

Industrial Decarbonization: RD&D Opportunities

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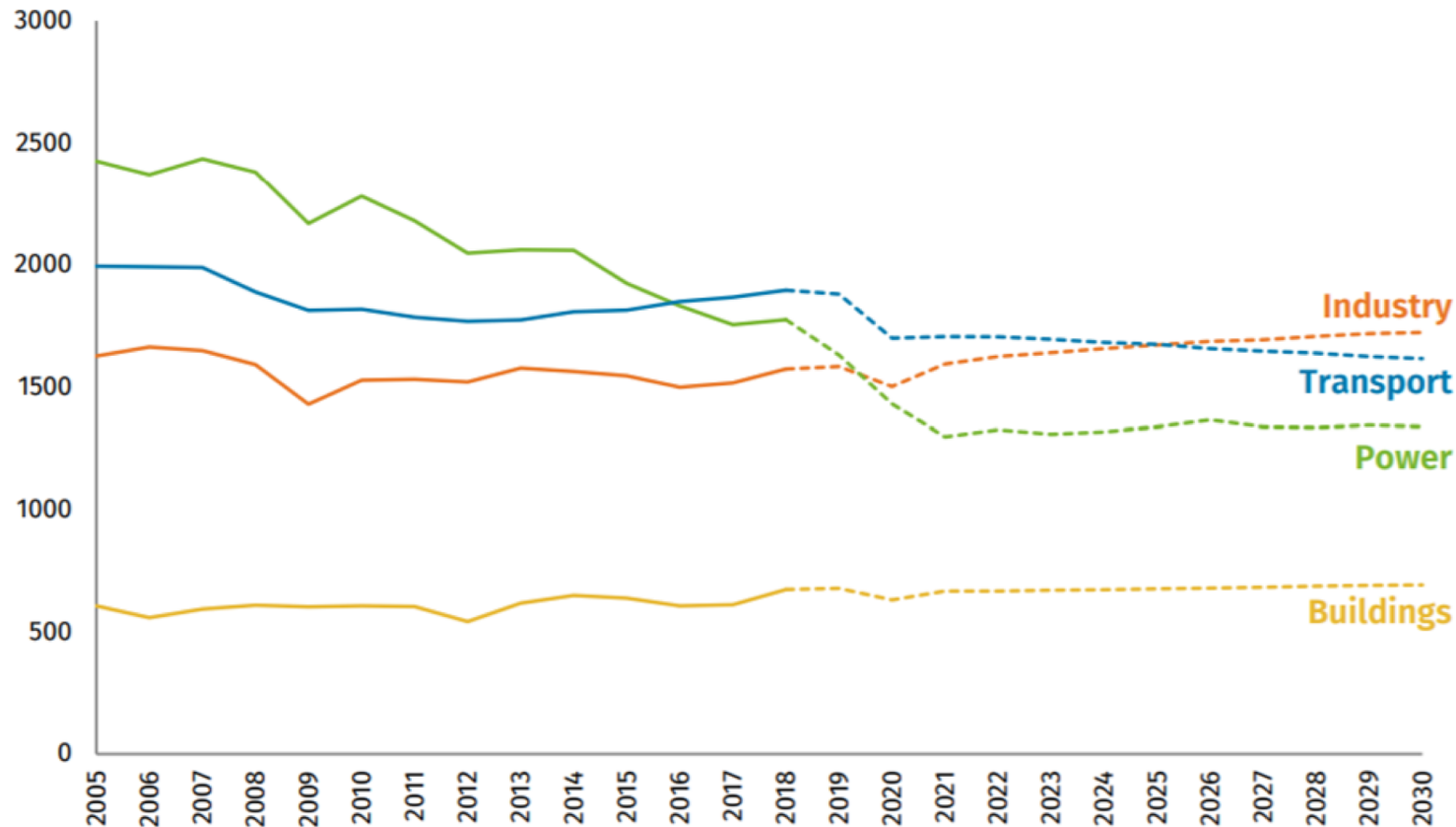
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<https://itif.org/issues/clean-energy-innovation>

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 - Clean energy innovation
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Industrial Emissions: A Curve That's Hard to Bend

