
NREL
Transforming ENERGY
City of Riverside
City Council Workshop on
Riverside's Clean Energy Future
Scott Haase
State and Local Strategic Partnerships
12/15/2020

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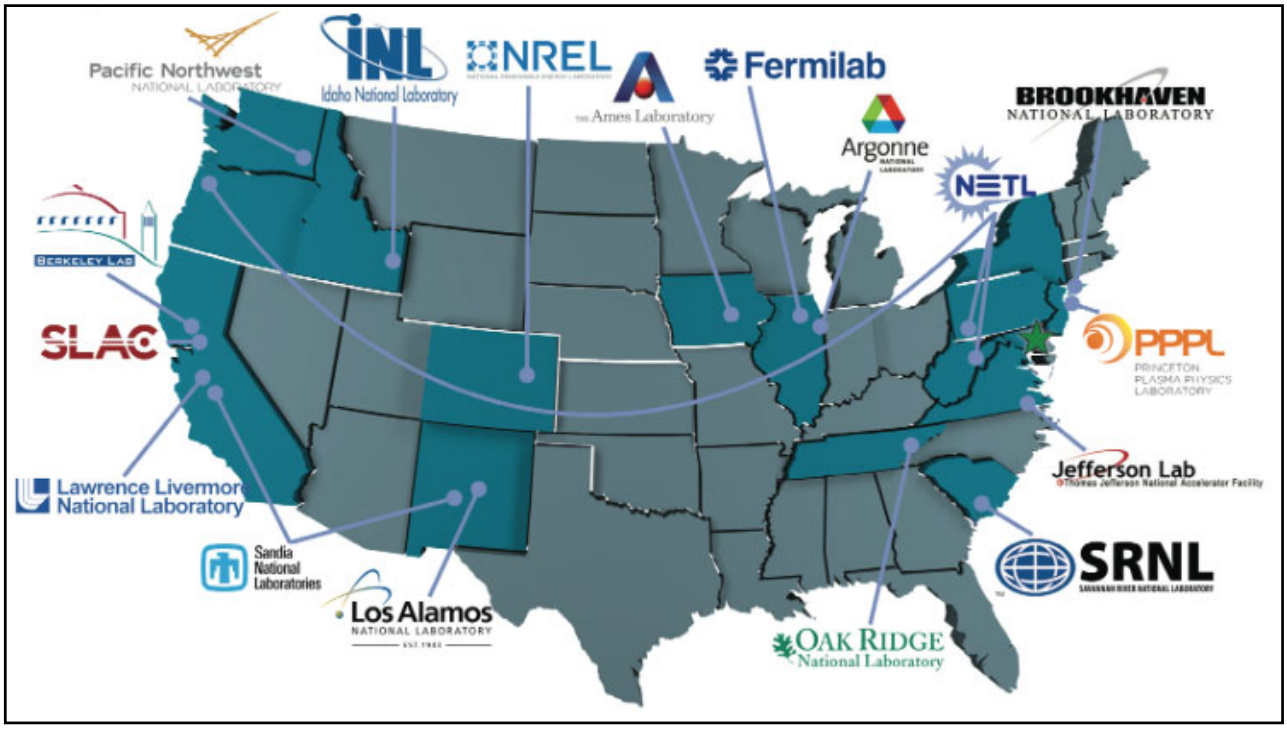
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Technology Focus

Renewable Power

- Solar
- Wind
- Water
- Geothermal

Sustainable Transportation

- Advanced Mobility
- Vehicle Technologies
- Hydrogen

Energy Efficiency

- Building efficiency/models
- Grid Interactive Buildings
- Demand Response
- Energy Management

Energy Systems Integration

- High-Performance Computing
- Data and Visualizations

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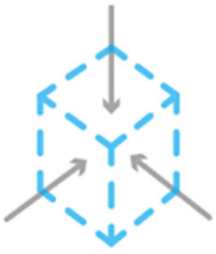
NREL helps cities realize ambitious goals in dynamic environments

Capitalizing on large and small opportunities to re-envision and revitalize city infrastructure

