

## Manufacturing and Energy Supply Chains

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

### Mission

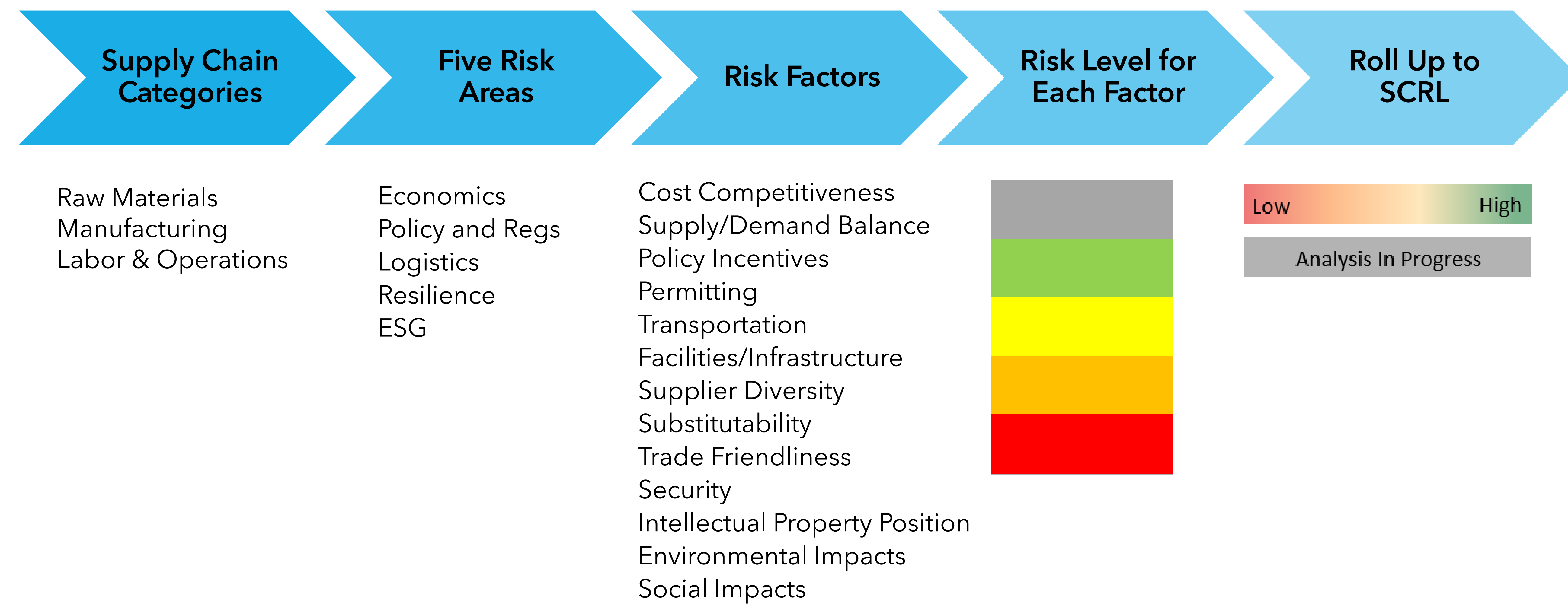
To strengthen and scale America's clean energy supply chains through:

- 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

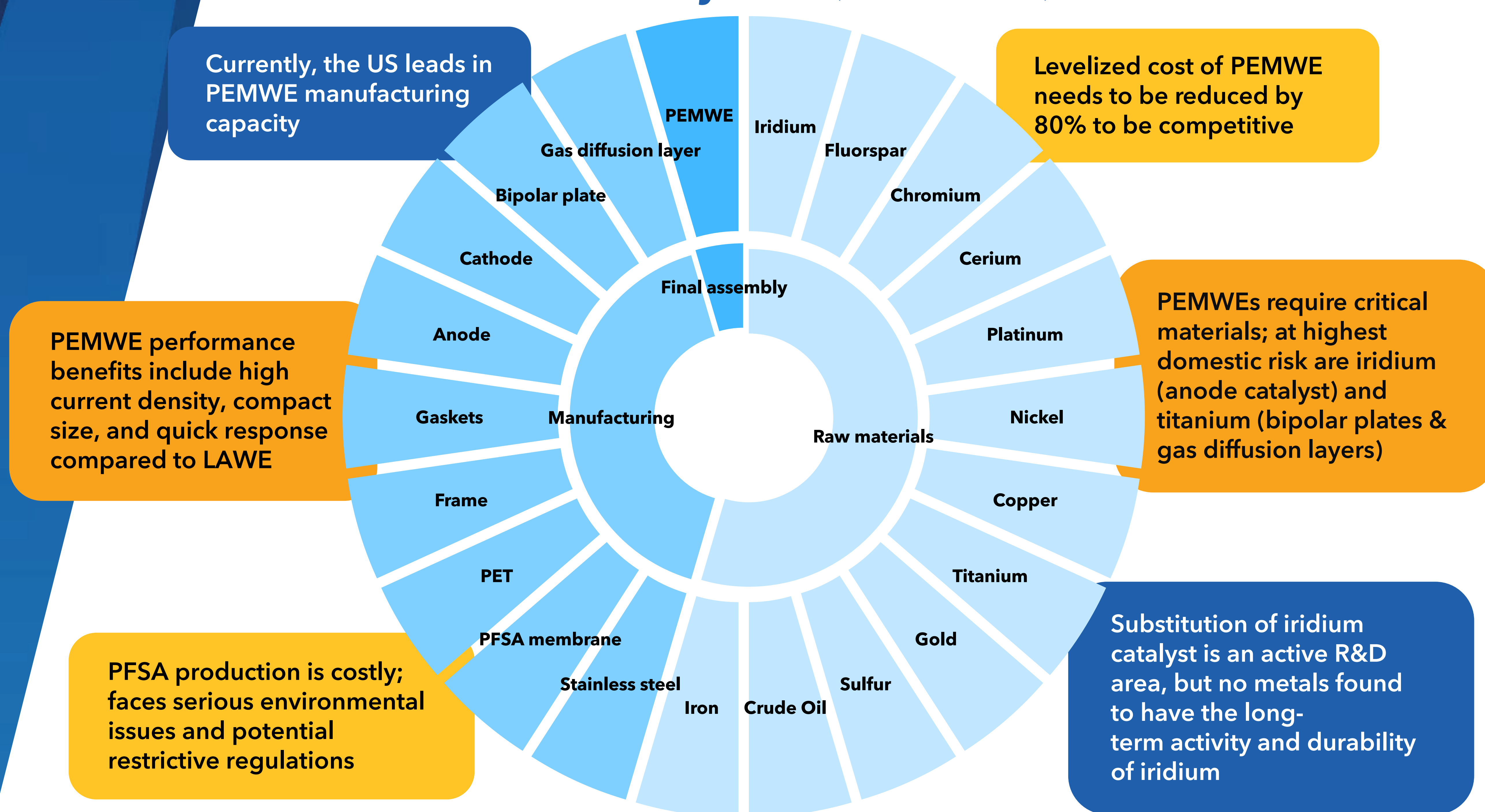
### Vision

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

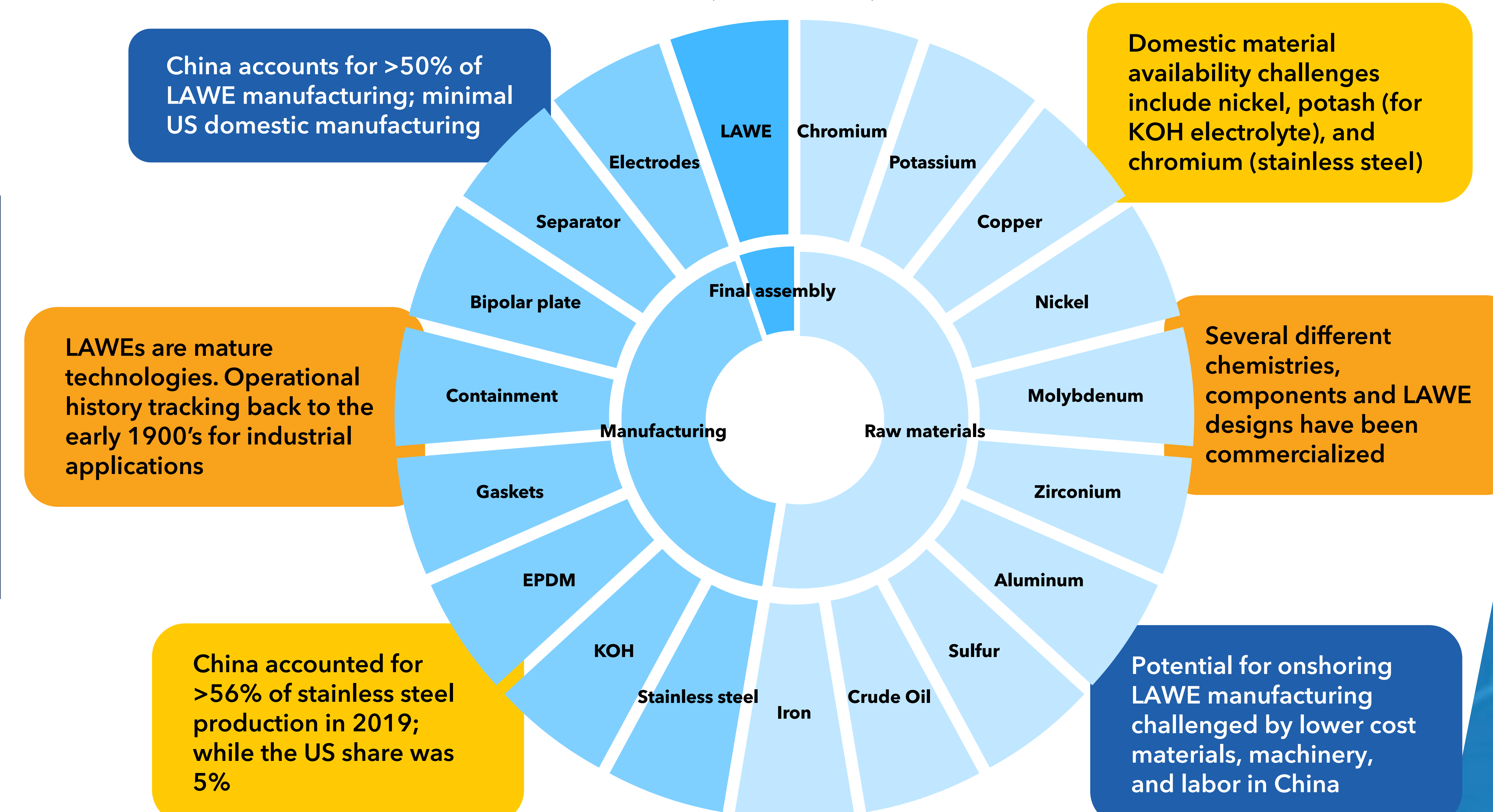
## Methodology



## 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).