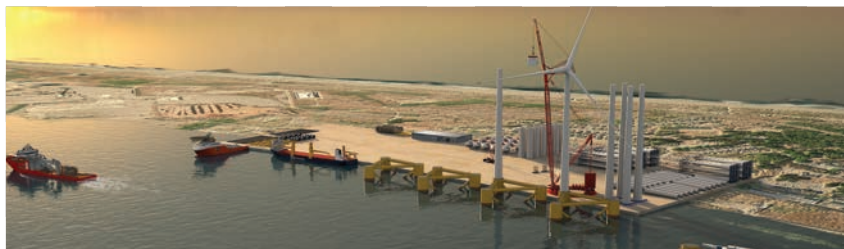


How the Redwood Coast  
Energy Authority is  
Buying and Building Local,  
Renewable Power Resources  
...and How You Can Participate



## Preface

Dear Community Member:

Redwood Coast Energy Authority is the public power provider for approximately 92% of Humboldt County's eligible homes and businesses. We are striving to provide 100% clean and renewable power by 2025, and get as much as possible of that power from local sources by 2030. We are looking for community input on how to get there.

During 2023 we are engaging the community in a process we call Humboldt's Electric Future. This report explains how we get our electricity today, what goals our Board of Directors has set, and what we need to do to comply with state regulations on power procurement. Within this framework, there is still ample opportunity for community members to have their voices heard on important decisions such as:

- Which clean and renewable resources should we maximize in our power portfolio?
- What criteria should we use in siting local renewable energy projects?
- How should we balance the community's priorities, such as clean energy, local economic development, and low utility rates?

We will be doing community engagement later this year to collect input on these and other questions. Please visit <https://www.redwoodenergy.org/humboldts-electric-future> to sign up for event notifications and learn more about how you can participate in Humboldt's Electric Future.

Sincerely,

A handwritten signature in blue ink that reads "Matthew Marshall". The signature is stylized with a large, sweeping "M" and a long, thin vertical stroke at the end.

Matthew Marshall

Executive Director



## RCEA as Humboldt County's Clean Energy Leader

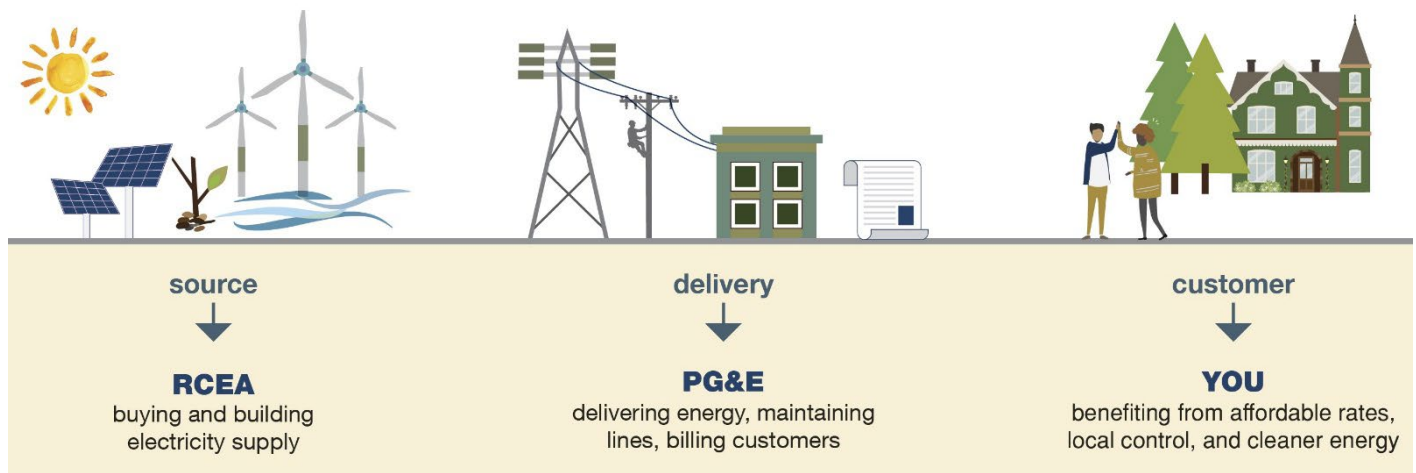
Redwood Coast Energy Authority (RCEA) is a local government Joint Powers Agency whose members include the County of Humboldt; the Yurok Tribe; the Cities of Arcata, Blue Lake, Eureka, Ferndale, Fortuna, Rio Dell, and Trinidad; and the Humboldt Bay Municipal Water District. RCEA's mission is to develop and implement sustainable energy initiatives that reduce energy demand, increase energy efficiency, and advance the use of clean, efficient, and renewable resources available in the region for the benefit of the member agencies and their constituents.

Beginning in May 2017, Humboldt County customers were automatically enrolled into RCEA's new Community Choice Energy (CCE) program and served by RCEA's default electricity service, REpower. RCEA customers interested in receiving electricity service with a higher renewable energy content can "opt up" into RCEA's 100% renewable electricity service option, REpower+, costing an additional \$0.01 per kilowatt-hour (kWh).

RCEA works in partnership with the local utility company, Pacific Gas & Electric (PG&E). While RCEA assumes responsibility for procuring and developing power (the "generation" component of the PG&E bill) on behalf of participating customers, PG&E continues to deliver your electricity, maintain the power lines and electrical grid, and handle customer billing, including the charges for the generation procured by RCEA.

## Abbreviations

CCE	Community Choice Energy
CEC	California Energy Commission
CPUC	California Public Utilities Commission
GHG	Greenhouse Gas
IRP	Integrated Resource Plan
kWh	Kilowatt-hour
MWh	Megawatt-hour (=1,000 kWh)
PG&E	Pacific Gas & Electric
RA	Resource Adequacy
RCAM	Redwood Coast Airport Microgrid
RCEA	Redwood Coast Energy Authority
REC	Renewable Energy Certificate
RPS	Renewables Portfolio Standard



## **RCEA's Strategic Plan and Community Choice Energy start-up procurement guidelines**

*RePower Humboldt*, RCEA's Comprehensive Action Plan for Energy<sup>1</sup> (Strategic Plan), is intended to support achieving RCEA's mission through various strategies and initiatives. The Strategic Plan was last updated in 2019 and includes the following areas of emphasis:

**Regional Energy Planning & Coordination:** RCEA will take a leadership role to develop and advance strategic regional energy goals through economic development, funding, planning efforts, and education. This work will be done in coordination with RCEA's member governments, other local public agencies, local tribes, and other public and private stakeholders.

**Integrated Demand Side Management:** RCEA will use an Integrated Demand Side Management approach to develop distributed energy resources and reduce energy consumption in the residential, commercial, industrial, agricultural, and government sectors and to align customer energy use with variable clean and renewable energy supplies. RCEA will prioritize efforts that enhance local energy resiliency and independence.

**Low-Carbon Transportation:** RCEA will decarbonize regional transportation through efforts to reduce vehicle miles travelled, increase advanced fuel vehicles adoption and fuel efficiency, and expand advanced fuel infrastructure.

