How Local Generation Fits into State Renewable Energy Goals

Neighborhood Clean Energy

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California's Energy Goals

- GHG Emissions Reduction (AB 32)
- Energy Security & Reliability
- Job Creation & Economic Growth
- Governor Brown's Clean Energy Jobs Plan
  - 12,000 MW of Distributed Generation
  - 8,000 MW of Renewable Central Station
  - 6,500 MW of Combined Heat and Power

Definition of Distributed Generation

- Fuels and technologies accepted as renewable for purposes of Renewable Portfolio Standard
- Sized up to 20 MW
- Located within low-voltage distribution grid or supply power directly to consumer

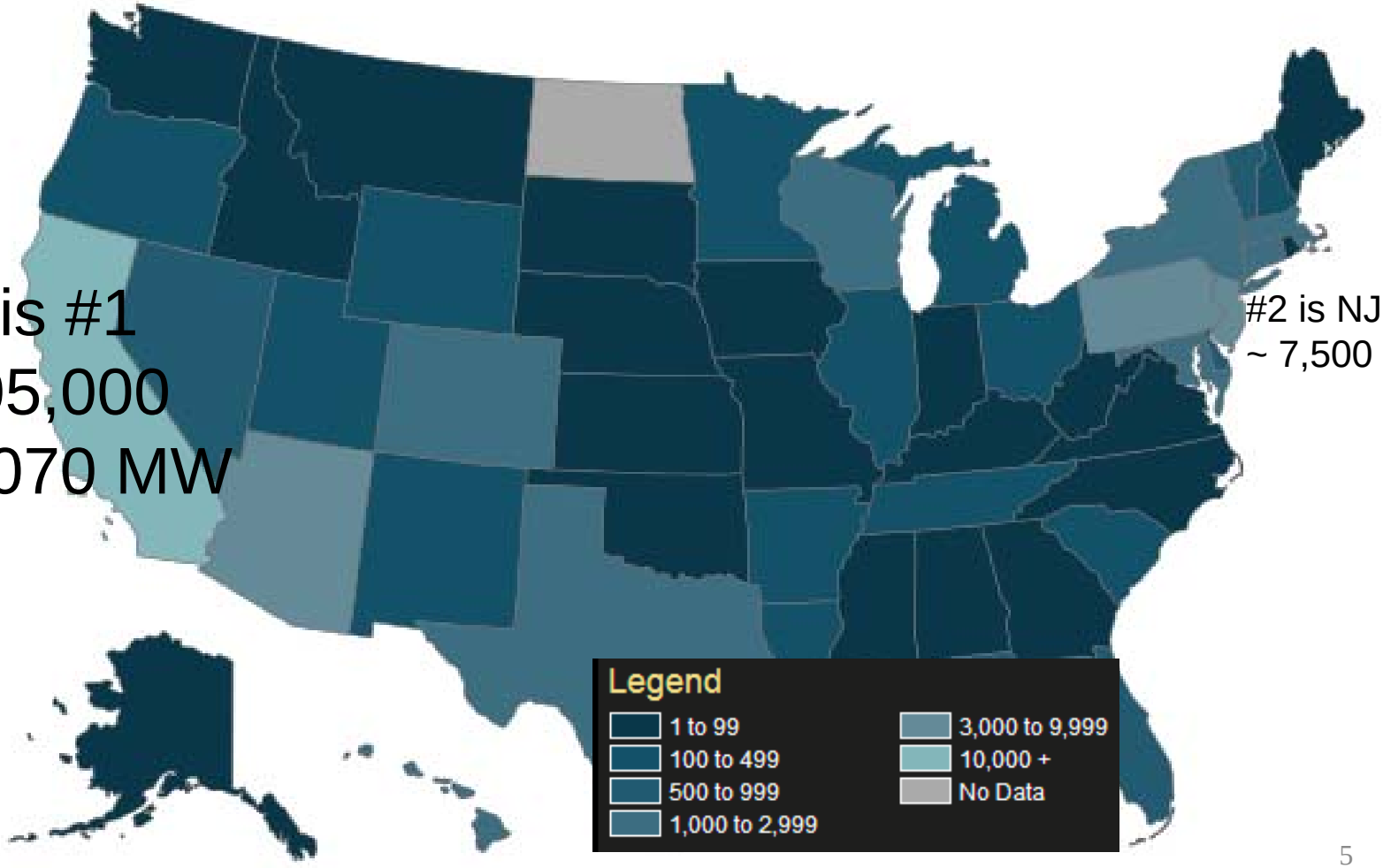
Distributed Generation Roadmap

- What renewable energy power projects are counted toward the Governor's goal?
- How much generation is already operating, pending or authorized?
- How should the remainder of the Governor's 12,000 MW goal be achieved?
- How do we make expansion local renewable energy more efficient, effective and equitable?

