



The U.S. Department of Energy

**Industrial Efficiency and
Decarbonization Office (IEDO)**

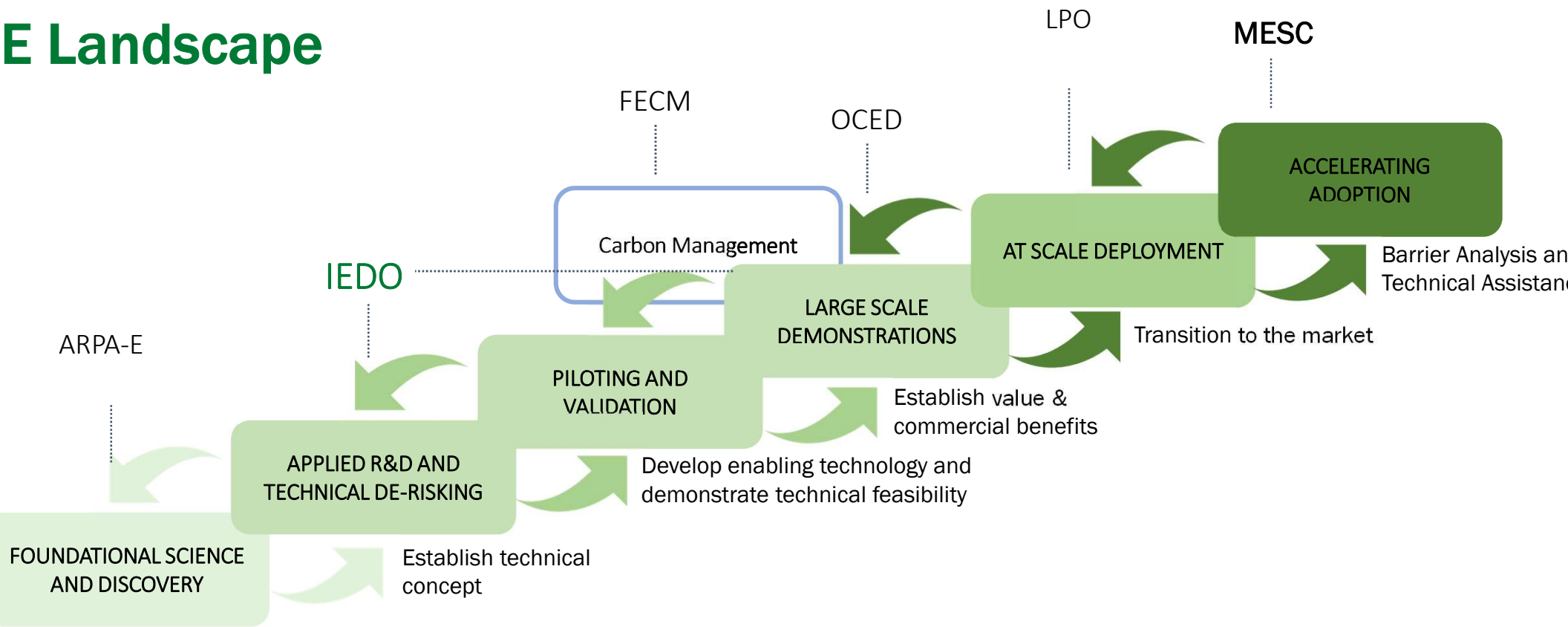
Isabelle Sgro Rojas, PMP

Energetics representing DOE-IEDO

ACEEE: Embodied Carbon Roundtable workshop
July 11th, 2023



E Landscape



EMERGING TECHNOLOGIES

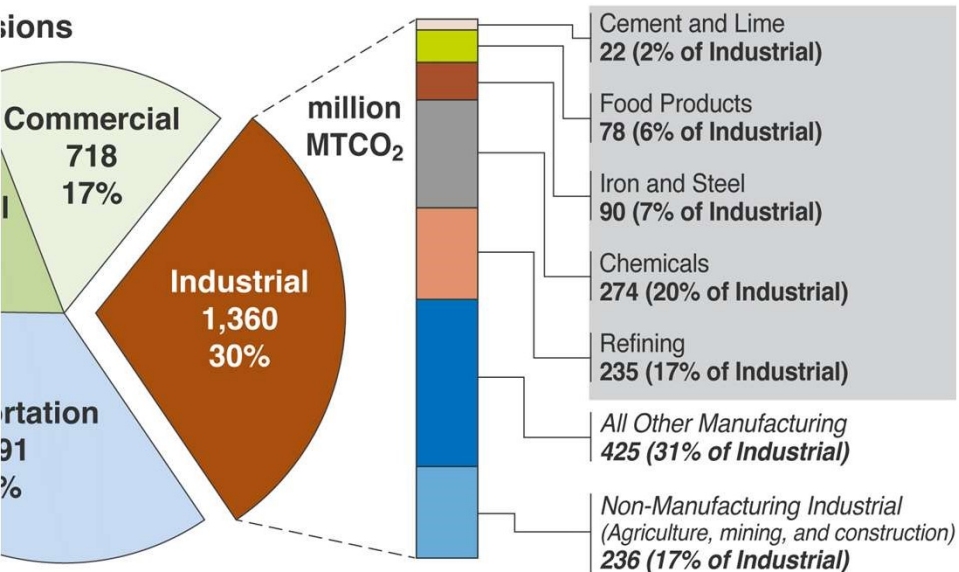
TIMELINE / INVESTMENT STAGE

ESTABLISHED TECHNOLOGIES

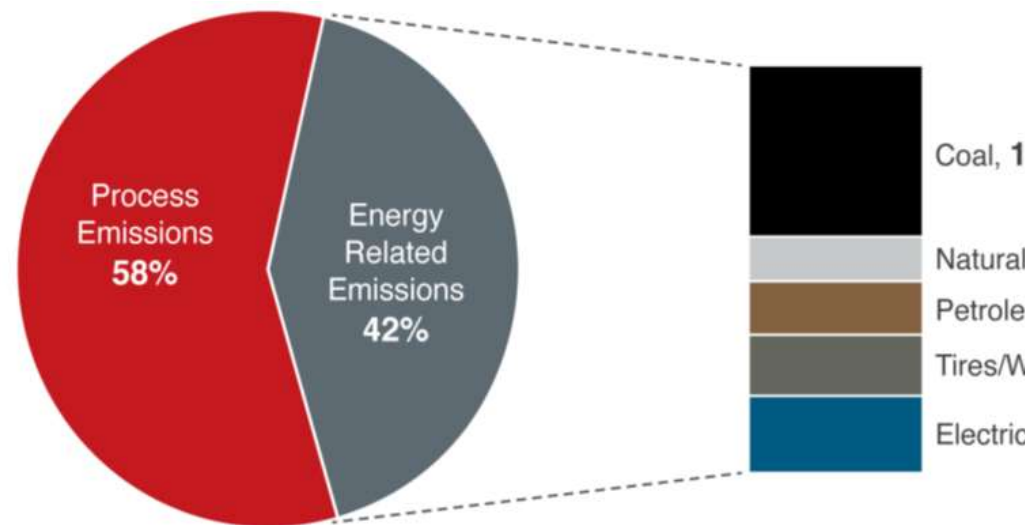


Focus on Energy Intensive Manufacturing Subsectors

Energy Related CO₂ Emissions Across U.S. Industry

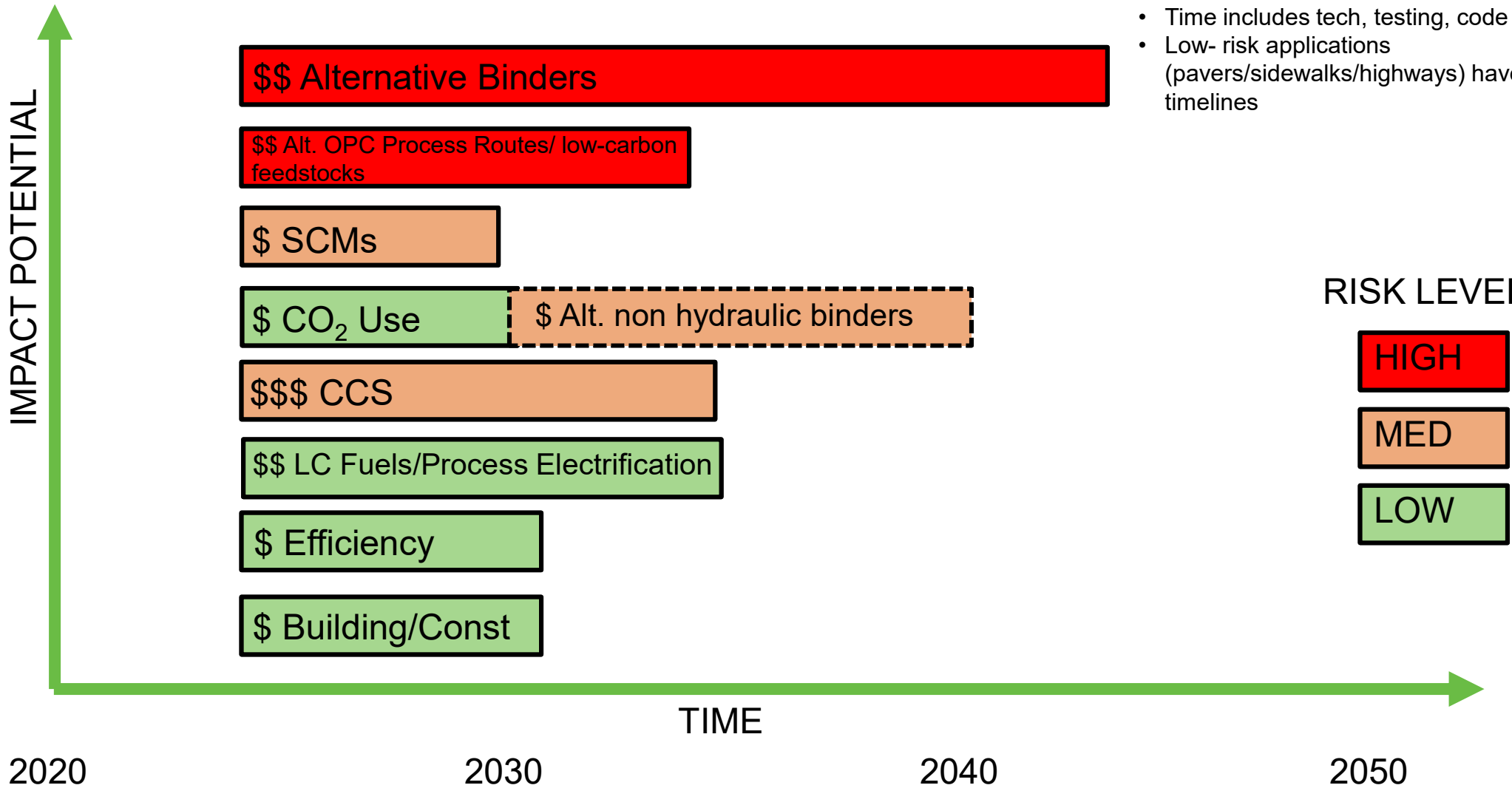


CO₂ Emissions in the cement Industry