**Energy Generation & Utility Services:** RCEA will address Humboldt County's supply-side energy needs through our existing CCE program and development of new programs and initiatives.

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<sup>1</sup> <https://redwoodenergy.org/wp-content/uploads/2020/06/RePower-2019-Update-FINAL-.pdf>

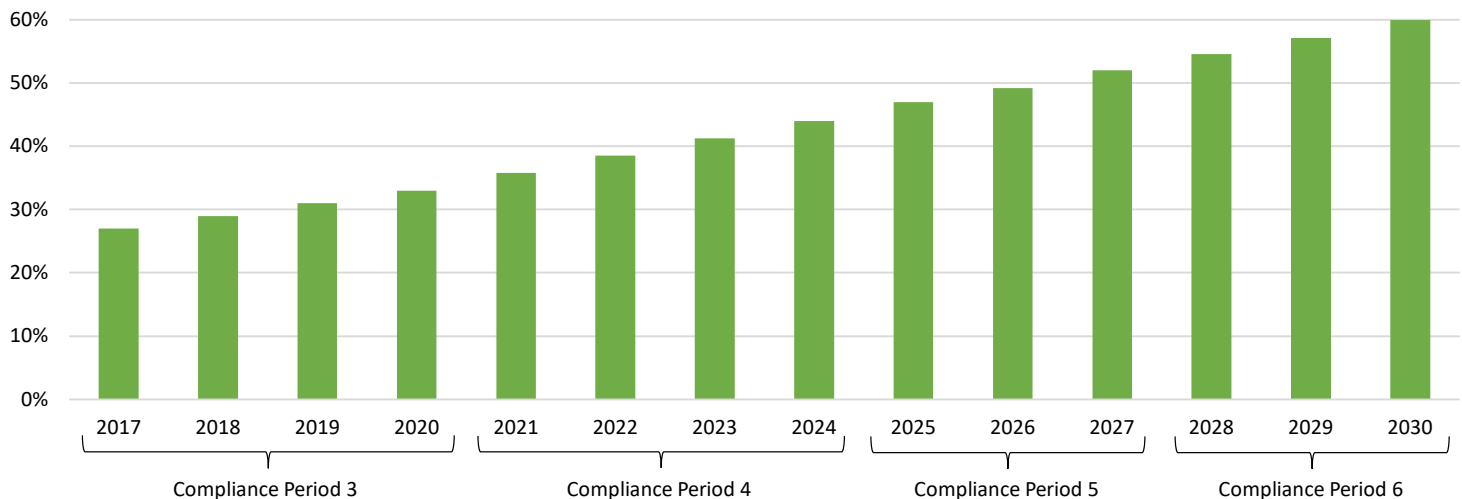


### How does RCEA buy power for our customers?

RCEA buys power through a mix of short- and long-term contracts. However, we are moving toward having more of our procurement under long-term contracts as a means of managing risk. In a typical multi-year contract between RCEA and an owner/operator of an energy generator, the energy is sold to the buyer at a fixed or market-indexed price, along with any other power products the project is eligible to sell, such as renewable certificates that document the value of putting clean energy onto the grid, or capacity products such as resource adequacy (see next page).

### What is the Renewables Portfolio Standard?

The Renewables Portfolio Standard (RPS) is one of California's key programs for renewable energy advancement throughout the State. The program sets continuously escalating renewable energy procurement requirements for retail sellers of electricity, such as RCEA. The California Public Utilities Commission (CPUC) enforces the RPS program, while the California Energy Commission (CEC) is responsible for the certification of renewable generation facilities. Figure 1 shows what percentage of an electricity seller's portfolio must be made up of eligible renewable energy sources each year, which is demonstrated using Renewable Energy Certificates (RECs).



**Figure 1. California's Renewables Portfolio Standard (RPS) Requirement Timeline**

## What is Resource Adequacy?

Resource Adequacy (RA) is a compliance product that represents a power plant's ability to be turned on when needed for grid reliability. Procurement of RA is required by the CPUC to ensure that electricity providers across California have collectively acquired sufficient generating capacity to meet forecasted electricity demand plus a buffer for unpredictable circumstances. RCEA is obligated to purchase its proportional share of RA capacity to ensure the California Independent System Operator has sufficient capacity to maintain reliable grid operations at all times.

The amount of RA that can be sold by a generator – such as a solar or wind farm – is determined by the amount of power the generator can provide at times when the grid is most constrained. This is less than the generator's nameplate capacity, or the maximum amount of power a resource can produce. In the case of intermittently available resources such as wind and solar, this downgrading of the generator's RA value is substantial. RCEA purchases RA through many of our energy contracts, but also through other long- and short-term contracts that are exclusively for RA capacity.

## RCEA's Electric Portfolio

RCEA is committed to providing power that has more renewable energy and lower greenhouse gas (GHG) emissions than what local energy users would otherwise receive. RCEA has set out to provide our customers with 100% renewable and carbon-free energy by 2025 and 100% local renewable energy by 2030. Specifically, our Strategic Plan states that “By 2030 Humboldt County will be a net exporter of renewable electricity and RCEA's power mix will consist of 100% local, net-zero-carbon-emission renewable sources.” In this context, RCEA defines “local” as resources located within the Humboldt Local Reliability Area, an area that roughly corresponds to Humboldt County, with some allowance for substations and hydropower plants that serve loads on both sides of the county line.

When our CCE program was first established, RCEA entered into a contract with Humboldt Sawmill Company to provide local biomass power generated by burning wood waste at its Humboldt Redwood plant in Scotia. The rest of our power initially came from short-term contracts for renewable and non-renewable resources across the western states. RCEA has issued at least one solicitation each year since 2019 targeted at procuring long-term renewable contracts to help meet RCEA's procurement requirements and the clean energy goals noted above. Table 1 is a breakdown of all the renewable energy projects RCEA currently has in our power portfolio, including operational projects and projects in varying stages of development.



**Table 1. RCEA's Long-Term Contracted and Owned Generation Resources**

Project Name	Resource Type	Project Location	Delivery Start	Contract Length	Capacity (MW)	Annual Energy (MWh)
Humboldt Redwood*	Biomass	Scotia, CA	2017	14 Years	18.0	125,000
Cove Hydroelectric	Small Hydro	Montgomery Creek, CA	2020	15 Years	5.5	14,800
Redwood Coast Airport Microgrid*	Hybrid <sup>2</sup>	McKinleyville, CA	2021	N/A	1.8	5,600
North Coast Highway Solar 1*	Solar	Hydesville, CA	2024	20 Years	0.99	2,100
North Coast Highway Solar 2*	Solar	Hydesville, CA	2024	20 Years	0.99	2,100
Sandrini Solar	Solar	Bakersfield, CA	2023	15 Years	100	307,500
Foster Clean Power A*	Hybrid	Arcata, CA	2023	20 Years	3.0	6,100
Fish Lake	Geothermal	Dyer, NV	2024	20 Years	0.4	3,000
Ormat Portfolio	Geothermal	CA & NV	2025	20 Years	4.0	TBD

\*local resource

RCEA also has agreements with PG&E to receive energy from two pools of resources, one comprised of hydroelectric plants and the other a mix of renewable energy sources. These resources are no longer needed by PG&E since a large portion of their former load is now served by RCEA and other community choice energy programs.

