

RIVERSIDE ACCELERATING CLEAN ENERGY BY 2040 STUDY WITH THE NATIONAL RENEWABLE ENERGY LABORATORY

Riverside Public Utilities

Board of Public Utilities
October 24, 2022

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Legislative Background

1. California goal: State-wide carbon neutrality by 2045

- a. Executive Order B-55-18
- b. Assembly Bill 1279 (2022) – California Climate Crisis Act

2. Renewable energy procurement

- a. Renewable Portfolio Standard – requires 60% renewable energy for retail electricity by 2030
- b. Senate Bill 1020 – Clean Energy, Jobs, and Affordability Act of 2022
 - i. 100% zero-carbon clean energy resources supply 90% of retail sales by Dec. 31, 2035 and 95% by Dec. 31, 2045

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Envision Riverside 2025 Strategic Plan



Environmental Stewardship

Champion proactive and equitable climate solutions based in science to ensure clean air, safe water, a vibrant natural world, and a resilient green new economy for current and future generations.

Goals

- 4.1. Rapidly decrease Riverside's carbon footprint by acting urgently to reach a zero-carbon electric grid with the goal of reaching 100% zero-carbon electricity production by 2040 while continuing to ensure safe, reliable and affordable energy for all residents.
- 4.6. Implement the requisite measures to achieve citywide carbon neutrality no later than 2040.



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Riverside Accelerating Clean Energy by 2040

1. Carbon neutral electric utility by 2040

- a. Identify and evaluate optional paths for RPU's electric utility to achieve carbon neutrality by 2040



2. Supports RPU's efforts to cost effectively and equitably implement measures to support customer's needs in a rapidly changing and increasing complex electric energy industry

3. National Renewable Energy Laboratory (NREL) | Neutral, industry expert

- a. Meets Riverside purchasing resolution requirements for contracts with federal agencies
- b. Evaluation and scenarios will be for Riverside and address Riverside's questions, concerns, and direction



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RACE/2040 Study



1. Clear purpose

- a. How to achieve Carbon Neutrality by 2040 – there are many ways to achieve it
- b. Parameters: Safety, Reliability, Affordability, Sustainability, Environmental Justice, and Economic considerations

2. Develop options and information for decision-making

- a. NREL does not recommend a path forward; instead evaluates different scenarios to provide decision-making information
- b. Comprehensive modeling from generation down to distribution system impacts
- c. Products are scenario evaluations AND datasets (incl. GIS data)

3. Guided by stakeholder and public input

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Comprehensive Policy Questions



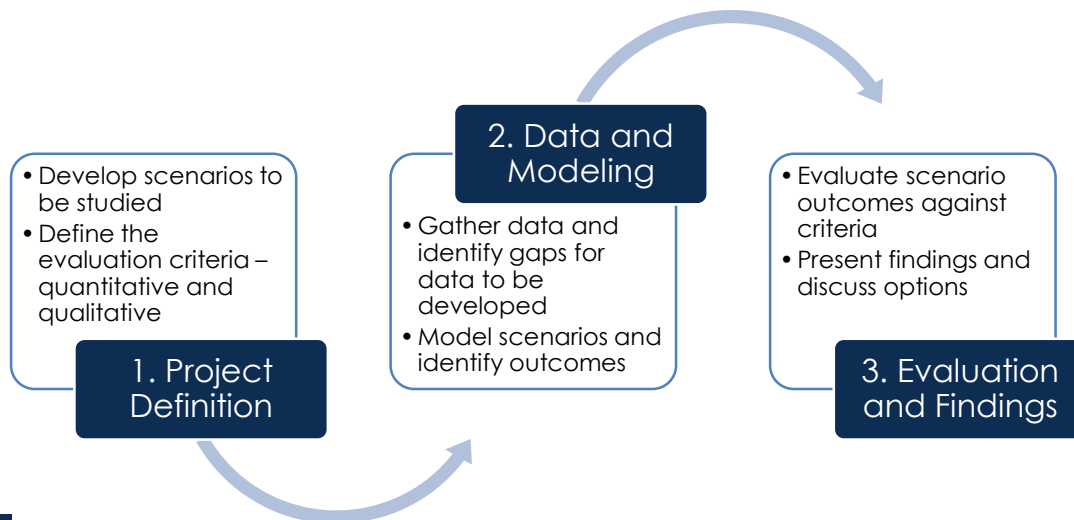
- How will this affect customer rates and costs?
- Can't everyone or RPU install solar in the City and then be 100% clean?
- Why do we need RTRP and transmission?
- Will there be enough generation to support bldg./transp. electrification?
- Will we have reliable electricity in the future with all of the planned growth?
- What is going to happen to RPU's power plants?