Number of PV Installations by State

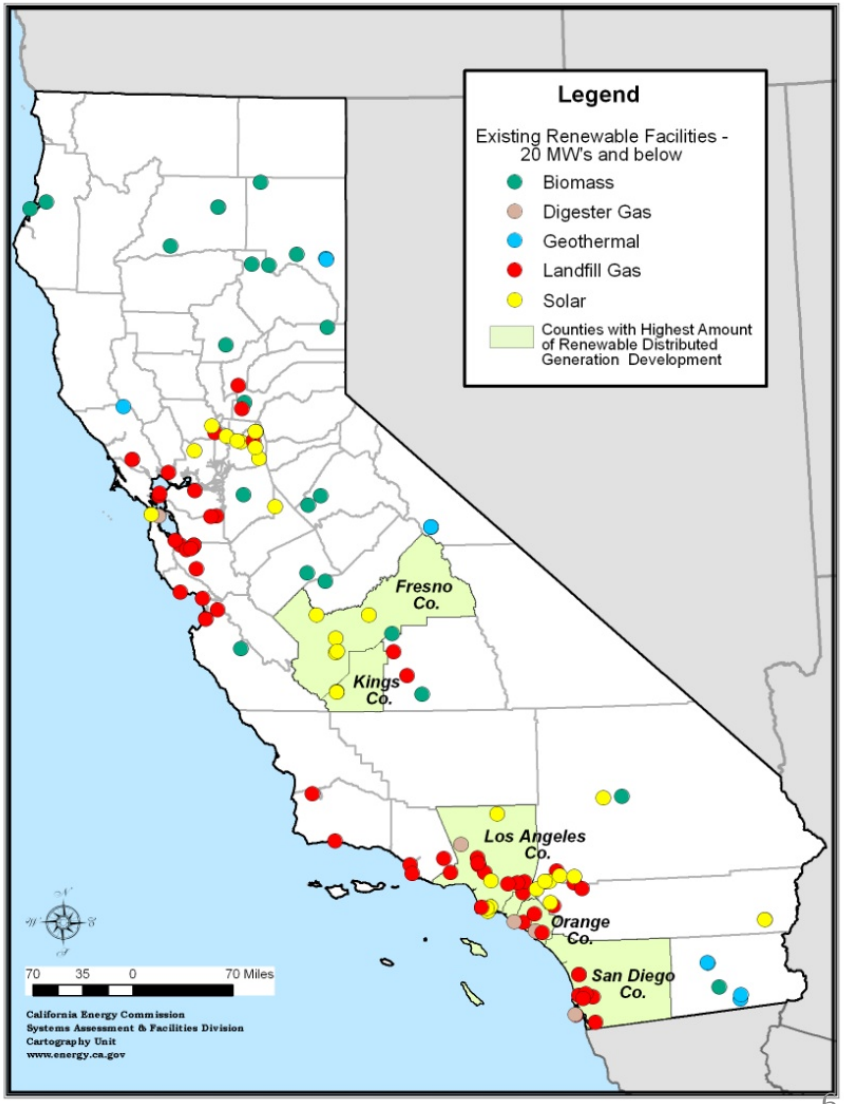
CA is #1
~105,000
~1,070 MW

#2 is NJ
~ 7,500

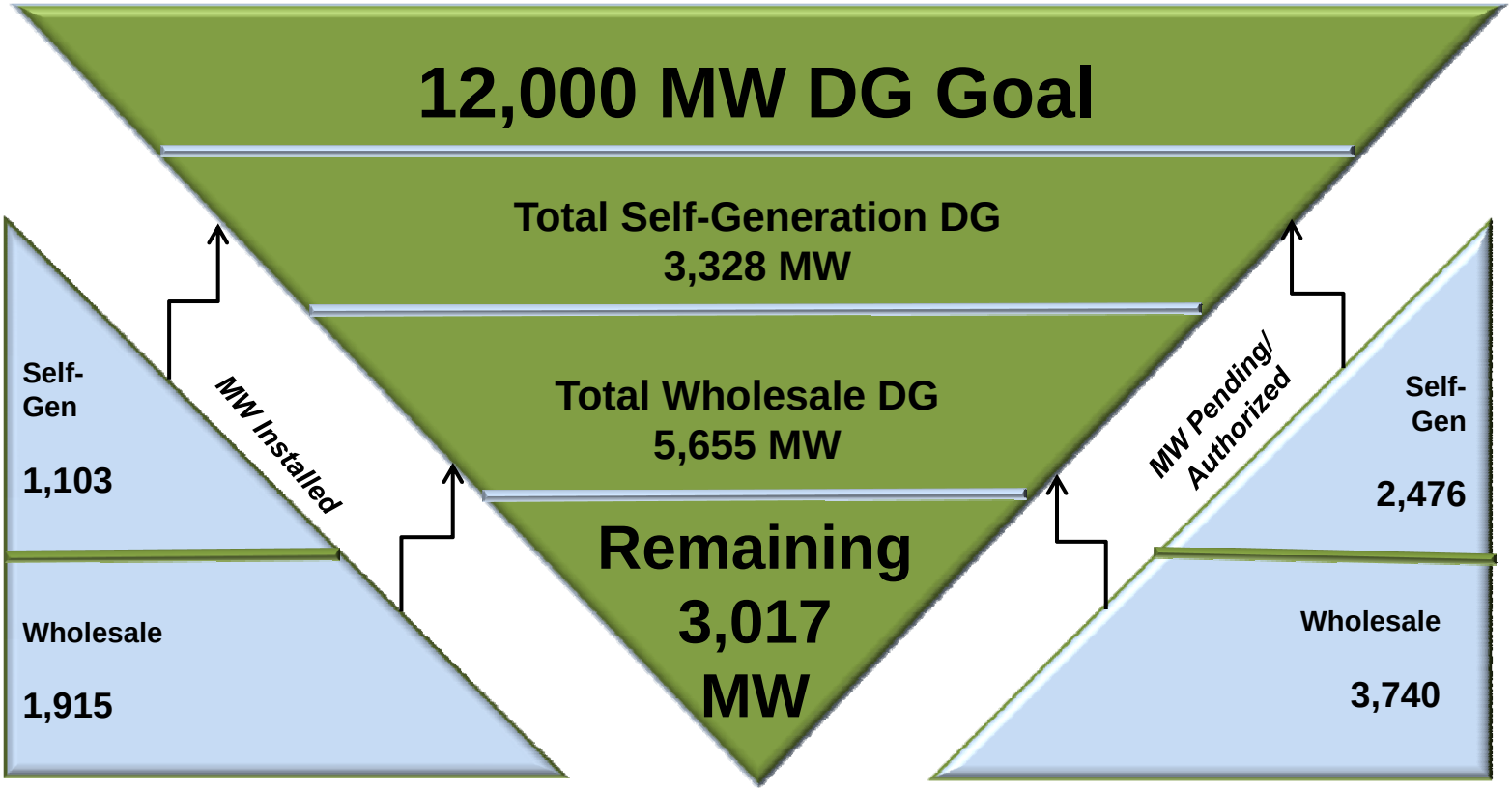


Source: http://openpv.nrel.gov/rankings

Wholesale Distributed Renewable Capacity in CA is ~1,900 MW