**Carbon-Free:** Since 2020, RCEA has been receiving carbon-free energy from PG&E's portfolio of large hydroelectric facilities. The contract is executed on an annual basis at RCEA's discretion. The amount of energy RCEA receives varies year to year depending on the hydrologic conditions throughout California, but in 2021 we received approximately 33,700 MWh of carbon-free energy.

**Renewable Energy:** Since 2023, RCEA has been receiving renewable energy from a variety of PG&E's eligible renewable sources, including biomass, digester gas, landfill gas, geothermal, small hydro, solar, and wind technologies. RCEA expects to receive approximately 51,300 MWh in 2023, with the amount gradually declining every year as resources retire until the contract expires in 2045.

<sup>2</sup> Hybrid resources are a combination of energy generators and energy storage systems. In RCEA's case, all of our hybrid resources utilize solar as the energy generation.

In addition to our renewable energy contracts, RCEA has also entered into a number of contracts for aggregated customer demand response and standalone battery energy storage as shown in Table 2. While these do not generate additional energy, they provide RCEA with some of our required resource adequacy and allow us to strategically balance the above generation resources with customer demand in real time, helping ensure grid reliability as we transition to using more intermittently available renewable energy resources such as wind and solar.

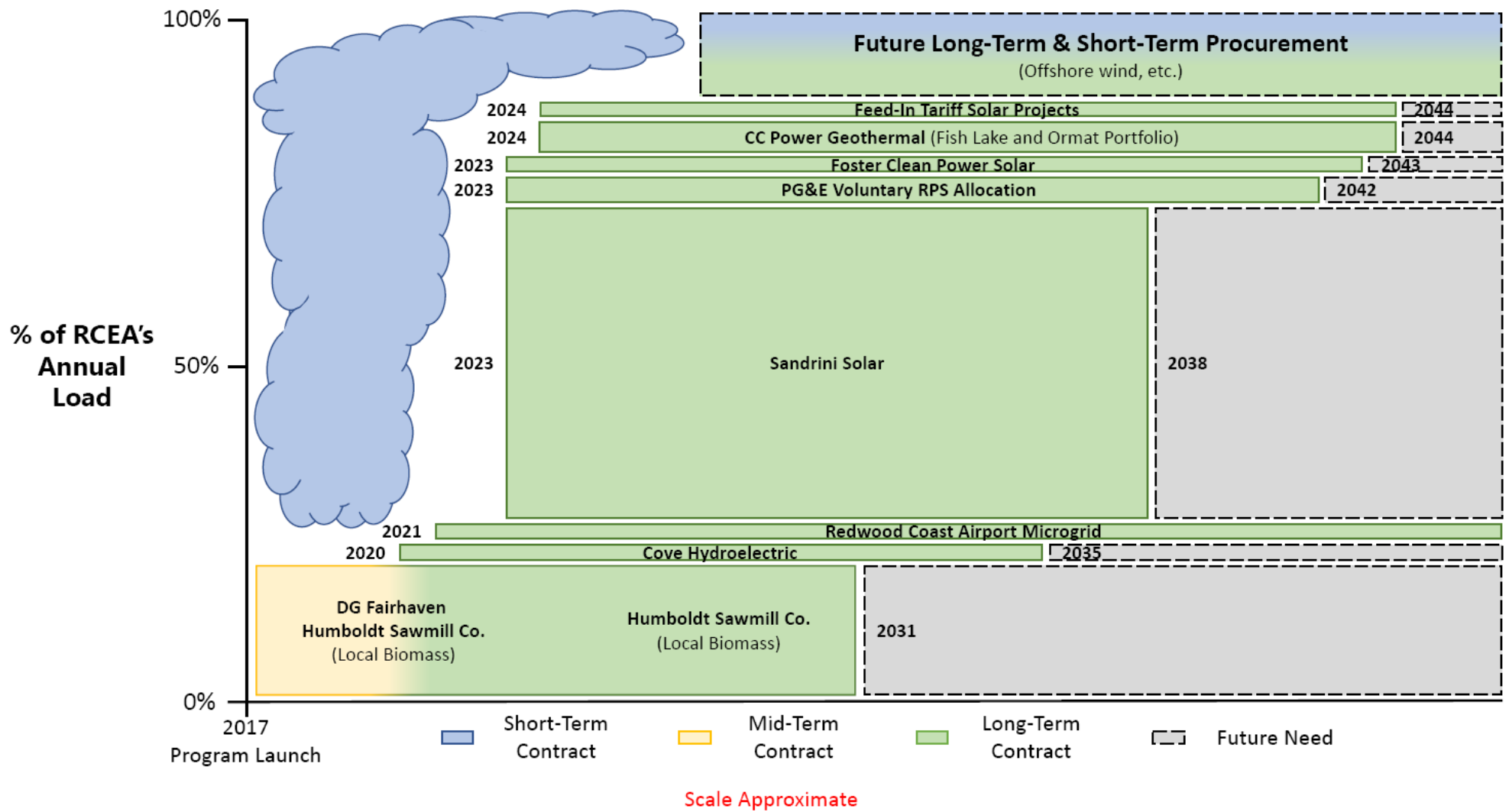
**Table 2. RCEA's Long-Term Resource Adequacy Agreements**

Project Name	Resource Type	Project Location	Initial Operation Date	Contract Length	Capacity (MW)
Leapfrog	Demand Response	CA statewide	2021	10 Years	5.5
Tierra Buena Energy Storage	Lithium Ion Battery	Tierra Buena, CA	2022	10 Years	2.5
Fairhaven Energy Storage*	Lithium Ion Battery	Fairhaven, CA	2024	10 Years	17.25
Goal Line Energy Storage	Lithium Ion Battery	Escondido, CA	2025	15 Years	2.0
Tumbleweed Energy Storage	Lithium Ion Battery	Rosamond, CA	2026	15 Years	2.72

