Understanding Streamlined Solar Permitting Practices: A Primer

Webinar
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Award: U.S.DOE SETO SEEDSII-SES

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Today's Talk

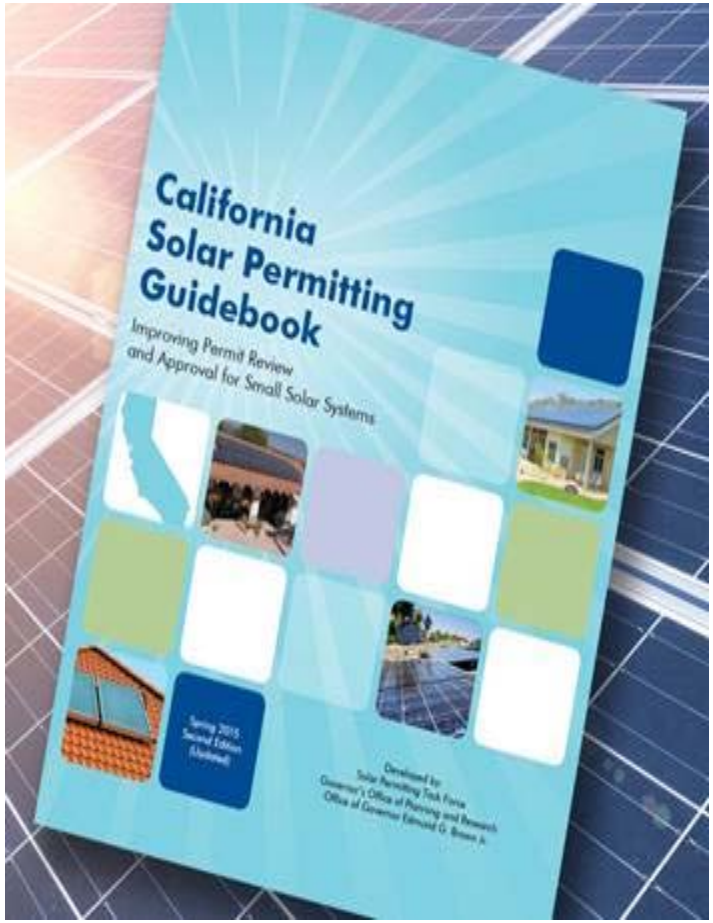
- Introduction
- A guide to the permitting, inspection, and interconnection process
- Streamlined solar permitting (SSP) practices
- Information on our current project
- Discussion

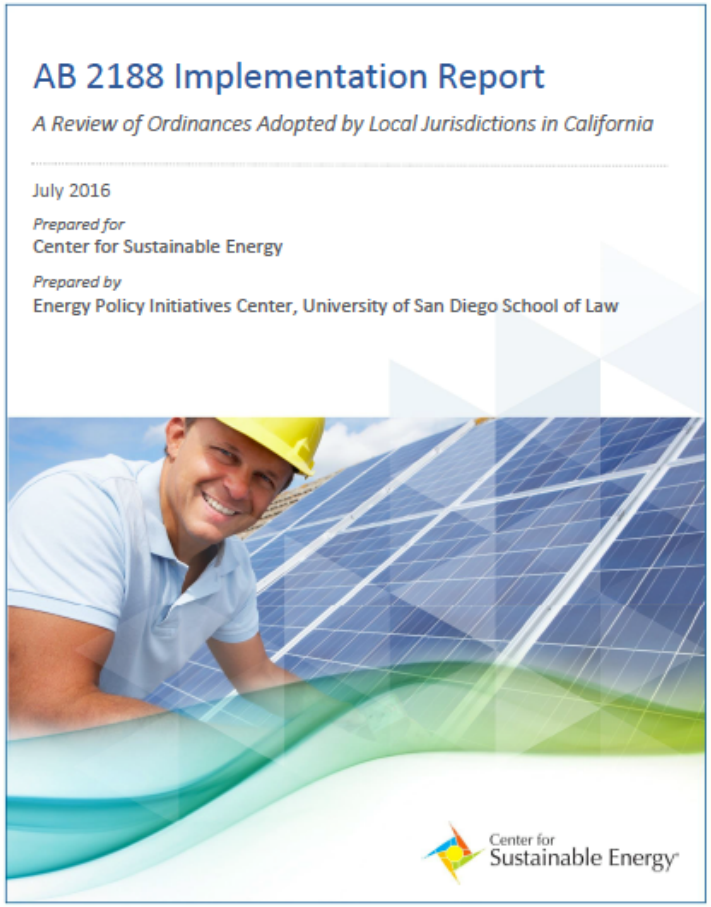
Introduction

The Permitting/Interconnection Problem

- The time it takes for a residential rooftop PV system to connect to the grid is often long and uncertain
  - Delay length: associated w/higher comparative costs of U.S. PV
  - Delay uncertainty: hurts customer satisfaction and subsequent lead generation
- Various streamlined solar permitting (SSP) practices have emerged but have not been widely adopted nationwide

