



# Possibilities to Enhance Interconnection Processes

October 31, 2024

*An initiative spearheaded by the Solar Energy Technologies Office and the Wind Energy Technologies Office*



# Meeting Recording Announcement

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# Agenda

- DOE i2X Program + Roadmap Overview (10 min)
- Panel Presentations: Enhancing Interconnection Processes (60 min)
  - Fritz Kahrl (Lawrence Berkeley National Laboratory)
  - Katie Siegner (RMI)
  - Xing Wang (AWS)
  - Melissa Alfano (SEIA)
- Open facilitated discussion (45 min)
- Future i2x Activities & Upcoming Events (5 min)

## Speakers

**Fritz Kahrl** – Affiliate, *Lawrence Berkeley National Laboratory*

**Katie Siegner** – Manager, *Rocky Mountain Institute*

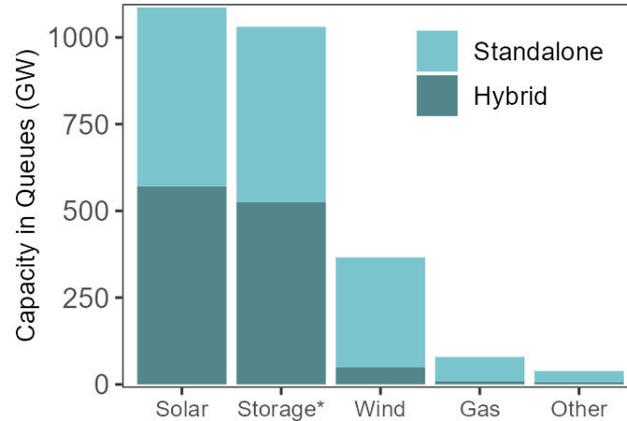
**Xing Wang** – Global Leader, Grid Modernization, *Amazon Web Services*

**Melissa Alfano** – Senior Director, Energy Markets and Counsel, *Solar Energy Industries Association*

# State of Transmission Interconnection

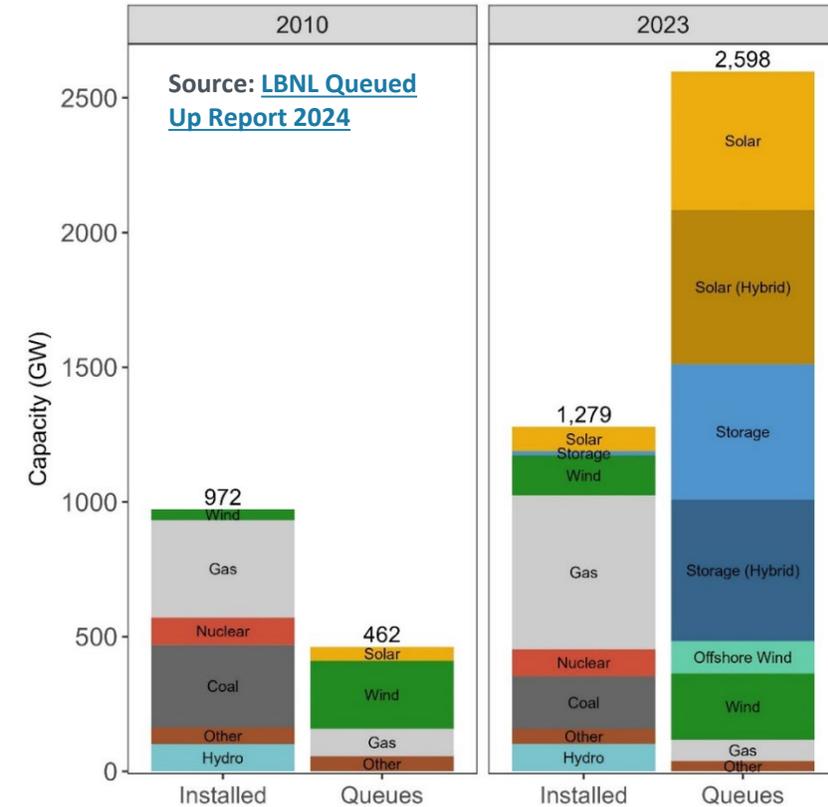
## Developer interest in solar, storage, and wind is strong

- Nearly 11,600 projects with 2,600 GW actively seeking interconnection
- Active capacity in queues increased ~8X since 2014

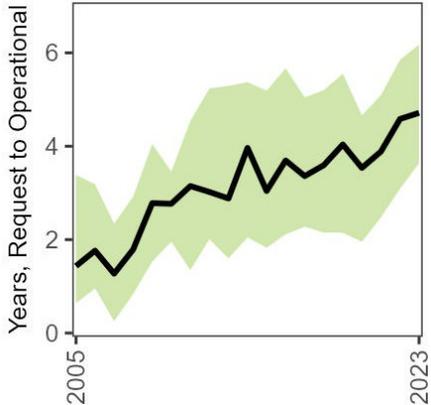


## Proposed capacity is more than 2x installed capacity!

- >95% of capacity in queues is zero-carbon



## Completion rates are generally low; wait times are increasing



- For projects built in 2023, the average time from request to commercial operations is 5 years compared to 3 years in 2015 and <2 years in 2008
- Interconnection costs also increasing

Source: [LBNL's Queued Up Report 2024](#)

# Interconnection Innovation e-Xchange (i2X)

**Mission:** To enable a **simpler, faster, and fairer** interconnection of clean energy resources while enhancing the **reliability, resiliency, and security** of our **distribution and bulk-power** electric grids



## Stakeholder Engagement

Nation-wide engagement platform and collaborative working groups



## Data & Analytics

Collect and analyze interconnection data to inform solutions development



## Strategic Roadmap

Create roadmap to inform interconnection process improvements



## Technical Assistance

Leverage DOE laboratory expertise to support stakeholder roadmap implementation

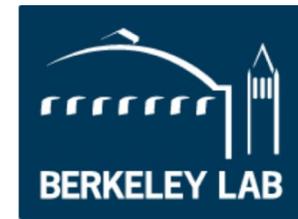


*i2X is a collaboration among DOE offices and National Labs*



U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy



**GDO**  
GRID DEPLOYMENT OFFICE





Department of Energy

# DOE Releases First-Ever Roadmap to Accelerate Connecting More Clean Energy Projects to the Nation's Electric Grid

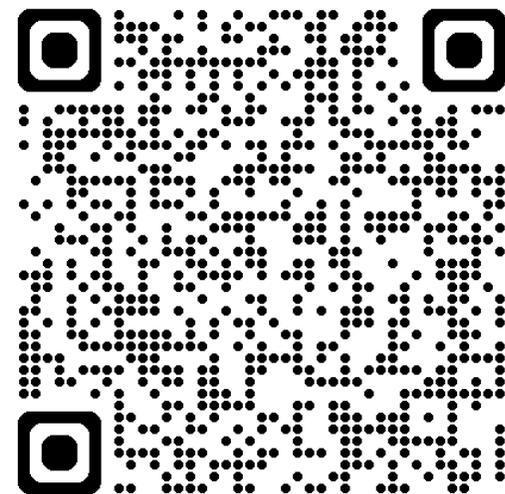
APRIL 17, 2024

[Energy.gov](#) »

DOE Releases First-Ever Roadmap to Accelerate Connecting More Clean Energy Projects to the Nation's Electric Grid

*Report Details Recommendations to Streamline Interconnection with Near- to Long-Term Solutions to Add Clean Energy Resources to the Transmission Grid and Boost Our Clean Energy Economy*

**WASHINGTON, D.C.** — The U.S. Department of Energy (DOE) released a [new roadmap](#) outlining solutions to speed up the interconnection of clean energy onto the nation's transmission grid and clear the existing backlog of solar, wind, and battery projects seeking to be built. The Transmission Interconnection Roadmap, developed by DOE's Interconnection Innovation e-Xchange (i2X), serves as a guide for transmission providers, interconnection customers, state agencies, federal regulators, transmission owners, load serving entities (LSEs), equipment manufacturers, consumer advocates, equity and energy justice communities, advocacy groups, consultants, and the research