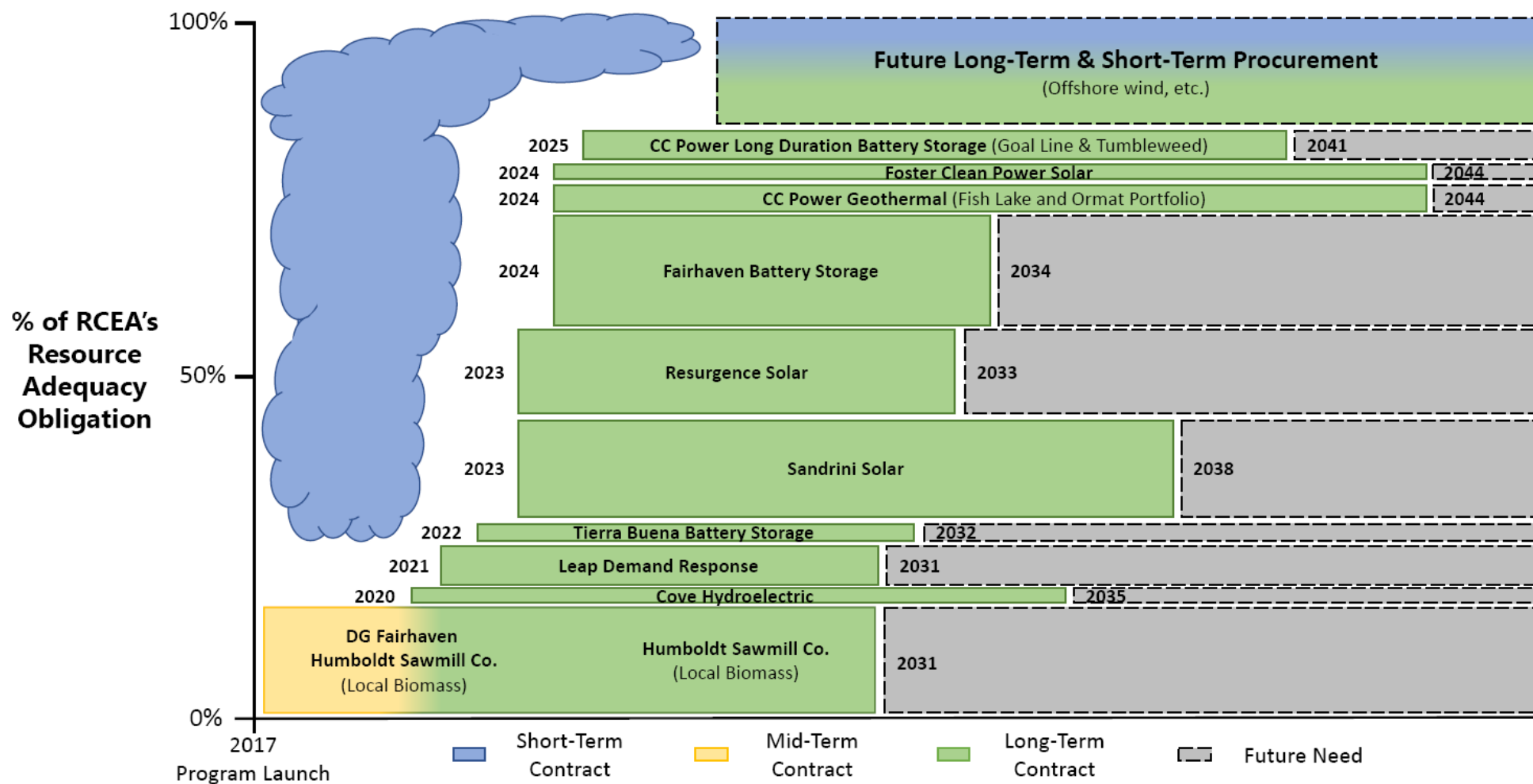
\*local resource

As shown in Tables 1 and 2, different resources enter RCEA's portfolio in different years and persist for longer or shorter terms, eventually needing to be extended or replaced with other resources. See Figures 2 and 3 for a conceptual illustration of how our various contracts make up our past, present, and future energy portfolio.





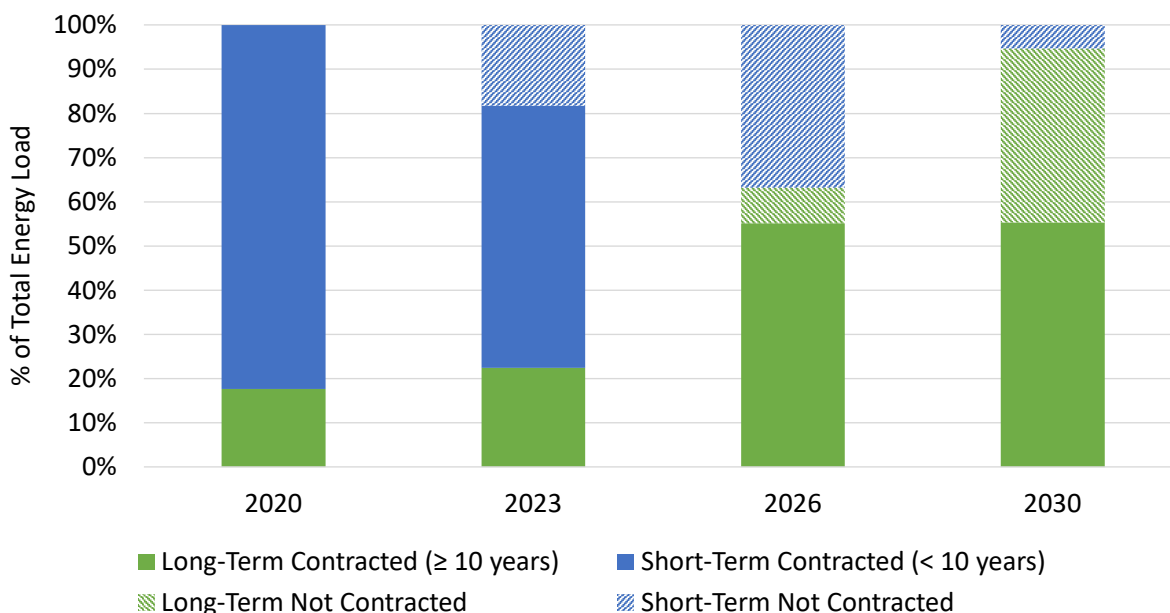
**Figure 2. RCEA Energy Portfolio Timeline**



Scale Approximate

Figure 3. RCEA Resource Adequacy Timeline

Despite our Board’s goal that all our energy come from local resources by 2030, RCEA has found it necessary for compliance with state laws and regulations to enter into some contracts for non-local resources that extend beyond 2030. One state law, Senate Bill 350, requires at least 65% of our renewable energy required under the CA Renewables Portfolio Standard to come from contracts of ten years’ duration or longer, or from resources we own. In addition, the CPUC has issued a series of procurement orders aimed at ensuring grid reliability; contracts compliant with these orders also need to be of minimum ten years’ duration. Figure 4 illustrates how RCEA is currently positioned to meet customer demand through a combination of short-term and long-term contracts.



**Figure 4: RCEA’s Progress Towards Long-Term Procurement**

Each solicitation issued by RCEA since 2019 has stated a preference for local projects, but the great majority of offers received have been for non-local projects. RCEA has had to weigh the importance of local procurement against several other factors, including cost, developer qualifications, and project risk. In addition, RCEA often finds itself competing for few available new resources when other energy providers across the state are working on the same schedule to fulfill the same CPUC-ordered procurement. At times, this has led to RCEA committing to non-local projects as the only alternative to non-compliance.

