

Achieving Carbon Neutrality by 2040

Power Resources Division
Resource Operations and Strategic Analytics

Board of Public Utilities
February 28, 2022

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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.
4.2.	Sustainably manage local water resources to maximize reliability and advance water reuse to ensure safe, reliable and affordable water to our community.
4.3.	Implement local and support regional proactive policies and inclusive decision-making processes to deliver environmental justice and ensure that all residents breath healthy and clean air with the goal of having zero days of unhealthy air quality per the South Coast Air Quality District's Air Quality Index (AQI).
4.4.	Implement measures and educate the community to responsibly manage goods, products and services throughout their life cycle to achieve waste reduction outcomes.
4.5.	Maintain and conserve 30% of Riverside's natural lands in green space including, but not limited to, agricultural lands and urban forests in order to protect and restore Riverside's rich biodiversity and accelerate the natural removal of carbon, furthering our community's climate resilience.
4.6.	Implement the requisite measures to achieve citywide carbon neutrality no later than 2040.

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Cross-Cutting Threads and Values



COMMUNITY TRUST

Riverside is transparent and makes decisions based on sound policy, inclusive community engagement, involvement of City Boards & Commissions, and timely and reliable information. Activities and actions by the City serve the public interest, benefit the City's diverse populations, and result in greater public good.



EQUITY

Riverside is supportive of the City's racial, ethnic, religious, sexual orientation, identity, geographic, and other attributes of diversity and is committed to advancing the fairness of treatment, recognition of rights, and equitable distribution of services to ensure every member of the community has equal access to share in the benefits of community progress.



FISCAL RESPONSIBILITY

Riverside is a prudent steward of public funds and ensures responsible management of the City's financial resources while providing quality public services to all.



INNOVATION

Riverside is inventive and timely in meeting the community's changing needs and prepares for the future through collaborative partnerships and adaptive processes.



SUSTAINABILITY AND RESILIENCY

Riverside is committed to meeting the needs of the present without compromising the needs of the future and ensuring the City's capacity to persevere, adapt and grow during good and difficult times alike.

Concept Proposed

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. **Complements the City's Climate Action Plan Efforts**
3. **LA 100 Plan serves as an example of the analysis options**
 - a. Evaluation and scenarios will be for Riverside and address Riverside's questions, concerns, and direction
4. **National Renewable Energy Laboratory (NREL) | Neutral, industry expert**
 - a. Meets Riverside Purchasing Resolution requirements for contracts with federal agencies

RPU Carbon Neutrality by 2040



1. Clear purpose

- a. How to achieve Carbon Neutrality by 2040
- 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



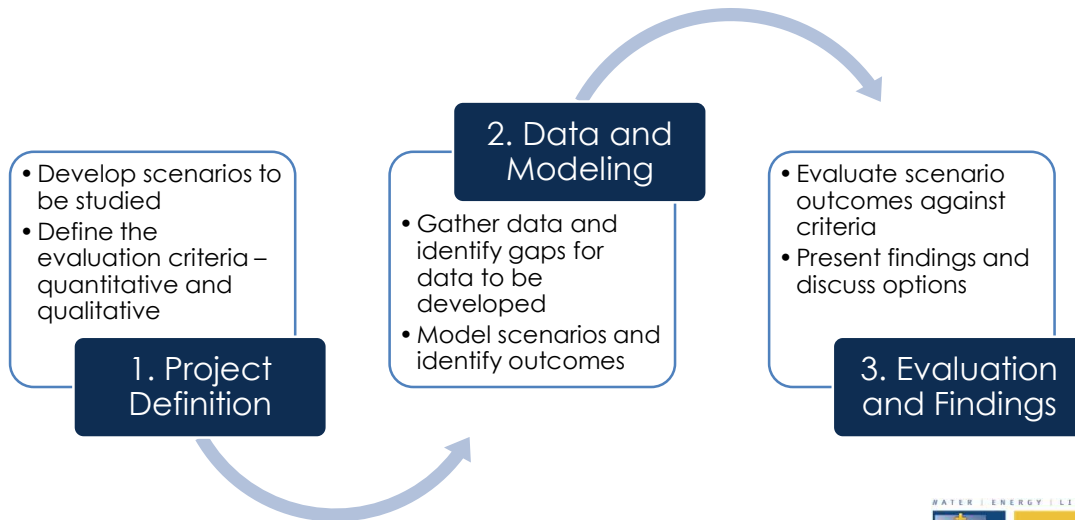
Comprehensively Address Policy Questions



- 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?
- Can we use local resources like green waste and the green belt area?
- Will we have reliable electricity in the future with all of the planned growth?
- What is going to happen to RPU's power plants?



Study Development Process



Demand-side Evaluations

Buildings	Other Loads	Modifying Actions	Are there other considerations?
<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 	<ul style="list-style-type: none"> • Universities? • Hospitals? • Water System? • Transit/Busses? • Any specialty load we should analyze?

