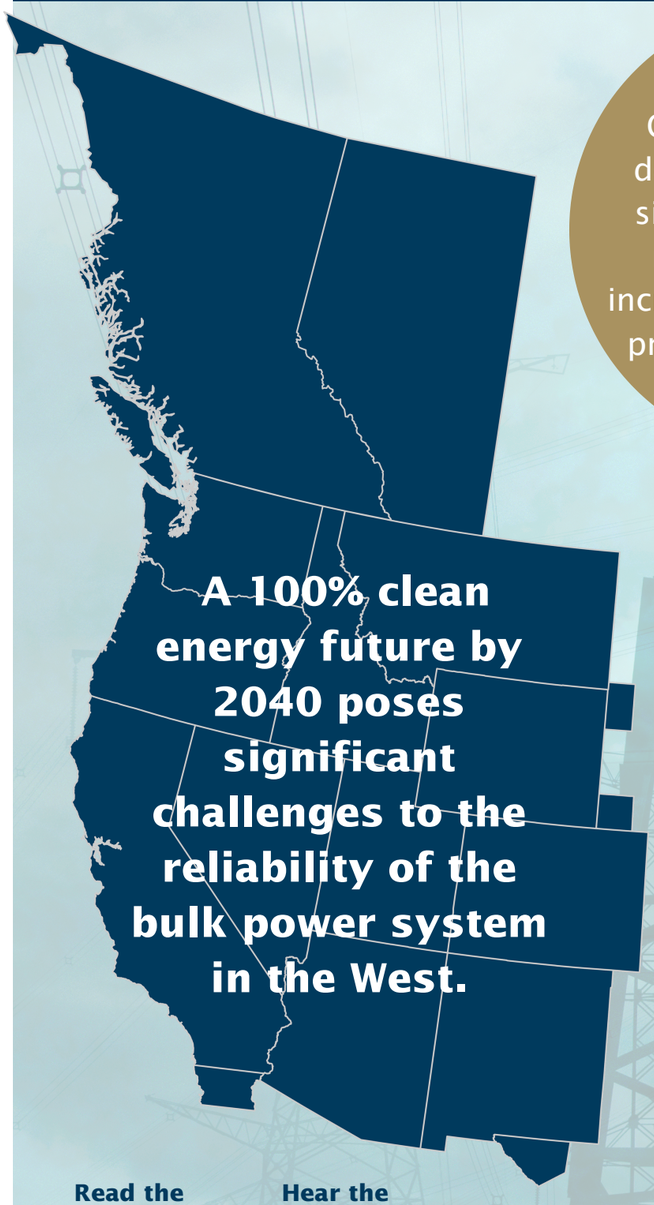
2040 CLEAN ENERGY SCENARIOS

Executive Summary



Finding #1

Growth in electrical demand will increase significantly over the next 20 years with increased electrification, primarily from vehicle electrification.

Finding #2

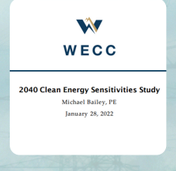
To reach higher levels of clean energy, the resource mix will need to maintain a certain amount of flexibility. Battery storage alone will not provide the required flexibility at clean energy levels above 90%.

Finding #3

New resource technologies that can provide the same operational flexibility as gas fired resources—but without carbon emissions—will be needed to reach a clean energy future.

Clean energy technology will have to make significant advances to reach clean energy targets above 90%. At least 16% of the total generation must be produced from sources with performance characteristics similar to gas-fired generation. Continued research, collaboration, and a common understanding among stakeholders are crucial to achieving a 100% clean energy future.

Read the report



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APPROACHING CLEAN ENERGY

This assessment examined the reliability implications of reaching various levels of clean energy in the Western Interconnection by 2040. To understand these clean energy portfolios, WECC examined over 200 possible resource-load mixes for various seasonal load conditions using a production cost model (PCM) simulation. This allowed WECC to identify tradeoffs between various resource portfolio mixes for clean energy levels between 80% and 100%.

WHY DOES THIS MATTER?

For the bulk power system to achieve a clean energy level that is reliable, supply must be balanced with demand for all seasonal load conditions, for both resource adequacy and operational flexibility. While there are multiple paths that can lead to a clean energy future, not all may be optimal. Decision-makers vested across a broad array of interests will need to work together to achieve a desirable clean energy path.