[www.energy.gov/i2x](http://www.energy.gov/i2x)

# Transmission Roadmap Key Components and Implementation Actors

## 35 solutions organized in four goals

### Solutions with different implementation time frames

- Short-term: within 1-3 years (by 2027)
- Medium-term: 3-5 years (by 2029)
- Long-term: beyond 5 years (2030 and after)

### Solutions describe collaborative actions among key actors

- Transmission providers (Utilities, ISOs, BAs)
- Regulators (FERC/NERC, State PUCs)
- Interconnection customers
- Consumer Groups
- Research community (including DOE)
- OEM and software vendors
- State, local, tribal governments
- Equity and public benefit organizations

### Measurable 2030 success targets

DOE has multiple potential roles in enabling Roadmap implementation

Convene Stakeholders

Provide Technical Support

Fund Research and Innovation

Evaluate Progress

# Measurable Success Targets for 2030

*Evaluating success relies on accessible data for tracking and auditing!*



**Reduced interconnection process time**  
Average time from request to agreement

**Target Value by 2030**

< 12 months

**Recent Value**

33 months (2022)



**Lowered cost uncertainty**  
Standard deviation of interconnection costs

**Target Value by 2030**

< \$150/kW

**Recent Value**

\$551/kW (2020-2021)



**Increased Completion rates**  
Completion rate for projects that entered facility study phase

**Target Value by 2030**

> 70%

**Recent Value**

45% (2016)



**Maintained system reliability**  
Number of annual NERC disturbances events involving unexpected tripping of IBRs not identified in offline analysis due to IBR modeling inaccuracy

**Target Value by 2030**

Zero

**Recent Value**

4 (2022)

# Four Interconnection Goals with 35 Solutions

**Goal #1: Increase Data Access and Transparency**

**Goal #2: Improve Process and Timeline**

**Goal #3: Promote Economic Efficiency**

**Goal #4: Maintain a Reliable, Resilient, and Secure Grid**

- Solutions are a collection of strategies rather than a rigid package of prescriptive fixes.
- Some solutions are complementary: to be effective, they would need to be implemented in tandem with others.
- Other solutions are exclusive: adopting one might obviate the need for another.
- Solutions may be topically specific (e.g., Cost Allocation)

Roadmap does not assess the costs of implementing the solutions.

Join . Connect . Collaborate

## Speakers

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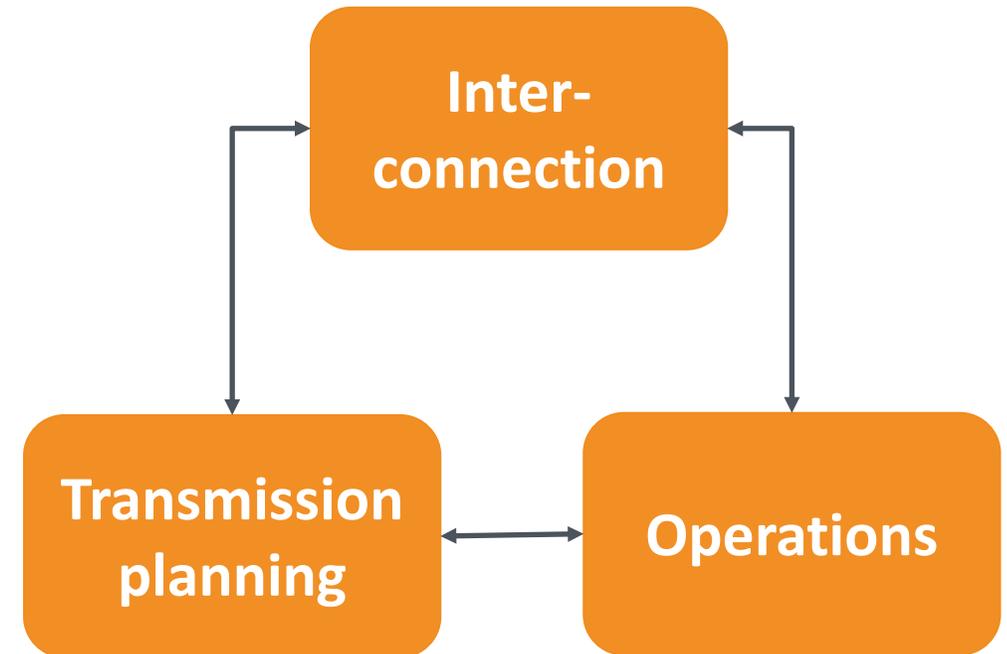


# Goal 2: Improve Process and Timeline

**Challenge:** *Backlogs and delays are the result of rapid growth in interconnection requests and inefficiencies in process. What changes can be made to handle larger quantities of requests while reducing study process timelines and maintaining access?*

## Objectives for Solutions that Improve Process and Timeline

- Increase ability to process higher volumes of requests and thereby promote faster interconnection of new resources
- Ensure openness and competitive access to the transmission network
- More efficiently utilize limited human resources



# Topical Area 1 – Queue Management

*Solutions should help reduce queue volumes and interconnection delays in the near term and enable transmission providers to handle larger and variable queue volumes in the longer term*

**Solution 1:** Implement and enforce more stringent commercial readiness requirements, financial commitments, withdrawal penalties, and time limits that balance effectiveness, equity, and open access principles.

SHORT TERM

**Solution 2:** Implement and enforce interconnection study timelines and use incentives for minimizing delays in completing studies.

SHORT TERM

**Solution 3:** Continue to automate parts of the interconnection process, such as data input and validation, some customer communications, and data sharing across processes and models.

SHORT TERM

**Key tradeoff:** Rationing quantity of proposed projects while maintaining competition and open access industry principles

# Topical Area 1 – Queue Management

*Solutions should help reduce queue volumes and interconnection delays in the near term and enable transmission providers to handle larger and variable queue volumes in the longer term*

**Solution 4:** Continue to monitor interconnection processing times and, as needed, develop one-off interventions for mitigating queue backlogs, such as additional temporary staff, outsourcing, temporary fast-tracking, and temporary rationing of queue space.

SHORT TERM

**Solution 5:** Create new and better use existing fast-track options for interconnection, such as surplus interconnection service, generation replacement service, and energy-only interconnection service.

MEDIUM TERM

**Solution 6:** Consider market-based approaches to rationing interconnection access.

LONG TERM

**Key tradeoff:** Rationing quantity of proposed projects while maintaining competition and open access industry principles

## Topical Area 2 – Affected System Studies

*Harmonizing assumptions and process timelines in affected system studies and joint seams planning can ease interconnection bottlenecks*

**Solution 1:** Increase voluntary collaboration on affected system studies, including harmonization of study procedures, study methods, data inputs, software tools, study criteria, and mitigation options.

SHORT TERM

**Solution 2:** Conduct affected system studies using an energy-only modeling standard, unless interconnection customers have requested deliverability to the affected system.

SHORT TERM

**Solution 3:** Develop a process to investigate new interregional transmission solutions through joint transmission planning efforts between neighboring affected systems.

MEDIUM TERM

**Key tradeoff:** Creating more consistent and harmonized interregional processes while maintaining the independence of individual balancing areas

## Topical Area 3 – Inclusive and Fair Process

*While all solutions of the roadmap aim to promote a fair interconnection process, not all stakeholders start with the same tools and resources; enhancements to interconnection and, relatedly, transmission planning processes can help achieve inclusive and fair outcomes*

**Solution 1:** Incorporate equity goals in transmission planning and valuation efforts.

SHORT TERM

**Solution 2:** Provide access to independent engineering, administrative, and legal services to support the navigation of interconnection processes.