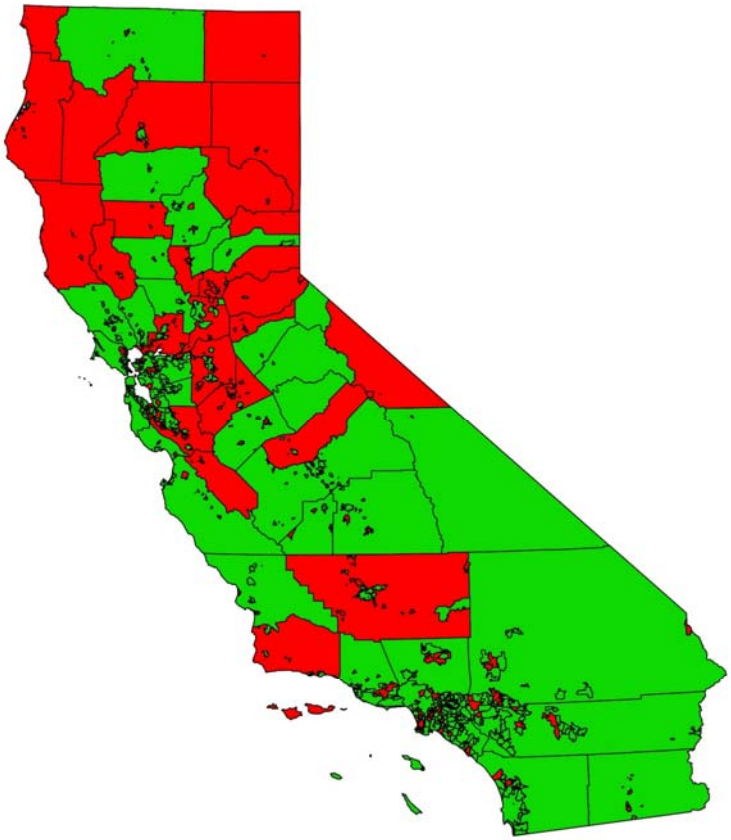
California Experience



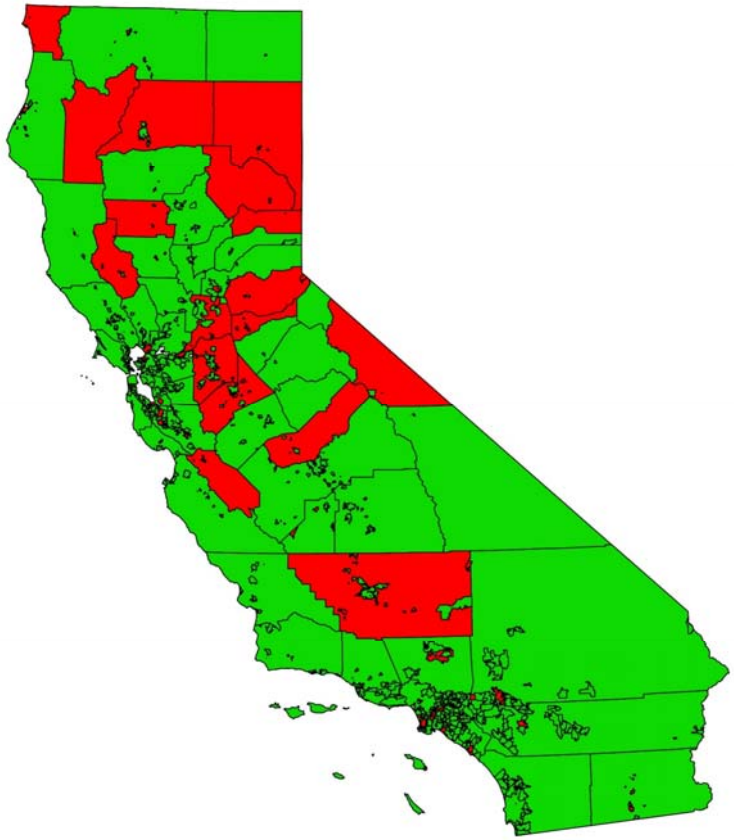


AB2188 Compliance

At Compliance Deadline



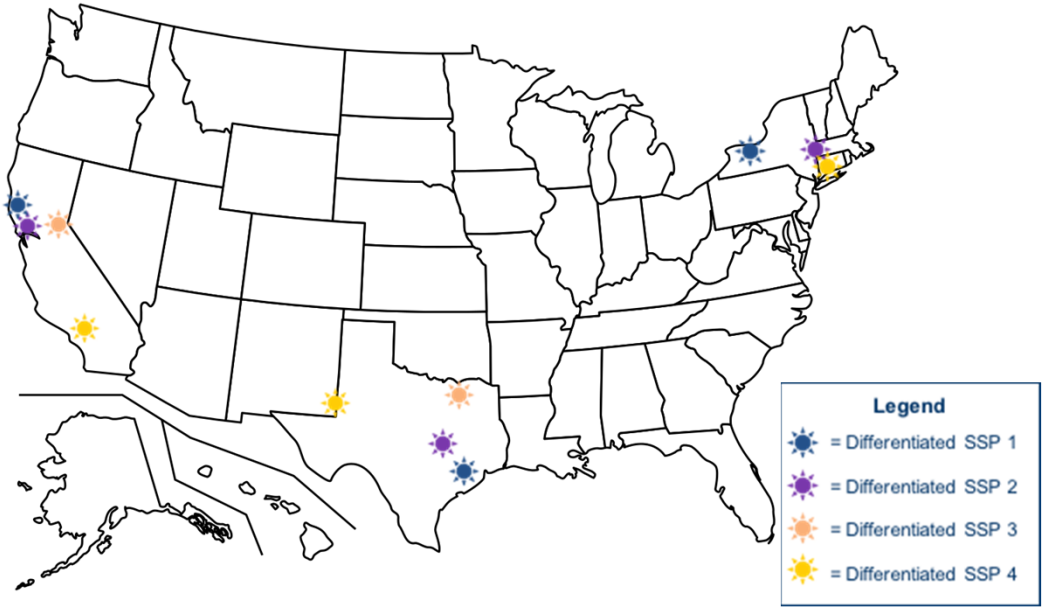
Almost Two Years After Compliance Deadline



Project Objective

Systematically design differentiated “mass customized” SSP practice combinations that:

- Suit different types of building departments, PV installers, and utilities
- Reduce the uncertainty and delays associated with full interconnection of residential rooftop PV systems



A guide to the permitting, inspection, and interconnection process

Solar Permitting Actors

- Values
  - Revenue (function of quantity) - costs; customer acquisition, retention, satisfaction
- Constraints
  - Financial; not incumbent actors; knowledge varies by geography