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Study Development Process



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Demand-Side Evaluations

Buildings	Other Loads	Modifying Actions
<ul style="list-style-type: none"> Residential Multifamily Single family Mobile home Non-residential 	<ul style="list-style-type: none"> Industrial & Large Commercial Manufacturing Building Electrification Transportation Light Duty Medium/Heavy Duty Gap 	<ul style="list-style-type: none"> Energy Efficiency Customer solar Customer energy storage Demand Response Climate Change

Scenarios for Moderate, High, and Stress Demand

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Supply Side and Grid Evaluations

Utility Options for Local Solar and Storage

- Local/In service territory generation and storage
- Feed-in Tariff

Renewable Energy Investments & Operations

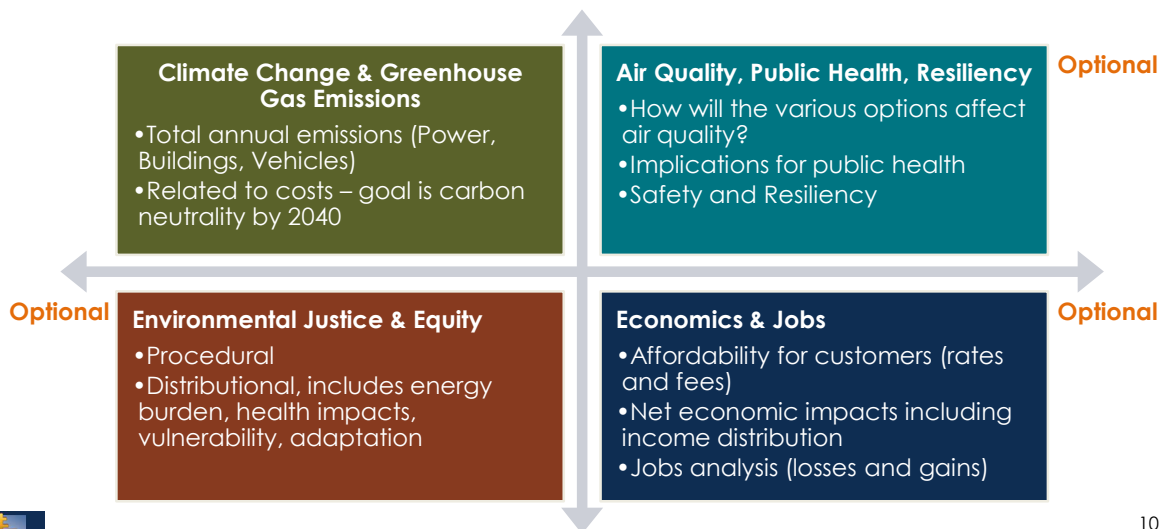
- Resource Planning and Adequacy
- Optimize RTRP
- Short- and long-term energy storage (supporting seasonal shift of storage)
- Options for RPU's power plants
- Hydrogen production and use
- Reliability (grid level)



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Community Evaluations



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Stakeholder Working Group

1. **3rd party** community engagement team (consultants/moderators)
2. **Utilize throughout the process**
 - a. Involve from the start to the end including scenario definition
 - b. Quarterly meetings – though possibly more often based on shorter timeline
3. **Organized and formed through the Board**
 - a. Representation from wide variety of organizations – neighborhood representation, environmental justice interests, climate interests, business, housing/affordability, ratepayer, Council/Board, universities, other organizations/stakeholders
4. **Clear role, intent and authority**
 - a. Initial meetings establish their purpose, role as community representatives, defined comment/input only authority, established end date



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Project Tasks and Fiscal Breakdown

Task/Subtask	Year 1 Budget	Year 2 Budget	Total Budget
Task 1: Project and Data Management	\$650,296.42	\$636,217.72	\$1,286,514.14
Task 2: Advisory Group	\$373,502.71	\$455,935.86	\$829,438.57
Task 3: Loads and Distributed Solar	\$1,749,148.27	\$1,499,660.15	\$3,248,808.42
Task 4: Supply/Grid	\$988,360.42	\$1,085,827.72	\$2,074,188.14
Task 5: Communication, Presentations, and Final Report	\$259,721.13	\$484,119.58	\$743,840.71
Total Statement of Work	\$4,021,029	\$4,161,761	\$8,182,790
10% Contingency			\$818,310
Total Fiscal Impact			\$9,001,100



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NREL Project Team Introduction



Douglas J. Arent
 Executive Director,
 Strategic Public-Private Partnerships



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Strategic Plan Alignment



Priority 4 – Environmental Stewardship

Goal 4.1: Rapidly decrease Riverside's carbon footprint by acting urgently to reach a zero-carbon electric grid with the goal of reaching 100% zero-carbon electricity production by 2040 while continuing to ensure safe, reliable and affordable energy for all residents.

Goal 4.6: Implement the requisite measures to achieve citywide carbon neutrality no later than 2040.

Cross-Cutting Threads



Community Trust



Fiscal Responsibility



Sustainability & Resiliency



Equity



Innovation



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Recommendations

That the Board of Public Utilities recommend that the City Council:

1. Approve the Funds-In Agreement - Nonfederal Sponsor for the development of the Riverside Accelerating Clean Energy by 2040 (RACE/2040) Study with the United States Department of Energy facility contractor, Alliance for Sustainable Energy, LLC, manager and operator of the National Renewable Energy Laboratory, for a two-year period in the amount of \$8,182,790;
2. Authorize 10% change order authority in the amount of \$818,310, for a total contract not-to-exceed amount of \$9,001,100, for any additional service hours to support project completion;
3. Authorize the City Manager, or designee, to execute the Agreement and any additional documents necessary for the agreement, including amendments and extensions, and making minor and non-substantive changes to the agreement; and
4. With at least five affirmative votes, authorize a supplemental appropriation of \$9,001,100 from the Public Benefits Undesignated Reserve (511 Fund) to a new account number as established by the Finance Department for the Riverside Accelerating Clean Energy by 2040 Study.

