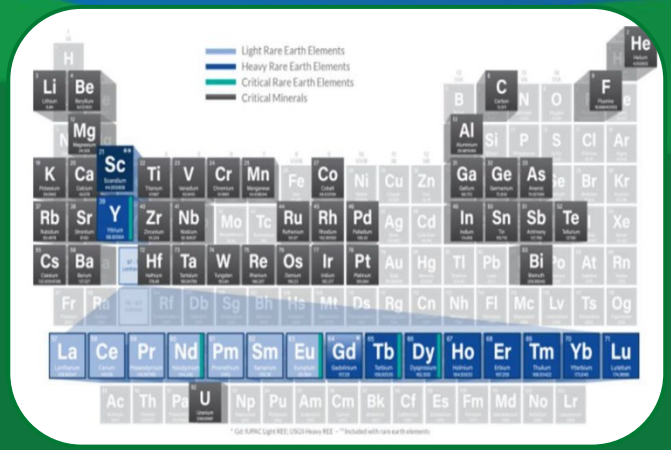
U.S. DEPARTMENT OF ENERGY
Fossil Energy and Carbon Management

Carbon Utilization Procurement Grants

Regional Carbon Management Applicant Education Workshop



SEC. 40302. Carbon Utilization Program

Directs the Secretary to establish a program for **eligible entities** (State; a unit of local government; or a public utility or agency) to submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary determines to be appropriate. An eligible entity shall use a grant received to **procure and use commercial or industrial products** that

(i) use or are derived from *anthropogenic carbon oxides*; and

(ii) demonstrate significant net reductions in *lifecycle greenhouse gas emissions compared to incumbent technologies, processes, and products.*

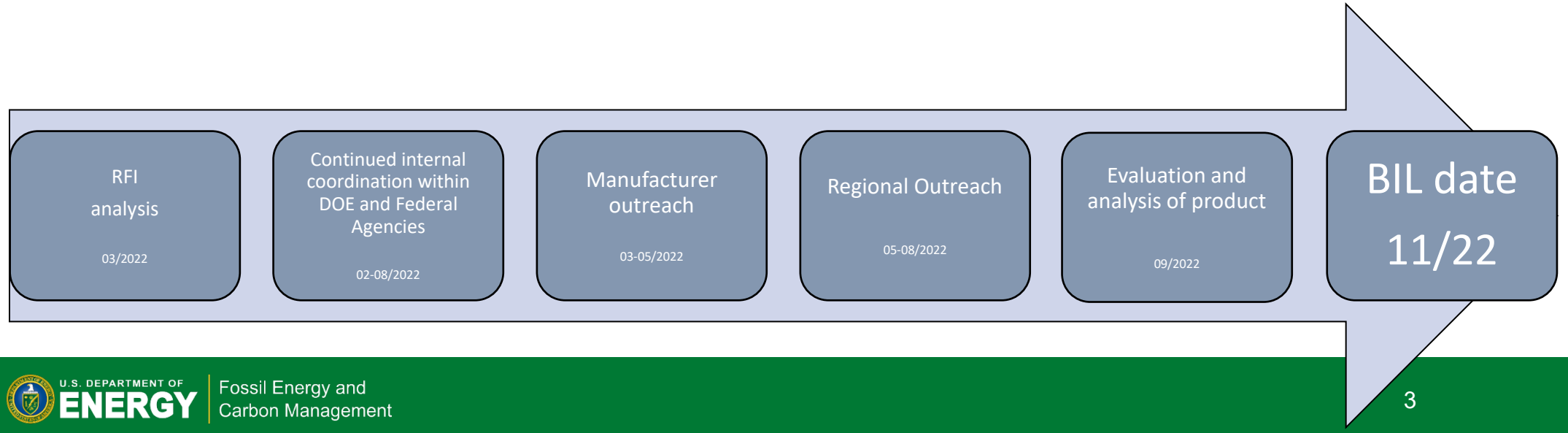
Appropriations and Timeline

PP 988 of BIL

(d) AUTHORIZATION OF APPROPRIATIONS.-

- $41,000,000 for fiscal year 2022;
- $65,250,000 for fiscal year 2023;
- $66,562,500 for fiscal year 2024;
- $67,940,625 for fiscal year 2025; and
- $69,387,656 for fiscal year 2026.