Solar Permitting Actors

- Values
  - Protect public safety; maintain relationships with stakeholders; managing current and expected solar workload
- Constraints
  - Dillon Rule vs. Home Rule; model code editions/cycles; resources

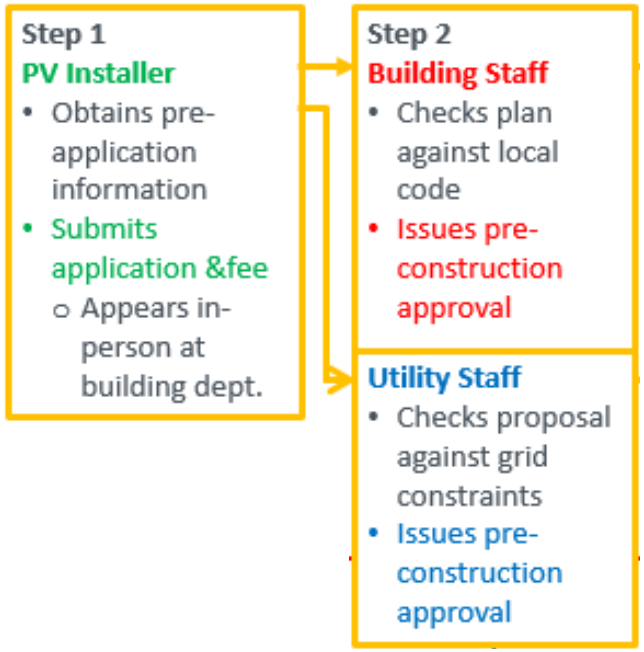
Solar Permitting Actors

- Values
  - Maintain grid; managing current and expected solar workload
- Constraints
  - Utility regulation (for many); resources

Solar Permitting and Interconnection Process

Step 1
PV Installer
- Obtains pre-application information
- Submits application &fee
  - Appears in-person at building dept.

Solar Permitting and Interconnection Process



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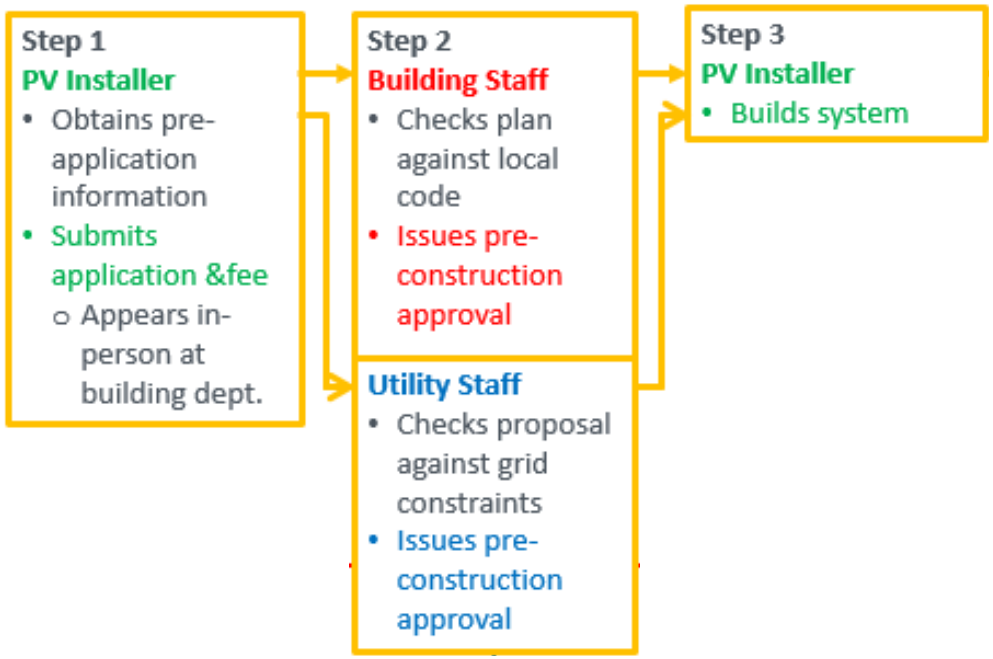

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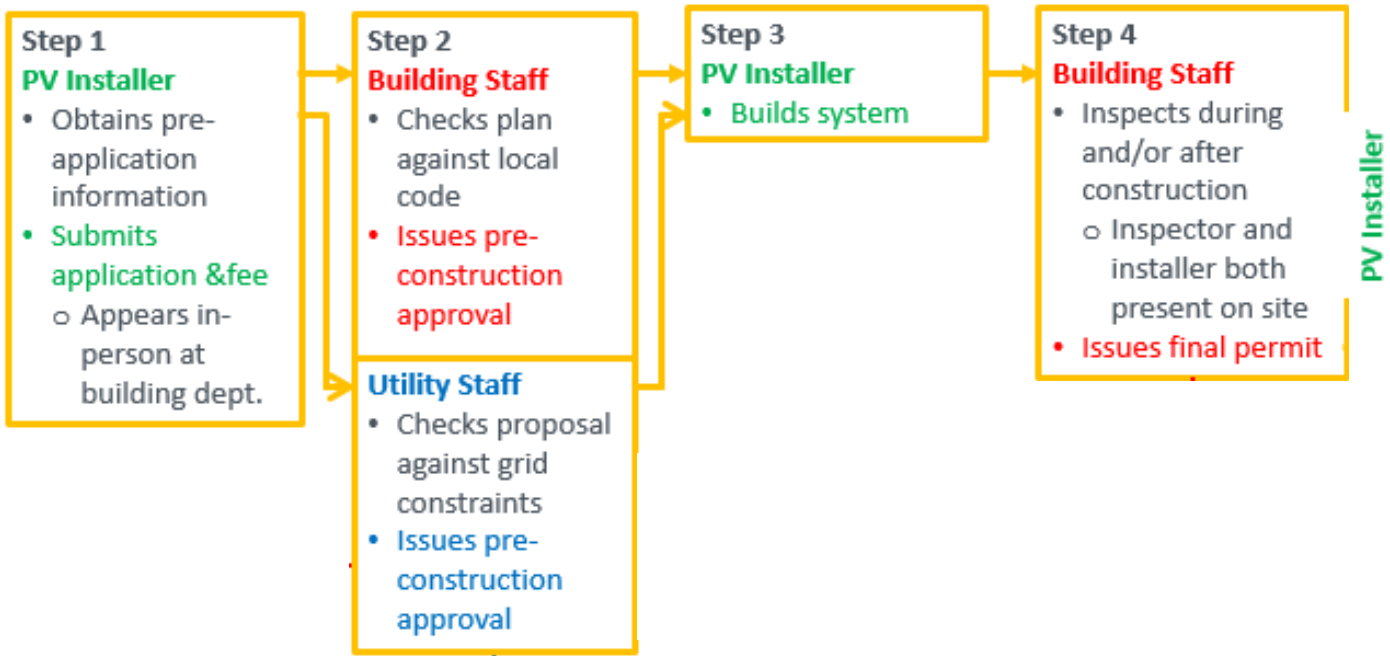

