Government-industry collaborative research

in the context of societal demands for engagement and justice

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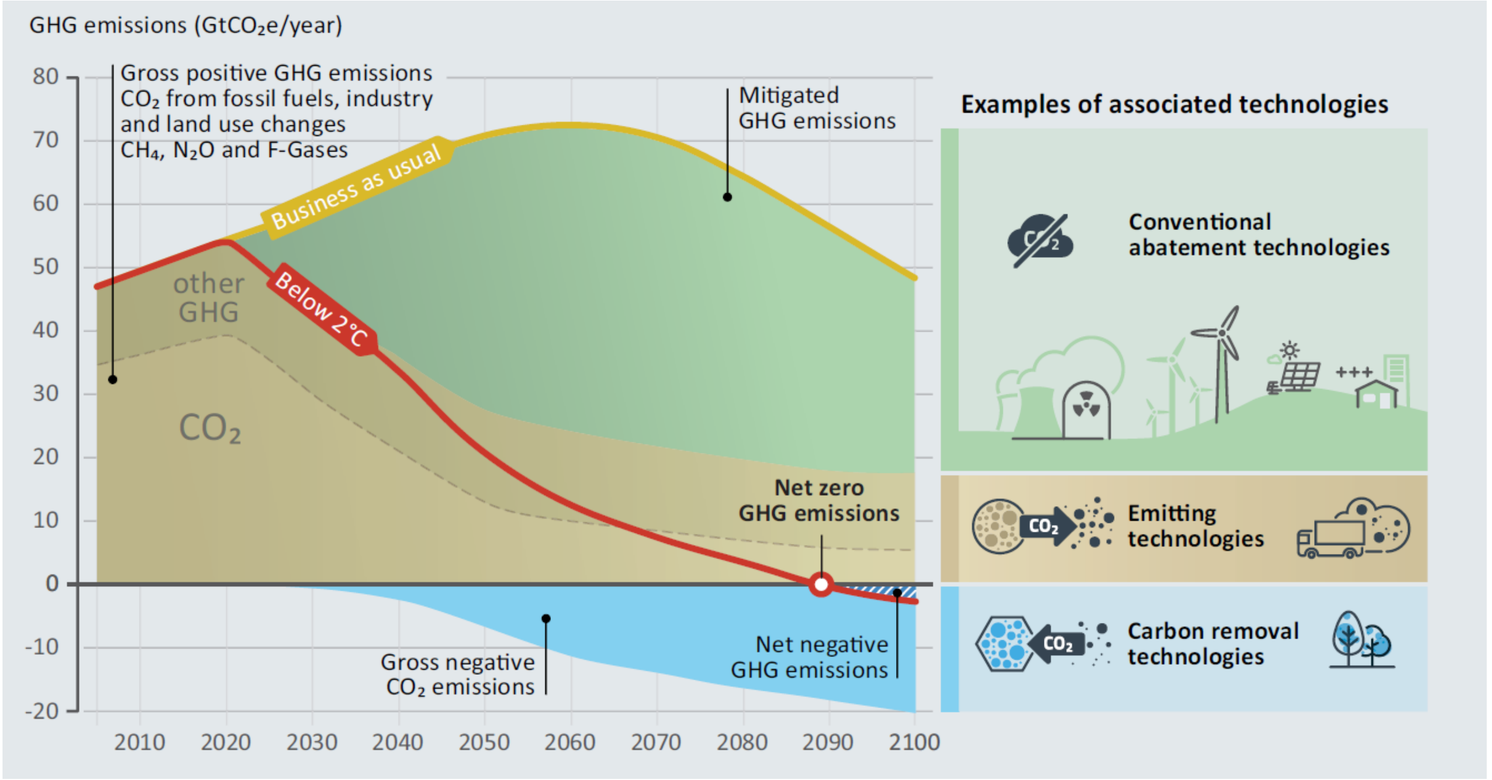
Context: A new era for societal considerations?

