

Logan City Energy & Conservation Road Map

Preface

Sustainability is based on a simple principle: Everything that we need for our survival and well-being depends, either directly or indirectly, on our natural environment. Sustainability creates and maintains the conditions under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic and other requirements of present and future generations. Sustainability is important to making sure that we have and will continue to have, the water, materials, and resources to protect human health and our environment (Adapted from EPA web site).

The Renewable Energy and Conservation Advisory Board (RECAB) was created in 2007 in response to Logan City's decision to not invest in a coal powered Power Plant. The Logan City Municipal Council tasked RECAB to advise them about sustainable energy options for Logan's future needs while keeping in mind these guiding principles:

- 1) Energy resources should make balanced use of alternative and renewable resources as well as fossil fuels in a market-driven, cost-effective and environmentally responsible way.
- 2) Energy options should protect and/or improve air quality in Cache County.

2030 Goal

RECAB recommends that by the year 2030, 50% or more of the Logan City Light & Power Department's portfolio be supplied by renewable energy resources such as hydroelectric, solar photovoltaics, wind generators, and geothermal power generators. Presently, Logan City's portfolio contains approximately 25% renewable energy (based on a 5 year average). RECAB recommends that Logan City Municipal Council pass a resolution establishing a 50% (or greater) renewable energy goal.

Discussion

It is the view of the RECAB that moving toward a renewable portfolio is prudent in planning for current and future electric generation needs and has the potential to create price stability for Logan City Light and Power for the next several decades. Future costs for fossil fuels are plagued with uncertainty due to anticipated Federal carbon taxes and/or cap and trade programs, market instability, and supply fears.

Renewable energy is clean, cost stable, and does not rely on dwindling natural resources to provide us with electricity.

Recent research and modeling indicates that growth in renewable energy production appears inevitable. In the United States, renewable energy accounted for 14% of US net generation in 2015 (NREL, 2016). Modeling performed by the National Renewable Energy Laboratory projects that by the year 2050, renewables will account for 33%-55% of net generation. Most recent projections predict a growth in utility scale renewable generation of 11.8% by 2018 alone (EIA, 2017) with the majority of growth occurring in solar photovoltaic's and wind energy. Growth in the renewable energy sector is occurring despite plunging costs of traditional fossil fuel generation and low pricing on natural gas (The Climate Group, 2017).

Much of this growth is being fueled by the significantly reduced costs to wind and solar production and improvements in technology to increase performance. Tax credits have also created situations where renewable energy is now cost competitive with non-renewable energy (NREL, 2016).

Fortune 500 companies and cities across the US are jumping on the renewable bandwagon by setting 100% renewable energy goals and meeting them at rapid pace. For example, RE100, a "collaborative, global initiative of influential businesses committed to 100% renewable electricity," boasts that 87 of the world's leading businesses have joined the commitment to secure 100% renewable energy, with 37 of those businesses joining in 2016 alone (The Climate Group, 2017). Companies such as Google, Apple, Facebook, and several others are making commitments to 100% renewable energy with some of them on track to meet these goals in 2017 (Moodie, 2016). Not only is it affecting where these businesses locate, but it also affects where they buy their power (CERES, 2014). Most businesses with renewable energy goals would prefer to purchase renewable energy from the utilities and, often, this is a huge driver for where companies locate.

Further evidence indicates that the use of renewable energy as a primary source of power is not only economically viable but also in very high demand by the populace. As of March 2017, over 30 cities in the United States have committed to 100% renewable energy targets on time frames as short as 15 years. Cities very similar in size, wealth distribution, and demographic as Logan are not only pursuing but succeeding in achieving these goals. Salt Lake City and Moab are two examples of cities in Utah that are leading the way with commitments to 100% renewables. Georgetown, TX, a staunchly conservative and Republican city was recently highlighted by NPR because of their quick conversion to 100% renewable power and the huge economic benefits the city has enjoyed as a result. Long term (>20 year) renewable energy power purchase agreements, modern energy management system implementation, intelligent and innovative use of local resources, community engagement, broadening of conservation plans and initiatives, in combination with legislation that promotes renewable energy and conservation have been the keys to successful implementation.

