DOCKETED	
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Description:	Panel Presentations for the Joint Agency Workshop to Plan for Senate Bill 100 Resource Build – Analysis of Land Use Implications
Filer:	susan fleming
Organization:	California Energy Commission
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Docketed Date:	2/22/2022

Panel Discussion

Perspectives on Considering Land Use in SB 100

- Natasha Keefer, Clean Power Alliance
- Dr. Grace Wu, University of California, Santa Barbara
- Julia Souder, JASenergies
- Andrew Ayres, Public Policy Institute of California
- Angela Islas, Self-Help Enterprises

Joint Agency Workshop to Plan for SB 100 Resource Build – Analysis of Land Use Implications

February 22, 2022

CPA CLEAN POWER ALLIANCE

CPA: The Clean Energy Future is Here

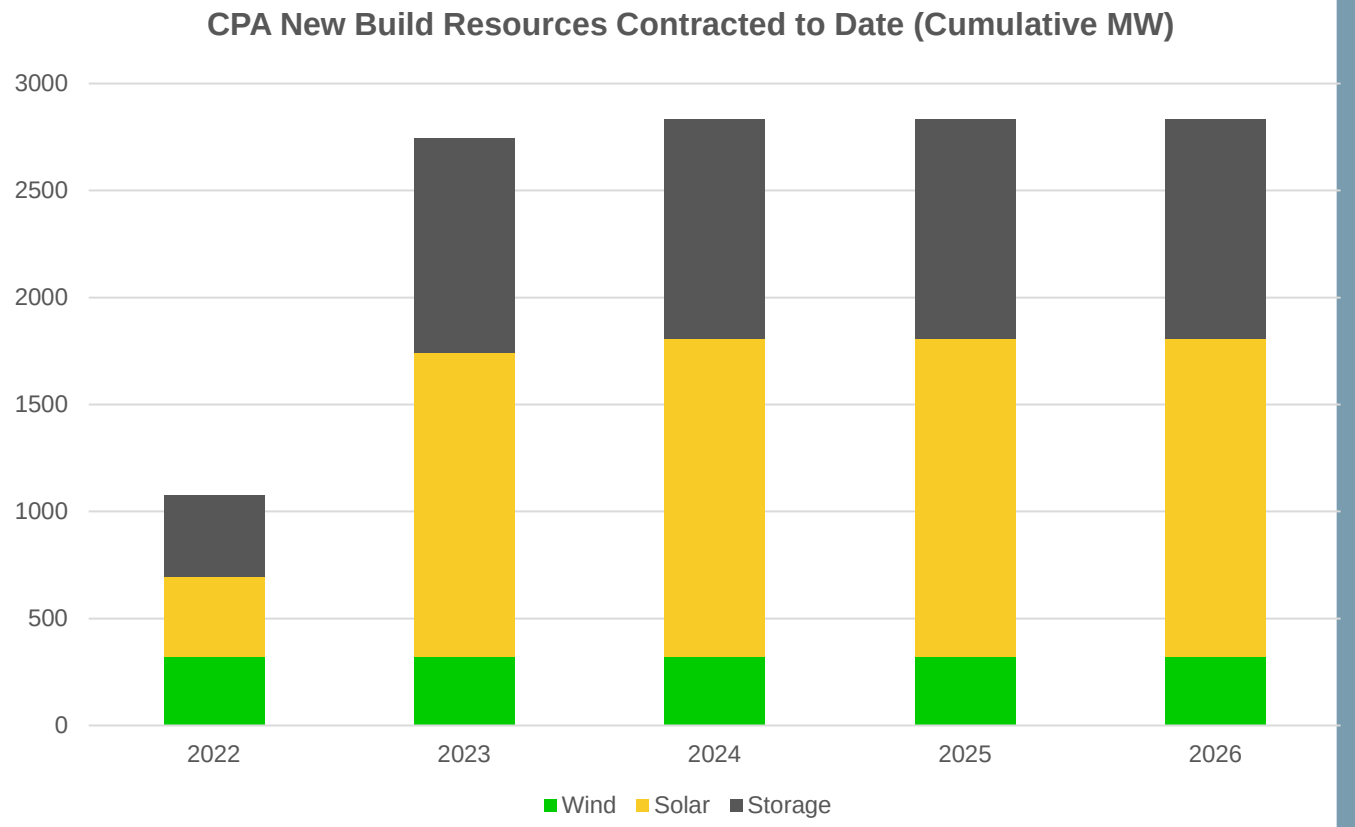
Nation's Top Provider of 100% Clean Energy

- Joint Powers Authority launched in 2018
- Serve more than 1 million customer accounts in Los Angeles and Ventura Counties
- 727,000 customers on 100% Renewable Energy rate plans by end of October 2022
- Over 1,900 MW of renewable energy and over 1,000 MW of storage contracted to date
- Local accountability and local benefit with revenues reinvested through local programs


VENTURA COUNTY
LOS ANGELES COUNTY
Ojai
Ventura
Oxnard
Camarillo
Moorpark
Thousand Oaks
Simi Valley
Westlake Village
Agoura Hills
Calabasas
Malibu
Beverly Hills
West Hollywood
South Pasadena
Sierra Madre
Arcadia
Claremont
Alhambra
Temple City
Whittier
Santa Monica
Culver City
Hawthorne
Downey
Paramount
Hawaiian Gardens
Manhattan Beach
Redondo Beach
Carson
Rolling Hills Estates
Service Area
Clean Power Alliance

Progress Towards SB 100

- CPA has contracted for 1,808 MW of renewable and 1,027 MW of storage new-build, utility-scale resources, with additional resources to be contracted to meet SB 100 goals
- New resource development has significance for land use in California



Land Use Considerations for CPA

- Reliable decarbonization
- Environmental stewardship
- Economic development opportunities
- Equitable access to clean energy
- Community priorities

Project Selection

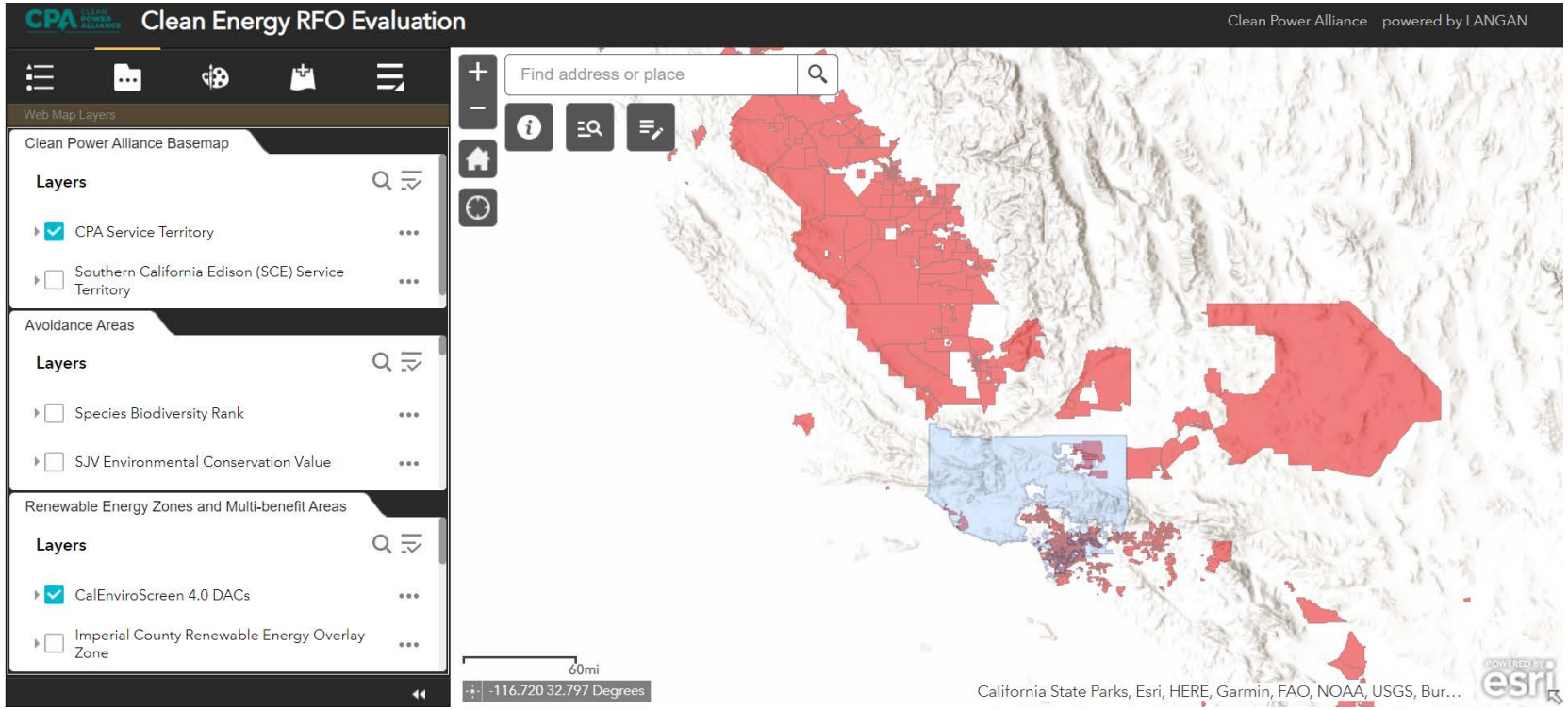
- CPA evaluates projects based on six criteria:

