The Queue as an Outcome Register: What the Abandoned Projects Record

On withdrawal as evidence, and the cost of four registers that do not share a vocabulary

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ABSTRACT

A dataset of successes describes what was possible. A dataset that also records failures describes where the boundary is. The interconnection queues of the United States system operators are unusual in keeping both: a project that is abandoned does not vanish from the file, it is flagged withdrawn and stays. This paper treats that flag as the outcome variable it is. Across the four operators publishing machine-readable queues, 9,089 distinct projects have requested interconnection totalling 1,672 gigawatts, and 1,066 gigawatts — 63.7 per cent — is already flagged withdrawn.

Withdrawal is not uniform and the variation is the finding. Harmonising the operators' incompatible technology codings, wind withdraws at 80.4 per cent of requested capacity against 63.1 for solar and 46.0 for hybrid plant. The paper reports the harmonisation itself as a result: four public registers describing one physical process use four vocabularies, and reconciling them is most of the work. A quarter of capacity carries no technology label at all.

I close by registering a forecast. 604.1 gigawatts currently sit live in these queues. Applying each technology's measured withdrawal rate implies 342.2 gigawatts — 56.6 per cent — will be withdrawn rather than built. The forecast is published before the outcome, resolves against the operators' own files, and is wrong if live capacity withdraws at a materially different rate from the capacity that preceded it.

Keywords: interconnection · survivorship · disclosure · data harmonisation · electrical infrastructure. JEL: D80, L94, Q40.

1 THE DATASET THAT KEEPS ITS FAILURES

Most economic datasets are built by survivors. A company files until it does not; a fund reports until it closes; a project appears in an operating inventory once it operates and never before. The systematic consequence is that the record over-represents what worked, and every statistic computed from it inherits that bias quietly.

The interconnection queue is a rare exception. A developer asking a system operator for permission to connect enters a queue, and if the project is abandoned the row is not deleted. It is flagged withdrawn and retained, because the operator needs the study history. The file therefore contains both outcomes of the same decision, which is the minimum condition for measuring a rate rather than describing a population.

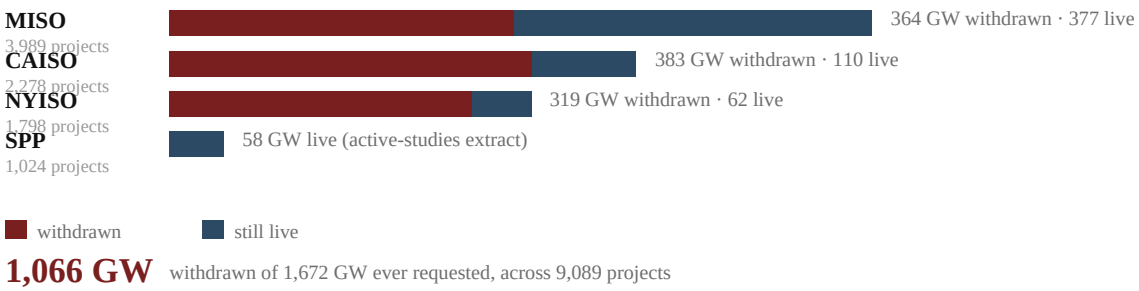
Across MISO, CAISO, NYISO and SPP — the four operators publishing queues in machine-readable form — 9,089 distinct projects have requested interconnection, totalling 1,672 gigawatts. Of that, 1,066 gigawatts is flagged withdrawn: 63.7 per cent of everything ever requested.

Three cautions belong with that number before anything is built on it, and they are the same three the companion paper states. The total is a cumulative sum across many years, not capacity that could have existed simultaneously, so it is not comparable to an operating fleet. Projects may overlap geographically or represent alternative plans for one site. And a withdrawal records that a project stopped, not why — financing, offtake, land, policy, queue costs and technology choice all end projects, and the file does not distinguish them.

A fourth caution is specific to this dataset and worth stating plainly, because it bounds every figure here. SPP publishes an active-studies extract, which by construction contains no withdrawn rows at all. Its zero is an artefact of the publication, not a property of Kansas. Every withdrawal share in this paper is therefore a floor.

THE QUEUE IS MOSTLY A GRAVEYARD

interconnection requests by system operator: withdrawn against still live, gigawatts



1,066 GW withdrawn of 1,672 GW ever requested, across 9,089 projects

A cancelled project is conventionally read as absence. It is an experiment the economy ran on itself, in which a proposed state met a constraint and lost. The successful projects show what is possible; the abandoned ones show where the boundary is. SPP's published file is an active-studies extract and carries no withdrawn rows, so the withdrawal share is a floor.

Source: published interconnection queues of MISO, CAISO, NYISO and SPP, latest observation per project.

Figure 1. Withdrawn against live capacity by system operator. SPP's zero is a publication artefact: its feed is an active-studies extract and carries no withdrawn rows.

One methodological note, because it cost this programme a published error. The source table holds seven dated snapshots of every project, written as the queues are re-collected. Counting rows rather than projects inflates every figure roughly sixfold, and the first edition of the companion paper did exactly that and described the inflation as growth in the collection. Every figure in this paper is counted on the latest observation of each project. A table that stores history is not a table whose rows are observations, and the distinction is invisible until someone checks a total against an independent source.

