



**Seattle
City Light**

2018 INTEGRATED RESOURCE PLAN

Seattle City Light: Working Hard to Keep the Lights On Everyday





EXECUTIVE SUMMARY

We have just completed our Integrated Resource Plan (IRP) Progress Report for 2018 to meet the biennial deadline set by Washington State law. The IRP Progress Report shows Seattle City Light's power supply portfolio is on track to meet City Light's power supply needs for at least the next 10 years using carbon neutral power and producing surplus clean energy. City Light's near-term plans include new investments in energy conservation and renewable energy credits (RECs) identified in City Light's 2019-2024 Strategic Plan Financial Forecast and in this IRP Progress Report. In meeting our stated goals of reliability, affordability and environmental stewardship, we are ahead of our goals – especially in our energy conservation efforts.

The 2018 IRP Progress Report included reviewing changing conditions, policies, investments, and alternate paths to keep our power supply robust and reliable; achieving greenhouse gas (GHG) neutrality; and meeting applicable laws for resource planning including Washington State's Energy Independence Act. City Light's IRP Progress Report included evaluation and discussion of alternate paths of the investment in:

- conservation
- renewable energy credits
- renewable generation
- options to replace the BPA contract
- a regional carbon fee to reduce GHG emissions

The findings of the 2018 IRP Progress Report include:

Power supply demands are expected to be met by conservation investment. Conservation

investment remains the first and best resource choice as the most environmentally responsible way to meet growing energy demands and is an important requirement of the Washington Energy Independence Act. Conservation increases City Light's generation surplus, improves reliability and reduces our purchase of Bonneville Power Administration's (BPA) hydro allowing further displacement of fossil fuel generation in the region. City Light customers have benefited by proactively implementing conservation and energy efficiency measures to lower their bills and by avoiding the impacts from building a new power generation plant. For the two-year period 2016 and 2017 City Light achieved 29.4 aMW of energy savings. This is nearly 3 percent of City Light's customer energy demand. To generate an equivalent amount of energy, City Light's customers would need to install over 200,000 kW of local solar and give up current levels of reliability in meeting their peak winter energy demand unless other investments are made.

City Light may need to purchase additional RECs starting in 2022. With the continued priority of investments in conservation that keeps City Light surplus in clean energy, the purchase of RECs is a cost-effective way to meet renewable generation requirements set forth in the Washington State Energy Independence Act of 2006. The Act calls for utilities to make investments in renewable generation to meet 9% of City Light demand today – growing to 15% in 2020. RECs provide payments to regional renewable generators to make sure the projects generate consistently and to provide financial support to develop other projects.



“CITY LIGHT CUSTOMERS HAVE BENEFITED BY PROACTIVELY IMPLEMENTING CONSERVATION AND ENERGY EFFICIENCY MEASURES TO LOWER THEIR BILLS AND BY AVOIDING THE IMPACTS FROM BUILDING A NEW POWER GENERATION PLANT.”

New power supply costs are declining but adding new renewable power generation could add costs to customer bills. Most new utility-scale clean power supply, customer generation, and demand reduction options continue to decrease in price. Demand for these products has increased due to tax incentives, renewable portfolio standards, and rigorous energy efficiency codes and standards. This has created a viable market for these new technologies and has led to lower installation and operating costs. However, if additional pressures emerge for City Light to add new renewable power sources, City Light’s analysis projects higher costs to deliver that power. Going forward, regional and local discussions about who pays for investments in transmission and distribution systems (the infrastructure that delivers power to customers and the region) will be as important as evaluating power supply options.

BPA Preference Power Contract continues to be a good option to meet City Light goals. The 2018 IRP Progress Report shows that the continuation of the BPA contract beyond 2028 is a good option to keep City Light’s costs down relative to available options. BPA provides approximately 40% of City Light’s power supply and a future contract is expected to provide clean energy to ensure that City Light has enough dependable supply to meet demands during the winters when we have the highest energy needs. Additionally, the analysis shows that City Light may purchase less power from BPA in a new contract if conservation continues to reduce demand.



Greenhouse Gas Offsets are as beneficial for City Light as renewable energy production to achieve GHG neutrality. In 2000 the City of Seattle passed a resolution to prioritize GHG neutrality in its electricity supply. In 2005, City Light became the first utility in the nation to provide its customers with GHG neutral power and continues to do so. The 2018 IRP analysis shows purchasing GHG offsets from verified projects that avoid, reduce, or sequester GHG emissions is a cost-effective mechanism for City Light to maintain GHG neutrality.



“IN 2005, CITY LIGHT BECAME THE FIRST UTILITY IN THE NATION TO PROVIDE ITS CUSTOMERS WITH GREENHOUSE GAS NEUTRAL POWER AND CONTINUES TO DO SO.”

More work is needed nationally and regionally to mitigate the impacts of climate change.

The City of Seattle’s policies supporting energy conservation, renewable energy, rigorous building codes, and greenhouse gas neutrality show that we have been a leader in fighting climate change and providing direct benefits of cleaner air and water in Seattle and the region. Conservation has helped City Light fight climate change and provide local benefits. For a lasting impact, this same commitment is needed from others.

Carbon fees can reduce regional GHG emissions.

