

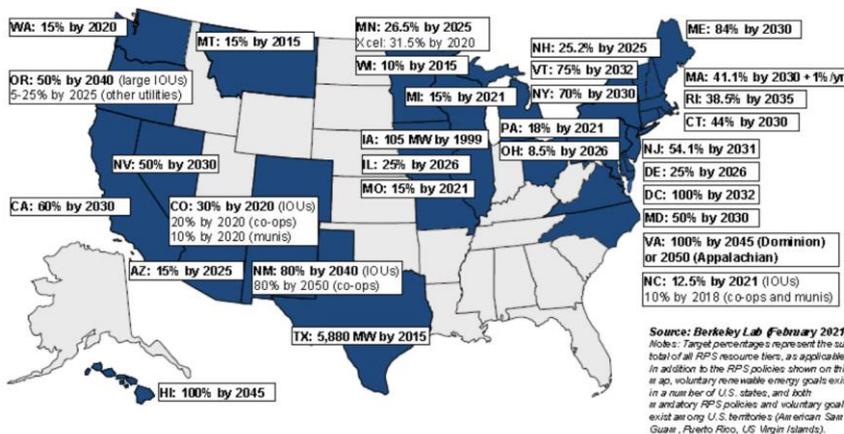
Letter from America: US renewables to rise unimpeded under Biden

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If you are a regulator or policymaker with green ambitions, there are two basic approaches to increase the share of renewables in the electricity mix. You can restrict the use of fossil fuelled generation either through regulations and/or by making them more expensive – such as by introducing a tax on carbon emissions – or you can mandate that a certain percentage of generation should come from renewable resources. Economists typically favour the former – it is more elegant and less intrusive – while politicians favour the latter because it is politically more palatable – few politicians like carbon taxes.

Figure 1: 30 states and the District of Columbia currently have RPS



Source: US renewable portfolio standards, 2021 status report, early release, Lawrence Berkeley National Lab, Feb 2021

status report by the Lawrence Berkeley National Laboratory released in Feb 2021, they account for 189TWhs of non-hydro renewable generation or roughly 45% of the 402TWhs since 2000 (see Figure 2).

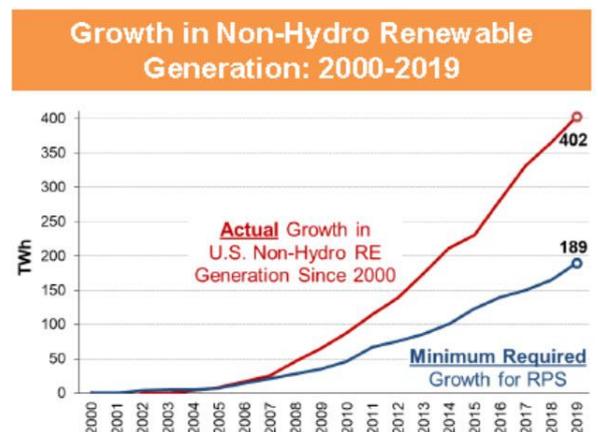
The fossil fuel lobby cries foul at the renewable subsidies while ignoring the significant subsidies it receives. Moreover, they incessantly complain about the excessive cost of renewables on customers' electricity bills. The former is not true – fossil fuel subsidies exceed renewable subsidies especially since the implicit cost of carbon emissions are not included. And according to the LBL report, the RPS mandates on average have added a mere 2.6% to US electricity bills – it adds to costs but is not an overwhelming burden by any measure.

Since many states have recently increased their RPS targets, some to 100% by 2045, how much of a difference are they likely to make moving forward? LBL figures that they will account for an extra 250TWhs by 2030 – roughly a 50% boost in non-hydro renewable generation from 2019 level (see Figure 3).

Whatever the relative merits of the options, renewable portfolio standards or RPS have long been favoured in the US – as opposed to feed-in tariffs (FiTs) or other instruments popular in Europe.

The practice started in the 1980s and has spread in recent years. They are currently in place in 30 states and the District of Columbia (DC) and account for 58% of retail electricity sales in the US (see Figure 1). While varying in many respects from state to state, they have been instrumental in increasing the share of renewables in the US electricity mix – even in places where they do not apply. According to *US renewable portfolio standards, 2021*

Figure 2: How much of a difference did RPS make?