MEDIUM TERM

**Key tradeoff:** Providing targeted support for stakeholders that do not start with the same tools and resources without ignoring open access principles

## Topical Area 4 – Workforce Development

*Interconnection requires technical expertise across many professions in the electric industry, from utility engineers to regulatory officials, and there is a high degree of competition for these skills*

**Solution 1:** Assess the scale of interconnection workforce growth requirements.

SHORT TERM

**Solution 2:** Upskill the existing workforce through continuing education programs.

SHORT TERM

**Solution 3:** Consider improvements to compensation and benefits while enhancing the advertisement and hiring process for interconnection-related positions.

SHORT TERM

**Solution 4:** Grow the number of workers in the interconnection workforce via outreach, career counseling, apprenticeships, and curriculum development in postsecondary education.

SHORT TERM

**Solution 5:** Expand education opportunities relevant to interconnection for under-resourced and EEJ communities.

SHORT TERM

**Key tradeoff:** Invest in growing an interconnection workforce and expanding its expertise, while recognizing that there will be competition for workers with interconnection-related skills

Join . Connect . Collaborate

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Join . Connect . Collaborate

# Discussion and Q&A

Website: [energy.gov/i2X](https://energy.gov/i2X)

Email: [i2x@ee.doe.gov](mailto:i2x@ee.doe.gov)



# Discussion

## *Discussion Code of Conduct*

- *Assume good faith and respect differences*
- *Listen respectfully*
- *Use "Yes and" to build on others' ideas*
- *Self-edit and encourage others to speak up*
- *Seek to learn from others*



Mutual Respect . Collaboration . Openness

## Discussion topics:

1. To what extent is interconnection an issue for, and perhaps part of the solution for addressing, recent load growth-related and generator retirement-related concerns around **resource adequacy**?
2. What current and potential options, such as **fast tracks or other tools**, exist for dealing with interconnection challenges to resource adequacy?
  - Are current options for fast-tracking resources through the interconnection process **sufficient to meet the needs** of market participants?
  - Do fast tracks create concerns around **fairness and open access** and how can these be managed?
3. Are there **opportunities to increase automation or reduce staffing challenges** in the near term that would help to reduce interconnection bottlenecks?
4. What **nearer-term areas of software and other R&D** will help to streamline interconnection processes and improve interconnection studies in the longer-term future?
5. What are the most promising **approaches for expanding the workforce** working on interconnection, better retaining the existing workforce, and providing periodic training to upgrade and adapt skills to changing technologies?
6. What kinds of regulations, improvements to process, and support systems can help to **improve the equity of interconnection outcomes**?

# Current DOE Actions to Implement Roadmap Solutions



**Solar and Wind Interconnection for Future Transmission (SWIFTR) Funding Opportunity - Award Negotiations Ongoing**



**i2X Forum for Implementing Reliability Standards for Transmission (i2X FIRST)**



**i2X Roadmap outreach and technical assistance**



**Collaboration among DOE Offices and other federal and state agencies**

# Discuss, envision, and implement solutions

## Upcoming i2X Solution eXchanges



**December 3** - Maintain a Reliable, Resilient and Secure Grid

## i2X Forum for Implementing Reliability Standards for Transmission (i2X FIRST)

i2X FIRST is a series of monthly interactive meetings to facilitate the adoption of new and recently updated standards relevant for interconnected clean energy resources like solar and wind energy.

Upcoming dates:

- Nov 26 | 11 a.m.- 1 p.m. ET | Virtual

Join . Connect . Collaborate

# Thank you for joining and participating

Website: [energy.gov/i2X](https://energy.gov/i2X)

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- Select “Slide Master”
  - **Only edit the background or pictures in the master editor, do not add new content**
  - **To replace a picture in the master slides, go to the “Insert” tab and select “insert picture” to place your image in the slide. Then click “ctrl + shift + {” to send the picture to the back of the slide.**
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# Bridging the Gap: Potential Solutions for Interconnection Labor Challenges

Melissa Alfano (she/ her)  
Senior Director of Energy  
Markets & Counsel  
October 31, 2024



*Powering the Solar+ Decade*



# About SEIA

*Building a strong solar industry to power America*



Federal, State &  
Local Policy



Climate &  
Equity



Managing  
Growth



Trade, Technology  
& Manufacturing



# The Problem

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Too few

Too inexperienced

# Too Few

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- An oft-repeated concern in the community is that there are simply too few interconnection engineers (and power systems engineers in general) to conduct studies and manage interconnection processes. The workforce shortage inside transmission providers can be particularly acute, with developers and engineering consulting firms often competing for the same engineering talent. *Comments of Pearl Street in FERC Docket No. AD24-9 (Interconnection Workshop).*
- Transmission engineers are already overworked with their day-to-day responsibilities, such as producing SIS studies. *Comments of Nira in FERC Docket No. AD24-9.*
- There are not enough engineers in the workforce or educational/training pipeline to increase the number of mandatory studies to be performed. *Initial Comments of AEP in FERC Docket No. RM22-14 (Order No. 2023).*
- The pool of qualified engineers and consultants is limited. *PJM Interconnection, L.L.C., Transmittal Letter, Docket No. ER22-2110 (2022 Interconnection Reform Filing).*
- Growing need for EMT modeling, but lack of expertise in EMT modeling within the industry today. *i2X Solution 2.13: Upskill the existing workforce through continuing education programs.*

# Too Inexperienced

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- There is no established career or training pathway to interconnection. Many skills are often learned on the job, reducing the ability of new staff to ramp up quickly and increasing the negative impacts of low employee retention. *i2X Solution 2.15: Grow the number of workers in the interconnection workforce*
- Additionally, we now have a younger, less experienced workforce as we bring in new hires and training can take months or years to become a fully effective engineer. *Request for Rehearing of the Indicated PJM Transmission Owners, FERC Docket No. RM22-14.*

# Solutions

**Where to find people and where to  
invest in the future workforce**





# Fellowship Programs

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# Solar Ready Vets Fellowship

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Solar Ready Vets Network is a Department of Energy funded initiative that connects military veterans and transitioning service members with solar career pathways. Through the network, SRV partners with [Hiring Our Heroes](#) and connects solar employers to their Corporate Fellowship Program.

The Corporate Fellowship places transitioning military service members and military spouses with employers for 12 weeks of on-the-job experience at no cost to the employer.

The **corporate** fellowship places degreed transitioning military service members with employers for **12 weeks at no cost to the employer** for on-the-job experience in corporate / management roles.



# Where to find new talent

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# Professional Societies

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The National Society of Black Engineers (NSBE) stands as one of the largest student-governed organizations based in the U.S. Founded in 1975, NSBE champions the dreams and ambitions of collegiate and pre-collegiate students, as well as technical professionals, in engineering and technology fields.



**Leading Hispanics in STEM**

SHPE changes lives by empowering the Hispanic community to realize its fullest potential and to impact the world through STEM awareness, access, support, and development.



# Where to create new talent

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# Investing in STEM

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Clean Energy Bright Futures is a national clean energy, career connected education program from Bonneville Environmental Foundation. CE provides solutions-oriented clean energy and climate solutions education to advance local educational goals and priorities that prepare the next generation to participate in, benefit from, and lead an equitable energy future.



REpowering Schools supports, recognizes, and connects the renewable energy industry with schools, educators, and colleges and universities seeking to boost education and introduce new job opportunities to students to build a diverse and sustained workforce.