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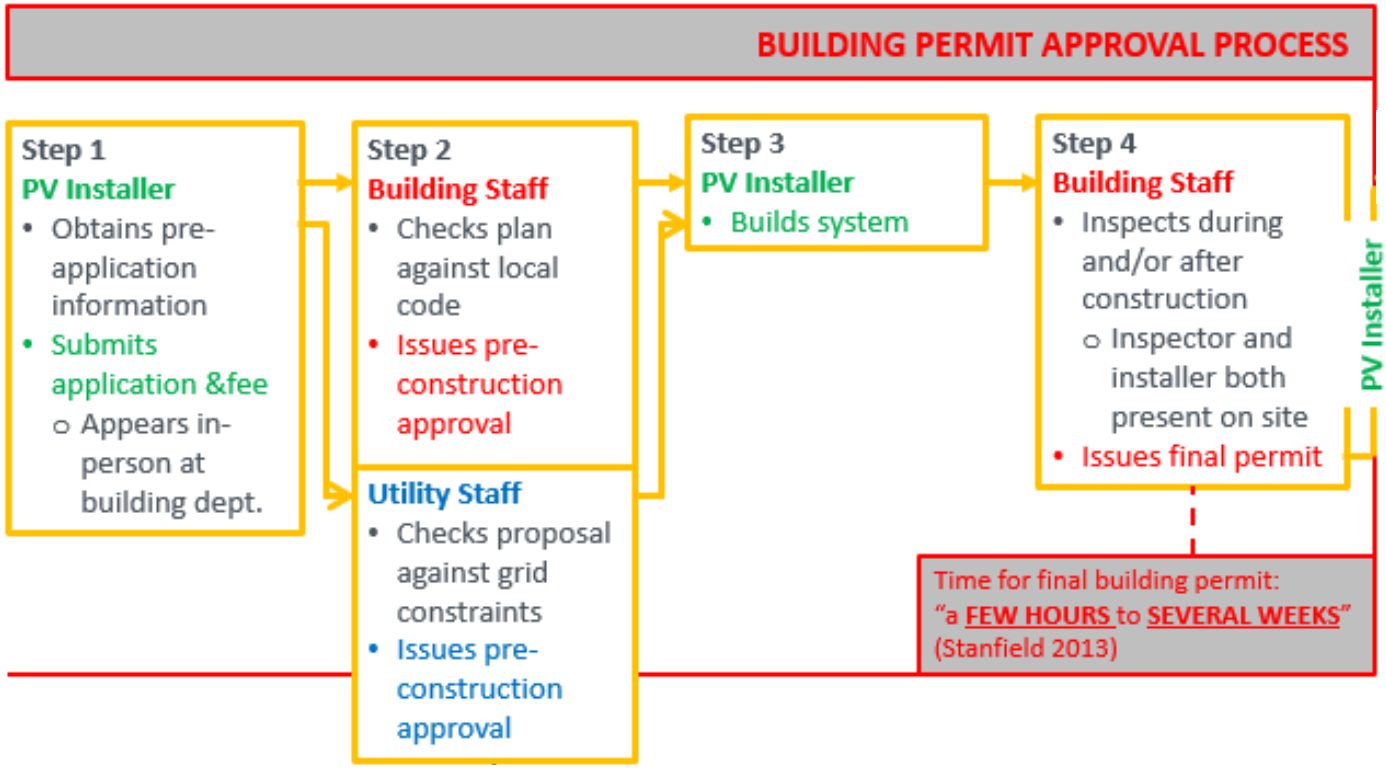