$ Value	Environmental Stewardship	Workforce Development
Development Score	Project Location	Benefits to DACs

Land Use Assessment

- CPA and The Nature Conservancy collaborated to develop a GIS mapping tool that CPA uses to evaluate project land use

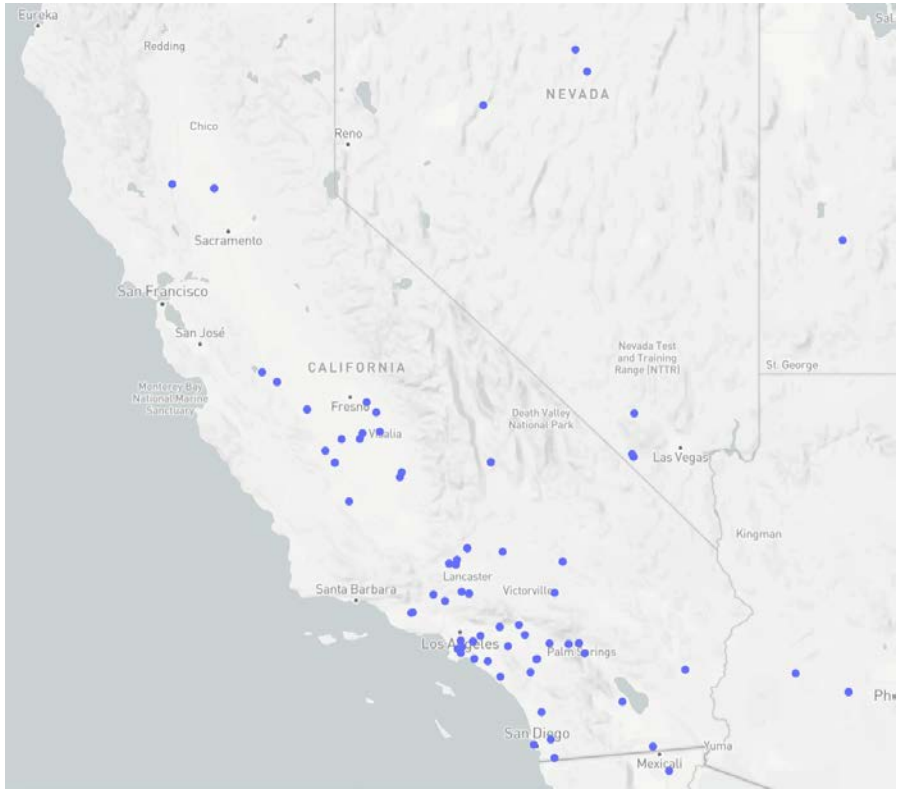
- The tool considers many multi-benefit and avoidance screens



Emerging Issues for SB 100

- Increase in offers from out-of-state
  - Transmission availability
  - Environmental impacts
- Siting opportunities for certain desired technologies is limited
  - e.g. Geothermal
- Intersection of cost, reliability, and environmental goals
  - Reliance on solar + storage
  - Offshore wind

Location of offers from CPA's 2021 Mid-Term Reliability RFO



Thank you

Natasha Keefer
Vice President, Power Supply
nkeefer@cleanpoweralliance.org

SPATIAL PLANNING FOR CONSERVATION, COMMUNITY, AND CLIMATE

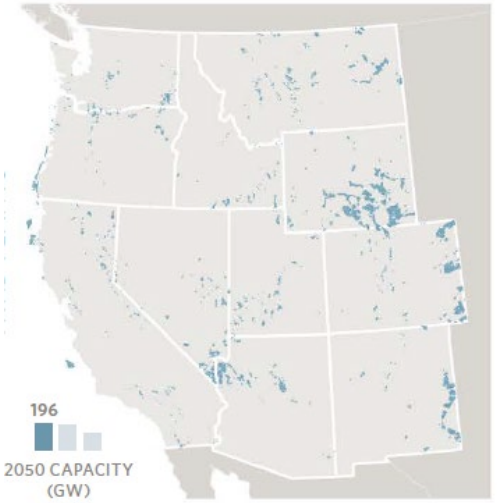
GRACE WU, PHD | ASSISTANT PROFESSOR | UC SANTA BARBARA

UCSB Environmental Studies
FOR OUR SHARED FUTURE
UC SANTA BARBARA

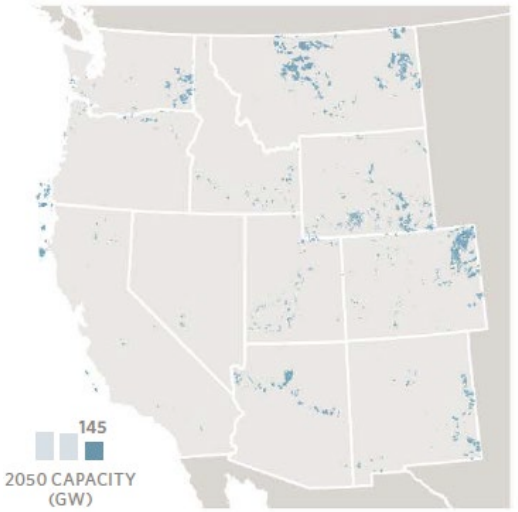
DOWNSCALED GENERATION AND TX PORTFOLIOS…