2 Four registers, four vocabularies

The queues describe one physical process and do not agree on what to call it. Photovoltaic generation appears as Solar, as Photovoltaic and as the bare code S. Batteries appear as Storage, Battery Storage, Battery/Storage and ES. Wind appears as Wind, as Wind Turbine and as W. None of these is wrong: each operator built its vocabulary for its own studies, and none was built to be read against another.

This is the paper's thesis in miniature. The obstacle is not secrecy — every row is public — but fragmentation, and fragmentation is an engineering condition rather than a fact of nature. Harmonising the codings is a mapping of about thirty terms, published in full as a companion file so that anyone can disagree with a specific line of it rather than with the result in general.

One category deserves separate mention because it is the largest single bloc after solar. A quarter of requested capacity carries no technology label the registers agree on, and it is reported here as Unlabelled rather than distributed across the others. Its measured withdrawal rate, 28.7 per cent, is the lowest of any group, which is itself suspicious: unlabelled rows are concentrated in one operator's feed and the low rate probably reflects that feed's reporting rather than a property of the projects. It is left in the table at its measured value and flagged rather than quietly dropped.

Table 1. Withdrawal by harmonised technology, measured on the resolved population. Groups with fewer than forty projects are omitted.

Technology	Projects	Requested GW	Withdrawn	Live GW
Solar	3,312	466.0	63.1%	171.8
Storage	2,198	356.0	63.4%	130.4
Wind	1,322	280.2	80.4%	54.9
Gas	425	167.3	70.1%	50.0
Unlabelled	553	134.1	28.7%	95.6
Hybrid	445	78.2	46.0%	42.2
Thermal	352	66.6	56.2%	29.2
Transmission	167	55.6	100.0%	0.0
Other	198	40.9	69.6%	12.4
Load	74	17.6	0.0%	17.6

Note: Transmission shows 100 per cent withdrawal on 167 projects, which reflects how one operator retires superseded transmission requests rather than a physical failure rate. Load and Unlabelled show low or zero rates because the operators carrying them publish active studies only. Rates are floors throughout.

Read down the live column and the forecast writes itself. The technologies with the most capacity still waiting are the technologies with the highest measured attrition, which is what it looks like when a queue is not clearing.

3 What this predicts, and what would falsify it

A rate that cannot predict anything is a description. So the measurement is registered as a forecast. 604.1 gigawatts currently sit live across the four queues. Applying each harmonised technology's own measured withdrawal rate to its own live capacity implies 342.2 gigawatts withdrawn — 56.6 per cent of what is presently waiting.

Table 2. Registered forecast. Each technology's measured withdrawal rate applied to its own live capacity, published before the outcome and resolvable against the operators' own files.

Technology	Live GW	Measured rate	Predicted withdrawal
Solar	171.8	63.1%	108.5 GW
Storage	130.4	63.4%	82.6 GW
Wind	54.9	80.4%	44.1 GW
Gas	50.0	70.1%	35.1 GW
Unlabelled	95.6	28.7%	27.5 GW
Hybrid	42.2	46.0%	19.4 GW
Thermal	29.2	56.2%	16.4 GW
Other	12.4	69.6%	8.6 GW
Load	17.6	0.0%	0.0 GW
Total	604.1	56.6%	342.2 GW

Note: the forecast assumes live capacity behaves like the capacity that preceded it. That is the assumption under test, and it is the one the result turns on.

The prediction is falsifiable in three specific ways, and I would rather name them than wait to be told. If live capacity withdraws at a materially different rate from the resolved population, the measured rates describe a past regime rather than a process, and interconnection reform or a change in financing conditions would be the obvious explanation. If the ordering across technologies inverts — if wind begins clearing faster than solar — then technology is not the right conditioning variable and location or vintage is. And if the operators change how they retire rows, the outcome variable itself moves and the series breaks; that would be visible as a discontinuity rather than a trend, and it is the failure mode I would expect to see first.

None of this prices anything. The estate holds no return series for these projects and nothing here

establishes that attrition is mispriced rather than merely real. What changes is the search space. An allocator holding a portfolio of queued projects holds a portfolio of positions on withdrawal rates, whether they know it or not, and those rates are measurable from public files in an afternoon.

Method and sources

Figures were derived from the published interconnection queues of MISO, CAISO, NYISO and SPP on 26 October 2026 and are counted on the latest observation of each project. PJM is absent because its interface requires a subscription and ISO-NE because it publishes no machine-readable queue; both absences are recorded rather than interpolated, and both mean the national picture is incomplete in a known direction.

The technology harmonisation maps roughly thirty source terms onto ten groups and is published as a companion file alongside the per-technology table, so that a reader can reject a specific mapping rather than the exercise. Lawrence Berkeley National Laboratory publishes an annual study measuring a broader population and a different transition, from queue entry to commercial operation, and reports 13 per cent of capacity entering US queues between 2000 and 2020 as having reached operation by end-2025 against 75 per cent withdrawn. The direction agrees. The definitions differ, the populations differ, and neither validates the other.

Interest. The author operates the instrument described and intends to commercialise research derived from it. Nothing here is investment advice, no security is recommended, and no claim is made that any constraint identified is mispriced.