# Thank You!





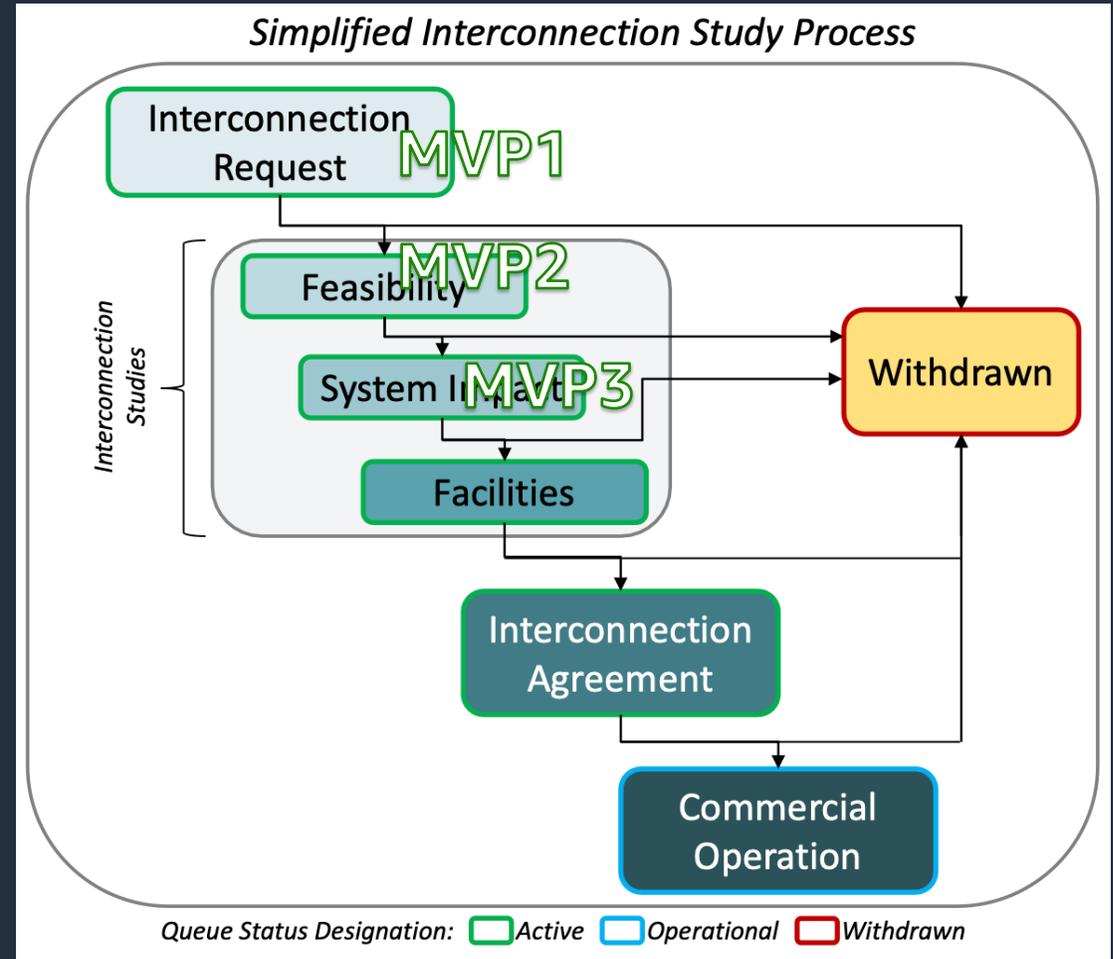
# Generation Interconnection Automation

Xing Wang, Ph.D.  
Global Leader, Grid Modernization  
AWS Energy and Utilities

[xxwang@amazon.com](mailto:xxwang@amazon.com)

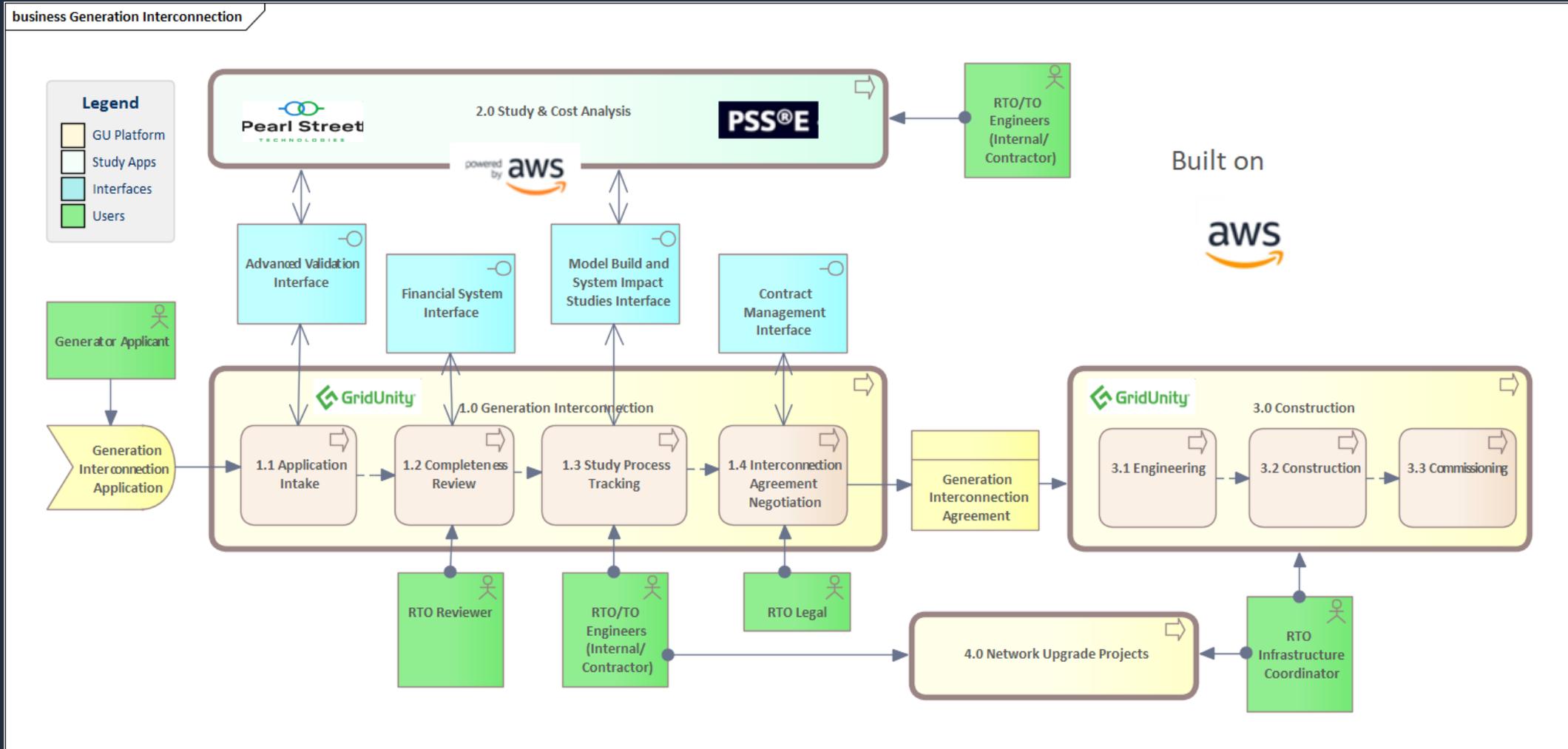
# SPP Generation Interconnection Automation (Q-Bot)

- Q-Bot is an AWS based solution for SPP to automate generation interconnection modeling, and accelerate system impact studies.
- Q-Bot aims to significantly shorten the interconnection queue study time (from years to months), leveraging AWS High Performance Computing and AI/ML capabilities
- AWS has been working closely with SPP GI and IT teams to define the scope of a phased implementation approach (MVP1/2/3...).
- AWS partnering with Pearl Street Technologies to create advanced model validation and to fully automate the GI model build process (reduced model build time from 3 months to less than 1 hour).
- AWS, SPP, and Pearl Street reported progress to FERC staff on Nov 6, 2023 at FERC office.



# Interconnection Life Cycle Management and Study Automation

An AWS-based solution that augments and automates existing ISO/RTO Interconnection tools leveraging cloud HPC and ML capabilities, to enable ISOs/RTOs, Transmission Owners, Project Developers, and Technology Providers to collaborate and accelerate the interconnection processes.



# Where do Machine Learning and Generative AI fit?



## Artificial intelligence (AI)

Any technique that allows computers to mimic human intelligence using logic, if-then statements, and machine learning



## Machine learning (ML)

A subset of AI that uses machines to search for patterns in data to build logic models automatically. Neural network is a type of machine learning.