LARGE-SCALE SOLAR PV | ONSHORE AND OFFSHORE WIND | TX LINES AND GENTIES

Only legal siting restrictions



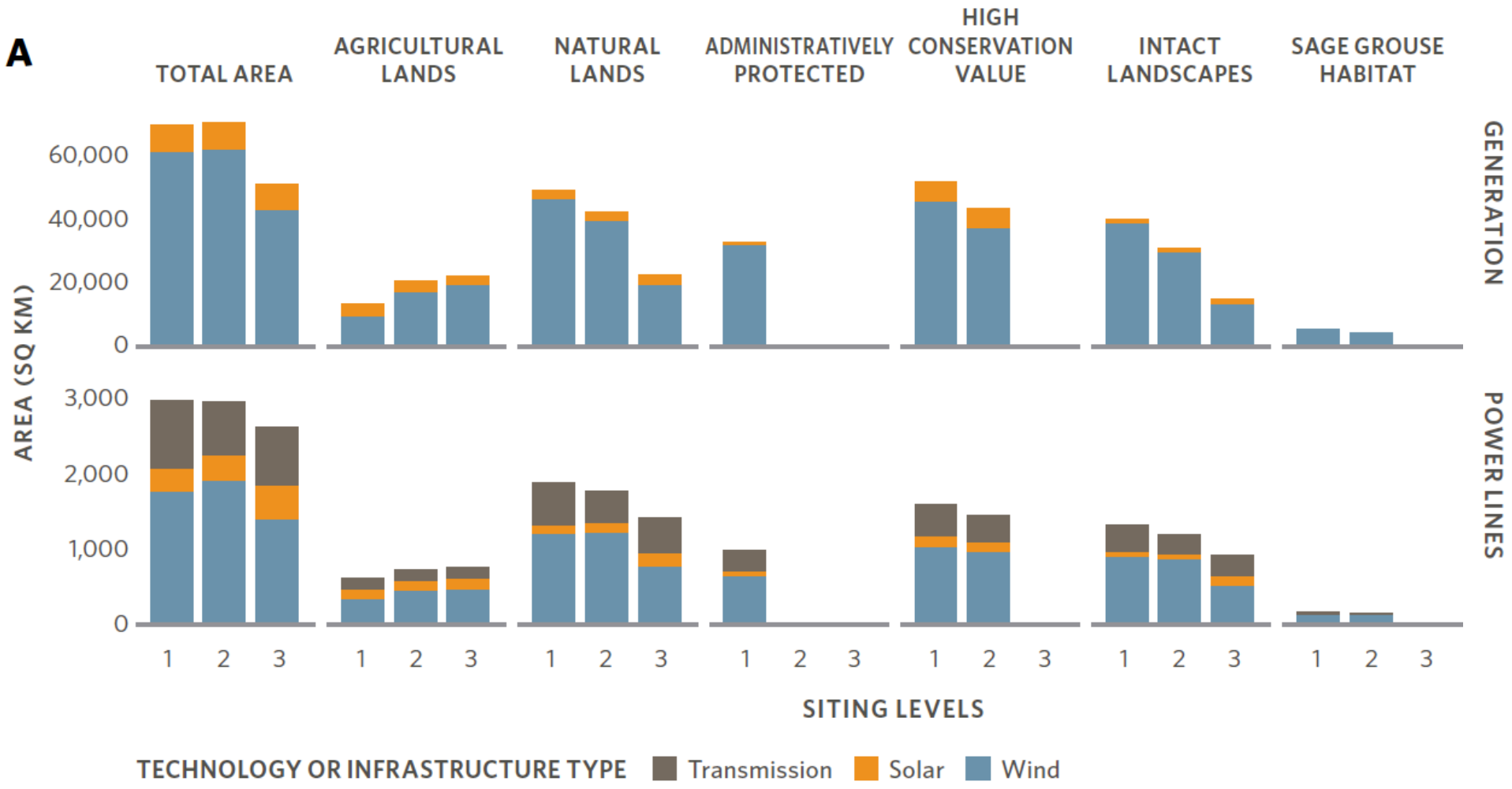
Protects high conservation value areas



- Spatially explicit
- Based on wind and solar plants installed in last 5 years
- Build-out meets 2050 net zero portfolio requirements

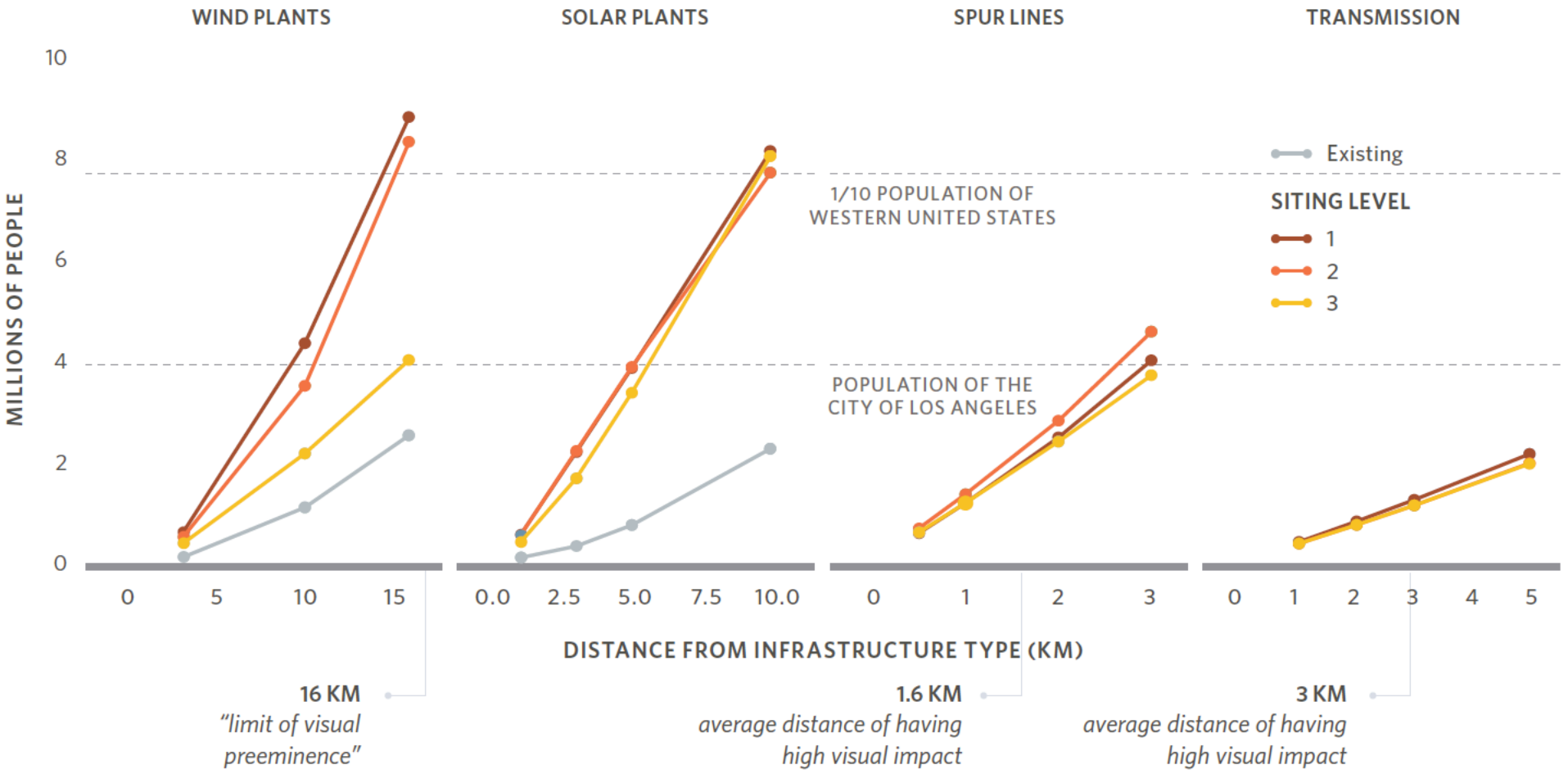
Wu et al. (in prep) | The results and methods presented here will be published in a forthcoming peer reviewed paper

...ENABLES ENVIRONMENTAL IMPACT ASSESSMENTS...