Some of RCEA’s contractual commitments needed for compliance and risk management purposes are at odds with the goal of 100% local procurement by 2030. However, as noted above RCEA’s strategic plan couples that goal with the aim that Humboldt County become a “net exporter of renewable electricity.” That goal could be fulfilled if other power providers, such as RCEA’s sister CCE agencies across the state, procure offshore wind or other Humboldt County renewable resources in sufficient



quantities to offset RCEA's purchase of non-local renewable energy. Given that the developable wind resource off the Humboldt coast is much larger than our local electricity demand, this scenario is very likely to come to pass within the coming decade.



**Figure 5. Redwood Coast Airport Microgrid**

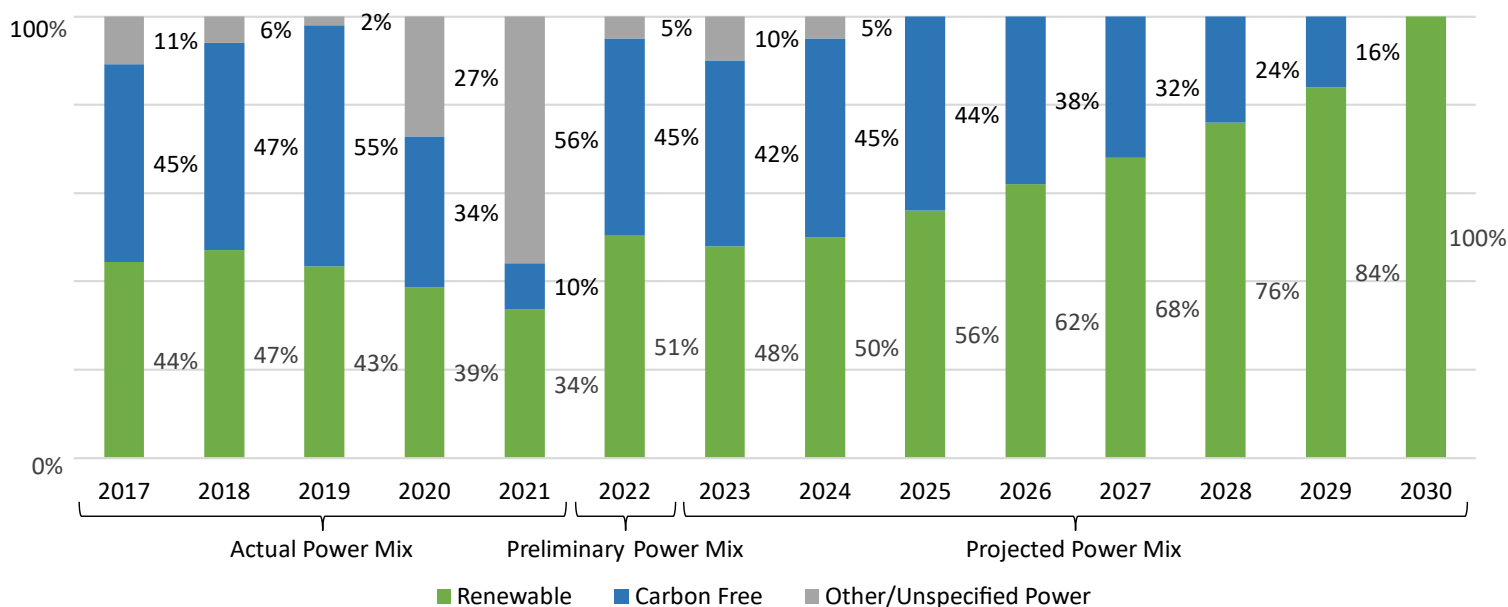
Most of RCEA's power is procured through contracts with power project developers or operators. However, RCEA has invested in one important RCEA-owned energy project. In 2021, RCEA began commercial operation of the Redwood Coast Airport Microgrid (RCAM), a solar plus energy storage facility at the California Redwood Coast Airport in McKinleyville. RCAM is California's first 100% renewable energy, front-of-the-meter<sup>3</sup>, multi-customer microgrid. The microgrid provides energy resilience for the regional airport and U.S. Coast Guard Air Station and electricity to RCEA's customers. Tax provisions in the federal 2022 Inflation Reduction Act make it more financially attractive for public agencies like RCEA to develop their own renewable energy projects, which may lead to RCEA developing more projects of this type.

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<sup>3</sup> "front-of-the-meter" means that this resource is serving the grid at large, rather than just offsetting load at one customer's site like a "behind the meter" rooftop solar system does.

Over the first six years of operating RCEA's CCE program, our power portfolio has evolved. While we have sought to advance gradually toward our 100% renewable goal, we have had to respond to external challenges by temporarily adjusting our procurement. During 2020 and 2021, short-term financial challenges required RCEA to temporarily reduce our renewable energy content to keep customer rates competitive. These financial challenges included increased wholesale power costs, lower than expected PG&E electric rates that are used to benchmark RCEA's own rates, and delayed or reduced customer revenues due to financial hardships during the pandemic.

The financial outlook in 2022 and future years has improved, allowing RCEA to resume our trajectory toward 100% renewable and carbon-free energy by 2025 and 100% local renewable energy by 2030. Figure 6 shows our power mix to date and our projected power mix to meet our 2025 and 2030 goals. Note RCEA's 2022 power mix is a preliminary estimate using data received as of the publication of this document.