## Deep learning (DL) (DeepMind's AlphaGo 2016)

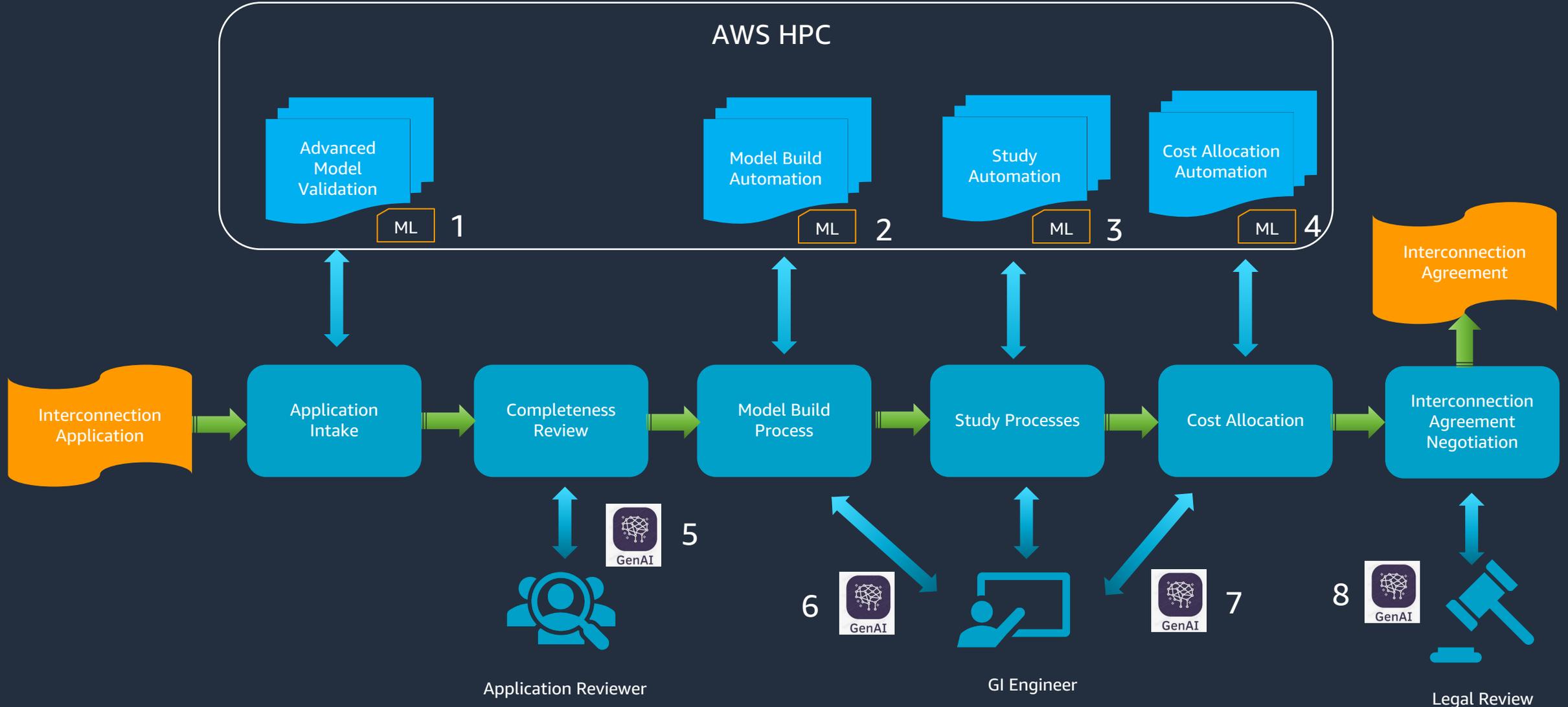
A subset of ML composed of **deeply multi-layered** neural networks that perform tasks like speech and image recognition



## Generative AI

Large Language Models/Foundational Models

# GenAI/ML Use Cases for Interconnection Automation



# Observations

- Not all steps in interconnection process can be automated, but automation will help reduce manual efforts, improve model accuracy and consistency, let valuable SMEs focus on the right tasks
- Digitalizing the entire interconnection process is foundational
- Think Big and Start Small
- Interconnection Scenario model build process appears to be "bang of the buck" in terms of applying automation to the process
- Cloud HPC and AI capabilities are enabler to interconnection acceleration and future consolidated planning process
- Please save all the system simulation data. You will need them to train the AI models!



# Improving interconnection: fast-track opportunities

Katie Siegner

Manager, Clean Competitive Grids

October 2024

# RMI's approach to realizing a climate-aligned energy transition: Think. Do. Scale.



## Scale:

Catalyze Global Markets at Speed



## Do:

Implement



## Think:

Identify Solutions

Tipping Point



Solutions adoption



## Outline

- What are “interconnection fast tracks”?
- Clean repowering research & analysis overview
- Current challenges and opportunities

# Interconnection fast tracks

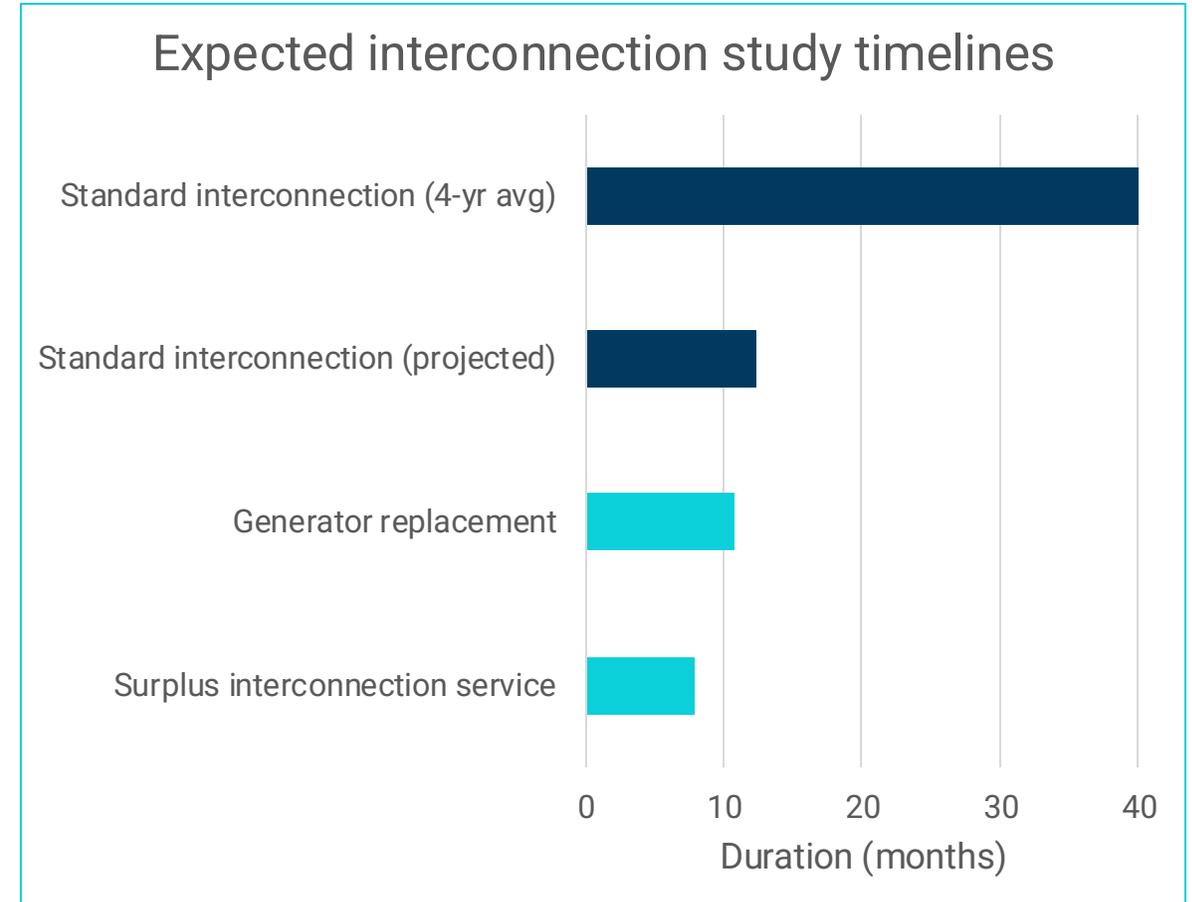
A near-term solution to expedite new generation additions while longer-term reforms are underway

