

AEIC GRID ADVANCEMENT PROGRAM • CHALLENGE BRIEF

Overcoming Supply-Chain Bottlenecks

Challenge 04. The operating problem, why it is hard, and what the cohort will work.

Working session**Cadence****Eligibility****Join****Program**

Tuesday, November 10, 2026, 2:00 p.m. ET

Second Tuesday of every month, 2:00 p.m. ET

AEIC members and any electric utility

<https://aeicopscenter.org/grid-advancement>

AEIC Center for Operational Excellence

The problem

We are trying to run the largest grid buildout in the history of the industry using equipment we cannot get.

Transformers, breakers, switchgear, conductor, and the long-lead materials underneath them are the pacing item on modernization now. Not the engineering. Not the money. The iron. Load is arriving on a schedule set by data centers and electrification. The equipment that serves it is arriving on a schedule set by a supply base that has been asked to scale faster than any capital-intensive manufacturing base can.

That turns a procurement problem into a planning problem, and then into a reliability problem. Projects slip. Interconnections queue behind a piece of steel. Emergency replacements get bought at whatever the market says that day.

Why this challenge

Because it is the one where a good decision inside your own four walls still leaves you exposed.

Most of what we work in this program can be improved by one utility getting better. Supply chain cannot. You can run a flawless forecast, order eighteen months early, and still sit behind the peer who ordered twenty. You can standardize your own specification and gain almost nothing, because the queue is long for reasons outside your company.

That is a collective-action problem, and a collective-action problem is what a convener is for. AEIC cannot build a factory. It can put the utilities standing in the same line into the same room.

Where utilities actually are

Almost everyone is running the same five plays:

Ordering earlier, and earlier. Blanket purchase orders, standing reservations, holding a queue slot for a project that is not approved yet. It works, and it means you are speculating with capital.

Relaxing the specification. Taking what the market has instead of what the standard says. Sometimes that is smart modernization. Sometimes it is a compromise nobody wrote down.

Stockpiling. Emergency inventory, spare banks, strategic reserves. Real protection, real carrying cost, and the first line item called idle in a rate case.

Refurbishment and life extension. Rewinds, retrofits, condition-based deferral. The fastest lever we have and the least rewarded, because life extension lands in O&M and O&M does not earn a return.

Mutual assistance. Which works beautifully for crews and barely at all for equipment.

None of these are wrong. They are what you do when your load forecast updates quarterly and your delivery date updates by years.

The hard part

The tactics and the technology mostly exist. Condition monitoring, asset intelligence, modular and alternative designs are real and deployed somewhere right now. The hard part is not knowing what to do. It is these four things:

1. The lead time is longer than the process that authorizes the purchase. To hold a delivery slot you commit before the project is approved, before the load is contracted, sometimes before the forecast is one you would defend under oath. So you buy on speculation and own that risk when the load does not show, or you wait for

approval and take the slip. We are asking planners to be right about something nobody can be right about, and the accounting treatment of being early is unkind.

2. You cannot see the constraint you are actually exposed to. Your contract is with the manufacturer. Your exposure sits three tiers below them, in electrical steel, bushings, castings, tap changers, and a handful of plants serving the entire market. When one of those tightens, every utility's diversified supplier list turns out to have been the same supplier all along. A slot in a queue is not supply.

3. Standardization is the cure, and every custom spec was written for a good reason. The biggest thing this industry could do to shorten lead times is stop asking for a hundred slightly different transformers. But your specification is not arbitrary. Every deviation traces back to a failure, an outage, a local condition, a lesson somebody paid for. Standardizing means overruling engineers who were right on their own terms, and the savings are collective while the risk is yours. That asymmetry is why going first is so hard to sponsor. It is a structural problem, not a failure of will, and it is exactly the kind of problem that only moves when several utilities move together.

*4. Shared sparing is the obvious answer and no single utility can build it. ** Pooling spares across utilities is the highest-leverage idea in this challenge, and it is structurally hard. Who holds title. Who carries the cost. How a unit sitting in another company's yard gets treated in rate base. What happens the day two members need the same spare. How you coordinate procurement without tripping over antitrust caution. And whether my spare even fits your bank, given hard part number three. Sparing and standardization are the same problem. You cannot share iron you have specified into uniqueness. **This is the one thing in the program that cannot be solved by a utility acting alone. It is why this session exists.*

If you need one sentence to carry into an executive review: **a slot in a queue is not supply. Our real exposure sits three tiers below the manufacturer we hold a contract with, and no utility can see that far by itself.**

None of those four barriers is local to you. In some form, all four show up in all ten challenges in this program: the commitment that has to be made before the proof exists, the exposure nobody can see, the work that falls between functions, and the value that shows up as a failure that did not happen. If your list looks like this one, you are not behind. You are standing in the same line as everyone else, which in this challenge is quite literally true.

And "we do not know where our sub-tier exposure is" is a legitimate answer here. Very few utilities have mapped it. Saying so out loud is a finding, and it is how the mapping starts.

What the cohort will work

Not "who has inventory." The room is going to work the questions that actually block progress:

- What are the real lead times right now, by asset class, from the people placing the orders?
- Where is your sub-tier concentration, and has anyone successfully mapped theirs?
- What has been standardized, and what did the utility that went first have to give up?
- What is the honest case for refurbishment when the incentive structure pays for new steel?
- What would shared sparing have to look like to survive legal, accounting, and the regulator?
- What did you try that did not work? That is the most valuable hour in this program, and it is the one you can only get from peers who have actually tried it.

What to bring

You do not need a solved problem. You need an honest one. Come with:

- Your real lead times, by asset class, as they actually are and not as the contract says
- One project that is slipping on equipment right now

- The specification deviation you would give up, and the one you would not
- One thing you tried that did not work

If the honest answer to any of those is "we do not know," bring that. It is a finding, not a failure, and you will not be the only one saying it.

What you get

- This brief, and a short video briefing, before the session
- The Flight Plan, a working pilot scaffold, inside InnovationWorks
- The session itself, with the utilities living this problem
- A retrospective afterward: what the cohort tried and what happened

Join

Tuesday, November 10, 2026, 2:00 p.m. ET. Recruitment runs per challenge, so your supply chain and asset management people can come to this one without committing to all ten.

Open to AEIC members and to any electric utility. If you run a utility, you are welcome here.

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Knowledge of one is the knowledge of all.

Sources: this challenge was developed from research of public utility filings. The technology landscape for this challenge is maintained separately inside InnovationWorks.