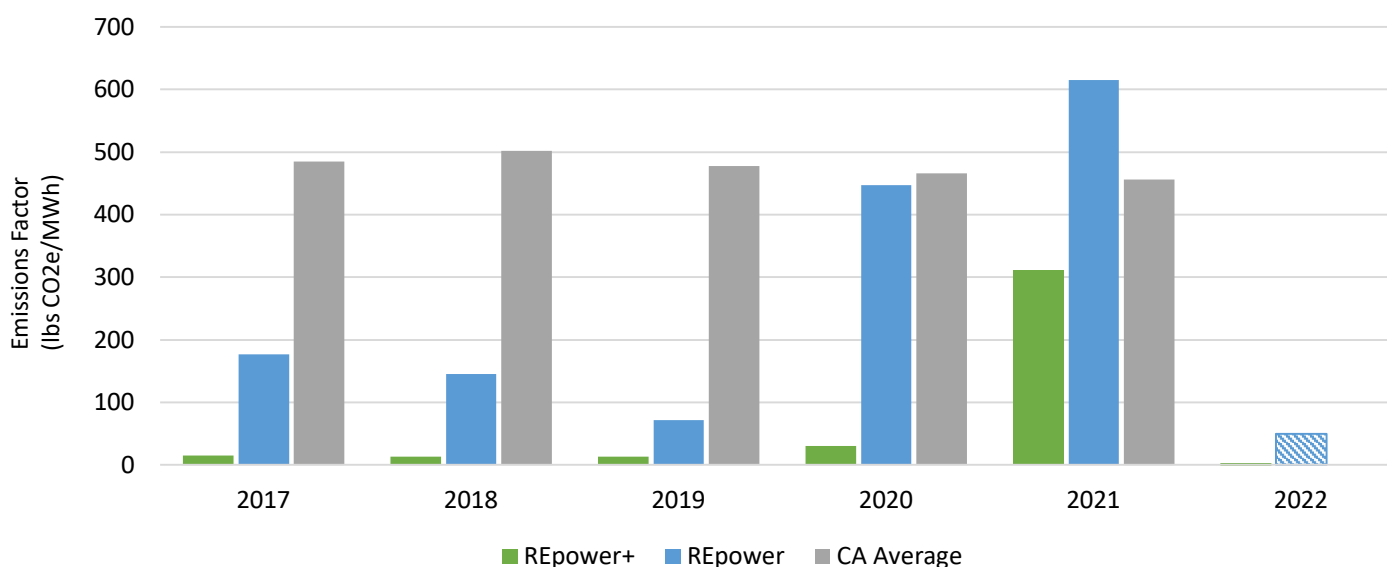


**Figure 6. Past and Projected RCEA Power Mix**

For the time being, RCEA's power mix includes unspecified power in addition to renewable and carbon-free resources. Unspecified power cannot be traced back to a specific source. It tends to be less expensive and have greater emissions than renewable and carbon-free power. RCEA currently includes some power from unspecified sources in its portfolio to keep customer rates affordable. As we continue to add long-term renewable energy contracts to RCEA's power portfolio, we plan to gradually phase out our reliance on unspecified sources of power.

## Greenhouse Gas Emissions

RCEA's GHG emissions have mostly been below the California utility average. However due to the short-term financial challenges in 2020 and 2021, the temporary reduction of our renewable and carbon-free energy procurement resulted in higher than usual GHG emissions. Also, a regulatory change took effect that ascribed GHG emissions to energy RCEA purchased from out-of-state renewables. As mentioned previously, RCEA's finances improved in 2022. This, along with procuring only in-state renewables in 2022, enabled us to get back on track to reducing GHG emissions associated with our energy mix, as shown in Figure 7. Please note that the 2022 GHG emissions shown in Figure 7 are a preliminary estimate. However, we will have RCEA's final GHG emissions for the 2022 calendar year published in summer 2023.



**Figure 7. RCEA's Historic Greenhouse Gas Emissions (lbs CO<sub>2</sub>e/MWh)**



## RCEA's Rate Structure

To date, RCEA has offered standard rates to our customers that parallel PG&E's generation rates with a Board-approved discount. Currently, RCEA customers receive a half a percent discount from what they would otherwise pay PG&E. This type of rate structure indexed to the local utility's rates is common among CCAs across California.

While RCEA's rate structure ensures that every customer will pay less than they would as a PG&E customer, it doesn't accurately represent the true cost of serving our customer base. This is because PG&E's rates reflect their cost to serve millions of customers across Northern California, plus an approved rate of return for their shareholders. Humboldt County has a unique climate, economy, and demography that determines our customers' energy consumption patterns. Most of RCEA's customer load is located on the temperate coast with more demand for winter heating than summer air conditioning, while PG&E's load is typically the opposite. Coupling RCEA's rate structure with PG&E's means our operational budget for power procurement and customer energy programs must fit within the confines of the current rate structure.

Building financial reserves over time will allow RCEA more short-term flexibility in setting its rates.

An accelerated timeline toward 100% renewable energy, or a decision to procure more premium priced renewable resources would drive up RCEA's operating costs. This could require RCEA to decouple our rates from PG&E's to appropriately cover the operational costs for meeting our procurement goals and serving our customers. Resulting rates could turn out to be lower or higher than PG&E's, depending on our comparative power procurement costs and other operating expenses.

Some CCE providers in California have begun to adopt rates based on their actual cost of service, rather than using a set discount relative to the investor-owned utility's rates. If RCEA were to adopt such a cost-of-service rate-making model and the resulting rates were higher than PG&E rates, we would face the risk of customers opting out of RCEA service. We would also need to consider all the challenges a utility faces in developing its own rates, including an added analytic burden and potential shifting of costs among customer classes.

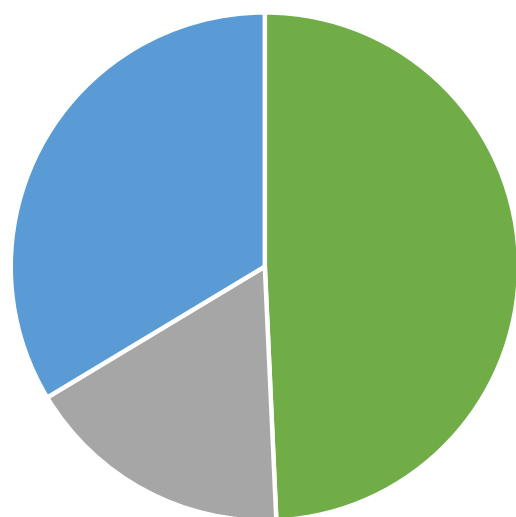


## REpower and REpower+ Participation

In 2017, when RCEA began serving customers in Humboldt County, all customers<sup>4</sup> were automatically enrolled into RCEA's REpower electricity service. However, approximately 1.4% of customers have "opted-up" into REpower+, RCEA's 100% renewable electricity service. RCEA monitors the number and load of opted up customers and procures additional renewable energy to cover this load.

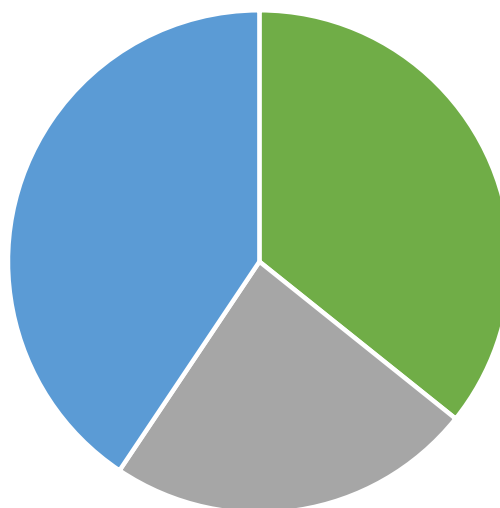
## The Customers We Serve

RCEA provides electricity to 92% of eligible customers in RCEA's service area. RCEA's customer base differs from what is typically seen across the State of California. In RCEA's service area, residential customers make up the largest electricity use sector, while for the state as a whole, commercial electricity use is dominant. Figures 8 and 9 are a comparison of how RCEA's customer base differs from the State as a whole.



■ Residential ■ Industrial ■ Commerical

**Figure 8. RCEA Usage by Customer Class**



■ Residential ■ Industrial ■ Commerical

**Figure 9. California Usage by Customer Class**

<sup>4</sup> Some large commercial and industrial customers who have special contracts with third-party electricity providers through a statewide program called Direct Access were not enrolled.



## **Are the renewable electrons procured by RCEA actually delivered to my home or business?**



Humboldt County is connected to a regional electric grid that spans across the western United States and has energy generators contributing electricity at various locations. When RCEA procures energy, we're paying a particular generator to put it into the grid at their plant, wherever it may be.