Fast-tracks are a complementary solution to improving interconnection processes\*

Primary fast tracks available today:

- Surplus Interconnection Service (SIS)
- Generator Replacement
- Other fast tracks under consideration; to be discussed in challenges & opportunities

\*These are distinct from queue prioritization efforts



# Clean repowering – deploying clean energy using existing fossil plants' interconnections – can accelerate interconnection

Regional interconnection rules include 2 cases that allow for a more streamlined process

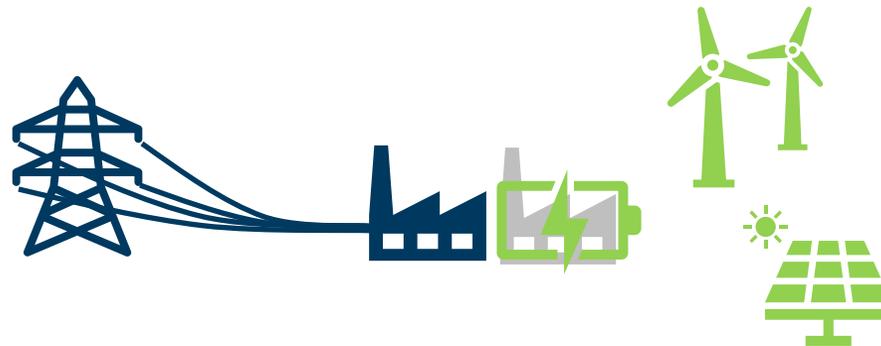
2 key IRA incentives improve the economics

**Surplus interconnection service:** adding new generation at the site of an *existing* plant, that would continue operating



**Energy community tax credit bonuses:** +10% on ITC or PTC

**Generator replacement:** adding new generation at the site of a *retiring* unit or plant



**DOE Energy Infrastructure Reinvestment (EIR) Loans:** up to \$250B

# Surplus interconnection service requests are governed by a federal standard (FERC Order 845)

## Key Components of FERC Order 845

Priority is given to existing generation owners

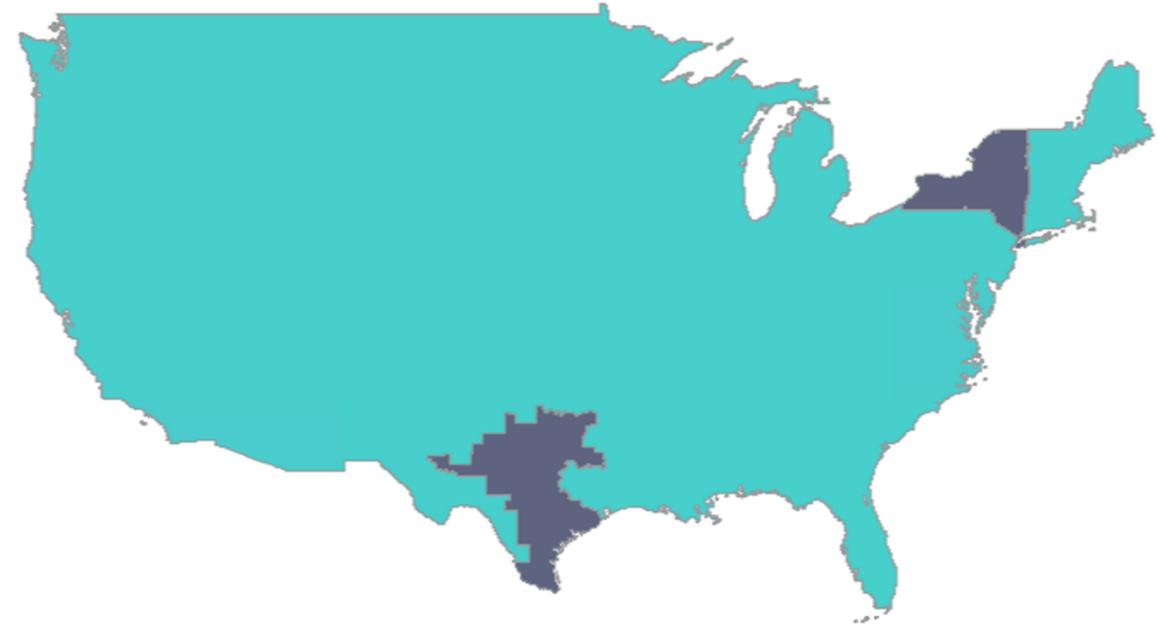
No network upgrades allowed

Must not exceed total interconnection service of existing plant

Interconnection rights expire within one year of existing facility retiring

All regions in the United States except for **NYISO** and **ERCOT** follow Order 845 requirements

- **NYISO** received a waiver based on its treatment of existing grid resources
- **ERCOT** is not FERC-jurisdictional and only has a process for adding storage to solar PV resources



*Has a surplus interconnection process*



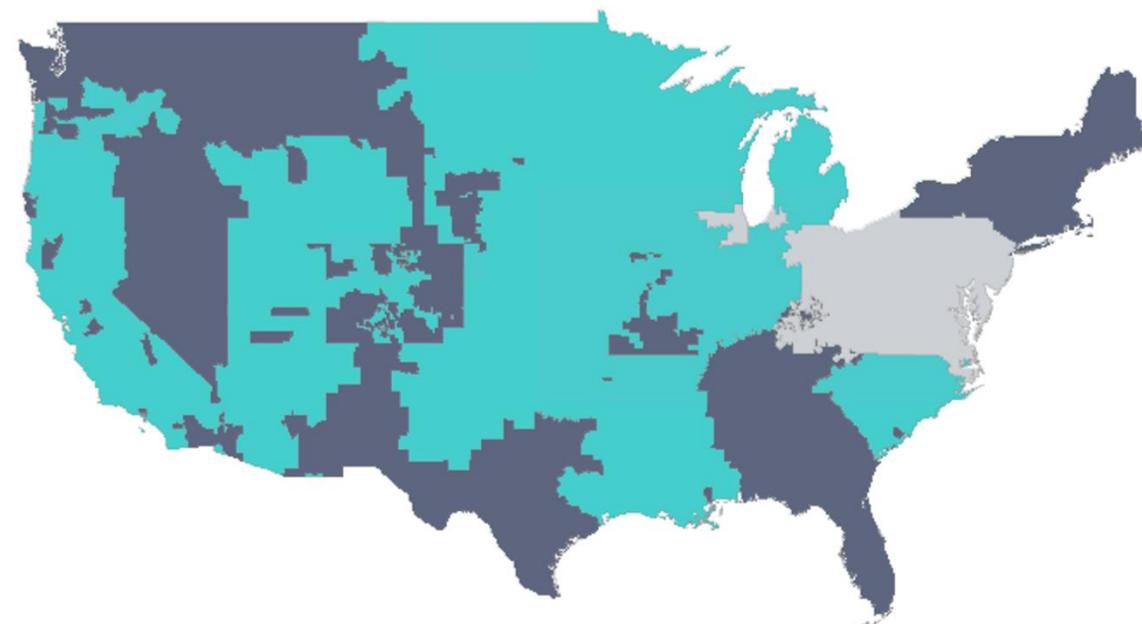
*Does not have a surplus interconnection process*

# Generator replacement processes that are separate from the queue exist in some regions but not others

- **MISO** set the standard in 2018 with its generator replacement interconnection process
  - Requests must be made at least **one year prior** to retirement and new generation must come online **within three years**
  - Initial process included **restrictions on plant ownership** that have been amended and relaxed over time
- **CAISO** and **ERCOT** have more limited processes that allow for in-kind replacements only
  - CAISO makes an exception for batteries at fossil plants
- **PJM** and **ISO-NE** do not have defined processes, yet
  - **PJM** initiated a stakeholder dialogue to consider the creation of a process in July 2023