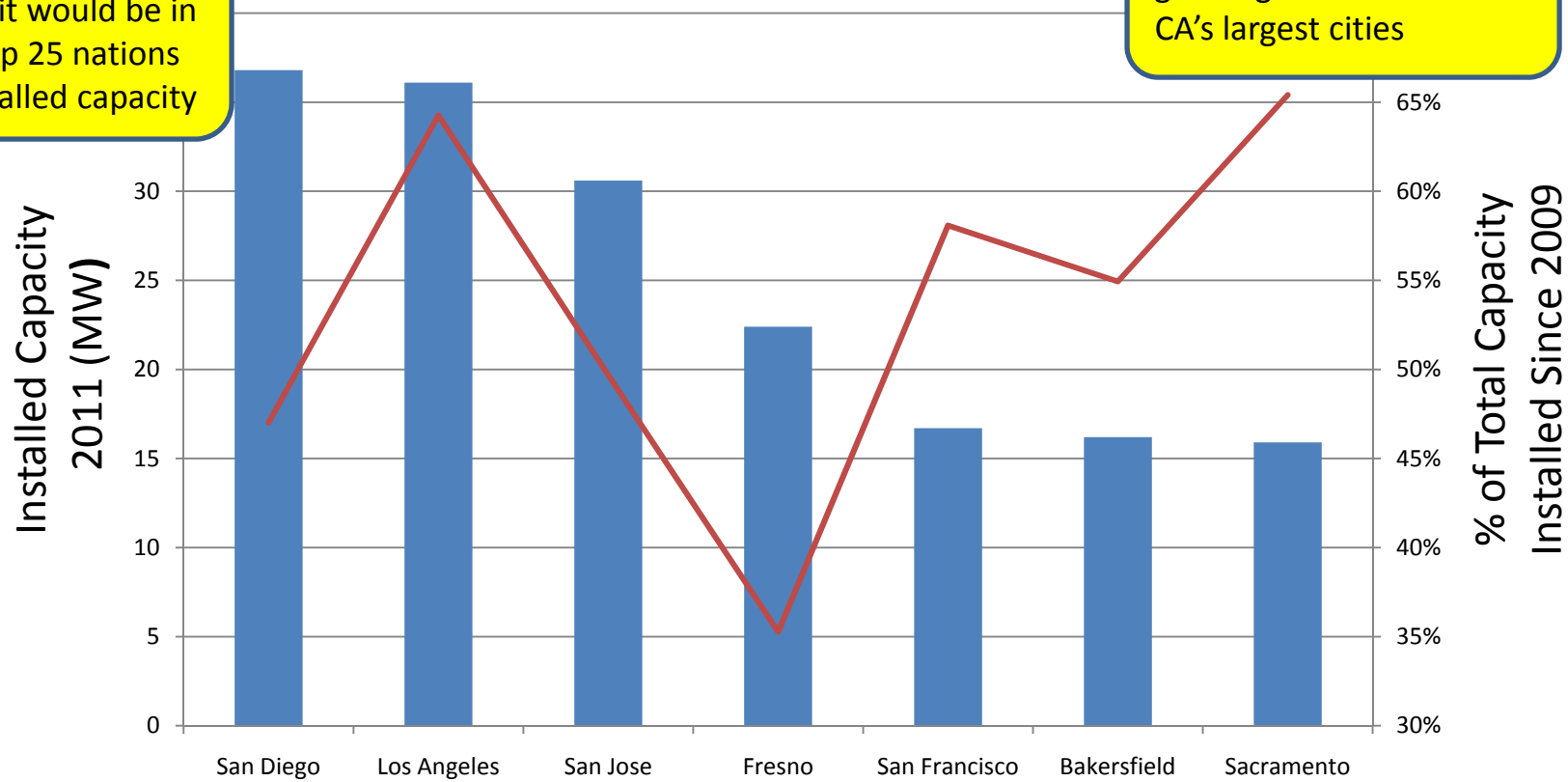
California Progress Towards the 12,000 MW Goal



Solar PV Installations for On-Site Use

If San Diego was a nation it would be in the top 25 nations for installed capacity

Sacramento is the fastest growing solar market of CA's largest cities



Environment California Research and Policy Center Report "California's Solar Cities 2012" See: http://www.environmentcalifornia.org/sites/environment/files/reports/California%27s%20Solar%20Cities%202012%20-%20Final.pdf