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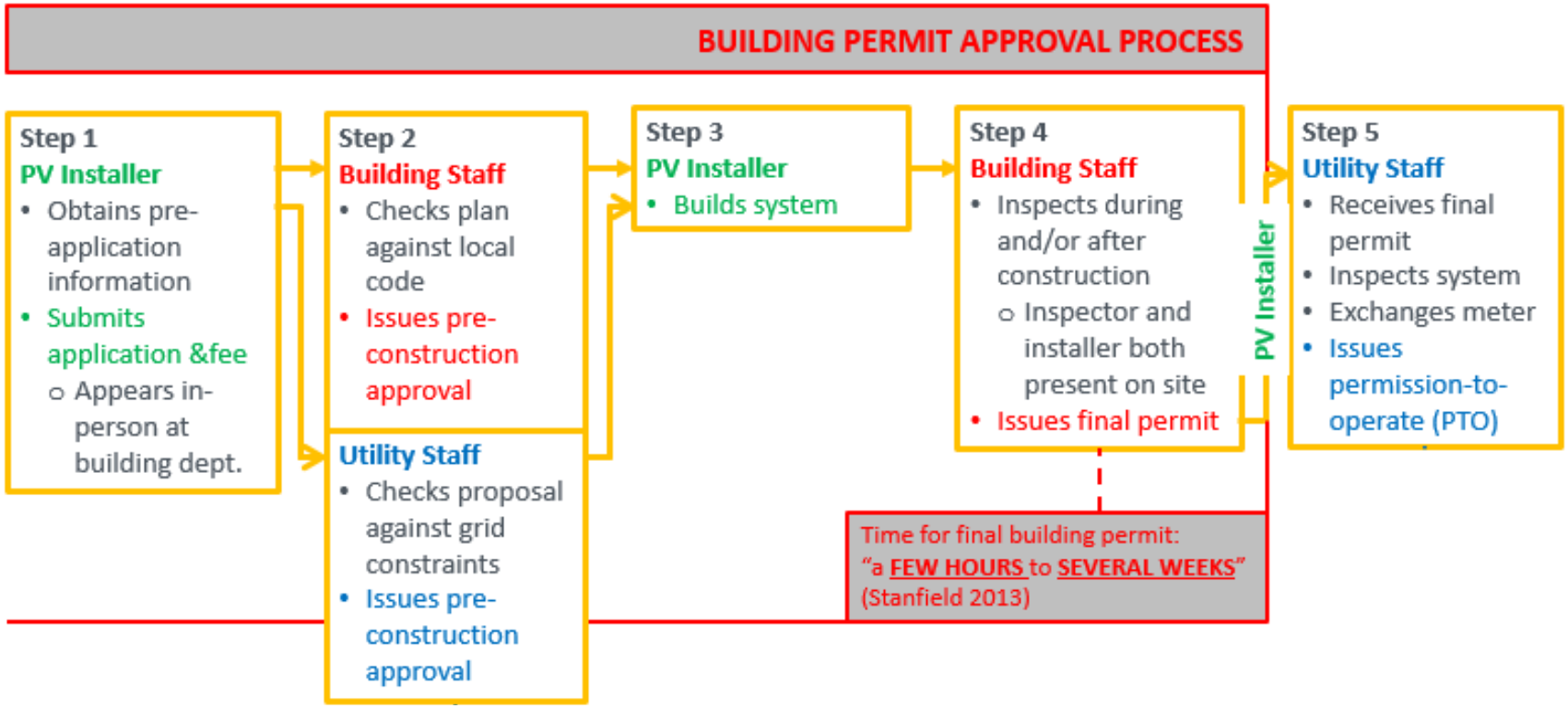

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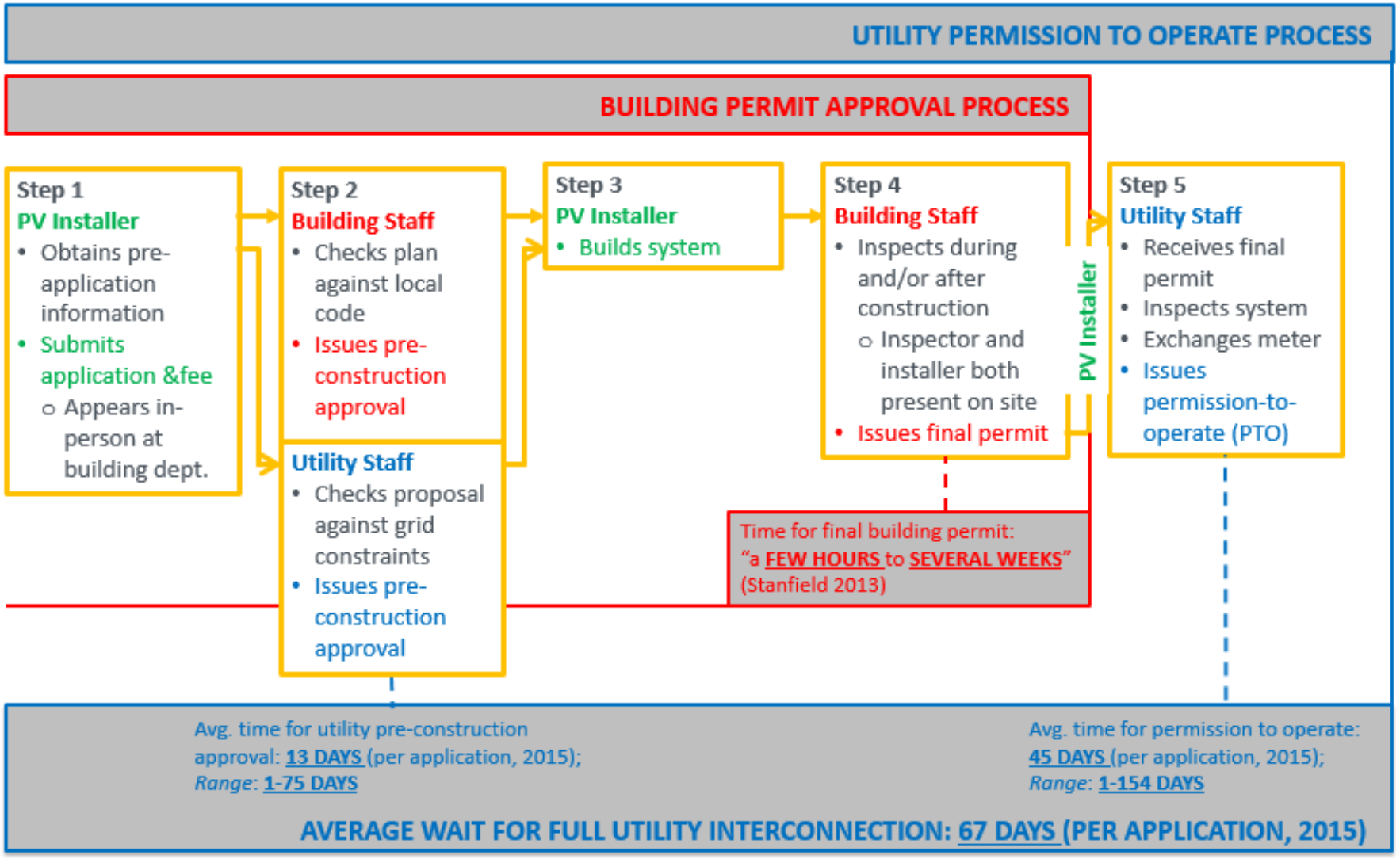

