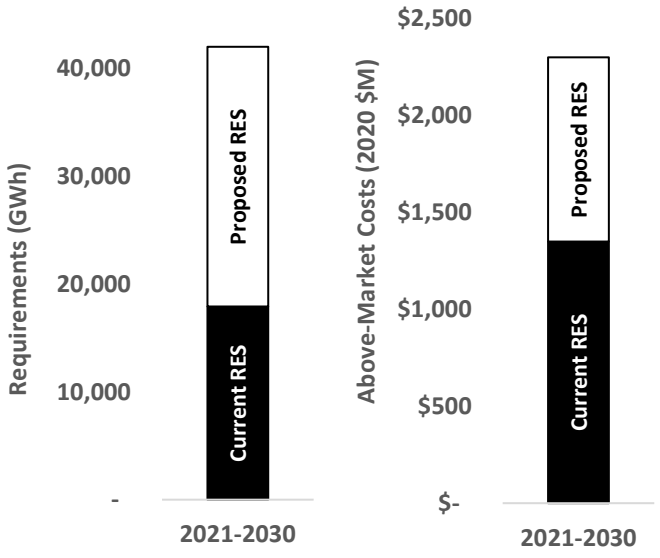
ABOVE-MARKET COSTS OF RHODE ISLAND'S RENEWABLE ENERGY STANDARDS

An analysis of the current standard and the standard proposed in Senate Bill 629 June 2021

The Rhode Island Division of Public Utilities and Carriers (Division) requested that Synapse Energy Economics, Inc. (Synapse) estimate the above-market costs of the current and proposed Renewable Energy Standard (RES). The above-market cost is the incremental cost for renewable energy and is calculated by subtracting energy and capacity revenues from the total cost for each resource. We leveraged many assumptions from The Brattle Group's *The Road to 100% Renewable Electricity by 2030 in Rhode Island* study from December 2020 to develop and assess one likely scenario for renewable energy resource development through 2030.[1] In this scenario, we assume:[2]

- The RE Growth and Long-Term Contracting programs continue to generate new RECs at approximately the same levels as in 2020;
- Revolution Wind is built in 2024 and provides up to 1,700 in new renewable energy credits (REC) annually;
- Electric utilities purchase additional new RECs for any incremental requirements through 2024;
- Additional offshore wind generates up to 1,825 in new RECs annually starting in 2025; and
- Electric utilities purchase additional new RECs for additional requirements from 2025 on consisting of 66 percent wholesale solar and 34 percent retail solar.

Figure 1. Current and Proposed RES Requirements and Above-Market Costs



About Rhode Island's proposed Renewable Energy Standard in Senate Bill 629

The current Rhode Island Renewable Energy Standard (current RES) requires retail electricity providers to supply a specified percent of their annual retail electricity sales from eligible renewable energy resources. The current RES increases from 17.5 percent in 2021 to 31 percent in 2030.[a] The RES proposed in Senate Bill 629 (proposed RES) increases from 17.5 percent in 2021 to 100 percent in 2030.[b]

For the current and proposed RES, up to 2 percent of the requirement can be supplied by existing RECs from eligible renewable resources placed into commercial operation before December 31, 1997. The rest of the requirement must be supplied by new RECs. Retail electricity providers may also comply by making an alternative compliance payment to the state's Renewable Energy Development Fund.

[a] R.I. Gen. Laws §§ 39-26

[b] 2021 -- S 0629. Available at: http://webserver.rilin.state.ri.us/BillText/BillText21/SenateText21/S0629.pdf.

Figure 1 summarizes the current and proposed RES requirements and above-market costs in total from 2021 to 2030. Over this 10-year period, we estimate the current RES will require nearly 18,000 gigawatt hours (GWh) of renewable energy resources at an above-market cost of $1.3 billion in 2020 dollars. The proposed RES will require an additional 24,000 GWh of renewable energy at an above-market cost of $1.0 billion for a total of 42,000 GWh of renewable energy at an above-market cost of $2.3 billion.

[1] Murphy, D., Hagerty, M., Weiss, J. 2020. The Road to 100% Renewable Electricity by 2030 in Rhode Island. Prepared by Brattle Group for the Rhode Island Office of Energy Resources.

[2] This scenario is based on the load projections and renewable resources in Portfolio 7 – Robust Offshore Wind, RE Programs Maintained in the study. The only significant adjustment is the removal of the Net Metering program as the RECs belong to customers.

Figure 2 shows the resources needed to meet the current and proposed RES requirements in gigawatt hours. The solid black line is the current RES, and the dashed black line is the proposed RES. The current RES requires additional new REC purchases through 2024, when new RECs from Revolution Wind become available. By 2030, nearly all new RECs from Revolution Wind are required to meet the current RES. In addition to these resources, the proposed RES requires new RECs from significant investment in additional offshore wind, wholesale solar, and retail solar.