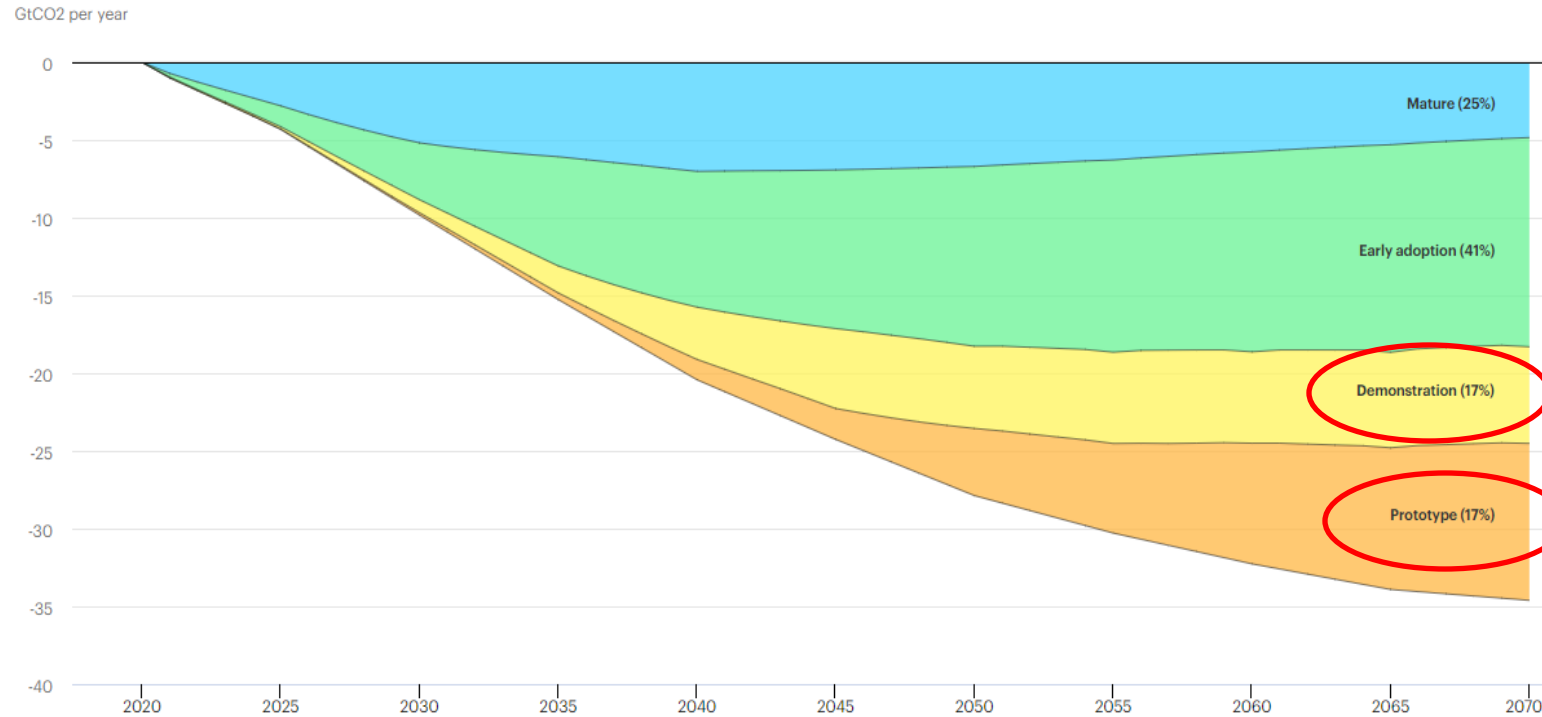


Source: Rhodium Climate Service

Promising, mature options:

- **Power:** solar, wind, etc.
- **Transport:** EVs
- **Buildings:** electrification
- **Industry? It's complicated!**

Invest Now, So the Next Wave of Solutions Is Ready!