City Goals

Economic Recovery
Resilience
Sustainability



Energy Sectors

Buildings
Mobility
Power Systems

NREL Capabilities

Data and Computation
Planning and Analysis
Technology Implementation

Source: Bill Gillies, NREL

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Common Opportunities for City-wide Clean Energy and Climate Goal Achievement

City Leading By Example
Immediate Opportunities

- Continued efficiency for City buildings, PV opportunities
- PV- and EV-ready new construction
- City policy development
- Fleet electrification

Whole Community Opportunities
Near Term

- Income-qualified & bulk purchasing for efficiency
- Ambitious local solar generation
- EV charging networks
- Electrification of busses
- Medium and heavy-duty fleet conversion

Envisioning 100% Renewable Energy
Long Term

- Switching from fossil fuel heating and cooking
- 100% renewable energy transportation
- Role of storage and ability to meet peak demands with Hydrogen or renewable gas

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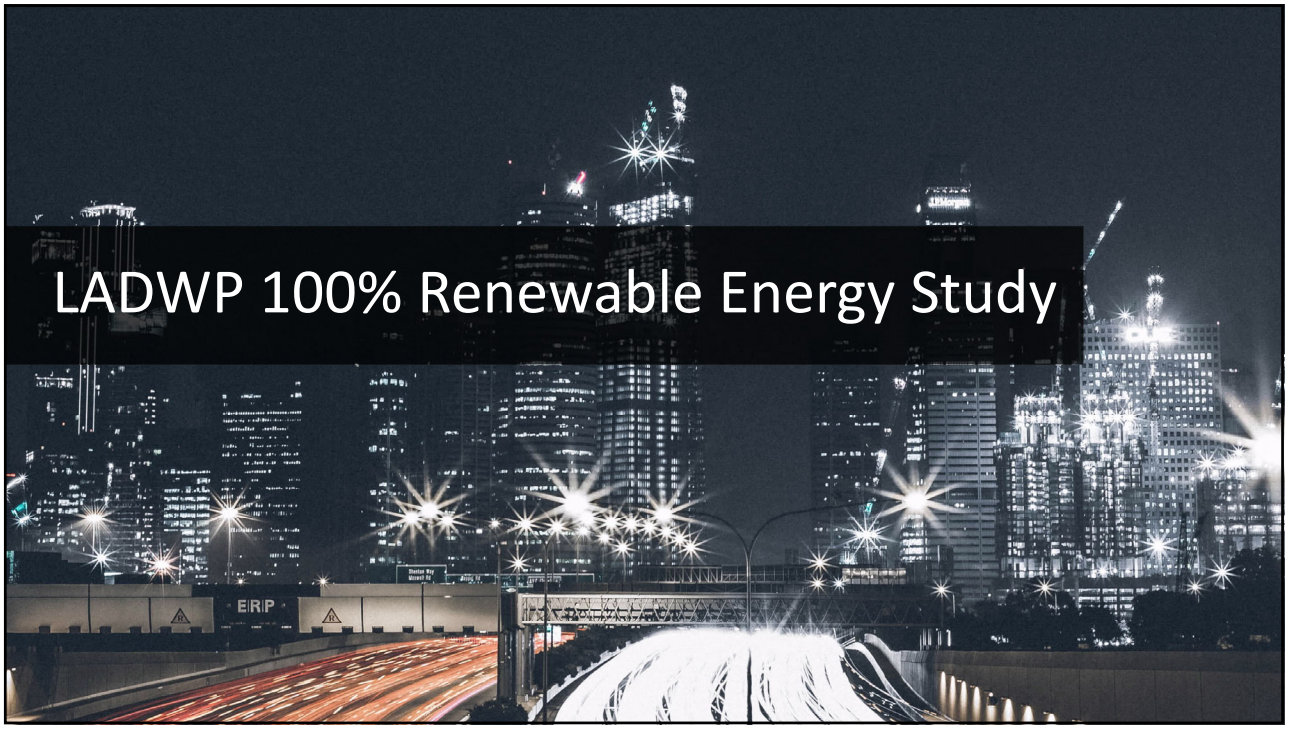

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The Los Angeles 100% Renewable Energy Study

LA100 offers detailed, ultrahigh- resolution analysis to equip LA decision-makers to understand:

- What are the **pathways and costs to achieve a 100% renewable electricity supply** while electrifying key end uses and maintaining the current high degree of reliability?
- What are the potential benefits to **the environment** and **health**?
- How might **local jobs** and the **economy** change?
- How can **environmental justice communities** benefit from and be part of the solution?