Wu et al. (in prep) | The results and methods presented here will be published in a forthcoming peer reviewed paper

…AND SOCIAL IMPLICATION ASSESSMENTS

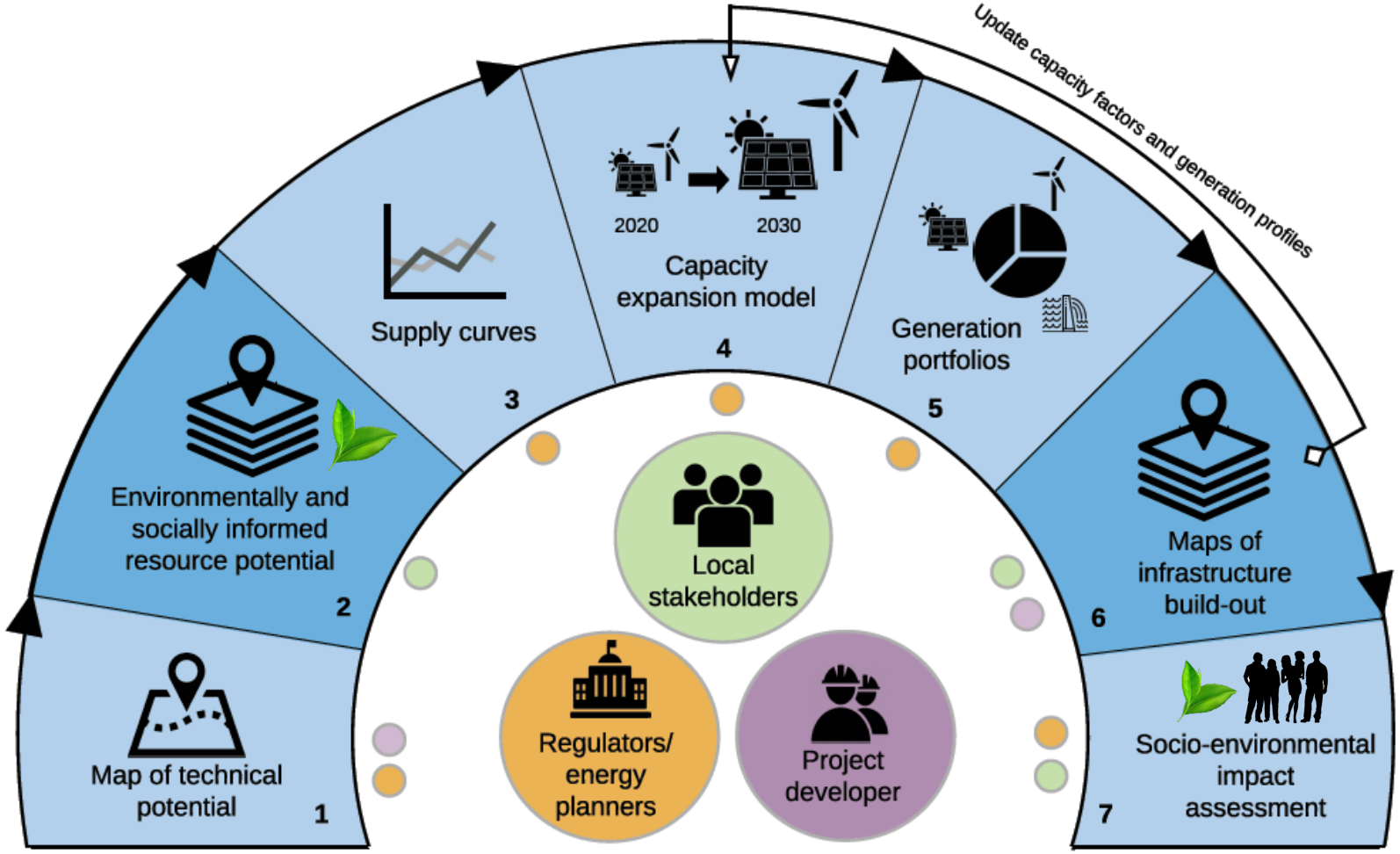


Social vulnerability indices assessed:

- Percentage unemployed
- Percentage below poverty

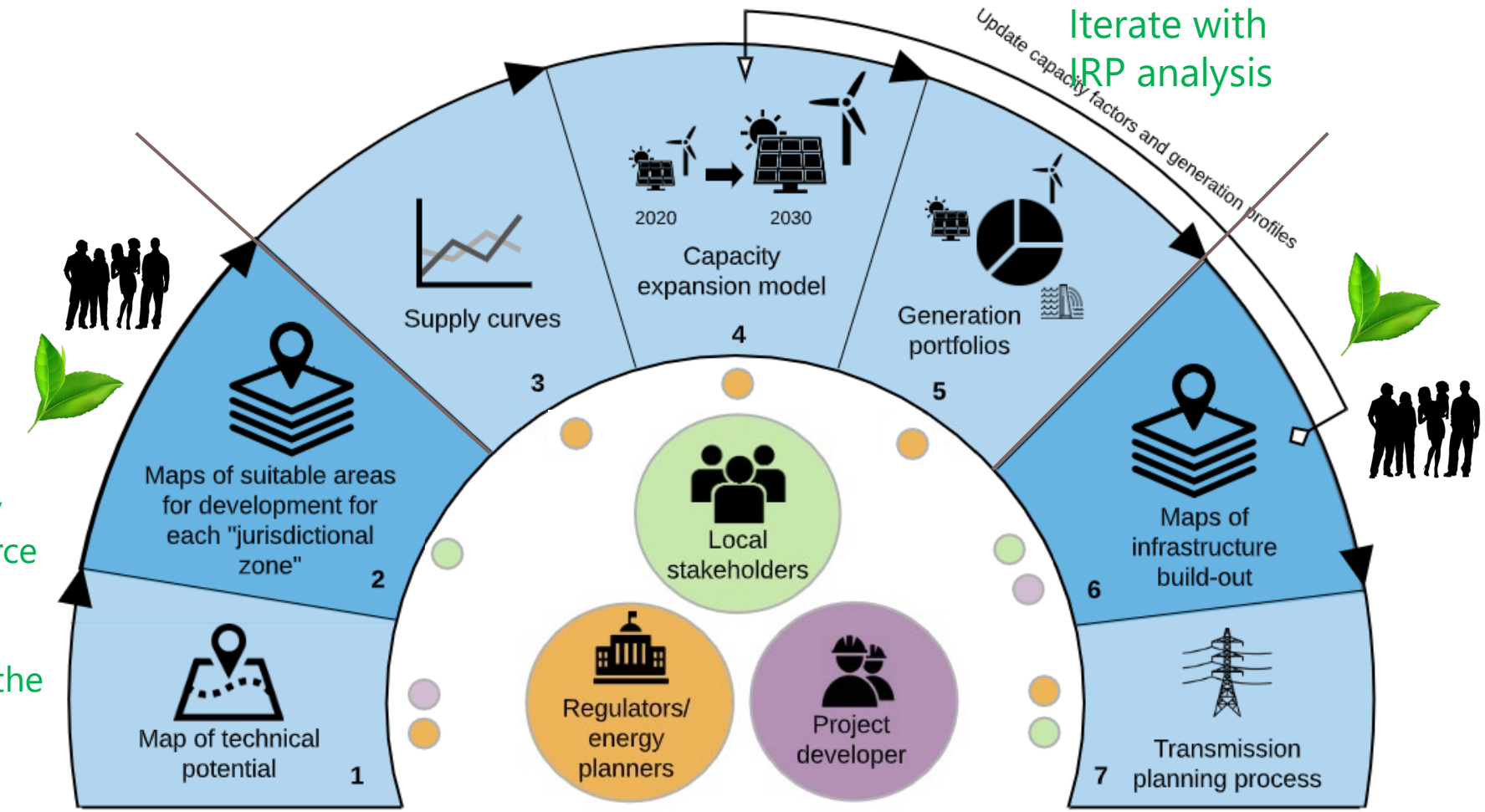
Wu et al. (in prep) | The results and methods presented here will be published in a forthcoming peer reviewed paper

