

Carbon-Free Electricity Supply

RESOLVED, That in order to support the implementation of energy storage, this Senate requests the PUC to report whether new tariffs or programs are necessary to achieve the following energy storage deployment goals...

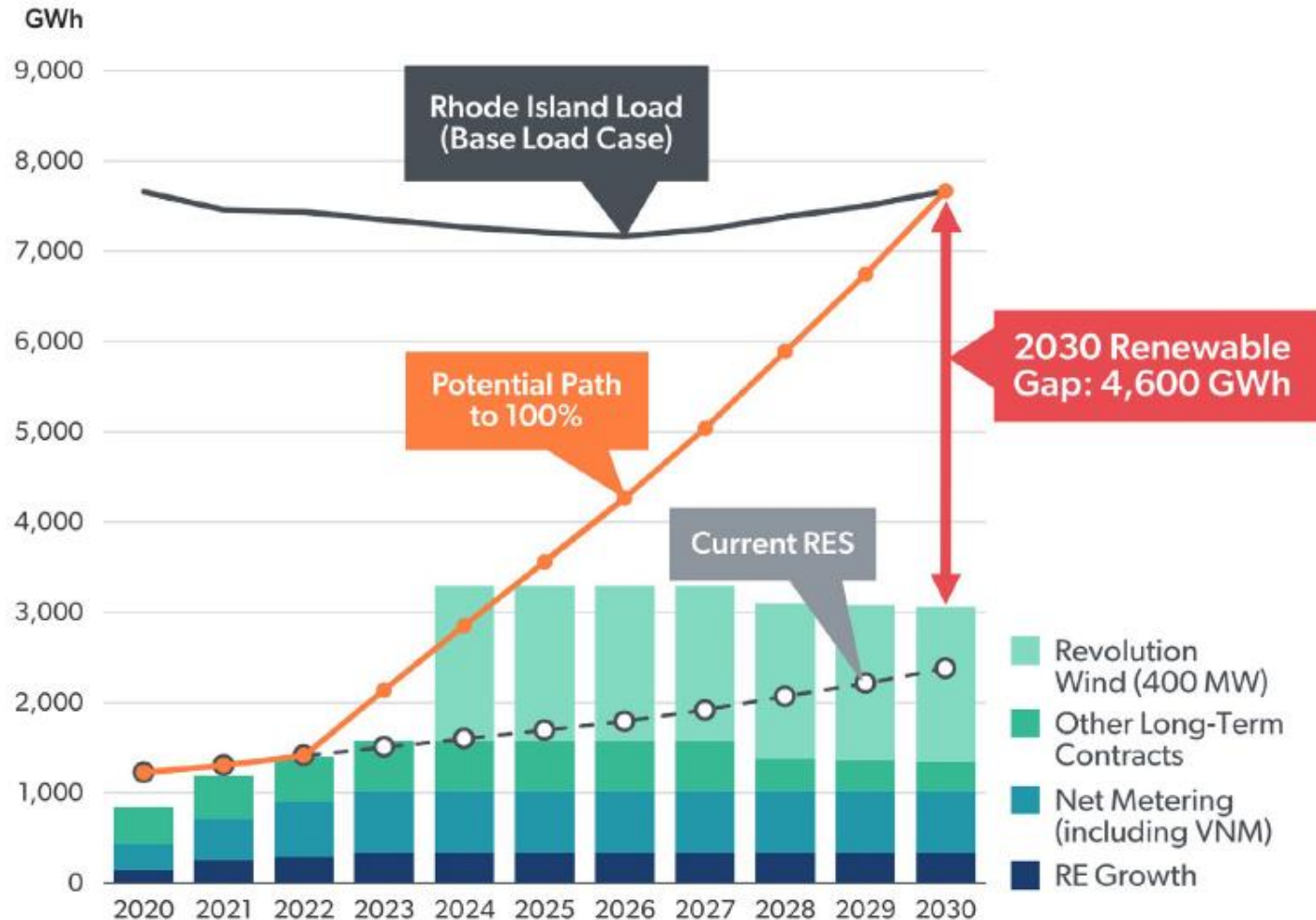
...Facilitating the transition to a safe and reliable carbon-free electricity supply

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- Achievement of carbon-free electricity supply goal is currently certificate-based.
- Certificate-based accounting:
 - aligns with existing clean energy programs,
 - aligns with competitive and regional markets and least-cost procurement policies, and
 - is a deliberate decision on how to measure compliance.

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RI OER Rhode to 100% Renewable Electricity



Does "100% Renewable" require shutting down all fossil generation in Rhode Island?