Distributed generation (rooftop solar) also plays a role in the growth of renewable energy, but future growth will depend on how utilities accommodate distributed generation and set the rate structure (NREL 2016).

Not only is this the direction that big business is moving, renewable energy has some distinct benefits for the citizens of Logan City and Logan City corporation as well. Salt Lake City has evaluated all municipally owned buildings to reduce electric and natural gas consumption as well as hired outside agencies to retro commission public buildings. The result has been significant financial savings (less than 5 years). In one case study alone, retro commissioning a facility saved nearly \$500,000 annually in utility costs alone! Discussion above pointed to the price stabilization for electric power that comes with renewable energy, locking in relatively low rates for the coming 20-30 years. Conservation of energy resources and curbing carbon emissions enhances options for future generations. Further there is an element of community pride with progressive leadership and action plans geared toward saving money and protecting the environment, as seen with Salt Lake City and Moab's commitment to go 100% renewable.

Strategies to Meet the 2030 Goal

- 1) To meet current and future electrical power base load demand increases, renewable energy will be given priority and considered before energy from non renewable resources that do not serve as a spinning reserve.
- 2) The City of Logan will lead by example.
 - a. All new municipally owned buildings will:
 - i. Be minimum LEED silver certified (or equivalent) based on Life Cycle Cost analyses;
 - ii. Be powered, in part, by on-site renewable energy;
 - iii. Not add to the non-renewable-based energy load of Logan City Light and Power. DLP
 - b. All existing municipally owned buildings will be:
 - i. Audited for efficiency and conservation;
 - ii. Evaluated for potential of retrofitting for on-site renewable power generation;
 - iii. Retrofitting, where feasible, for conservation and efficiency.
- 3) The City of Logan will:
 - a. Evaluate the existing rate structure for Industrial Facilities, Commercial Buildings, and Single & Multi-Family Residences to determine if we can better incentivize conservation through the rate structure;
 - b. Continue and, when applicable, expand existing residential and commercial programs to incentivize energy conservation;
 - c. Training and tools to manage a renewable portfolio.

- d. Establish a revolving energy fund to help pay for improvements. (short payback period).

Note: Please see the working appendix for strategies to help diversify the Logan City power portfolio. RECAB plans to present to council when sections in the working appendix are completed.

References

1. The Climate Group (2017). *RE 100*. Retrieved from: <http://media.virbcdn.com/files/69/ddbfa4d36e1b8bd4-RE100AnnualReport2017.pdf>
2. CERES (2014). *Power Forward 2.0: How American Companies are Setting Clean Energy Targets and Capturing Greater Business Value*. Retrieved From: <https://www.ceres.org/resources/reports/power-forward-2.0-how-american-companies-are-setting-clean-energy-targets-and-capturing-greater-business-value/view>
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4. Marcy, Cara (2017, January 10). Renewable Generation Capacity Expected to Account for most 2016 Capacity Additions. *US Energy Information Administration Today in Energy*. Retrieved From: <http://www.eia.gov/todayinenergy/detail.php?id=29492>
5. EIA (2017), 2017. Short Term Energy Outlook. Retrieved From: http://www.eia.gov/outlooks/steo/report/renw_co2.cfm
6. NREL (2016). 2016 Standard Scenarios Report: A U.S. Electricity Sector Outlook. Retrieved From: <http://www.nrel.gov/docs/fy17osti/66939.pdf>

Appendix: Strategies for Diversifying the Logan City Power Portfolio

1. Landfill Gas/Methane
2. Expanding Reach of Community Solar Program
3. Exploring potential at the new Wastewater Treatment Facility
4. Nextacker Storage Pilot Project for PV
5. Buying renewable energy and spinning reserves
6. Solar
7. Wind
8. Geothermal
9. Waste Heat
10. Hydro electric
11. Green Riders or tariffs for large corporations seeking renewable energy.
12. Graphs comparing the levelized costs of the different types of renewable energy.
13. Internal Logan City building energy conservation
14. Best practices for new construction of Logan City Municipal Buildings
15. Suggest an implementation plan