance Agreement.
- Energy Resource: "Energy Resource" shall mean a Generating Facility* that is not a Capacity Resource.

*"Generating Facility" is not defined in the OATT nor RAA but in the OATT, "Customer Facility is defined as Generation Facilities or Merchant Transmission Facilities interconnected with or added to the Transmission System pursuant to an Interconnection Request under Tariff, Part IV.

RAA Definitions

- Capacity Resources: "Capacity Resources" shall mean megawatts of (i) net capacity from Existing Generation Capacity Resources or Planned Generation Capacity Resources meeting the requirements of the Reliability Assurance Agreement, Schedules 9 and Reliability Assurance Agreement, Schedule 10 that are or will be owned by or contracted to a Party and that are or will be committed to satisfy that Party's obligations under the Reliability Assurance Agreement, or to satisfy the reliability requirements of the PJM Region, for a Delivery Year; (ii) net capacity from Existing Generation Capacity Resources or Planned Generation Capacity Resources not owned or contracted for by a Party which are accredited to the PJM Region pursuant to the procedures set forth in such Schedules 9 and 10; or (iii) load reduction capability provided by Demand Resources or Energy Efficiency Resources that are accredited to the PJM Region pursuant to the procedures set forth in the Reliability Assurance Agreement, Schedule 6.

- Generation Capacity Resource: "Generation Capacity Resource" shall mean a Generating Facility, or the contractual right to capacity from a specified Generating Facility, that meets the requirements of RAA, Schedule 9 and RAA, Schedule 10, and, for Generating Facilities that are committed to an FRR Capacity Plan, that meets the requirements of RAA, Schedule 8.1. A Generation Capacity Resource may be an Existing Generation Capacity Resource or a Planned Generation Capacity Resource.

RAA Provisions

- RAA Schedule 9 – this Schedule only requires that rules be established to determine and demonstrate the capability of Generation Capacity Resources
- RAA Schedule 9.1 (H)—The provisions of this section **do not apply to Energy Resources**
- RAA Definition –
  - Generation Capacity Resource: "Generation Capacity Resource" shall mean a Generating Facility, or the contractual right to capacity from a specified Generating Facility, that meets the requirements of RAA, Schedule 9 and RAA, Schedule 10, and, for Generating Facilities that are committed to an FRR Capacity Plan, that meets the requirements of RAA, Schedule 8.1. A Generation Capacity Resource may be an Existing Generation Capacity Resource or a Planned Generation Capacity Resource.
- RAA Schedule 10 –
  - Generation Capacity Resources must be deliverable…Certification of deliverability means that the physical capability of the transmission network has been tested by the Office of the Interconnection and found to provide that service consistent with the assessment of available transfer capability as set forth in the PJM Tariff

OATT VI. ADMINISTRATION AND STUDY OF NEW SERVICE REQUESTS; RIGHTS ASSOCIATED WITH CUSTOMER-FUNDED UPGRADES

- §230.1 Purpose:
  - Capacity Interconnection Rights shall entitle the holder to deliver the output of a Generation Capacity Resource at the bus where the Generation Capacity Resource interconnects to the Transmission System.
- §230.2 Receipt of Capacity Interconnection Rights:
  - Generation accredited under the Reliability Assurance Agreement Among Load Serving Entities in the PJM Region as a Generation Capacity Resource prior to the original effective date of Part IV shall have Capacity Interconnection Rights commensurate with the size in megawatts of the accredited generation. When a Generation Interconnection Customer's generation is accredited as deliverable through the applicable procedures in Part VI and Part VI *[sic]* of the Tariff, the Generation Interconnection Customer also shall receive Capacity Interconnection Rights commensurate with the size in megawatts of the generation as identified in the Interconnection Service Agreement.
    - The main import of this provision is to make clear that while deliverability is a necessary condition, it is not sufficient to make a resource eligible to sell Capacity. The Capacity Resource eligibility comes through the perfection of the CIRs with the demonstration of deliverability via contract rights contained in the ISA.