- Governments want to be **responsive to society** at state and federal levels
  - Increasing awareness of **environmental justice**
  - Increasing awareness of need for public and community **engagement** to build big projects — especially in the context of needing to build new clean energy infrastructure & industry
  - Industry also often working with **ESG** priorities
  - Early career academics are coming from an academic environment with these values
  - World is facing problems that require bold, **rapid cross-sectoral** action

Example of challenge that requires this kind of collaboration: Developing a carbon removal industry

- Government needs to respond to demand for negative emissions
- Government, academic and industry partners need to work together — in a socially responsive way
  - To figure out what even works
  - To develop monitoring, reporting and verification
  - To develop demonstration projects
  - Recognized need for basic and applied research simultaneously



Example policy demand: Justice40

- EO 14008 Sec 223 – Justice40 – how Federal investments might be made for **40% of the overall benefits** of **certain federal investments** to flow to **disadvantaged communities**

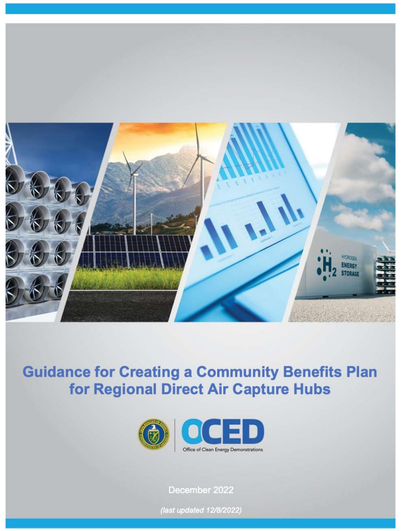
Federal investments

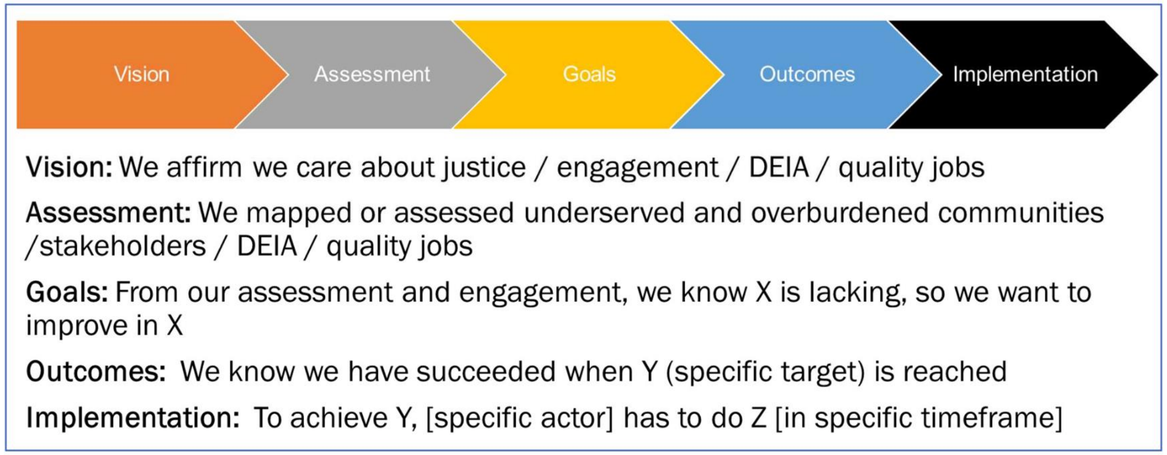
40% of the overall benefits

Disadvantaged communities

Example response: DOE's framework

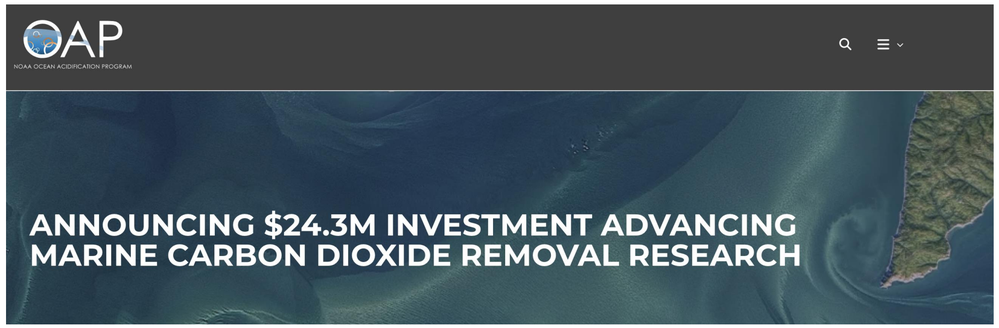
- Community Benefit Plans for projects funded through the Bipartisan Infrastructure Law — scored in merit review (20%)
  - Diversity, Equity, Inclusion, Accessibility
  - Environmental Justice
  - Quality Jobs / Investing in the American Workforce