SSP reform practices

SSP Categories	Building Permit SSP Examples	Interconnection SSP Examples

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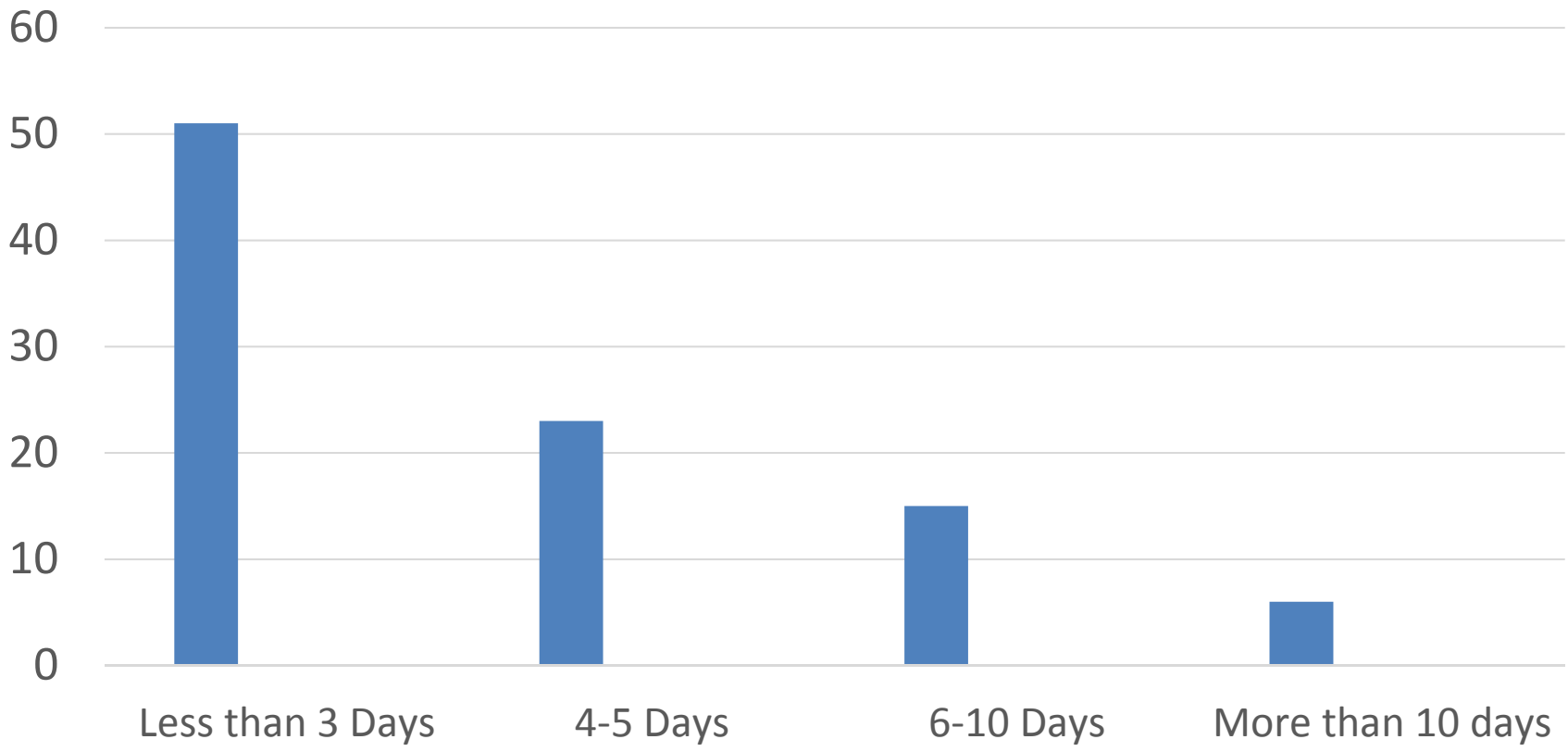
Other	"Reasonable fees"; No community-specific licenses; Train permitting staff in solar	Meter exchange inventory control; Automatic screening for grid issues in online platform; Better management of building department paperwork