Adaptive Program for Remainder

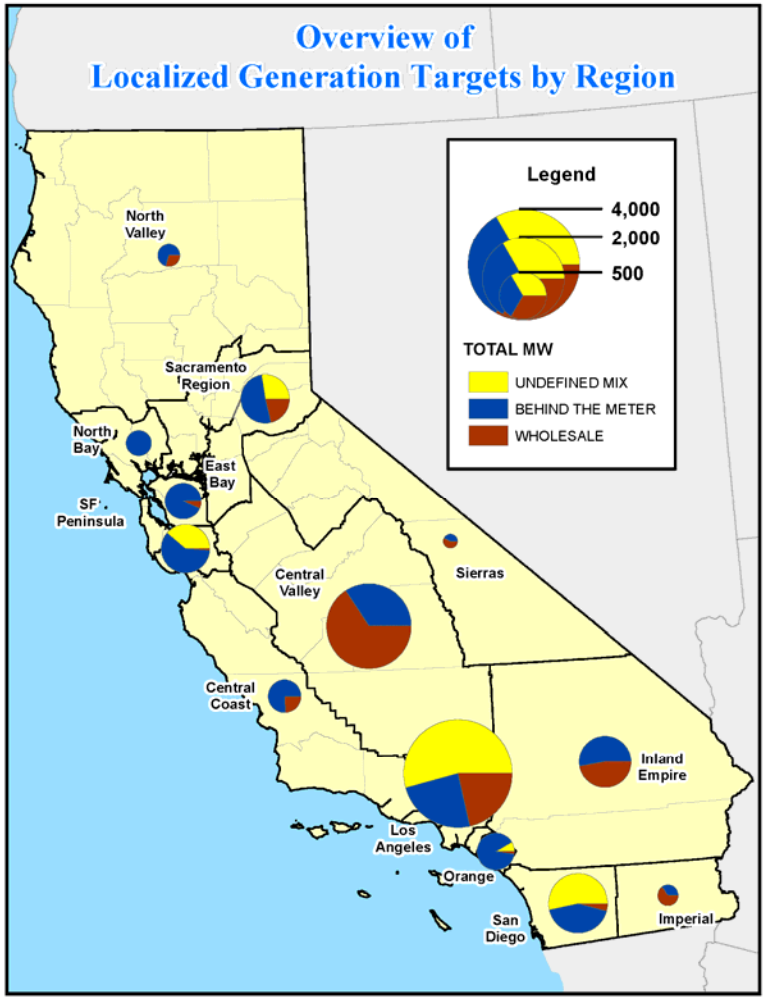
- Implement and track existing programs:

1. Which add reliability and/or avoid transmission?
2. Which are most effective in cost containment?
3. Which produce the most generation most quickly?
4. Which are administratively efficient?
5. Which support other state policies (RPS, DR?)
6. Which maintain diversity of resources?

- Develop and expand on programs that fit integrated resource planning.

DG Regional "soft" Targets

- Localized Electricity Generation Allocated by Region and Type:
  - Wholesale
  - Behind the Meter
  - Undefined Mix
- Technology Neutral
- Plan to update annually to biannually



Developing Renewable Generation on State Property Report

- Developed out of a Memorandum of Understanding among 8 state agencies
- Goal of 2,500 MW by 2020
  - Help State achieve 33% renewables by 2020
  - Help achieve Governor's goal of 20,000 MW of renewables by 2020
- 60 to 70 MW self-generation projects already underway at CDCR, CalTrans, and Ucs with lots of wholesale potential on CSLC lands

