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Kiloton-scale xenon detectors for neutrinoless double beta decay

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If neutrinoless double beta decay ($0\nu\beta\beta$) is not observed in the upcoming generation of ton-scale detectors, future detectors at the kiloton-scale may be required to probe the majority of the remaining parameter space for the decay. Gas or liquid phase xenon time projection chambers (TPCs) provide a possible path to reaching $0\nu\beta\beta$ half-life sensitivities as long as 10^{30} years. A key challenge to enabling such experiments is the procurement of the required xenon, and possible avenues for acquisition of kiloton-scale quantities of xenon that avoid existing supply chains will be described.

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