A SPATIAL PLANNING FRAMEWORK FOR LOW CARBON INFRASTRUCTURE



SPATIAL PLANNING CAN BRIDGE THE DIVIDE BETWEEN LOCAL SITING DECISIONS AND STATE-LEVEL GOALS

B. State-regional IRP planning



Iterate with IRP analysis

A. Locally-informed resource assessment

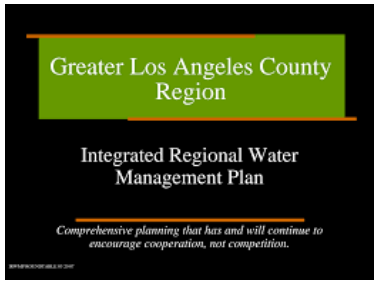
Generate socio-environmentally informed resource maps with community involvement at the county level

C. Guiding energy infrastructure siting

Conduct strategic social and environmental impact assessment

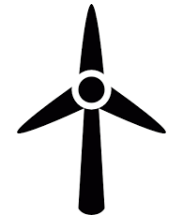
INSTITUTIONAL SUPPORT AND FUNDING FOR COUNTY-LEVEL ENERGY INFRASTRUCTURE PLANNING

Integrated regional water management plans



Regional energy infrastructure plans

Kern County
REIP



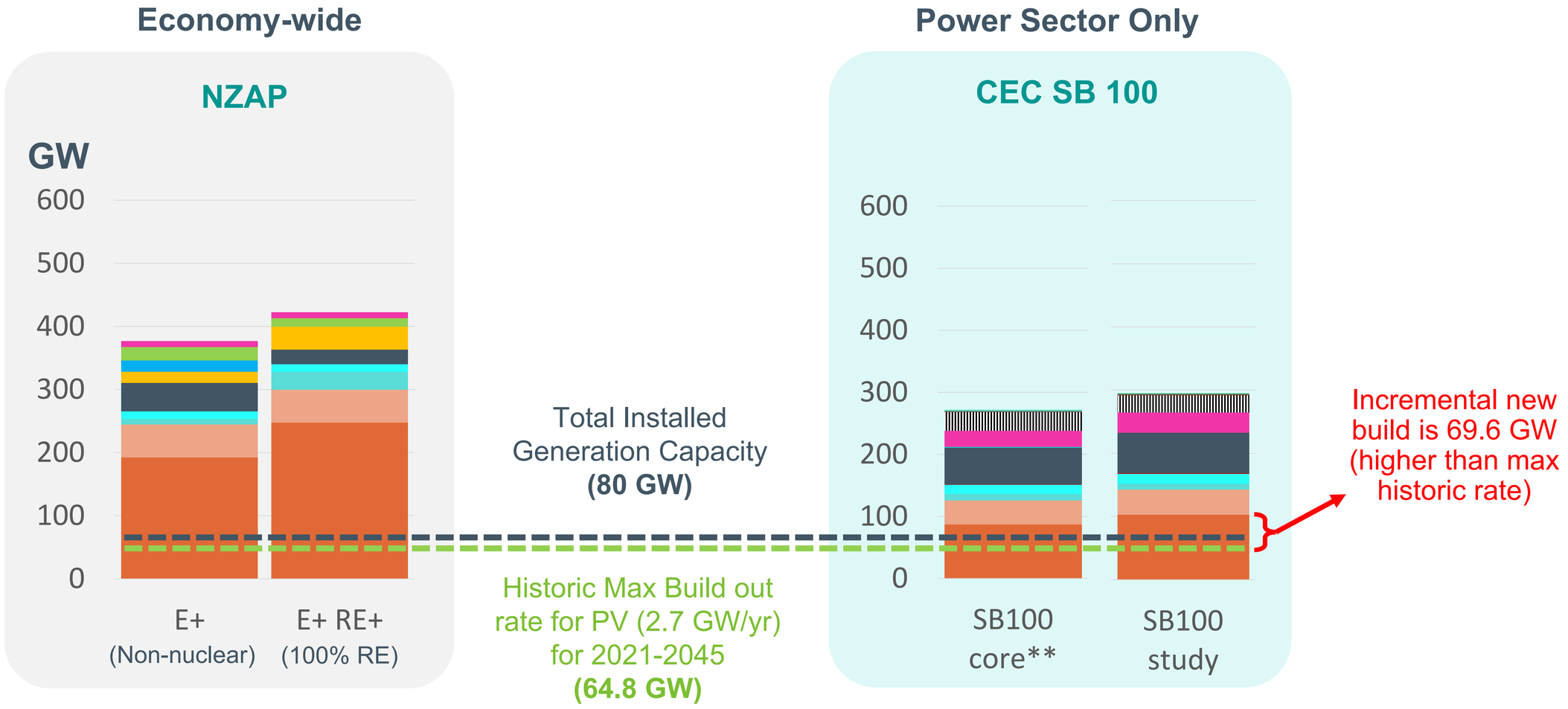
REIP

San Bernardino County
REIP

CEC Workshop: SB 100 and Land Use

February 22, 2022

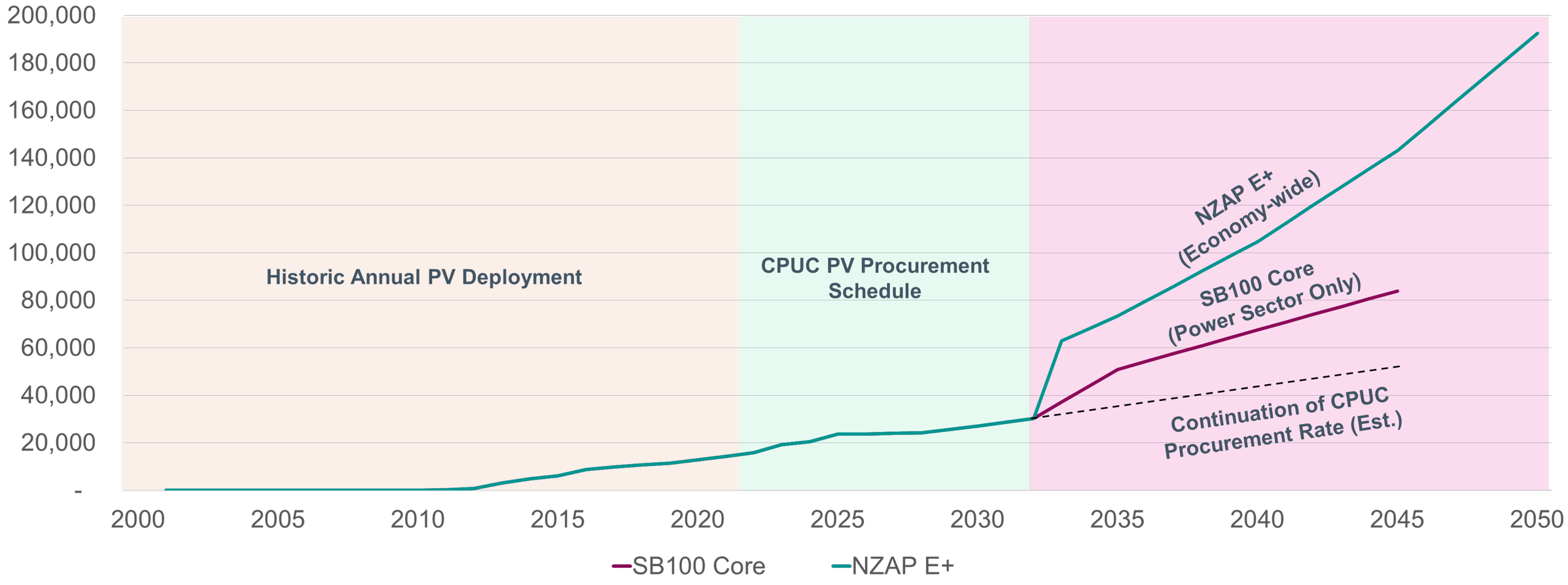
CA Required Resource Mix



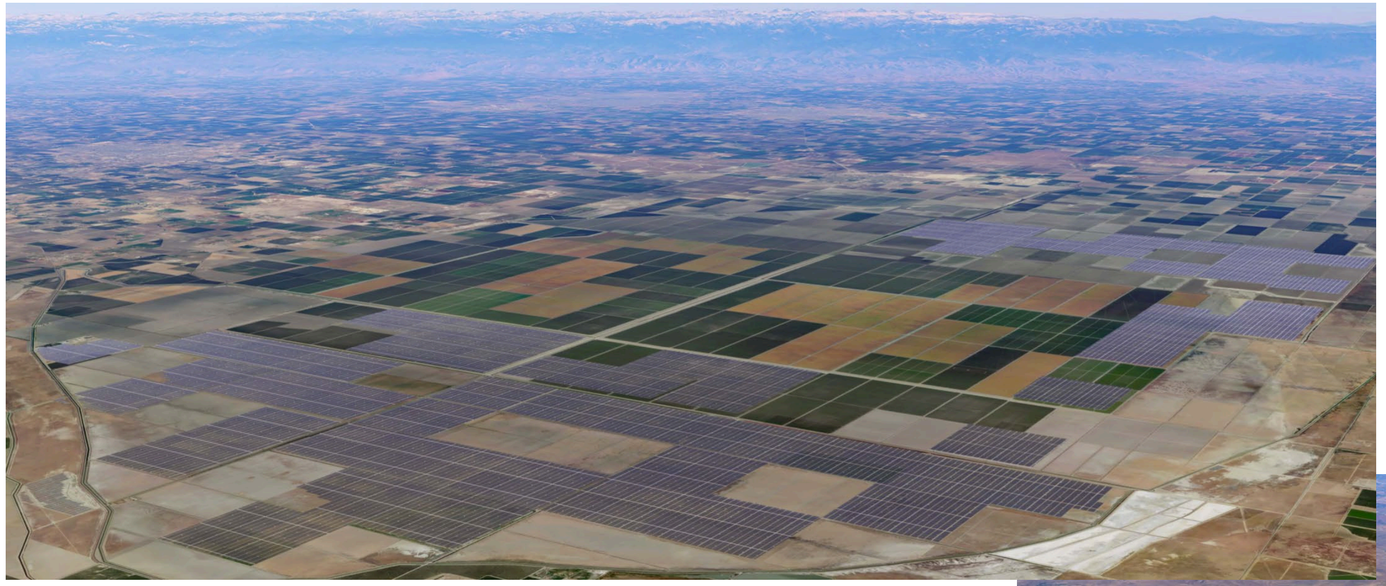
NZAP excludes imports, includes customer-sited PV

**Excludes T&D and storage losses; includes out of state wind customer-sited PV

Solar PV procurement in CA