Notes: Minimum Growth Required for RPS excludes contributions to RPS compliance from pre-2000 vintage facilities, and from hydro, municipal solid waste, and non-RE technologies. This comparison focuses on non-hydro RE, because RPS rules typically allow only limited forms hydro for compliance.

Source: US RPS, 2021 status report, LBL, Feb 2021

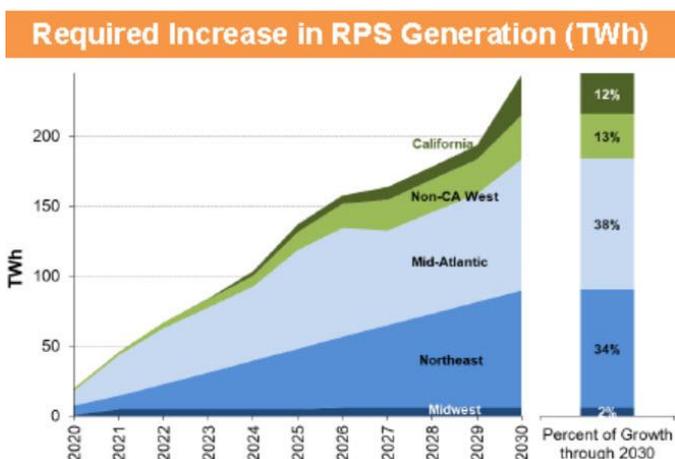
Moreover, the LBL analysis points out that the RPS mandates affects different technologies differently. For example, it says that in 2019, 32% of solar capacity additions were serving RPS needs versus 13% for wind. In some states, there are set-asides for specific technologies to make sure all renewables benefit from the mandates.

Unsurprisingly, most states have managed to meet or beat their RPS targets thus far, apparently without too much trouble.

In 2015 Hawaii passed legislation requiring all electric utilities to achieve a 100% RPS by 2045, with interim goals of 30% by 2020, 40% by 2030, and 70% by 2040. In Feb 2021, Hawaii’s largest utility, Hawaiian Electric Co (HECO) said it has already blown past its mandated 2020 target, reporting that 34.5% of its electricity generation mix was made up of renewable energy sources. HEC more than tripled the amount of renewables in the last 10 years, from 10% in 2010.

According to HECO’s CEO Scott Seu, “Exceeding the state renewable energy mandate underscores Hawaiian Electric’s commitment to replace imported fossil fuels at a pace that keeps us on the path to be carbon neutral by 2045.” Several states have subsequently passed similar legislation.

Figure 3: How much of a difference will RPS make by 2030?



Notes: For regulated states, incremental RPS needs are estimated on a utility-specific basis, based on each utility’s RPS procurement and REC bank as of year-end 2019. For restructured states, incremental RPS needs are estimated regionally, based on the pool of RPS-certified resources registered in the regional REC tracking system, allocated among states based on eligibility, demand, and other considerations.

Source: US RPS, 2021 status report, LBL, Feb 2021

RPS or not, US renewables provided 20.6% of the total electrical output in 2020 – an increase of 9.2% over 2019, according to the latest data from the US Energy Information Administration (EIA).

In the meantime, coal output in 2020 was 19.8% lower than a year earlier while natural gas continued to provide the largest share – roughly 40%, growing by 2%. Total generation, however, was down by 2.7%, due in part to the pandemic and economic conditions.

Wind and solar combined were up 16.7% in 2020 from 2019 levels. Solar alone expanded by 24% compared to 2019, providing nearly 3.3% of the nation’s total. Wind grew by 14%, accounting for 8.3% of the total. No other energy source experienced anything resembling the high growth rates of wind and solar.

In its *Annual Energy Outlook 2021*, the EIA projects that the share of renewables in the US electricity generation will increase to 42% by 2050 with wind and solar responsible for most of that growth. The EIA, like many others, has consistently under-

predicted the growth of renewables. There is no reason to believe that their latest won’t be too low.

Ken Bossong the Executive Director of SUN DAY Campaign notes that renewable sources have doubled their share of the nation’s electrical generation over the past decade, up from 13.6% at the end of 2015 and just 10.4% at the end of 2010. Within the next five years, he says, they will likely provide more than a quarter of the nation’s electrical generation.

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