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● Mature ● Early adoption ● Demonstration ● Prototype

Solutions needed to get to net-zero by 2070 but not yet on the market:

- **Demonstration: 17% of global emissions!**
- **Prototype: another 17%!**

Federal Investment Is Essential

- **High cost**
- **High risk**
- **Slow payoff**
- **Public benefits**

Cement



Iron and Steel

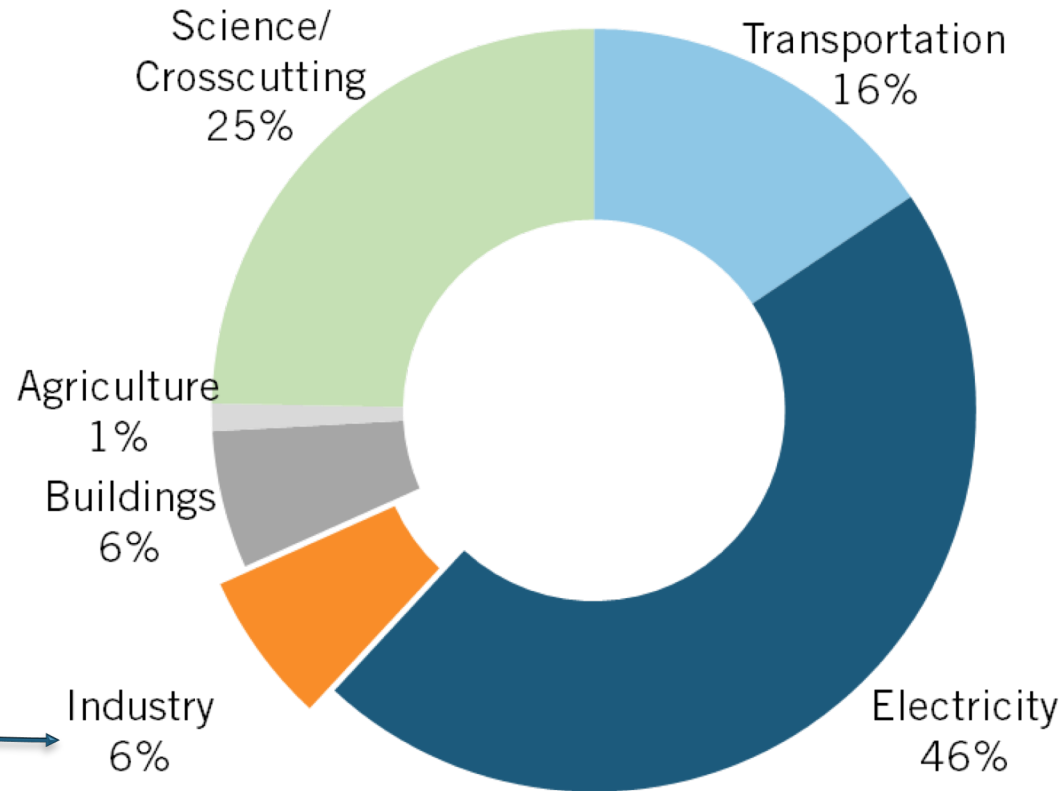


Chemicals



But DOE's Investment Has Been Modest and Scattered

DOE Portfolio, by Sector, FY 2020



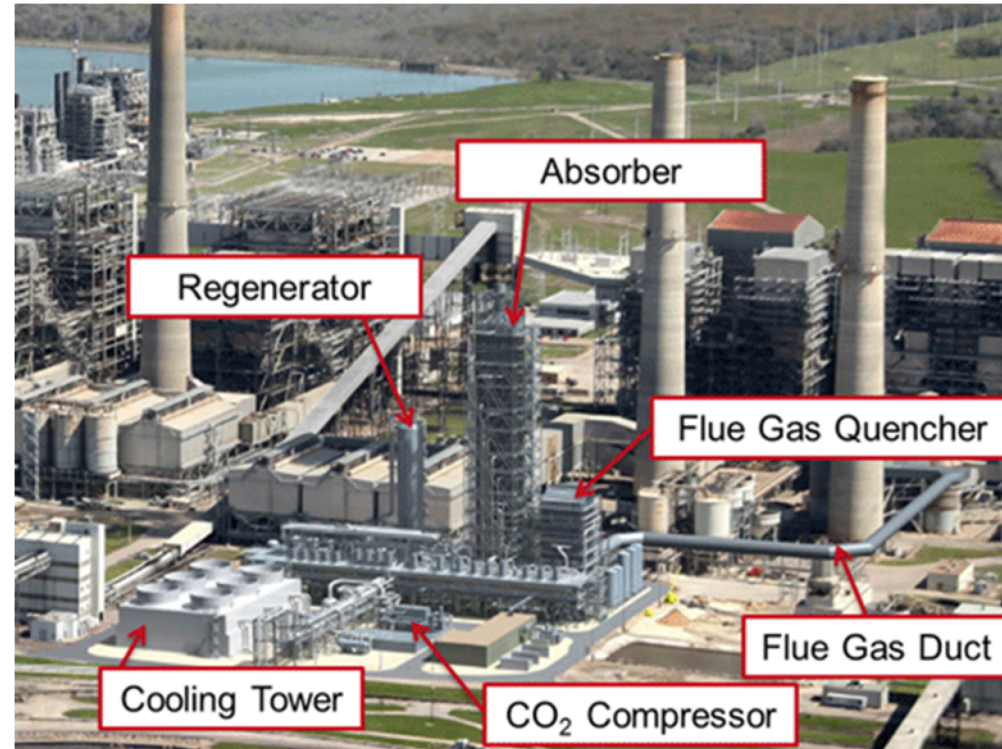
About \$500 million
out of \$9 billion

