**CALIFORNIA ELECTRICITY RPS TARGETS BY 2030**

Many variables are to be factored into determination of the targets. The precautionary principle is to guide planning. When applied to climate change, this means that scientific estimates of the amount of GHG emissions we can achieve at future dates may be too low to prevent severe ecosystem damage. Thus, climate scientists recommend that our policies set ambitious targets for mitigation over the next 5 and 10 year periods. If GHG targets are exceeded by 2030 (by annual emissions being lower than projected), then we can easily relax targets beyond those dates. However, if GHG targets are allowed to remain too high and ecosystem impairments are more severe than anticipated, it will be too late to decelerate climate change.

The climate lag is also important to incorporate. Climate scientists estimate that there is a lag of 38 years between the initial year of decreased annual GHG emissions and global cooling. E.g., if GHG emissions from measured and estimated sources in CA were decreased to 400 MMT CO2e/year in 2021 and held at that level annually until 2059, the temperature would not begin to subside until 2059. There is widespread scientific consensus that this is risky. It is more prudent and effective to set progressively lower annual targets, e.g., a 7% decrease annually.

Even if climate change is a hoax, as proclaimed by a few ill-informed individuals, aggressive reductions in GHG emissions are still warranted. When recently-gathered biomass and antique biomass (fossil fuels) are burned, the combustion emits about 10 major toxic co-pollutants. About 80% of toxic air pollution is from the combustion of fossil fuels. The most recent estimates indicate that between 7 and 9 million people are killed annually by air pollution.

Also, the annual GHG data from EPA and CARB does not include many sources of GHG emissions. Burning of non-fossil biomass is an example. Another major omission is methane from leaking NG pipelines, anesthetic gases, decomposition of detached organic matter, landfills, and raising livestock. Some industrial super-pollutants, with high GWP, are omitted. There are 650,000 miles of NG pipelines in CA and over 1,000 leaks are reported daily. The contracting and fiscally-impaired fossil fuel industry has higher priorities for spending than pipeline repair. More stringent regulations are needed to maintain safe pipelines.

The rate of deforestation in CA and globally is increasing. This is driven by wildfires, excessive logging, and increased tree mortality due to air pollution, thermal, and drought stress. Our forests sequester more carbon per acre than any other habitat. They also trap nitrous oxides, PM, sulfer oxides, and ground-level ozone. Forests store and gradually release water via streams. This helps to keep temperatures lower, attenuating climate change. Lower GHG targets need to be planned in order to overcome deforestation.

Increased demand for electricity is likely to keep pace with population growth. The Public Policy Institute of CA estimates that the population of CA will rise by 0.8% annually, reaching 44 million by 2030. Supply plans are recommended to at least match this projection.

There are numerous policies in CA to accelerate the transition to a low-carbon economy. These will increase demand for electricity. Reach codes for new buildings to be all-electric (without NG infrastructure) have been adopted in many municipalities. Gov. Newsom’s Executive Order N-79-20

<https://www.courthousenews.com/newsom-bans-sale-of-gas-diesel-vehicles-in-california-by-2035/>

bans the sale of internal combustion passenger trucks and cars by 2035, and commercial trucks by 2045. Many municipalities have planned or built electric mass transit and school bus fleets.

To curtail demand, many more policies are needed to increase efficiency of buildings and industrial processes and to incentivize conservation. Due to the recession, additional revenue sources are needed to fund electrification of our economy. Let me know if you want a list that does not raise corporate or individual income tax rates.

In order for electrification to be reliable and effective 24/7, a statewide (and preferably regional or national) smart grid with battery storage is required. This would have distributed generation and storage as well as EV-to-grid capability.

In light of the above, the following RPS targets for electricity generated by all sources follow.

Date Interim Target %

2022 40

2024 46

2026 53

2028 60

2030 68

2032 77

2035 90

The 2035 report, linked below, shows a well-researched road map for reaching 90% by 2035.

Let me know if you wish additional citations. Please collaborate with other agencies to enact a policy mix that achieves the above objectives and requirements.

[https://cleantechnica.com/2019/12/22/100-wind-water-solar-energy-can-should-be-the-goal-costs-less/?utm\_source=CleanTechnica+News&utm\_campaign=1c1d8cbf07-Daily+Email+CAMPAIGN&utm\_medium=email&utm\_term=0\_b9b83ee7eb-1c1d8cbf07-332179453](https://cleantechnica.com/2019/12/22/100-wind-water-solar-energy-can-should-be-the-goal-costs-less/?utm_source=CleanTechnica+News&utm_campaign=1c1d8cbf07-Daily+Email+CAMPAIGN&utm_medium=email&utm_term=0_b9b83ee7eb-1c1d8cbf07-332179453" \t "_blank)

[https://www.2035report.com/?utm\_campaign%3DHot\_News&utm\_medium%3Demail&\_hsmi%3D8926706&\_hsenc%3Dp2ANqtz--01pnyezm3biSUyT-ycRBlM--v8jSvHFUHRJD2tsbaiDOgJuMetjG3cyXCbhgdN-9QzkP6EuPTOdDadEXduplG30PECCn7OQef6c0snci9S3N5g1U&utm\_content%3D89266706&utm\_source=hs\_email](https://www.2035report.com/?utm_campaign%3DHot_News&utm_medium%3Demail&_hsmi%3D89266706&_hsenc%3Dp2ANqtz--01pnyezm3biSUyT-ycRBlM--v8jSvHFUHRJD2tsbaiDOgJuMetjG3cyXCbhgdN-9QzkP6EuPTOdDadEXduplG30PECCn7OQef6c0snci9S3N5g1U&utm_content%3D89266706&utm_source=hs_email" \t "_blank)

[https://theenergymix.com/2020/09/30/renewables-employed-11-5-million-in-2019-could-approach-30-million-by-2030-irena-reports/](https://theenergymix.com/2020/09/30/renewables-employed-11-5-million-in-2019-could-approach-30-million-by-2030-irena-reports/%22%20%5Ct%20%22_blank)

<https://yaleclimateconnections.org/2020/07/trump-epa-vastly-underestimating-the-cost-of-carbon-dioxide-pollution-to-society-new-research-finds/#:~:text=The%20latest%20research%20by%20an,to%20nearly%20%24600%20by%202100.>