Achieving 100% renewable electricity does not require shutting down all fossil generation resources in Rhode Island. Executive Order 20-01 challenges Rhode Island to "meet one hundred percent (100%) of the state's electricity demand with renewable energy resources by 2030", which is different from mandating the closure of in-state fossil fuel generators that supply the regional electric grid with electricity. Meeting Rhode Island's entire electricity demand with incremental renewable energy will cause a corresponding reduction in the

FIGURE 3: RENEWABLE ELECTRICITY GAP TO ACHIEVE 100% RENEWABLES

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Pros/Cons of Meeting 100% via Market Purchases of Short-term RECs

Market purchases of short-term RECs may result in lower costs of meeting 100% RES (though it is also possible it might not, given reasonable uncertainties). However, REC purchases might also have other less desirable impacts, including:

- Lower GHG impacts, if RECs are from renewable resources that are not entirely additional (e.g., resources built ahead of other states' needs). RECs may be more likely to be inexpensive when the renewable generation is not additional.
- Limited support for local renewable resources (potentially giving up in-state economic activity).
- Increased ratepayer exposure to volatile REC prices via market REC purchases.

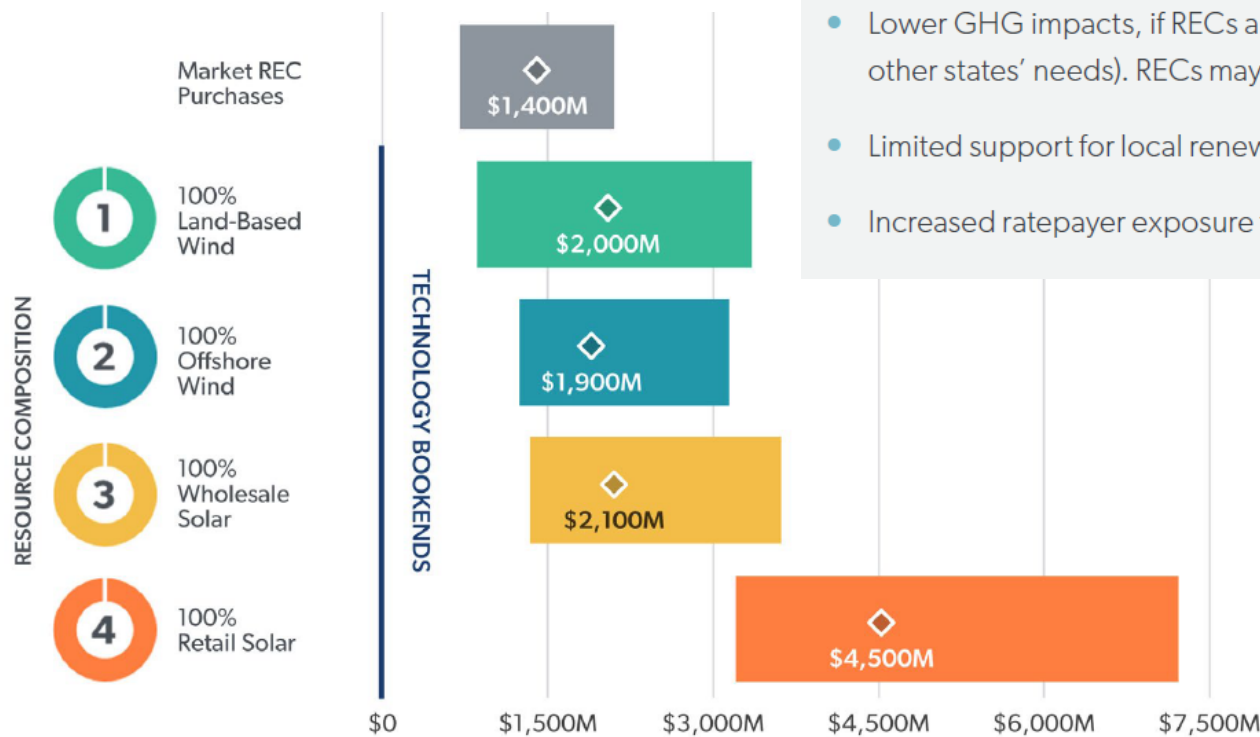


FIGURE 13: NPV OF ABOVE-MARKET COSTS (2020-2040) OF ACHIEVING 100% RENEWABLES; BOOKENDS

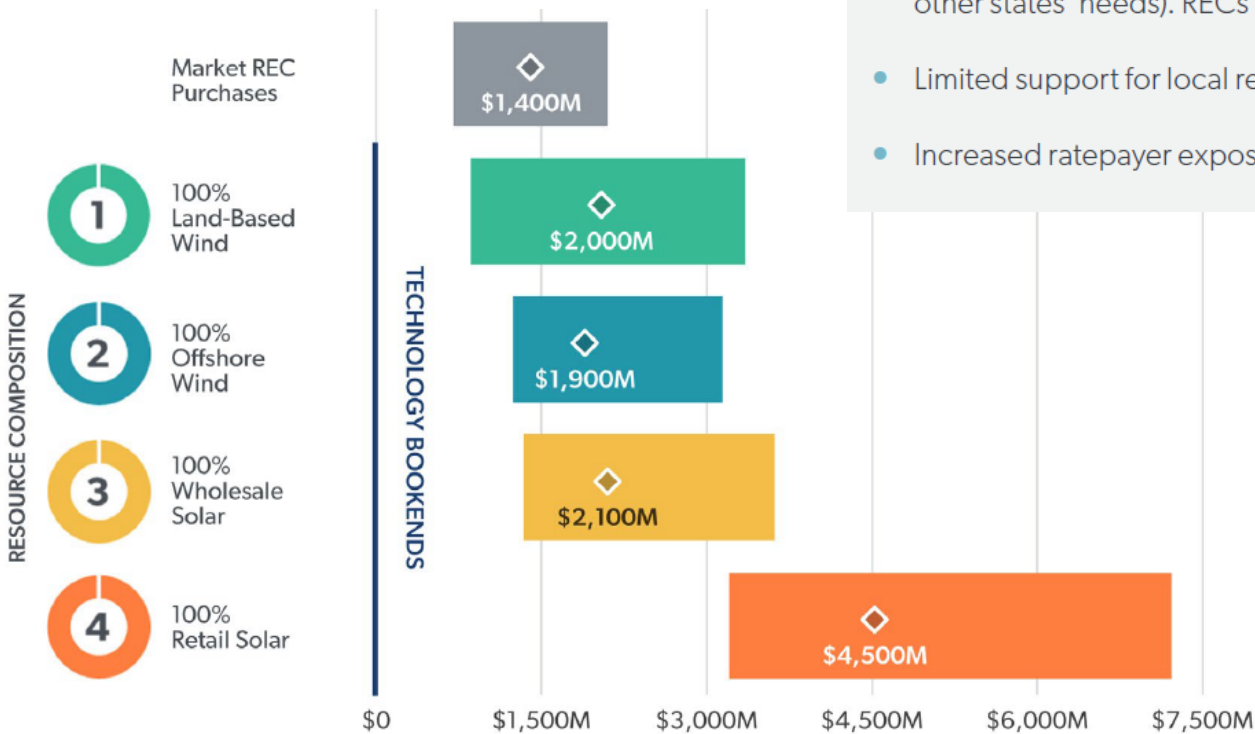
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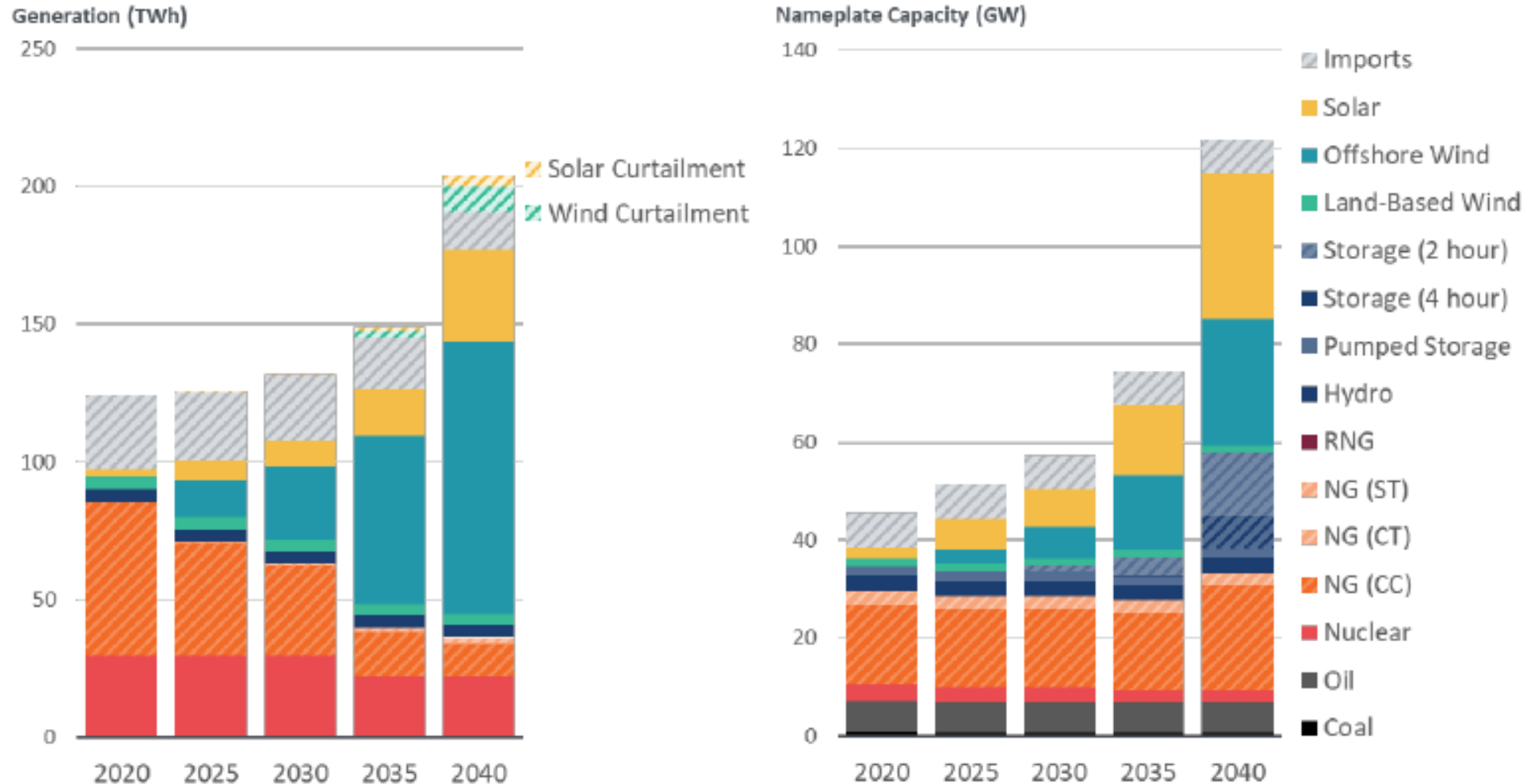
RI did not choose a certificate-only strategy. We are making large investments in new clean energy projects.