A regional carbon fee that puts a price on carbon emissions to incentivize clean energy production could also be a lower cost way to reduce City Light’s greenhouse gas emissions. Our analysis shows a region-wide carbon fee produces higher benefits for City Light compared to City Light making direct investments in more renewable energy generation. The primary reason is that putting a price on carbon should provide greater

incentive for power producers to shift to cleaner sources of energy while increasing the value of our clean hydro resources. This should also lower the carbon content of City Light’s power purchases from the region. However, carbon taxes are not without controversy in Washington State because of differences in how the impacts may be felt by consumers served by the different utilities. If a carbon tax is implemented in Washington State, City Light customers may be asked to share the burden of the State’s clean energy cost, and that was not a component of the IRP study.

MOVING ON TO 2020

Questions to Ask – and Answers to Seek for the Next IRP

As City Light's IRP team and its stakeholders begin the more extensive 2020 IRP, we have already identified several key areas which merit additional focus. With a focus on constituents, councilmembers can help educate and ask the public what changes they see in their own power needs. Some of the questions we want to ask our customers are:

How do we define each of our goals of reliability, environmental responsibility, and affordability? What are the tradeoffs we are willing to make in our goals, if any? Are there any new goals to consider?

Not all of City Light's goals – affordability, reliability, and environmental responsibility – may be valued equally by everyone. There is a need for continued community-wide conversations about our current goals. Affordability has traditionally meant meeting the power supply demand with the most reliable and environmentally responsible power and keeping rates in line with other regional electric utilities.

While we continue to pursue energy efficiency beyond our immediate needs to reduce customer expenses, our costs and rates may be affected. Similarly, City Light's high standards for reliability and environmental responsibility could mean higher costs and possible rate increases. Some in our community find such rate increases burdensome.

Additionally, earthquakes, landslides and other hazards that are present in our region raise issues of resiliency in the design of our transmission and distribution networks. Power delivery is just as important as adequate power supply for everyday use. Should we be making more investments in our infrastructure to withstand stresses and sudden shocks or simply focus on how we will recover?

These questions will require guidance from our customers, the Mayor, and City Council to help City Light recommend future paths to meet our energy supply needs.

What regulations are important to you?

Regulation changes are being discussed, voted upon, and argued in court. Federal fuel standards are being weakened, natural gas power generation at the national level is viewed as part of the solution, and proposals for regulating GHG emissions through public initiatives are taking form in both Washington and Oregon. Providing leadership in the region for aggressively reducing and eliminating fossil fuel use entails not only balancing costs and benefits but also the equitable sharing of those costs and benefits.

How much value should our electric customers and the region place on hydro energy? Should policies focus on equity between hydro and other renewable generation?

City Light has a long history of leadership in environmentally responsible regional hydro use and policies. How the region should properly value – and price – the benefits of clean energy that hydro provides will be part of the core 2020 discussions. We will consider hydro generation costs and the role hydro plays in meeting regional population growth and new power demands as fossil fuel use is displaced.

Will we have adequate clean energy to respond to climate change as fossil fuel use declines and population continues to grow?

There is wide recognition that renewable costs and technologies are rapidly changing. City Light is well-positioned to meet near-term needs but recognizes that our long-term future is less clear. Climate change as well as the potential for customers to switch to electricity for home heating and cooling may change the adequacy of our power supply and require new transmission and distribution lines to serve new demands. We will need to continue to monitor and assess the potential magnitude and timing of these impacts.

CONCLUSION

The 2018 IRP Progress Report's findings are compatible with what City Light planned in its 2016 IRP. New technology, incentives, policies and programs have meant that conservation measures have more than made up for the expected growth associated with the area's economic boom.

Our customers are asking more sophisticated questions about electric power needs, alternative energy options, the costs of possible choices, rate equity, and the individual's responsibility for paying towards City Light's total infrastructure when they produce much of their own electricity.

term distribution planning, and integrating City Light's work to examine power supply and demand options that continue to expand customer choices.

We look forward to discussing how we define the goals which have driven City Light for decades. City Light leadership, the Mayor, City Council, stakeholders and the public will be asked to determine the best practice investments in infrastructure for a reliable grid, environmental progress, promotion of social justice and equity, and reasonable protection from risks (natural or man-made).

We look forward to the challenges and opportunities ahead as energy production shifts away from fossil fuels and our electric system is asked to respond in new ways. Seattle City Light will continue to provide the necessary research and analysis to help leaders make informed policy and long-term investment decisions for our thriving city.



City Light has been pushed, rightfully, to engage our customers. We distribute surveys, ask for opinions, host local community meetings, produce video presentations, offer open houses and networking nights, strengthen our Stakeholder Advisory Council, conduct focus groups, and take comments or questions on our website.

The 2018 IRP Progress Report notes that with the strong leadership at the City of Seattle and City Light, the utility has excelled in both power supply and environmental stewardship. Every year we strive to be an example that other cities and utilities can emulate. As City Light begins work on the 2020 IRP, we will focus on supporting long-

seattle.gov/light



Seattle City Light is dedicated to delivering customers affordable, reliable and environmentally responsible electricity services.

SAFETY • ENVIRONMENTAL STEWARDSHIP • INNOVATION • EXCELLENCE • CUSTOMER CARE



Seattle City Light

700 5th Ave, Seattle, WA 98104 **Tel:** (206) 684-3000
seattle.gov/light