*Spreading generator replacement processes to new regions can increase the scale of the opportunity*



*Has a generator replacement process separate from the standard interconnection queue*



*Separate generator replacement process pending*



*Does not have a separate generator replacement process*

# Clean repowering is a 250 GW “no-regrets” option, as it can reduce system costs by an NPV of \$21 B over a 30-year planning horizon while adding resources to improve reliability

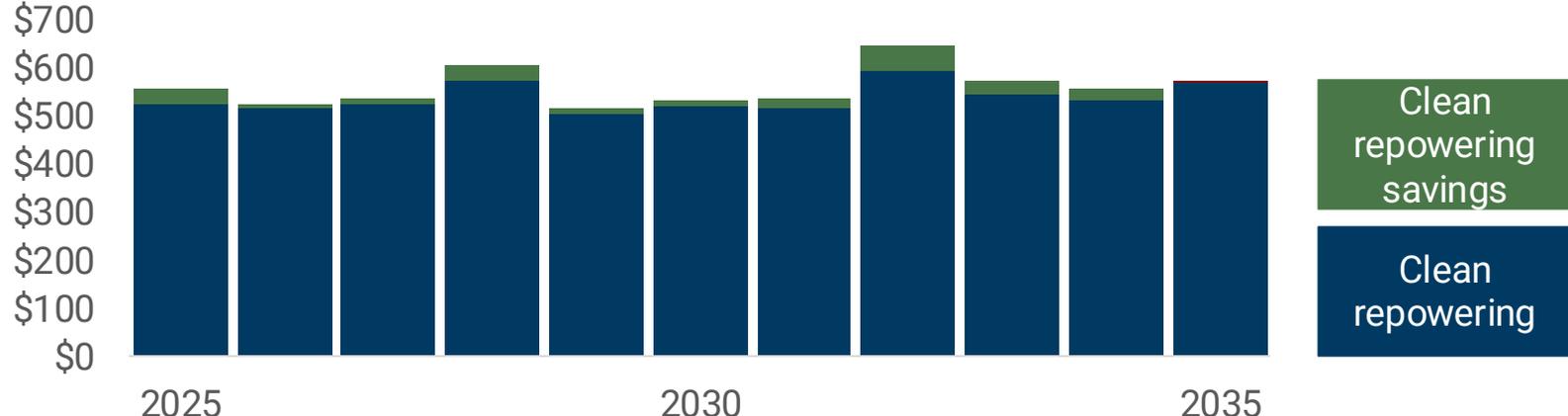
## Affordability

- Avoids high costs of fossil fuel use and new transmission build
- Reduces interconnection process costs

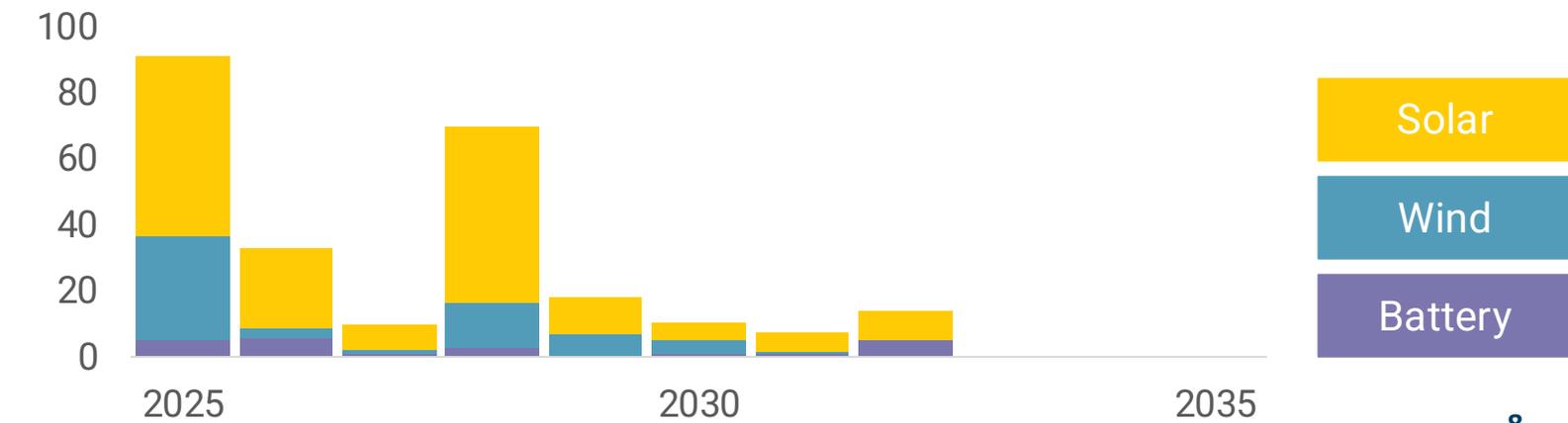
## Reliability

- Minimizes grid impacts of new generation + retirements
- Faster interconnection can help mitigate near-term reliability risks

Clean repowering annual savings (\$B)



Clean repowering annual deployment (GW)



# Plans for clean repowering projects are in development nationwide, and growing

**Xcel Energy** plans to replace coal plants in **Minnesota** and **Colorado** with solar and long-duration iron-air storage

**Visra** replaced its **Moss Landing** natural gas plant with 750 MW of 4-hr battery storage

**PNM** is prioritizing storage resources that “leverage existing interconnections” in its latest RFP

**Xcel Energy** is adding solar to 2 of its oldest natural gas units in **New Mexico** and **Texas**

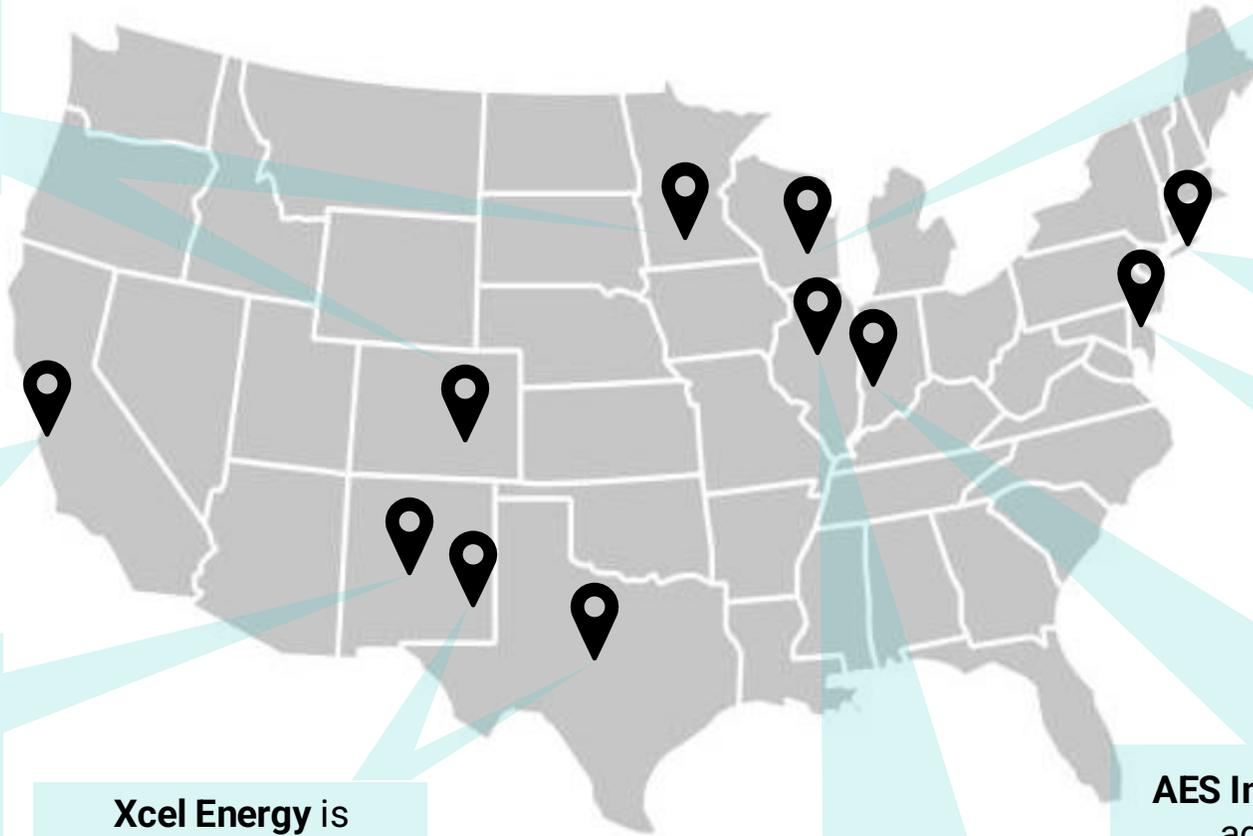
**Visra** is retiring its **Joppa** and **Edwards** coal plants and replacing them with battery storage