Illustrative Examples of 6GWs Each of Utility Scale Solar



Equity Considerations are Critical

- Regardless of the resource mix, the communities most impacted by the required infrastructure build-out in California are the communities that are already disproportionately burdened by multiple sources of pollution and other vulnerabilities.

- EJ considerations will be present in nearly every infrastructure project and/or decision.

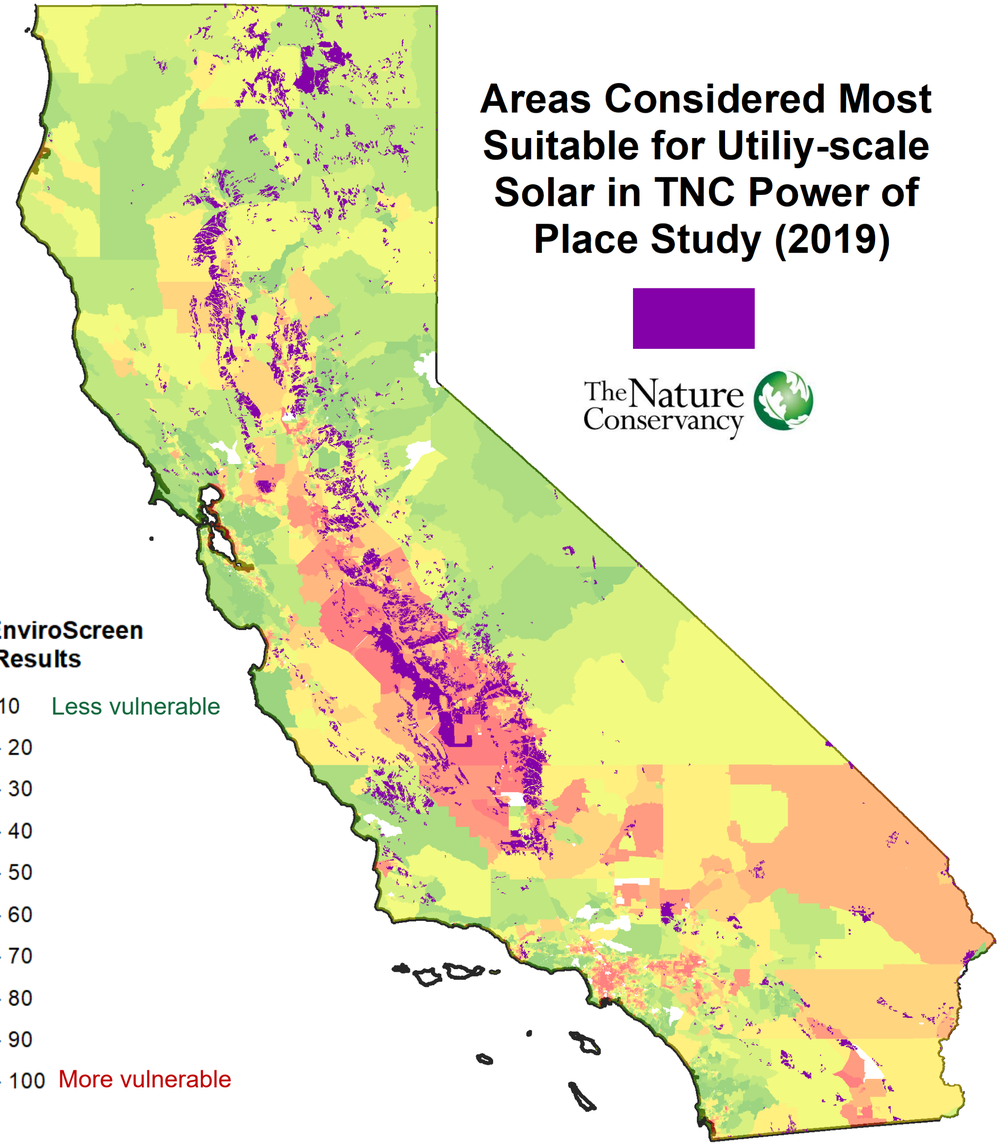
Pollution Burden ✖ **Population Characteristics** = **CalEnviroScreen Score**

Exposures
- Ozone Concentrations
- PM2.5 Concentrations
- Diesel PM Emissions
- Drinking Water Contaminants
- Children's Lead Risk from Housing
- Pesticide Use
- Toxic Releases
- Traffic Impacts

Environmental Effects
- Cleanup Sites
- Groundwater Threats
- Hazardous Waste
- Impaired Water Bodies
- Solid Waste Sites and Facilities

Sensitive Populations
- Asthma Emergency Department Visits
- Cardiovascular Disease (Emergency Department Visit for Heart Attacks
- Low Birth-Weight Infants