FIGURE 13: NPV OF ABOVE-MARKET COSTS (2020-2040) OF ACHIEVING 100% RENEWABLES; BOOKENDS

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FIGURE 7: GRIDSIM RESULTS – NEW ENGLAND GENERATION AND CAPACITY OVER TIME



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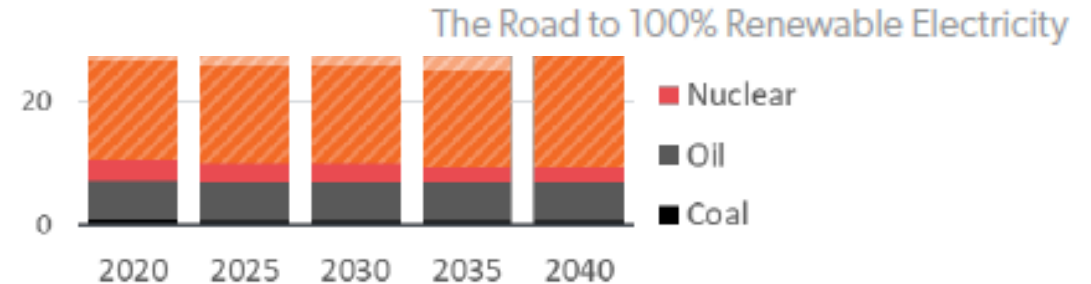
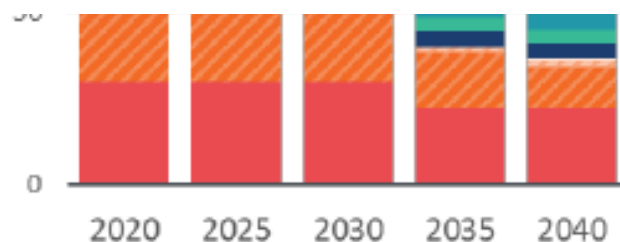
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FIGURE 7: GRIDSIM RESULTS – NEW ENGLAND GENERATION AND CAPACITY OVER TIME



Beyond 2030, as other New England states' renewable requirements also rise, the entire regional grid will transition to higher levels of renewable energy. Even though fossil capacity may remain for occasional usage to support reliability, the ability to operate this dispatchable generation is likely to be limited by emissions constraints. System operators will thus need additional non-emitting resources to match supply to load in real time, such as energy storage (e.g., batteries) and flexible load on a very large scale, which will increase the costs of providing reliable electricity to customers.

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Regardless of the GHG accounting convention or definition of clean electricity:

- There are alternatives to storage that can solve barriers to achieving “100% clean electricity,” and storage should only be deployed if it the best alternative, and
- Storage can reduce the costs of increasing amounts of renewable energy on the system, even if RI maintains its certificate-based emissions accounting.