OATT VI. ADMINISTRATION AND STUDY OF NEW SERVICE REQUESTS; RIGHTS ASSOCIATED WITH CUSTOMER-FUNDED UPGRADES

- 212 Interconnection Service Agreement:
  - "Upon completion of the Facilities Study (or, if no Facilities Study was required, upon completion of the System Impact Study), the Transmission Provider shall tender to each Interconnection Customer an Interconnection Service Agreement (in the form included in Attachment O to the Tariff) to be executed by the Interconnection Customer, the Interconnected Transmission Owner and the Transmission Provider.

OATT VI. ADMINISTRATION AND STUDY OF NEW SERVICE REQUESTS; RIGHTS ASSOCIATED WITH CUSTOMER-FUNDED UPGRADES

- ATTACHMENT O - FORM OF INTERCONNECTION SERVICE AGREEMENT
  - SPECIFICATIONS FOR INTERCONNECTION SERVICE AGREEMENT
    - 2.0 Rights [for Generation Interconnection Customers]
    - 2.1 Capacity Interconnection Rights: {Instructions: this section will not apply if the Customer Facility is exclusively an Energy Resource and thus is granted no CIRs; see alternate section 2.1 below}

      Pursuant to and subject to the applicable terms of the Tariff, the Interconnection Customer shall have Capacity Interconnection Rights at the Point(s) of Interconnection specified in this Interconnection Service Agreement in the amount of ___ MW. {Instructions: this number is the total of the Capacity Interconnection Rights that are granted as a result of the Interconnection Request, plus any prior Capacity Interconnection Rights}
    - 2.1a To the extent that any portion of the Customer Facility described in section 1.0 is **not a Capacity Resource with Capacity Interconnection Rights, such portion of the Customer Facility shall be an Energy Resource.**
      - RAA Definition of Energy Resource—Not Capacity

PJM Presentations
In Further Support of
LS Power's Position

FROM PJM PRESENTATIONS AT PC AND SPECIAL PC MEETINGS

- Capacity Interconnection Rights for ELCC Resources, March 9, 2021- Slide 5:
  - "CIRs are not included in ELCC calculations or in determining accredited UCAP
    - Resource adequacy performance and accredited UCAP may be overstated unless CIRs are considered"

- 8.26.2021 - PC Special Session - CIR for ELCC Resources
  - Item 2 - Summary of Solution Options for CIRs for ELCC Resources Issue Charge for PJM PDF - PJM's Solution Option A
    - "Design Component #1: CIR requests should be initially set at a level that ensures any resource's UCAP is fully deliverable over a broad range of summer hours…The purpose of this change is address concerns that the status quo approach does not adequately ensure the UCAP for Variable Resources is deliverable…"

      Note: LS Power supported PJM's Solution Option A but it mysteriously disappeared.

FROM PJM PRESENTATIONS AT PC AND SPECIAL PC MEETINGS

- Accredited UCAP (AUCAP) Calculation for ELCC Resources: Before and After ELCC Implementation, Resource Adequacy Planning Special PC, February 15th, 2022
  - Slide 3:

ELCC Class	Pre-ELCC UCAP Method	Issues
Onshore Wind	368-hour rule (average output during 4-hr window in 92 days of previous summer)	By keeping a fixed 4-hr summer window, the potential shift in loss of load risk patterns due to high penetration of wind/solar (risk shift towards summer evenings & winter) is not captured. Outputs above the deliverability level included in UCAP calculation.
Offshore Wind		
Solar Fixed		
Solar Tracking		

  - Slide 8: "Issues with the current implementation of ELCC for AUCAP calculation
    - Outputs above the current deliverability level are still included in the ELCC AUCAP calculation (just like in the methodology used before the ELCC implementation)"

- PJM Board of Manager's Letter to PJM Power Providers Group, Clean Energy Trades Organizations, and Certain Public Interest Organizations dated March 4, 2022
  - "Further, in studying the deliverability of existing renewable resources using the proposed new generator deliverability test,[] PJM continues to determine that in-service generating resources are deliverable and that all generating resources with an Interconnection Service Agreement (ISA) but not yet in service will be deliverable, with the exception of a small number of megawatts (approximately 5 MW)."