Scenarios for Moderate, High, and Stress Demand

Supply-Side and Grid Evaluations

Utility Options for Local Solar and Storage

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

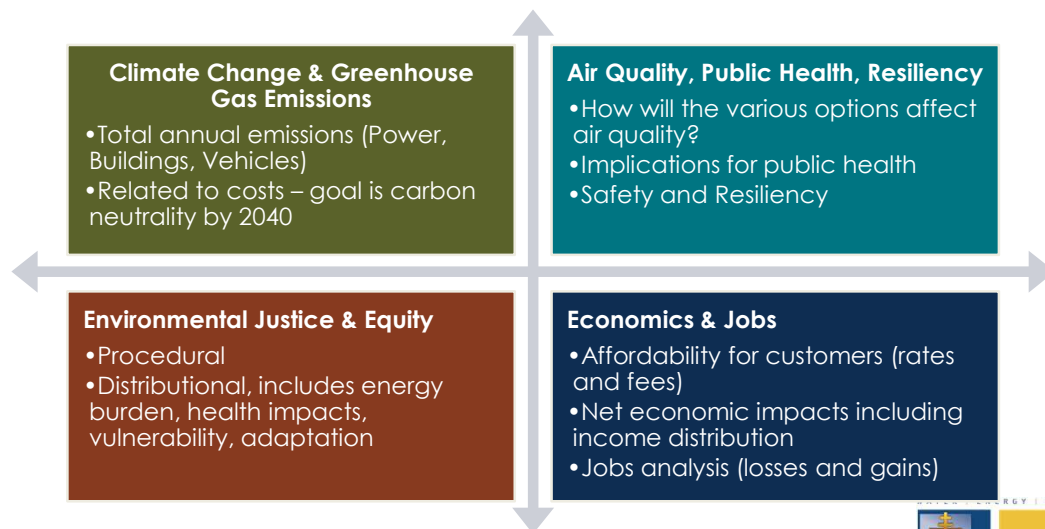
Renewable Energy Investments & Operations

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

Distribution Analysis

- Demand forecasts at a customer level and other factors
- Complete a power-flow and upgrade cost analysis
- Reliability (distribution level)

Community Evaluations



Creates Lasting Valuable Data

1. **Customer and demand datasets**
 - a. Parcel level existing and future settings data developed
 - b. Allows evaluation of various scenarios and land use change evaluation
2. **Builds a distribution system dataset**
 - a. Better integrate AMI data for planning purposes
 - b. Allows evaluation of upgrade needs and costs based on scenarios
3. **Utilizes utility supply planning**
 - a. Bulk power – resources
 - b. Evaluation of power plants
 - c. Demonstrate optimal uses for transmission/interconnection
4. **Evaluates the costs and impacts (GHG, air, social) of all scenarios**



Scenarios

1. **SB 100 – Meet the State Goals for carbon neutrality by 2045**
 - a. 100% clean by 2045
 - b. Target is for retail sales, not generation
 - c. Allows up to 10% natural gas offset by renewable energy credits
2. **City Goals – carbon neutrality by 2040**
 - a. Options and scenario parameters to be developed
 - b. Include various demand and generation scenarios
 - c. Incorporate options that are drivers for Riverside, such as use of biofuel from green waste or strategies for hydrogen

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 Mayor/Council office (pending)**
 - a. Representation from wide variety of organizations – neighborhood representation, EJ 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 authority (only recommendations), established end date



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Internal Next Steps

1. **Project Scope Definition**
2. **Coordination with NREL Project Team**
 - a. Project costing (need round cost / to be refined)
 - b. Scope refinement
 - c. Options for analysis to manage costs
3. **Collaboration with other City Departments**
 - a. Specifically with Climate Action Plan and General Plan effort
 - b. Stakeholder group coordination
 - c. Coordination regarding future growth and development
4. **Project Timeline**
 - a. Spring 2022 through End of 2024



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Strategic Plan Alignment

Envision Riverside 2025 Strategic Plan Priorities



#4 Environmental Stewardship

Cross-Cutting Threads



Community Trust



Fiscal Responsibility



Sustainability &
Resiliency



Equity



Innovation

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Recommendations

That the Board of Public Utilities:

1. Receive and discuss the presentation on the staff proposal to study and develop approaches for Riverside Public Utilities to achieve carbon neutral energy by 2040;
2. Direct staff to work with the United States Department of Energy, National Renewable Energy Laboratory to develop a proposed scope of work, including optional tasks, for the preparation of a study to evaluate various scenarios and approaches for Riverside Public Utilities to achieve carbon neutral energy by 2040; and
3. Direct staff to bring a proposal for the preparation of the RPU Carbon Neutrality by 2040 Study to the Board of Public Utilities by the end of May 2022.

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