Socioeconomic Factors
- Educational Attainment
- Housing-Burdened Low-Income Households
- Linguistic Isolation
- Poverty
- Unemployment



Inclusive Transmission Planning and Use of Existing Corridors Will Be Key

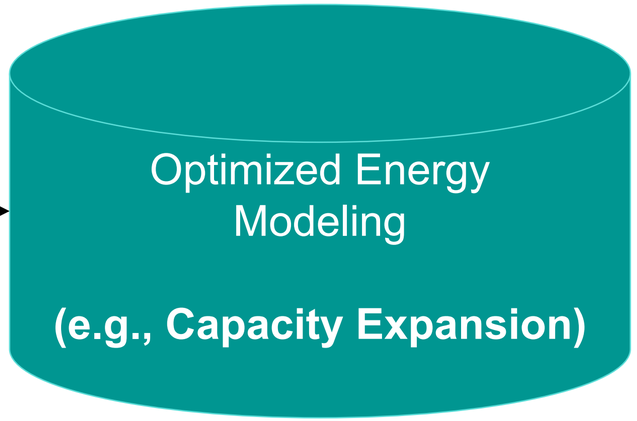
Cacophony of Voices	Developing transmission requires approval from dozens of disparate stakeholders, and multiple agency reviews, and can be very risky and time-consuming.
Timing of Projects	The past five 500 kV transmission projects in California over 100 miles have taken, on average, a decade to build.
Building New Lines	This will require a never-before-seen build rate for transmission upgrades and importantly, new lines.
Using Existing Corridors	Use of existing corridors is possible, but this is not a complete solution: there are many corridors that do not overlap; required incremental transmission paths and co-location along highway and rail corridors can create use conflicts.

Models are not Plans; Plans are not Projects

Modeling

Input Assumptions:

- Demand curve
- Technology cost curves
- Exogenous policy direction
- Prescriptive outcome
- Etc.



Future Resource Mix(es) or the “Goal/ Target”

(Very little, if any, feedback)

Deployment Challenges

Generic Considerations for Scaling Generation & Transmission Capacity:

- Scope and scale
- Speed
- Cost
- Feasibility
- Public support
- Etc.

Real world challenges:

- Available vs. developable land
- Land costs, development costs
- Public and/or political support
- Permissions/ ROWs
- Physical space
- Etc.

Risk-informed Implementation Plan

Recommendations

- Implement SB 100 goals, establish a single point of responsibility with sufficient authority to implement the state's energy transition.

  If everyone is responsible, no one is responsible

- Ensure SB 100 priorities are coordinated, develop a buildout plan with specific target quantities, preferred locations of key infrastructure, and aligned with economic development and equity priorities.

- Promote SB 100 tracking, create a dashboard to track energy transition progress, including equity impacts, deployment requirements by technology, transmission, etc.

- Allow for SB 100 inclusive upcoming discussions to develop state policies that may quicken infrastructure buildout and ensure local economic benefit sharing (e.g., benefits to local tax base).

- Next SB 100 report continue to promote public engagement and education regarding the scale and urgency of the buildout.

Thank you!

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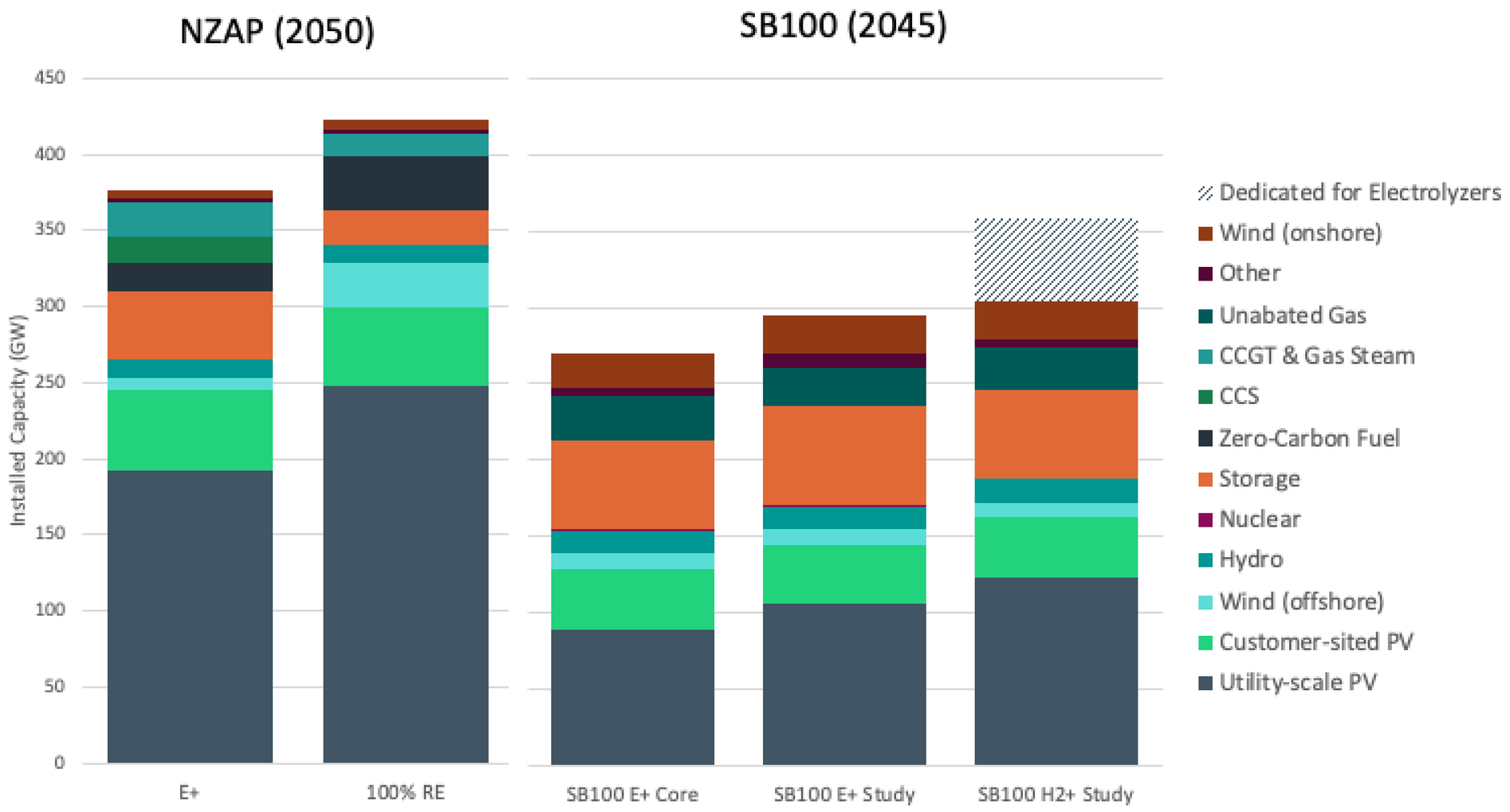
LUCID CATALYST