Figure 2. Current and Proposed RES Resources

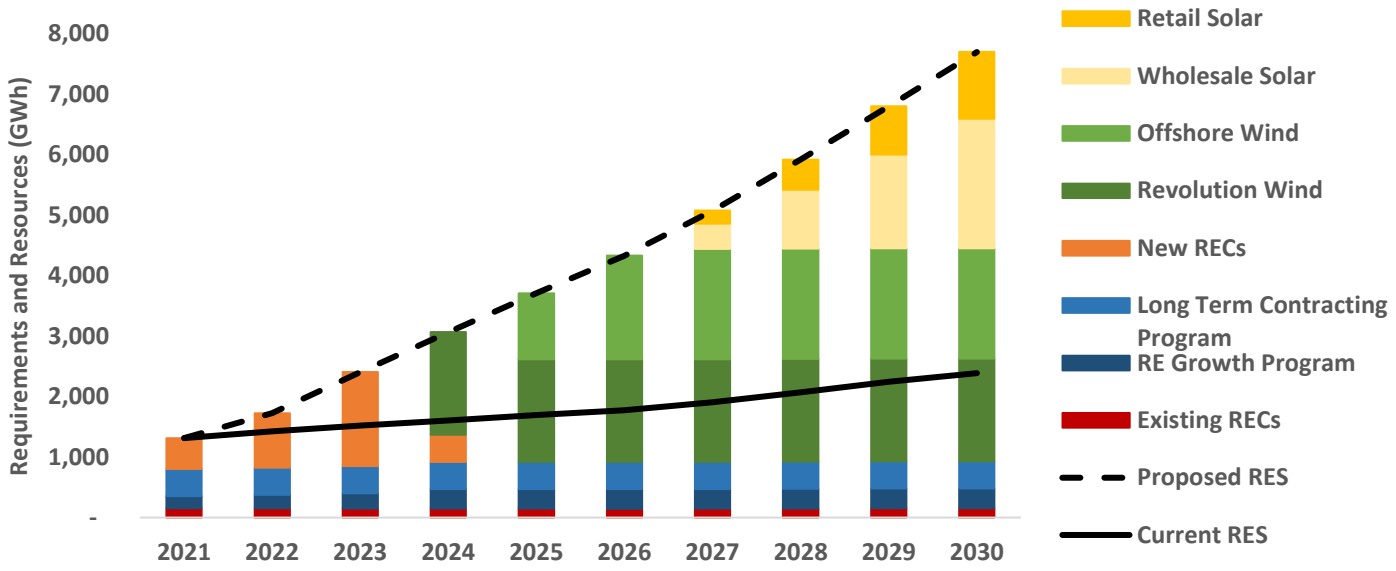
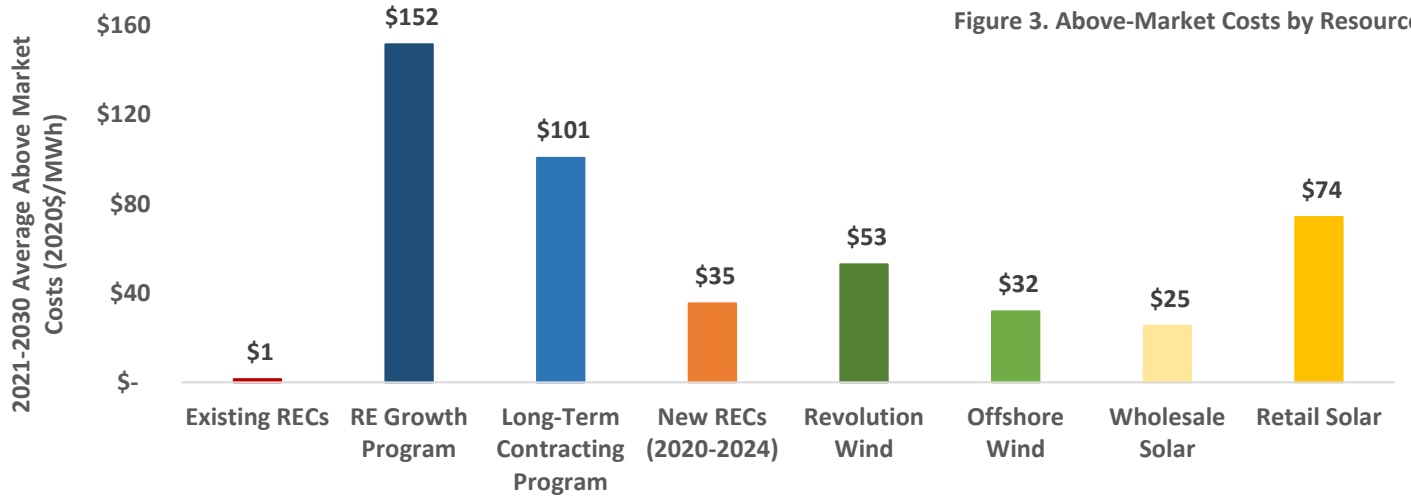


Figure 3 shows the average above-market cost by resource over the period. The additional wholesale solar and offshore wind used to meet most of the incremental requirement for the proposed RES have above-market costs of $25 and $32 per megawatt hour (MWh), respectively. These costs are significantly lower than the above-market costs of the RE Growth program ($152/MWh), the Long-Term Contracting program ($101/MWh), and Revolution Wind ($53/MWh) which comprise most of the current RES requirement in 2030. It is also important to note that National Grid's energy efficiency programs can play a role in complying with the proposed RES by reducing electricity use and the amount of renewable energy needed. Expanding lower-cost energy efficiency programs can reduce the above market costs of compliance with any RES.

Figure 3. Above-Market Costs by Resource



About Synapse

Synapse Energy Economics, Inc. is a research and consulting firm specializing in energy, economic, and environmental topics. For more information, contact: Jennifer Kallay at jkallay@synapse-energy.com.