Infrastructure Package

♥ Industrial Demo Projects

- **Big-ticket**
- **Shared costs**
- **Shared benefits**
- **No other way to learn**
- **Global competition**

Petra Nova Carbon Capture Project
(funded in part by 2009 Recovery Act)



(Source: [Mitsubishi](#))

Industrial Decarbonization Demo Projects Abroad

Ammonia - Australia

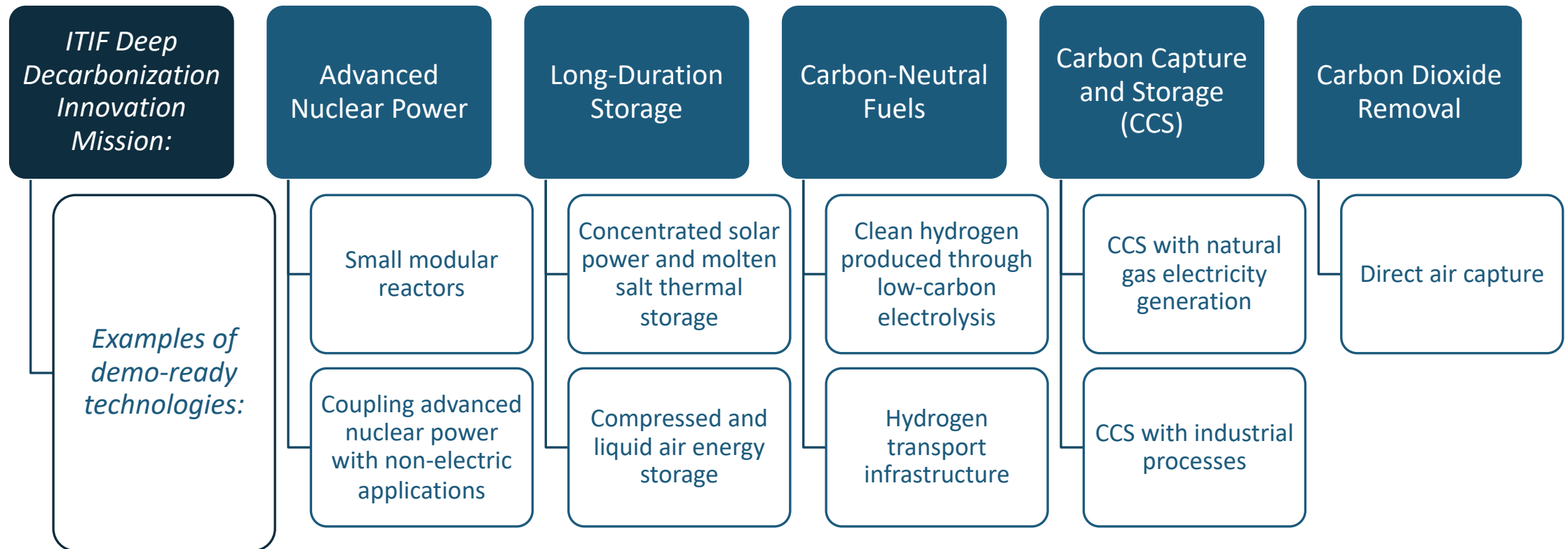


Steel - Sweden



Part of a Broader Federal Demonstration Portfolio

Technologies that (a) support deep decarbonization, (b) are large/complex, (c) are demo-ready



Thank You!

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