  - Community and Stakeholder Engagement





Another example: NOAA Marine CDR

- Required multi-partner investment
- Awards support 17 projects, 47 institutions
- Partners had to be from at least two sectors: academia, private sector, or government



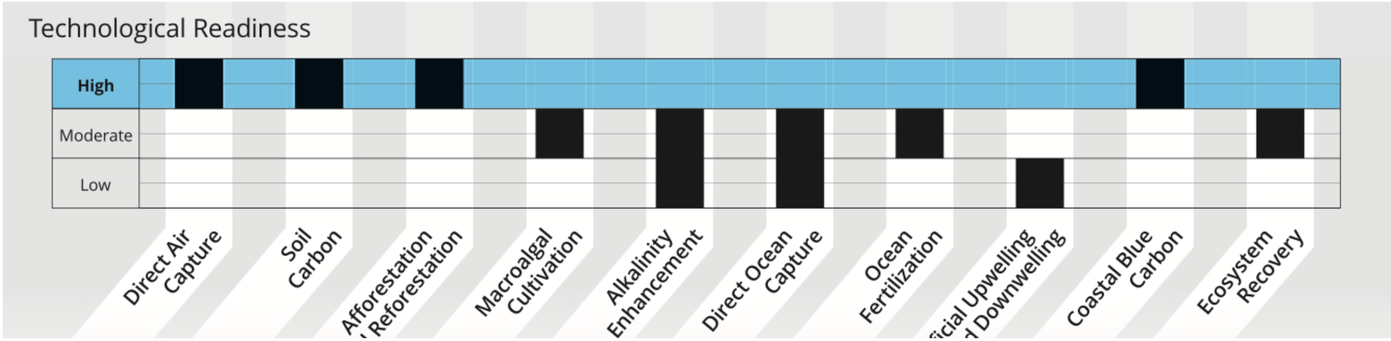


Figure 1a. Comparison of various attributes of carbon removal methods, including the duration, effectiveness, cost range, technical readiness, and potential for NOAA to contribute for these methods. The data for this table are taken from Table 1. Highlighted here is ocean alkalinity enhancement, one of the methods of carbon removal that is most related to NOAA's existing mission. Note that this visualization is particularly challenging. An alternate visualization of some of this data can be found in Figure 1b, next page.

Takeaways

- While there is a recognition that lack of social consideration threatens adoption and deployment of clean energy technologies, agencies are still not sure how to allocate funding or write CFPs for this, and it’s not funded in legislation
- Academia has expertise to lend to industry partners in this regard, but there’s not a structure to facilitate those connections, and industry often seems lost because the new wave of engagement and justice concerns is not addressed by their traditional methods
- These CFPs have not been prescriptive about governance of relationships between project partners, and this is typically underdeveloped in funding applications
- Applicants really need guidance for collaborating in this new context; philanthropy could step up in terms of training and social infrastructure