



As Figure 7 (above) demonstrates, New York already experiences a significant amount of wind curtailment, or wasted potential renewable generation. Resource planning models discussed in the UC Irvine White Paper predict that when renewable energy comprises more than 60% of the resource mix, “energy production will exceed demand in over 20% of the hours of the year, totaling between 5% and 10% of all renewable power produced,”¹⁸ resulting in significant curtailment of these resources. The opportunity for renewable generators to be able to sell their excess power generation to produce and store green hydrogen would provide a financial benefit to renewable generation resources, when otherwise such power generation would have to be curtailed resulting in no energy margin. The benefits go beyond providing additional revenue for renewable resources: ultimately, the costs associated with meeting the Clean Energy Standard will be reduced, making that program as efficient as possible for ratepayers. As previously discussed, long-term reductions in the cost of the excess electricity supplied by renewables to electrolyzers will, over time, lead to reductions in the production costs of green hydrogen.

¹⁸ See UC Irvine White Paper at pp 3-4. If we apply the mid-range of UC Irvine estimate (7.5%) to ICF’s projected resource mix in New York for the year 2040 (i.e., approximately 66,300 GWhs of total wind generation [July 8th ICF Report at p. 19]), we find that there will be approximately 5 TWh in excess renewable wind-related generation. If this excess 5 TWh per year were applied to the production of green hydrogen, it would produce approximately 97.1 million kgs of green hydrogen annually (or 97,143 metric tons). (See H2 Solutions – New Energy Business, Omar Rubio – Status September 2020 – New Energy Business Siemens Energy, 2020, at p. 11). The estimated volume of green hydrogen could produce approximately 1.7 TWh of generation using highly efficient combustion turbines converted to operate on 100% hydrogen. This generation volume would account for a meaningful portion of the projected dispatchable generation requirements of NYS in 2040 as projected in the ICF Report to maintain electric grid reliability.