The five top manufacturing subsectors are responsible for 51% of energy-related industrial CO₂ emissions

Tech Development Pathway: Cost, Impact, Risk, Time-to-Launch



Cement & Concrete Decarbonization

Industrial Decarbonization FOA:

Applications received; 5 awarded (\$16.4M)
 Green cement/SCMs from captured CO₂
 PC with lower firing temperature
 Concrete with high-volume SCMs and CNTs

Multi-topic FOA:

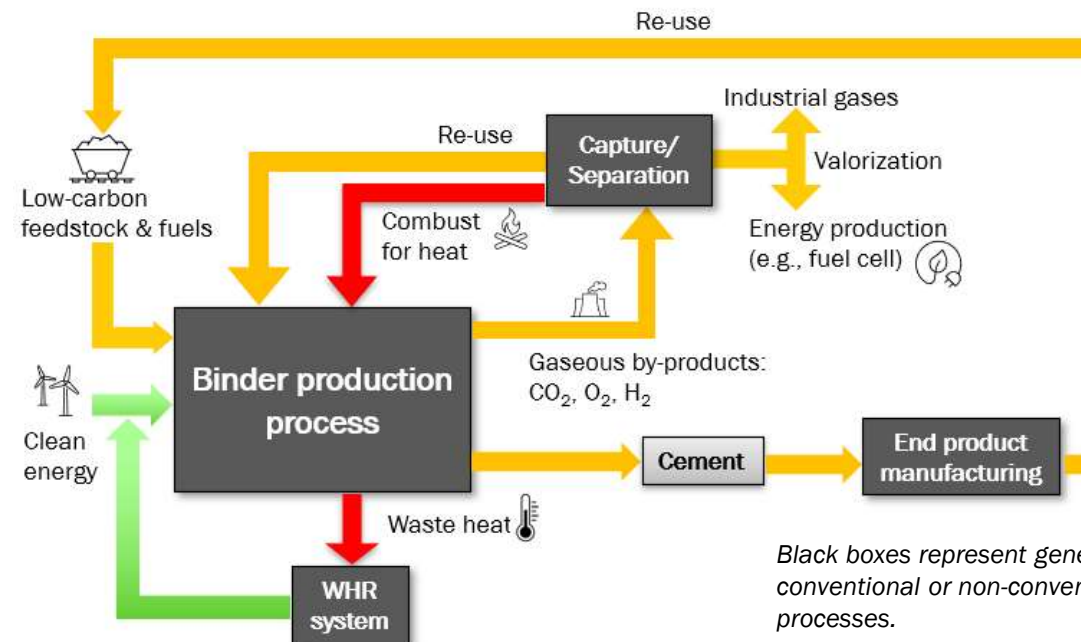
Accepted papers received; 37 encouraged to submit full
 and 31 proposals received (\$21.5M available)
 for concrete
 Material/recycled concrete/plastic/mining waste as
 feedstock for cement production, or as SCMs
 Red clay cement
 Electrolytic cement production

DOE-AMMTO-BTO TCF Lab Call

Topic: Greener Buildings and Building Materials with
 Reduced Embodied Carbon (Up to \$2.4M available)

FY24-25 priorities

- Alternative binders, alternative SCMs
- Process innovation for deep & economical emissions reduction
- Cement and concrete circularity
- CO₂ mineralization (waste materials)
- Advances design of concrete systems for carbon reduction
- **Multimodal decarbonization strategies for low-emission cement production** (Low carbon solutions that incorporate two or more strategies)



Thank you

