The changing global climate, coupled with dynamically evolving energy and economic scenarios, is impacting life cycle effects of all, including building industry. To effectively decrease construction’s 40% share of global annual energy use and carbon emissions, it's crucial to integrate these changes into life cycle assessments (LCA) and energy assessments, since buildings have lifespans exceeding 100 years. Current research lacks comprehensive methods to embed future weather and energy shifts into LCA. This paper explores these future changes and their integration into building LCA. Using industry reports, scholarly articles, and agency data, we calculated global energy trends and weather patterns for 2030, 2050, and 2080. The projected energy use changes across U.S. economic sectors were also determined from federal data. Results indicate a 41-59% decline in fossil fuel use by 2050, with renewable energy increasing from 11% to 41%. Concurrently, global temperatures may rise by 2-5°C, signalling major weather shifts. These reductions will translate in economy-wide energy intensity, showing an expected drop of 8%. This paper’s results are pivotal for not only researchers and practitioners involved in assessing the LCA of buildings, but also for global policy makers in refining energy policies to effectively mitigate climate change for decades to come.