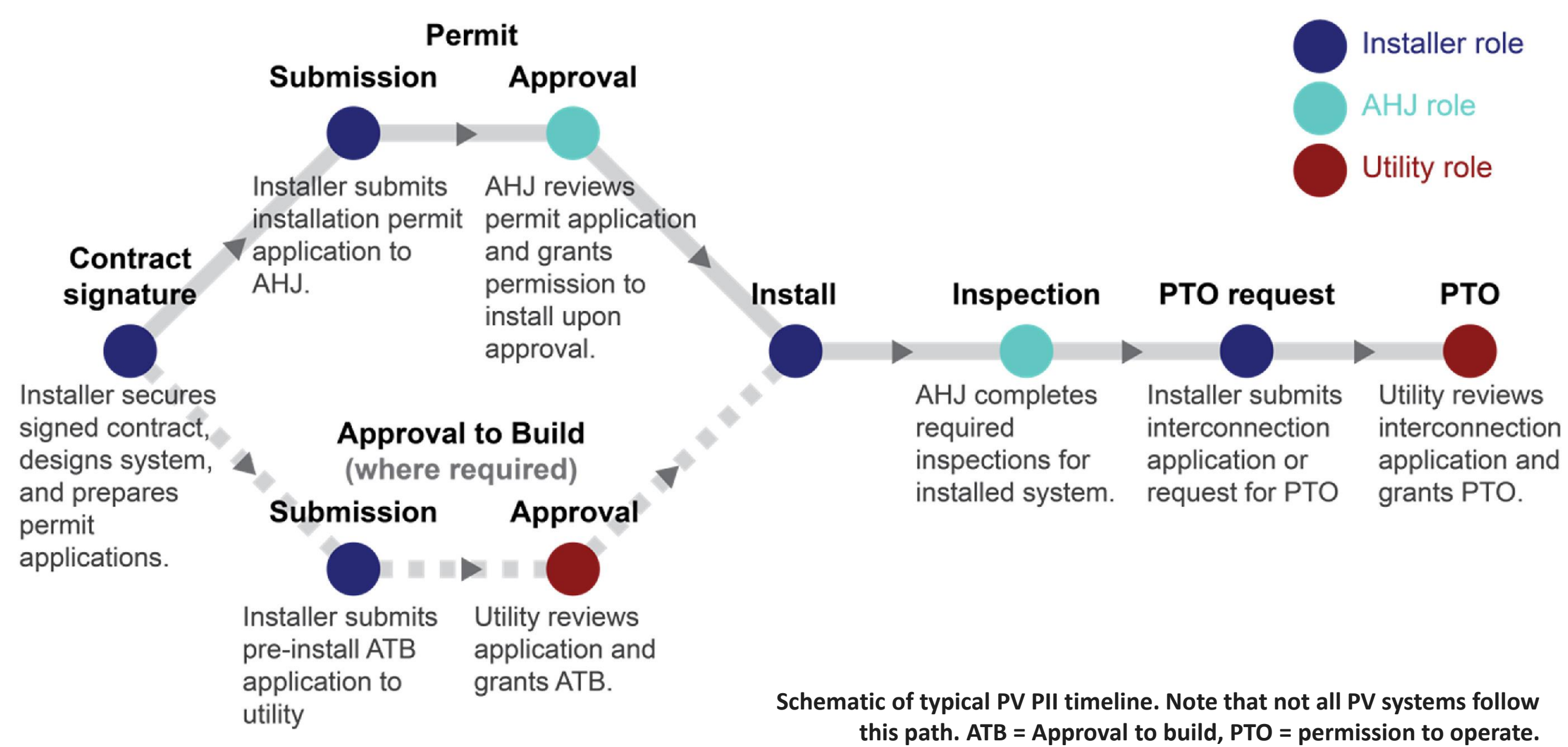


# Data shows residential PV interconnection timelines are decreasing, but wide variance in rules and compliance across states remains.