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What Makes the LA100 Study Groundbreaking?

First 100% RE study of a large system that must balance electricity supply and demand **at all times**	Complex analysis reflecting **integration** of models that address multiple aspects of the challenge	Unprecedented **detail** in modeling resolution and simulations

LA100 does **not** present recommendations or suggest policies

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Advisory Group Provides Input and Review Throughout the Study

Representatives:

- Environmental groups
- Neighborhood councils
- Academia
- Premier accounts
- City government
- Business and workforce groups
- Utilities

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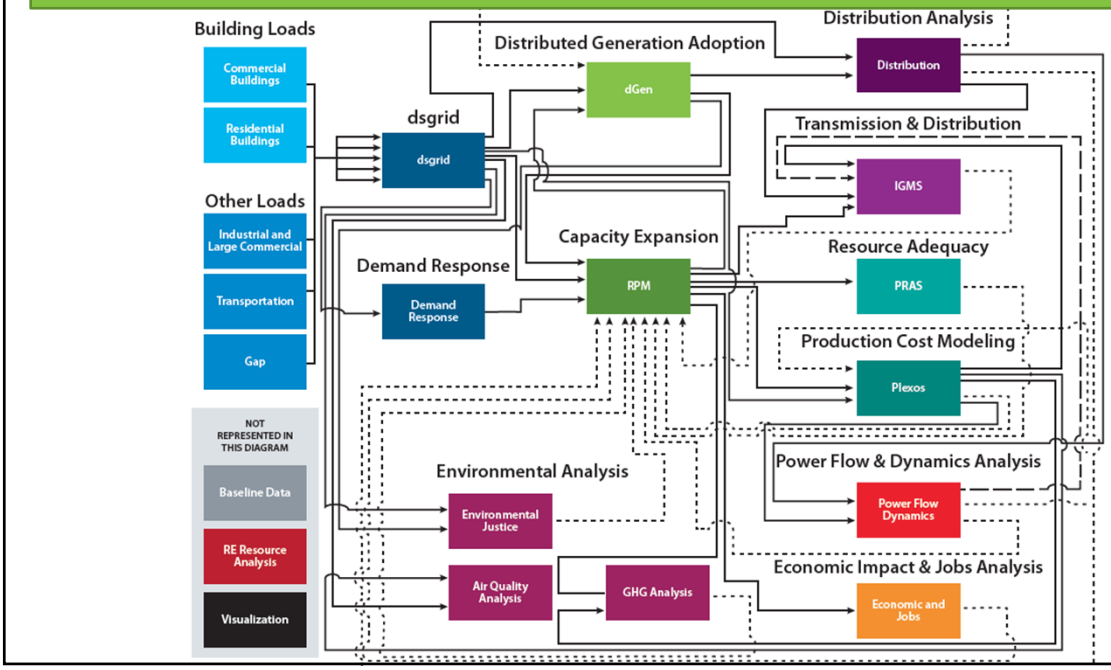
Possible Components of Community Energy Transformation Analysis



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Riverside's Clean Energy and Climate Investment Pathways: Possible Next Steps

- Leverage RPU's IRP process
- Form community advisory group
- Establish study goals and objectives for possible expansion of IRP framework
  - Where possible, incorporate cutting edge tools and models
  - integrate non-power sector models (e.g. transportation)
- Create scenarios to capture the range of possible futures
- Conduct detailed studies

Possible related efforts

- Workforce needs
- Net economic impacts within the City of Riverside
- Air quality changes to ozone and $PM_{2.5}$ concentrations
- Health impacts (select morbidity and mortality) from changes in exposure to ozone and $PM_{2.5}$
- Monetization of benefits (health and greenhouse gases)
- Environmental justice analysis using CalEnviroScreen

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Thank you!

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