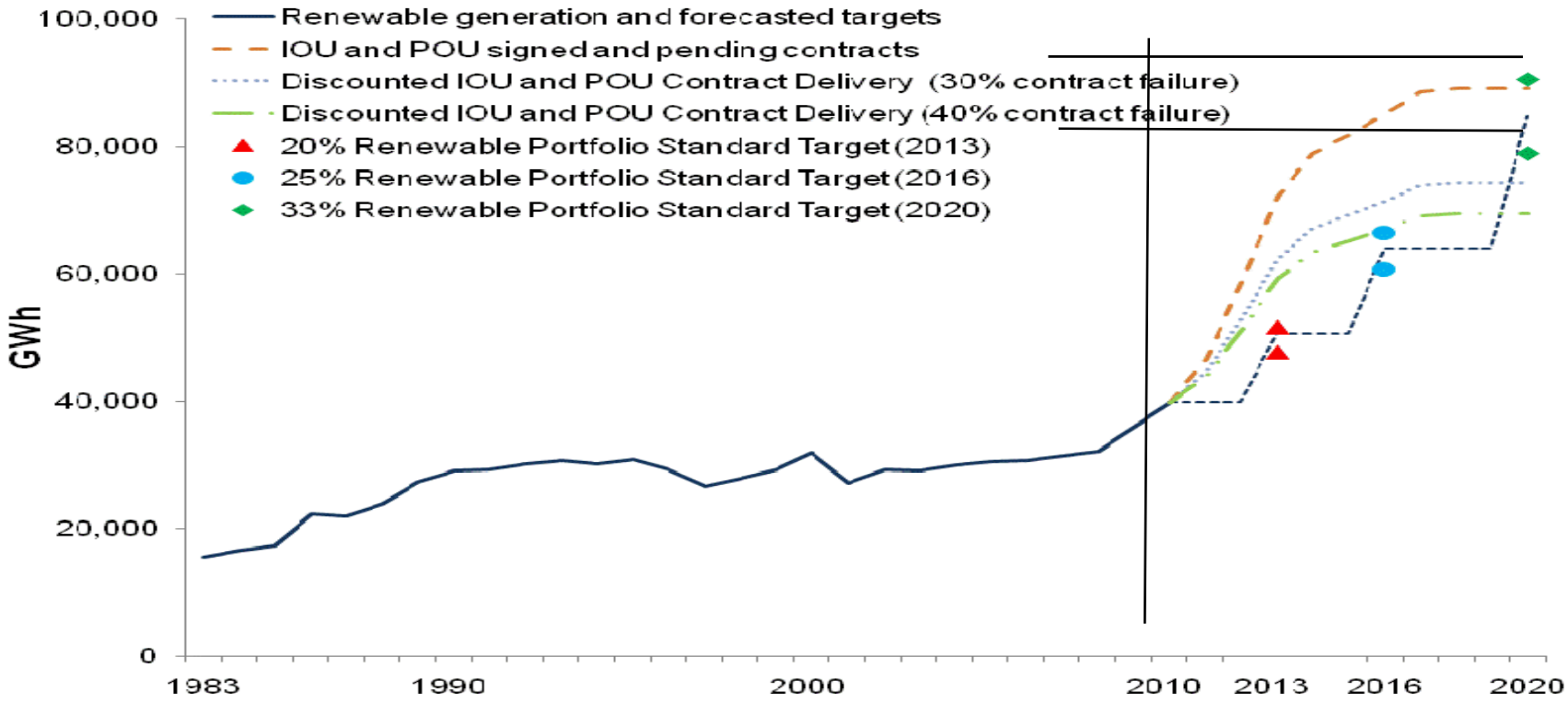
State Property Report: Next Steps

- Energy Commission should help evaluate and identify renewable development opportunities
- Agencies should coordinate procurement strategies and leverage opportunities for group purchases
- Agencies should coordinate development of land use agreements, lease terms, and other contracting efforts
- The Energy Commission is working with the Governor's Office

2011 Integrated Energy Policy Report

Renewables and Distributed Generation

Renewable Portfolio Standard Progress



Existing generation values from J-11 table. http://energyalmanac.ca.gov/electricity/electricity_generation.html
Each color bar represents the estimated range of generation needed to meet the target.

DG Permitting Issues

- Widely varying codes, standards, and fees among local governments
- Developers must get permit approval from multiple entities
  - Fire department
  - Building and electric code officials
  - Local air districts
- Many locals do not have energy elements in their general plan or zoning ordinances

Efforts to Improve Distribution-level integration

- September 2011, CPUC opened a proceeding on interconnection-related issues
- Utilities are modernizing their distribution systems, which will likely increase as a result of SB 17
- Energy Commission and CAISO funded a study to highlight lessons learned form European experience
- PIER research focused on predicting the impacts of DG on distribution circuits

Energy Commission 2012 Focus

1. Identify and prioritize geographic areas in the state for both renewable utility-scale and distributed generation development
2. Evaluate the cost of renewable energy projects beyond technology costs – including costs associated with integration, permitting, and interconnection – and their impact on retail electricity rates.
3. Develop a strategy that minimizes interconnection costs and time, and also minimizes integration costs and requirements at the distribution level and the transmission level and that strives for cost
4. Promote incentives for renewable technologies and development projects that create in-state jobs and support in-state industries, including manufacturing and construction.
5. Promote and coordinate existing state and federal financing and incentive programs for critical stages including research, development, and demonstration

Thank you!

Questions?