**Alliant Energy** received a grant from the DOE Office of Clean Energy Demonstrations to pilot a **compressed CO<sub>2</sub> energy storage** project at its Columbia Energy Center

**Several offshore wind projects** along the East Coast are looking to use surplus or retiring fossil plant interconnections to connect to the grid

**Elevate Renewables** is deploying storage at existing natural gas generation facilities and currently has a pipeline of 5 GW across 25 locations in the Mid-Atlantic

**AES Indiana** is adding 200 MW of storage (in addition to natural gas) to its retiring **Petersburg** coal-fired power station



# RMI clean repowering resource library

## Articles

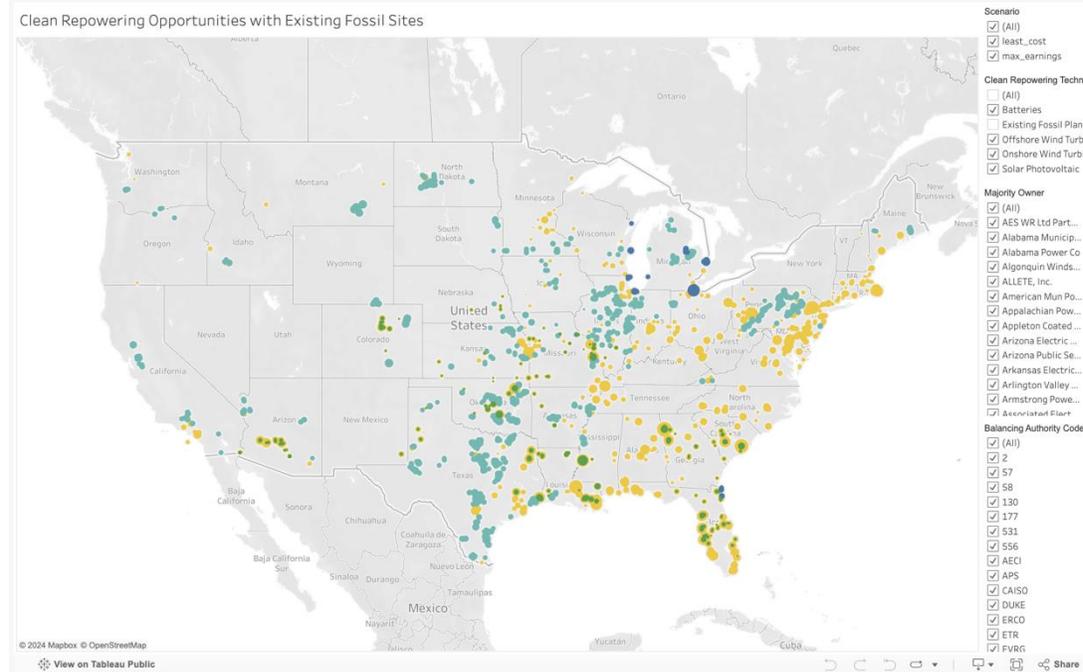
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# PJM aims to fast-track reliability projects in interconnection queue

“We need to do something, and do something now,” Donnie Bielak, PJM Interconnection director for interconnection planning, said Tuesday.

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Ethan Howland  
Senior Reporter



The Guernsey power station, a 1,875-MW, gas-fired power plant near Byesville, Ohio, owned by Apex Power Group and Caithness Energy. The PJM Interconnection plans to allow a limited number of generating projects enter an interconnection study process earlier next year, officials with the grid operator said on Oct. 8, 2024. *Courtesy of GE Vernova*

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The PJM Interconnection on Tuesday floated a plan to allow a limited number of generating projects that could address reliability needs to jump into an interconnection study cycle early next year.

The “[reliability resource initiative](#)” is a response to unprecedented demand growth forecasts coupled with a slow pace of bringing new power plants online and looming generator retirements, according to Donnie Bielak, PJM’s director for interconnection planning.

“We need to do something, and do something now,” Bielak said Tuesday during a PJM Planning Committee meeting.

# Challenges

Fast track changes are happening on ad hoc basis, with some including problematic provisions

- **PacifiCorp:** generator replacement process (2022) met with protests, concerns re. competition
- **PJM:** Reliability Resource Initiative (2024) would create fast track for “quick-build,” “firm” resources
- **GRID Power Act** introduced in the House would allow RTOs to fast-track review of generators that would improve grid reliability

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“I worry that by continuing to approve these rules one region at a time, we are sleepwalking into a fundamental reshaping of interconnection policy”

– Commissioner Clements, PacifiCorp dissent



Tonja Wicks, of Elevate Renewables, presents a stakeholder coalition package regarding CIR transfers. | © RTO Insider LLC

Oct 14, 2024 | Devin Leith-Yessian

VALLEY FORGE, Pa. — The Planning Committee narrowly endorsed a coalition proposal to rework how generation owners can transfer capacity interconnection rights (CIRs) from a deactivating unit to a new resource. (See “Voting on CIR Transfer Proposals Deferred to October,” *PJM PC/TEAC Briefs: Sept. 12-13, 2024.*)

The coalition *proposal* received 51.8% support during the Oct. 8 vote, beating out a *PJM* proposal that received 40.6% support and a package from the Independent Market Monitor that received 11.1%.

The coalition proposal would create a technology agnostic process for new resources to replace gas generation being forced to deactivate in states with strong clean energy requirements. It has a nine-month timeline for applications to be reviewed, a replacement impact study identifying any potential network effects and the drafting of an interconnection agreement. The proposal was modified based on feedback at the Sept. 12 PC meeting to include thermal alongside the voltage and short circuit analyses in the replacement impact study.

## Why This Matters

CIR transfers are one of several areas where stakeholders are seeking to improve how generators retire from PJM as concerns mount that new resources will not keep pace, leading to a capacity shortage in 2029/30.

# Opportunities

Proposals and stakeholder processes to expand and improve fast tracks are developing across the country:

- **PJM:** proposal for establishing a generator replacement process recently passed in the Planning Committee (Oct. 2024)
- **PJM:** EDP Renewables filed a complaint at FERC re. PJM’s overly restrictive surplus service requirements (Jul. 2024)
- **MISO:** Interconnection Process Working Group considering enhancements to current generator replacement process

It is critical to ensure that new or amended fast tracks respect fair and open access to the grid, esp. given transmission constraints and queue backlogs

# On the horizon: more interconnection reforms from FERC?

- FERC is currently soliciting comments in response to its September workshop on further interconnection process enhancements and efficiencies
- RMI preparing comments
- One of our focus areas is enhancing the viability of ERIS as a workable interconnection option as well as screening queued projects with an economics-informed lens
- If done correctly, we see this as another, non-discriminatory way to “fast-track” queued resources

Share of projects choosing ERIS and NRIS interconnection by region, with corresponding grade from AEU Interconnection Scorecard