CATF CLEAN AIR TASK FORCE

EDF ENVIRONMENTAL DEFENSE FUND® Finding the ways that work

JASENERGIES

Princeton's NZAP and CEC's SB100 Scenarios



Solar Development and Farmland Transitions in the San Joaquin Valley

Presentation to the California Energy Commission

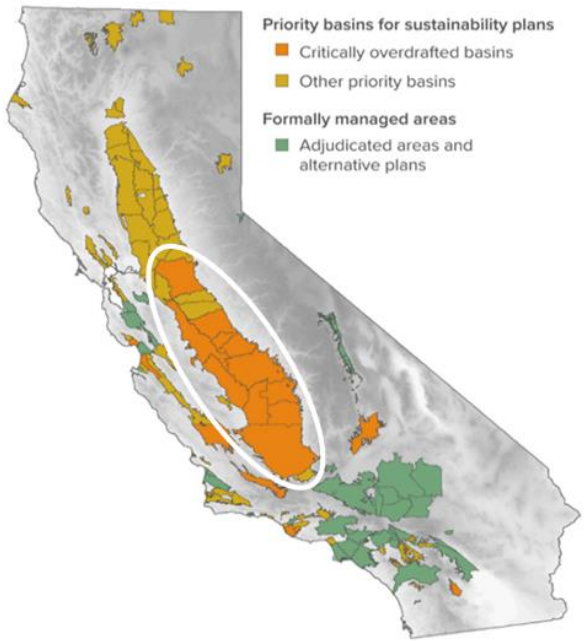
February 22, 2022

Andrew Ayres, Ph.D.
PPIC

Supported by California Strategic Growth Council's Climate Change Research Program with funds from California Climate Investments – Cap-and-Trade Dollars at Work, Babbitt Center for Land and Water Policy at the Lincoln Institute of Land Policy, and USDA

SJ Valley is ground zero for implementing the Sustainable Groundwater Management Act (SGMA)

Main groundwater basins



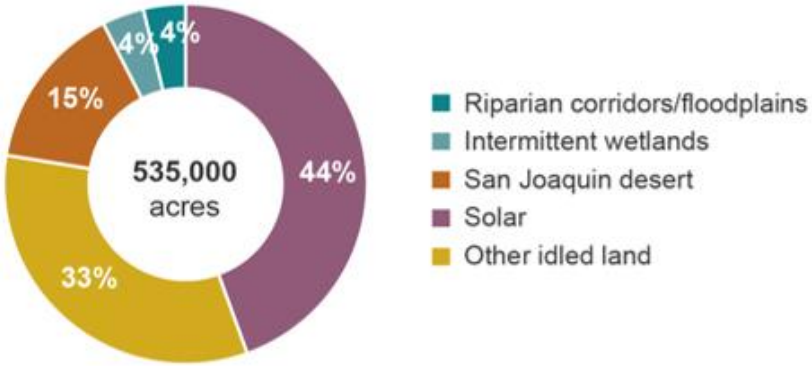
- Largest ag region: >50% of CA output
- Biggest imbalance: ~2 M acre-feet/yr overdraft; 11% of net water use
- Consequences: reduced supplies for future droughts, sinking lands, dry wells
- Balance requires more supply, less water use, or combination
- The economic problem: some S&D solutions are more costly than others

Source: Adapted from Ayres et al. Improving California's Water Market (PPIC, 2021).

Solar is viewed as a promising multi-benefit option for retired lands

- At least 535,000 acres may be affected (≥10% of irrigated footprint)
- Challenges and threats:
  - Revenue, job losses
  - Dust, pests, weeds
- Opportunities for multiple benefits: healthy soils, habitat, solar, recharge, flood protection, recreation
- Cooperative approaches—problems can't be solved farm-by-farm

Potential uses of formerly irrigated lands

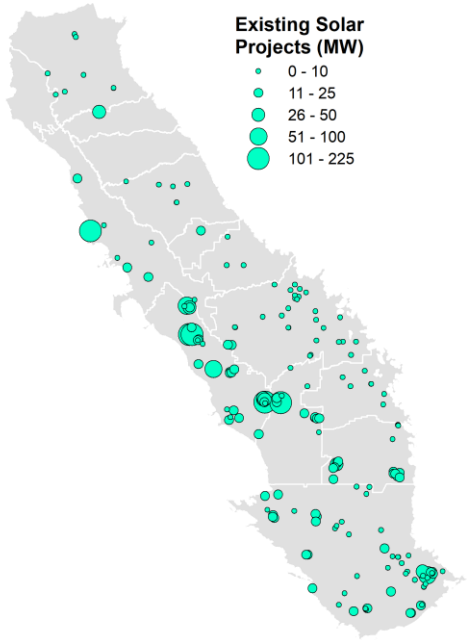


Source: Hanak et al. (PPIC, 2019) with updated solar energy estimates from Wu et al. (TNC, 2019).

Solar in the Valley is growing quickly

- In the last 5 years…
  - Over half of total capacity
  - Average project size doubled
- Some siting considerations are more important than others
  - Access to transmission (more)
  - Costs of interconnection (more)
  - Land rental payment (less)
  - Resource availability (less)

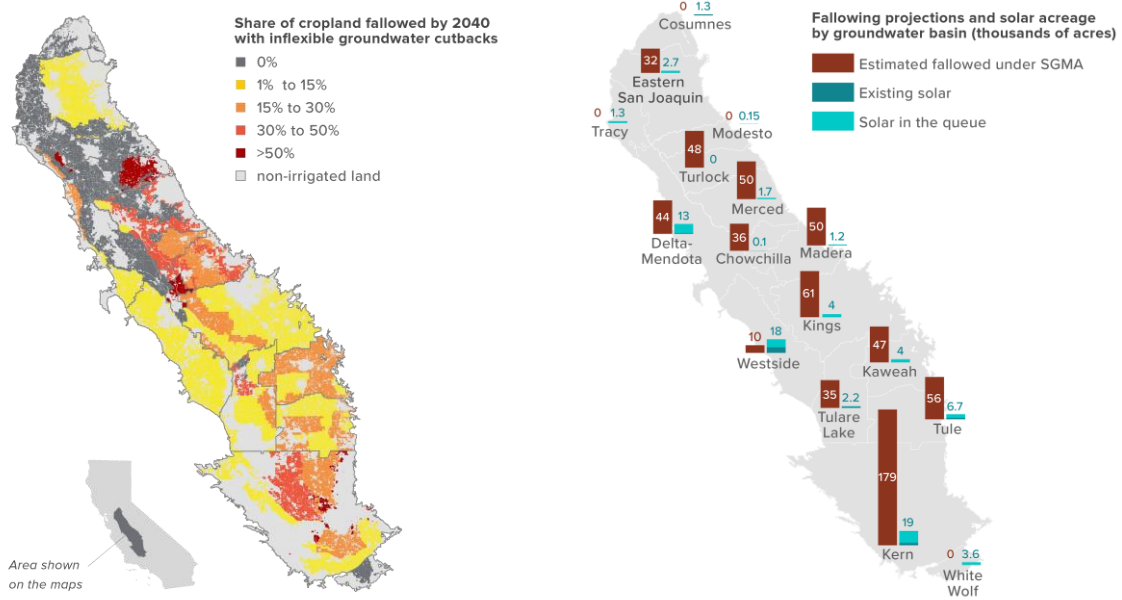
Utility-scale solar projects



Source: Lucid Catalyst, 2022

There may be substantial scope for co-locating solar and land retirement

- Many areas of valley could have ample land—if transmission is available



Source: PPIC estimates (fallowing, preliminary estimates), Lucid Catalyst (solar)

With tighter integration, energy and land use planning can foster synergies

- Don’t lose sight of areas with limited connection capacity today
  - Mid-central, east side of San Joaquin Valley
- Deliberately consider farm size and location
  - Transmission, permitting changes can make solar easier in areas with smaller farms
- Incentivize multi-benefit land transitions
  - New DOC program ($50M) could support solar co-benefits to aid local acceptance

Public Comment

Rules

- 3 minutes per person
- 1 person per organization

Zoom

- Click “raise hand”

Telephone

- Press *9 to raise hand
- Press *6 to (un)mute

When called upon

- Unmute, spell name, state affiliation, if any

Written Comments:

- Due: Thursday, 3/10/22 by 5:00 p.m.
- Docket: 21-SIT-01
- Submit at: **https://efiling.energy.ca.gov/EComment/Ecomment.aspx?docketnumber=21-SIT-01**

3-MINUTE TIMER

Thank You!