What electrons are actually delivered to our customers is not exactly the same as what we buy, since electricity flows by the path of least resistance to the customer load that's physically closest to the generation source. So, a unit of electricity used in Humboldt most likely originated at one of the plants here in the county, which are currently powered by natural gas, biomass, or solar. But electrons circulating on the grid are all the same, whether they are generated with renewable or non-renewable resources. It's similar to how your dollars can be deposited at a bank or credit union, then an equivalent amount of dollars can be withdrawn from an ATM thousands of miles away; it doesn't matter to you or the bank that those bills are different than the ones you deposited.

What's important in terms of cleaning up the grid is that we're gradually ensuring more of the energy going in comes from clean and renewable sources. In this way, Humboldt County ratepayer dollars are directly reducing total GHG emissions via renewable and carbon-free energy purchased by RCEA.

It is also RCEA's goal to generate as much of Humboldt's electricity as possible using local renewable resources, thereby reducing reliance on the Humboldt Bay Generating Station natural gas plant and imported fossil energy. As we make that transition, more of the electricity we buy will be what's consumed close to the source by our own customers. This is important for local economic development, and for local electric reliability as we transition away from natural gas in a grid constrained region. It's also important in terms of local air quality, as we gradually replace today's power plants that combust natural gas or biomass with non-emitting resources. But it's less important in terms of GHG emissions, for which the benefit is essentially the same wherever they can be reduced on the planet.



## California's Integrated Resource Planning (IRP) Process

Integrated resource planning is a standard long-term planning exercise conducted periodically by utilities to assess resources needed to meet customer energy demand at affordable rates. In California, load-serving entities including RCEA are required to submit an Integrated Resource Plan (IRP) to the CPUC every two years. These plans also address non-energy requirements that the LSE must meet, such as system reliability, dependence on unspecified system power, renewable resource integration, GHG emissions targets, and consideration of impacts that power plants may have on disadvantaged communities.

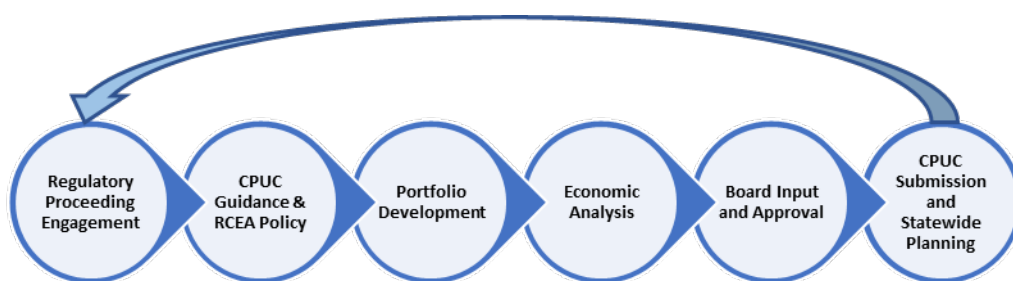
### RCEA's 2022 IRP

RCEA filed its biennial IRP with the CPUC on November 1, 2022. The plan details RCEA's electricity procurement plans through 2035 in keeping with statutory requirements for grid reliability and GHG emissions targets. RCEA is expected to submit its next IRP to the CPUC in 2024.

The CPUC requires load-serving entities like RCEA to submit a comprehensive package as part of the IRP process. The CPUC provides load-serving entities with spreadsheets to enter our proposed power portfolio(s) and demonstrate the portfolio's compliance with the State's grid reliability and GHG emissions targets. In 2022, RCEA submitted a detailed narrative describing our proposed portfolio, and two sets of spreadsheets, corresponding to two different 2030 and 2035 GHG emission scenarios.

RCEA's 2022 and prior IRP materials are available for viewing on our website. However, some of the information required by the CPUC to be included in the resource data templates is market-sensitive and therefore redacted from the public versions. Learn more by visiting:

<https://redwoodenergy.org/integrated-resource-plan/>.



**Figure 10.** RCEA's Integrated Resource Planning Process

Figure 10 represents the cyclical IRP process that RCEA undertakes every two years. First, RCEA and other LSEs engage in the regulatory process via the CPUC's IRP proceeding to understand and critique state planning assumptions and analysis methods. From this, the CPUC issues final guidance, requirements, and templates for the compliance filing, which staff review along with RCEA policies, plans and programs that will all advise development of the IRP portfolio. To develop the portfolio, staff

review existing and planned resource commitments and consider new resources to fill out the portfolio over time in different configurations, referred to as candidate portfolios. Then, RCEA's consultant (in consultation with staff) analyzes the economic performance of each candidate portfolio, and the options are presented to the RCEA Board along with a portfolio recommendation. After Board input and approval, RCEA submits the IRP to the CPUC, whose staff combine all LSE IRPs into one statewide portfolio that is used for grid planning, and the cycle is then repeated two years later.

## Equity Considerations

Many communities disproportionately lack access to clean, reliable, and affordable energy due to race, nationality, income, or geographic location. Currently the U.S. Department of Energy is working toward providing disadvantaged communities with 40% of the overall benefits from federal investments in climate and clean energy. When it comes to the energy system, many communities face serious challenges.

Energy Insecurity	Energy Poverty	Energy Burden
<b>Definition:</b> The hardships households face when meeting basic needs.	<b>Definition:</b> The lack of access to reliable energy itself.	<b>Definition:</b> The percentage of household income spent on energy expenditures.
<b>Example:</b> Not using the air conditioning during a heatwave because of energy costs.	<b>Example:</b> Disproportionate exposure to power outages experienced by marginalized communities.	<b>Example:</b> Communities of color and low-income families direct a higher share of their income toward energy costs.

Energy justice is aimed at overcoming these challenges by reducing energy costs and burdens on low-income customers, avoiding disproportionate impacts, guaranteeing the equitable distribution of the benefits of energy generation and transmission, ensuring access to reliable and clean energy, and providing community participation in energy related decision-making and development.

To help overcome some of these challenges, RCEA's Board approved a Racial Justice Plan in 2022, which is designed to remove racial disparities among communities in accessing energy services, and increase access to clean energy, energy efficiency, and healthy communities. In relation to RCEA's CCE program, the Racial Justice Plan includes the following commitments:

- Tribal engagement
- Diversity, equity and inclusion in program selection design and implementation
- Energy justice in power procurement and energy resource development
- Collaboration with other California CCE providers and other external organizations on environmental justice and energy equity matters

## Achieving True Round-the-Clock Renewable Energy

In keeping with the current regulatory framework and common accounting methods for clean energy procurement, RCEA has set its procurement goals on an annual basis. If our goal is a 40% renewable portfolio, we purchase enough renewable energy over the course of a year to meet 40% of our customer load. This is an important step toward a truly clean energy portfolio, but it doesn't get us all the way there. For example, if we were to procure that 40% by buying only solar energy, we would not actually be providing renewable energy to our customers at night when the sun isn't shining, so we would need to purchase energy from other, potentially more polluting, sources to meet customer load round-the-clock.