## Interconnection Timeline Analysis for Residential Rooftop Solar



### Intro

Most residential photovoltaic (PV) systems must secure an interconnection (IX) agreement prior to operation. Many states’ utility commissions have established mandates that limit the maximum number of days allowed for utility review and approval of IX applications. *Using NREL’s SolarTRACE data, we examined whether utilities are complying with these state-mandated timelines, and how the timelines have changed over time.*

### Methods

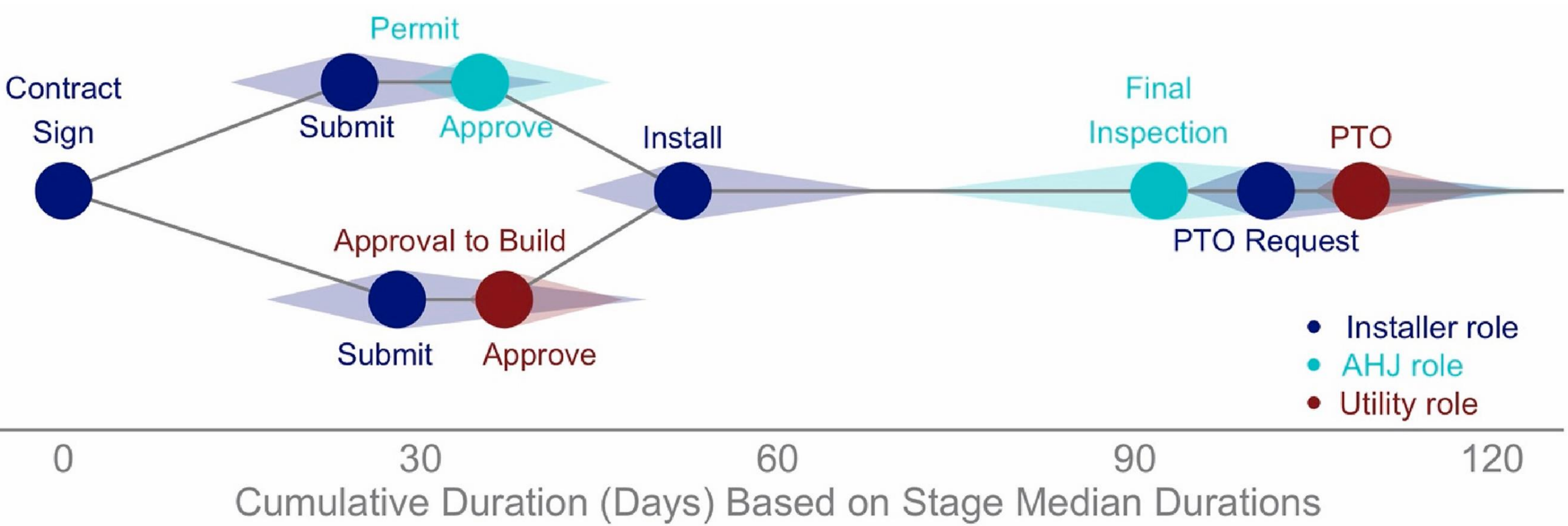
- Our data includes 170,000 PV projects across 24 U.S. states from 2017-2019.
- We use median timelines for IX pre-installation approval across small ( $\leq 10$  kW) and medium (11-50 kW) systems.

### Results

- As of 2020, **state-mandated timelines** ranged from **10 to 40 business days**
- NREL data shows:**
  - Actual state-level median approval timelines ranged from 0 to 23 days
  - 8% of all PV system applications in the data were not approved within state-mandated timelines
  - IX timelines have declined since 2015.** Small project timelines improved by 57%–100%. Medium project timelines improved by 44%–74%.

### Discussion

- Promising evidence that timeline mandates are largely met, but short approval timelines do not always coincide with more stringent mandates**
- NREL is currently expanding this work to include PV+Storage, larger systems, and updated timelines as of 2024



### References

Fekete, Emily S., Jesse R. Cruce, Shiyuan Dong, Eric O'Shaughnessy, and Jeffrey J. Cook. 2022. "A Retrospective Analysis of Distributed Solar Interconnection Timelines and Related State Mandates." <https://doi.org/10.2172/1841350>

O'Shaughnessy, Eric, Shiyuan Dong, Jeffrey J. Cook, Jesse Cruce, Kristen Ardani, Emily Fekete, and Robert Margolis. 2022. "Effects of Local Permitting and Interconnection Requirements on Solar PV Installation Durations." *Energy Policy* 161: 112734.

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