Descriptive Statistics on DOE Data

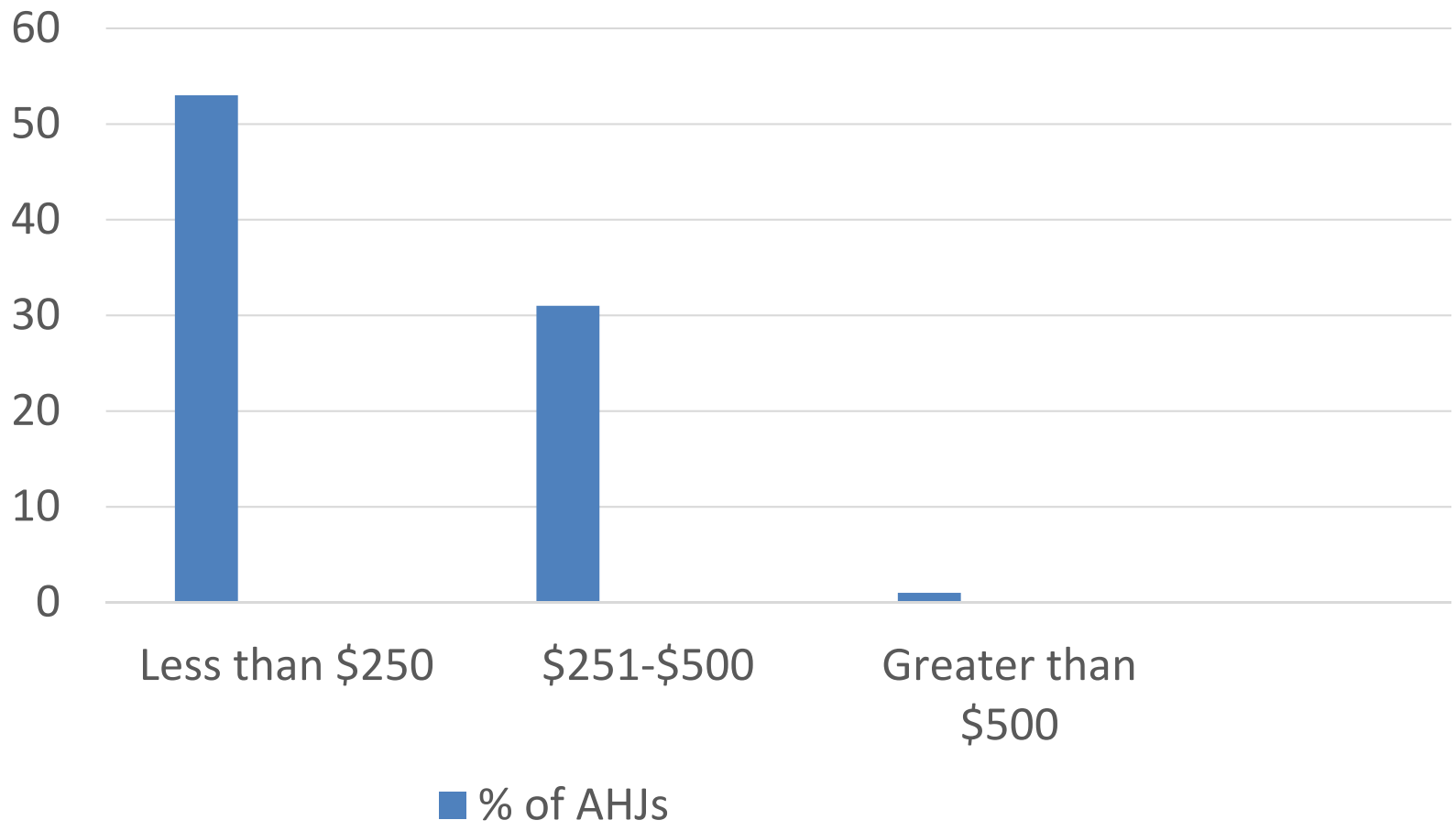
1st of 4 Slides on 281 AHJs Nationwide with forms of SSP

- 94% of AHJs allow PV installers to obtain an application online;
- 25% of AHJs allow online application submissions;
- 49% of AHJs do not have expedited processes for solar PVs, while 47% do (4% did not report)

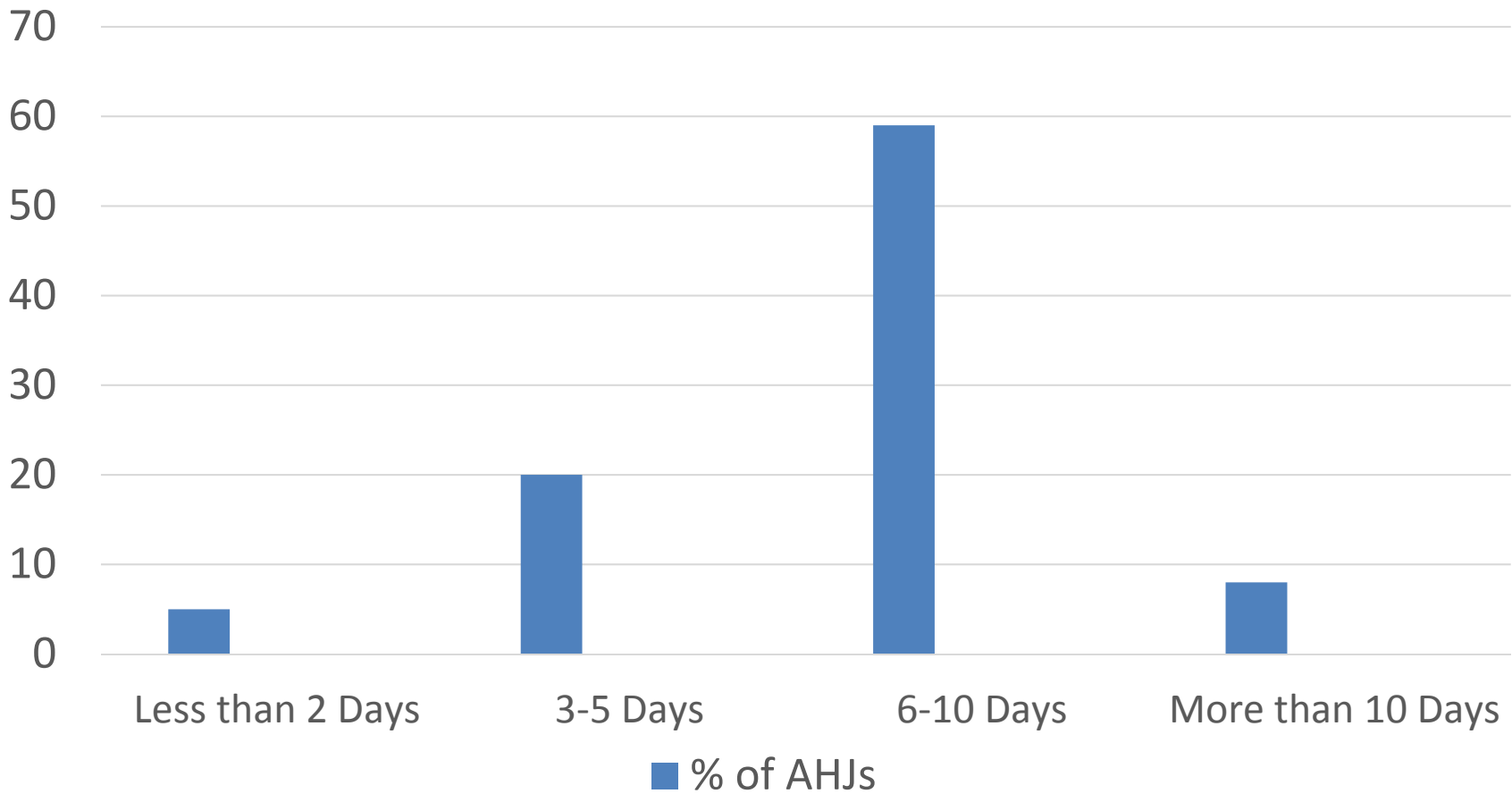
Average Response Time from Application Submission to AHJ Decision