Aiming for a 100% renewable portfolio on an annual basis is an ambitious goal RCEA and other electricity providers have set, but it does not ensure a completely clean portfolio every hour of the year. Years before launching our CCE program, RCEA in partnership with the Schatz Energy Research Center at Cal Poly Humboldt and PG&E performed a California Energy Commission-funded study on the feasibility of transitioning Humboldt County to a renewable energy-driven economy. The study used detailed computer modeling to identify a pathway to meeting loads in all seasons and times of day with renewable energy, using natural gas for generation only minimally to fill in gaps due to intermittency of wind and solar resources. At the time, battery energy storage at utility scale was not yet considered cost-effective. Inclusion of energy storage in the scenarios analyzed could further reduce dependency on fossil fuels.<sup>5</sup>

More recently, some clean energy leaders, notable among them Peninsula Clean Energy, the CCE agency serving San Mateo County, have set goals to serve their customers with 100% renewable energy around-the-clock, by carefully analyzing what renewable energy, energy storage, and other resources they would need to procure to meet their load in every hour of the year without having to call on fossil fuel power plants. Peninsula Clean Energy concluded that truly meeting a 100% renewable goal every hour of the year would be cost-prohibitive. Their study recommends procuring a portfolio

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<sup>5</sup> [http://schatzcenter.org/docs/RePower\\_Humboldt\\_Strategic\\_Plan.pdf](http://schatzcenter.org/docs/RePower_Humboldt_Strategic_Plan.pdf)

that can meet the 100% renewable goal 99% of the time. In Peninsula Clean Energy's case, this is estimated to result in only a 2% cost increase over a portfolio that merely meets the goal of 100% renewable on an annual basis.<sup>6</sup>

RCEA has embarked on our own analysis to study the costs and benefits of a round-the-clock renewable energy portfolio. We will share our findings as they become available.

### **RCEA Goals vs Constraints**

As highlighted throughout this document, there are numerous factors for RCEA to consider when supplying our customers with energy. As we strive to achieve our various goals, we're required to strategically navigate various constraints, whether they be internally or externally imposed. As represented in Figure 11, there are times when our goals are in conflict with the constraints that we operate within, but we're determined to overcome these challenges through innovative solutions and adaptive strategic planning.

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<sup>6</sup> <https://www.peninsulacleanenergy.com/achieving-24-7-renewable-energy-by-2025/>



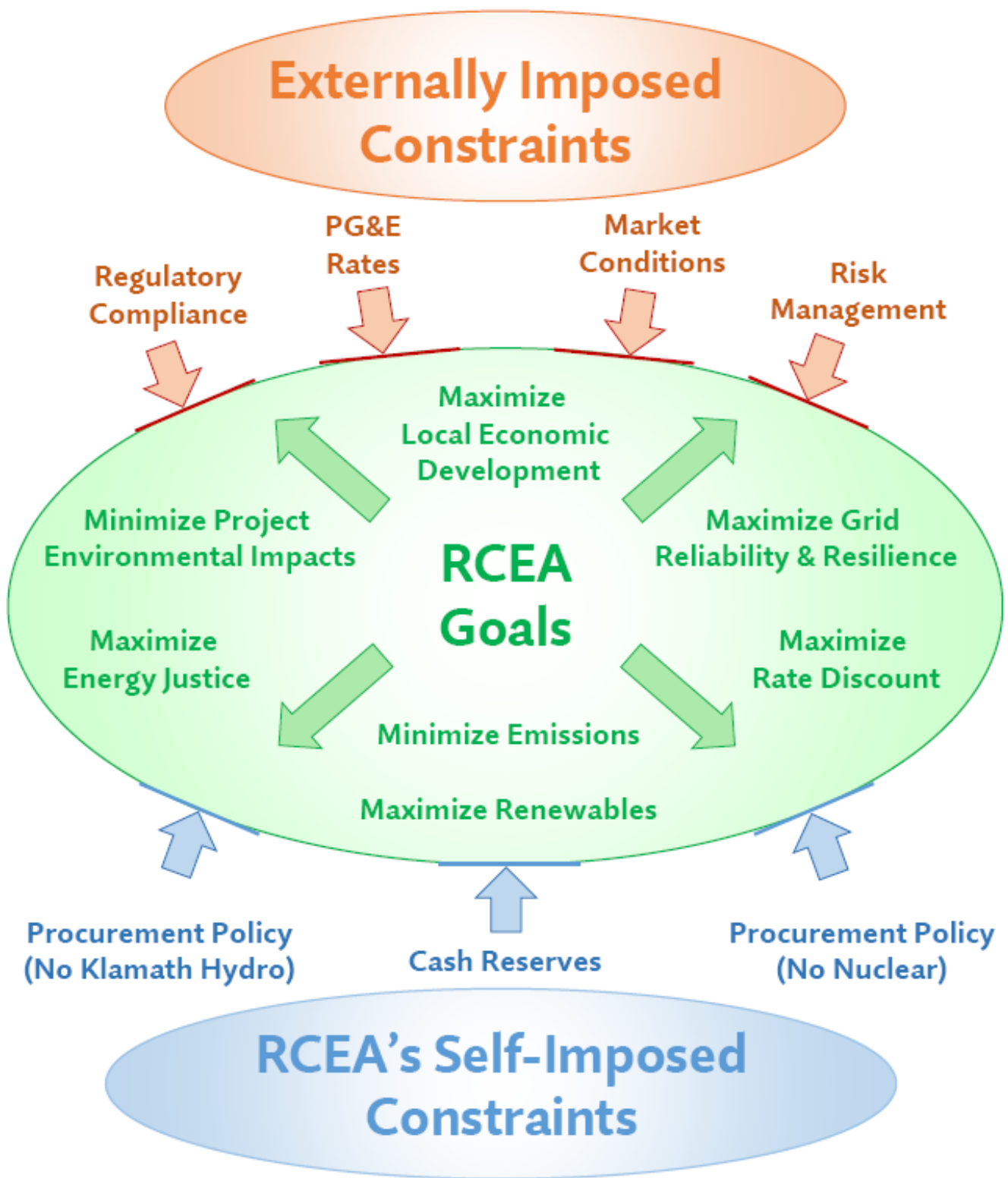


Figure 11. Goals & Constraints

## Conclusion

RCEA appreciates your interest in planning Humboldt County's clean electricity future. We will offer opportunities during 2023 for the public to provide input to be incorporated as feasible in RCEA's 2024 integrated resource plan.

Please visit <https://www.redwoodenergy.org/humboldts-electric-future> to find updated information and to sign up for event notifications.

You can also email us at [Humboldts-Electric-Future@RedwoodEnergy.org](mailto:Humboldts-Electric-Future@RedwoodEnergy.org) any time with comments or questions about RCEA's Community Choice Energy program.



*Luna Latimer, RCEA Community Advisory Committee member, indicates her priorities during RCEA's 2019 Comprehensive Action Plan for Energy update*



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