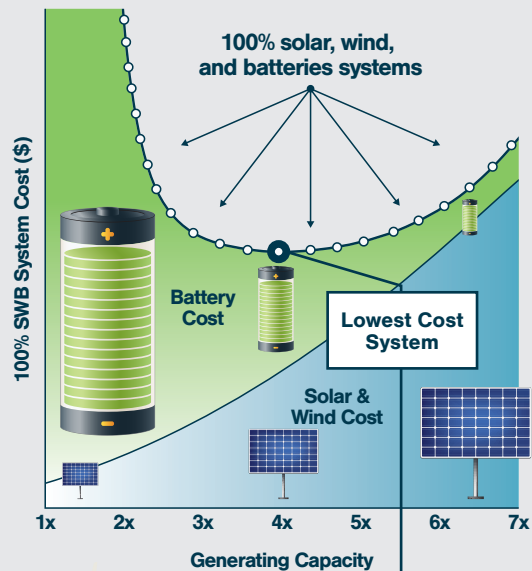


Rethinking Energy 2020-2030: 100% Solar, Wind, and Batteries is Just the Beginning – Visual Summary

100% Solar, Wind, and Batteries is Possible

Thousands of combinations of SWB can deliver 100% of our electricity demand. There is a nonlinear cost tradeoff between generation and storage. To identify which combination is least expensive, we use the **Clean Energy U-Curve**.



3x-5x more generation than the existing grid

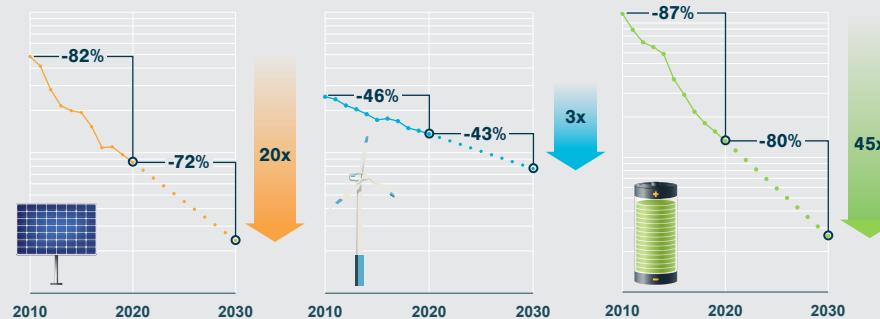
35-90 hours' worth of batteries (varies by geography)



100% Solar, Wind, and Batteries is the Cheapest System by 2030

Falling costs drive technology disruptions. Solar and wind are already the cheapest new generation options, and cost less than existing coal, gas, and nuclear power plants in many areas. The cost of SWB systems will fall another 70% by 2030, making disruption inevitable.

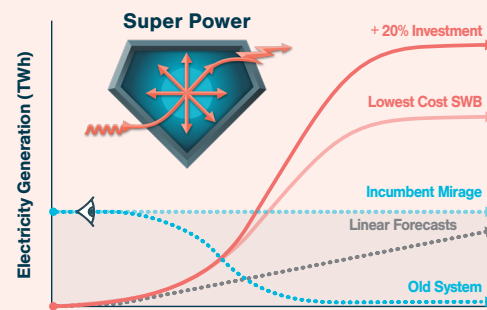
\$/kWh (logarithmic plot)



- » We are beyond the rupture point, and the bulk of disruption will unfold rapidly over the next decade.
- » Electricity from a 100% SWB system in 2030 will cost less than 3 cents per kilowatt-hour.
- » New investments in coal, gas, or nuclear power is financially unviable.
- » Existing coal, gas, and nuclear assets will be stranded.

100% Solar, Wind, and Batteries is Just the Beginning

100% SWB systems naturally produce a huge surplus of clean energy at near-zero marginal cost that we call **Super Power**.



Super Power will disrupt all existing uses of energy

Additional investments in generation yield disproportionately large returns of Super Power

Energy California (TWh)



Electric Power Sector 285.0	Transportation Sector 227.5	Residential Sector 122.1	Comm. Sector 90.2	Industrial Sector 344.6
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Super Power is available on most days of the year



Super Power will create new growth opportunities

