

Manufacturing and Energy Supply Chains

The U.S. Department of Energy's (DOE's) Office of Manufacturing and Energy Supply Chains (MESCC) is revitalizing the U.S. manufacturing base with over \$20 billion of direct investment in manufacturing capacity, industrial decarbonization, and workforce development.

Mission

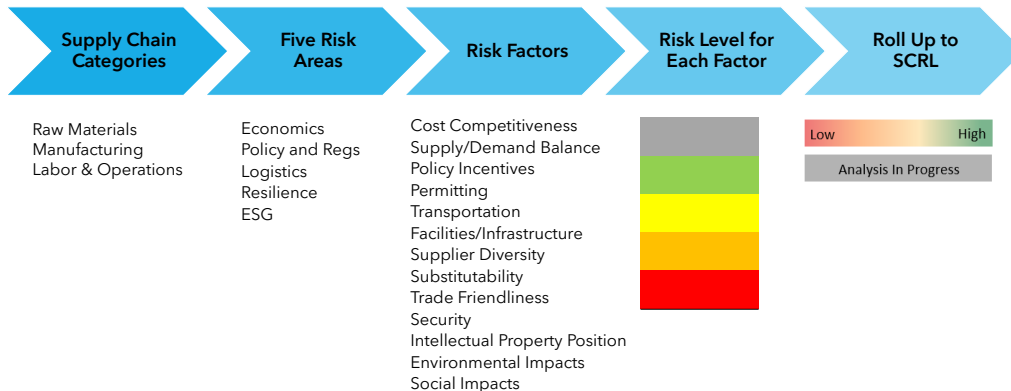
To strengthen and scale America's clean energy supply chains through:

- transformative manufacturing capacity investments
- targeted workforce investments to build up the energy workforce of the future
- cutting-edge energy supply chain vulnerability and innovation analysis

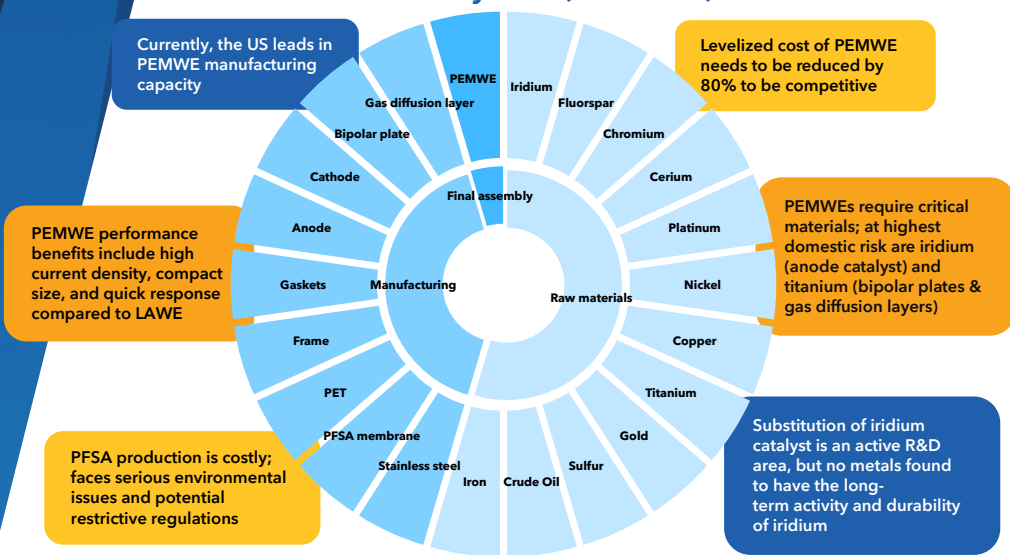
Vision

To eliminate vulnerabilities in U.S. Clean Energy supply chains, while driving unparalleled social, economic, and environmental impact through our programs & awards.

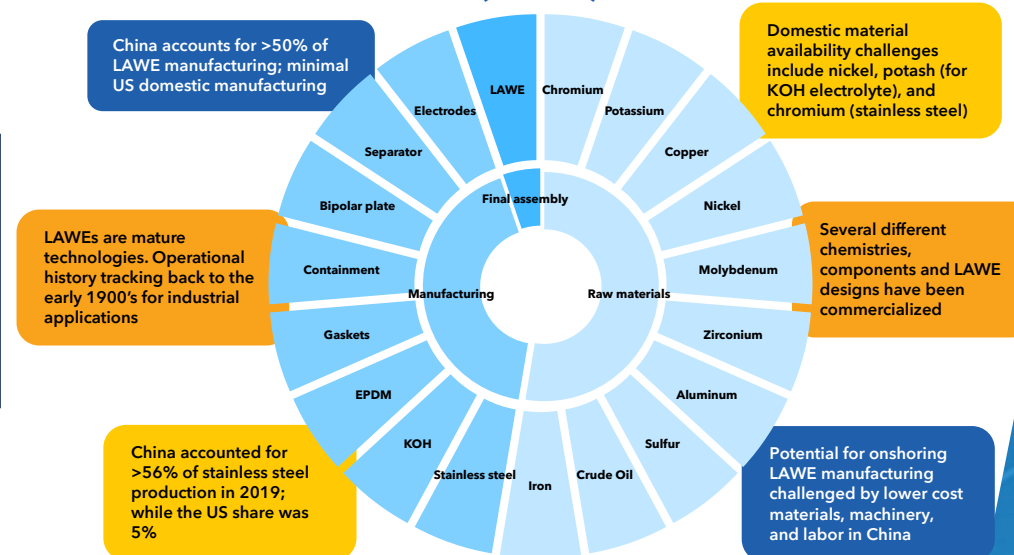
Methodology



Proton Exchange Membrane Water Electrolyzers (PEMWE)



Liquid Alkaline Water Electrolyzers (LAWE)



Electrolyzer Market Summary

- Both PEMWEs and LAWEs are commercially available products with technology readiness levels equal to 9.
- To meet net zero energy goals, electrolyzer manufacturing capacities are forecasted to require 20-25 GW/y (domestic) and 500 GW/y (global) by 2030 [DOE][IEA].
- The current domestic electrolyzer manufacturing capacity is <20% of that required to meet 2030 domestic demand goals [DOE].
- Deeper analysis is needed of labor requirements, capital equipment, product testing, and power electronics (e.g., transformers, rectifiers, printed circuit boards).