Average Total Fees (for Building Permits)



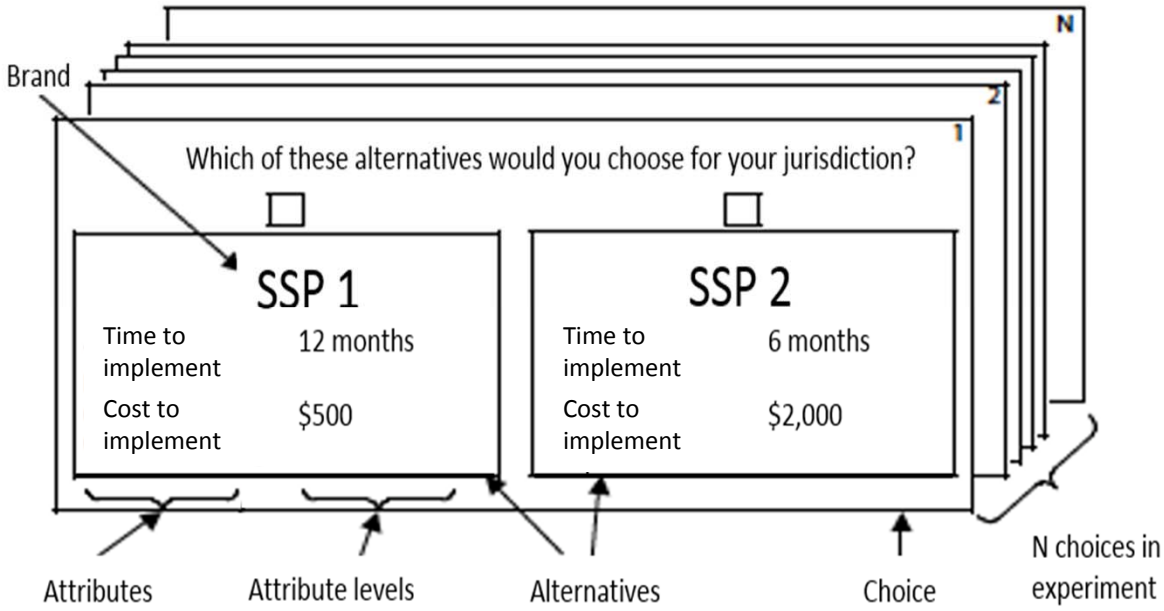
Time for Interconnection Application Completion



Information on our current project

Project Overview

- Uses discrete choice experiments (DCEs) to elicit actor preferences on alternative combinations of SSP attributes
  - DCEs to be conducted with building departments in California, as well as PV installers and utilities nationwide
- The analysis combines the DCE results with variables believed to be relevant to SSP adoption



Data Compilation Underway

Motivations to Adopt SSP

- Local factors for high PV demand (workload proxy)
  - Includes high solar value proposition, electric vehicle adoption, demographics
- Locality adjacent to high PV demand area(s)

Resources to Adopt SSP

- Financial status of AHJ, utility
- AHJ and utility relationship
- AHJ and utility administrative structure

Challenges to Adopt SSP

- Political
  - Proxy w/opposition to AB2188
- Public safety risks (AHJs)
- Grid constraints (utilities)

Opportunities for Local Choice re: SSP

- State of standardized SSP
  - Model code, State law or PUC interconnection rule
- Jurisdictional enforcement philosophy

Useful References

- Argetsinger, B. and B. Inskeep (2017). *Standards and Requirements for Solar Equipment, Installation, and Licensing and Certification: A Guide for States and Municipalities*. Clean Energy States Alliance (CESA). February 2017.
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- Stanfield, S., K. Kapla, E. Schroeder McConnell, R. Haynes, and K. Kooles (2013). *Minimizing Overlap in PV System Approval Processes: Case Studies and Analysis*. Interstate Renewable Energy Council (IREC).
- Stanfield, S. and D. Hughes (2013). *Model Inspection Checklist for Rooftop PV Systems*. Interstate Renewable Energy Council (IREC).

- Detailed data on SSP across 281 AHJs nationwide: https://docs.google.com/spreadsheets/d/19DVGAQZgUAp8a-dCejyR-PWlv_FHFFVCfbYblWaDA-0/edit?usp=sharing

Q&A and Follow-Up

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Read more at www.energycenter.org/solar-permitting