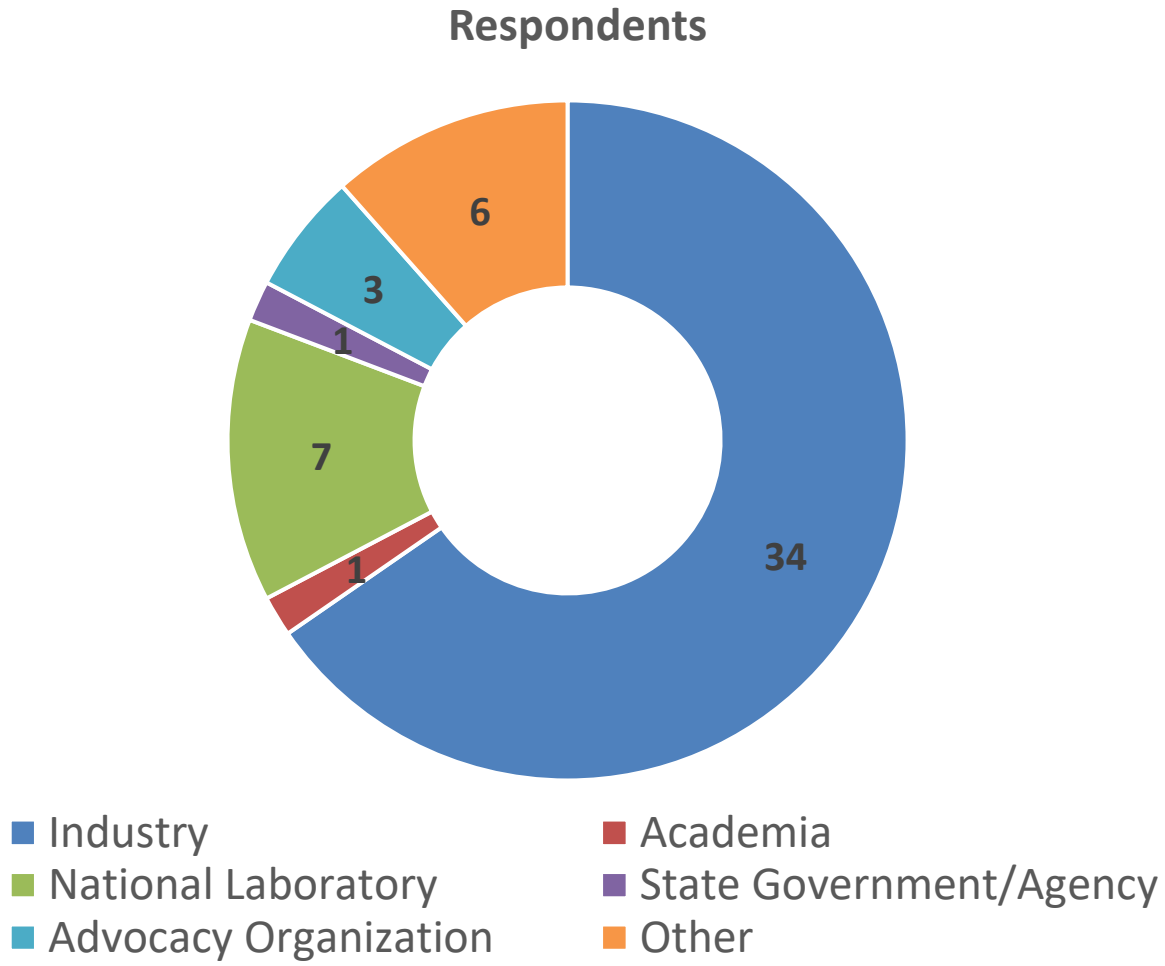
Funding totals ~$310MM over five years



RFI Technical Area #6 - Deployment and Demonstration Opportunities for Carbon Reduction and Removal Technologies

Response overview (52 total respondents)

- **Industry (34)**
- **Academia (1)**
- **National Laboratory (7)**
- **State Government/Agency (1)**
- **Advocacy Organization (3)**
- **Other (6)**
  - **Includes non-profits, consultant, foundation, initiative, institutes**



RFI Technical Area #6 Overall Summary

Funding, business models, and market considerations

- The current market offers a non-attractive business case due to high-cost premiums compared to fossil-derived materials.
- Several respondents expressed uncertainty on if or when 45Q applied to CO_2 conversion and this results in investment hesitation. Updated 45Q credit and/or other funding and incentives must be implemented to promote and, in some cases, sustain the commercialization of CO_2 conversion technologies/products.

Engagement and Existing Government Procurement Mechanisms

- Respondents most often specified that DOE should engage stakeholders at the state level, but responses varied from the Federal level all the way down to customers. The most common response is to engage commercially motivated stakeholders (i.e., industries) as well as government groups and agencies at all levels.

Product Codes, Standards and Certifications

- There is no current standard practice to measure, quantify, or report the carbon footprint of a product or technology. There is no verification that a product utilizes CO_2. There is no sufficiently detailed, standard method to perform life cycle analysis for CO_2 conversion.
- These issues must be remedied in order to allow for technology/product developers to obtain/qualify for some “low-carbon” certification (and possible subsequent incentive) and to encourage consumers to purchase such certified products. This will promote commercialization.

Technology

- Responses covered a wide variety of CO_2 conversion products and pathways.
- The discussed CO_2 utilization technologies spanned a range of maturity levels, but most technologies are at a lower TRL.
- Respondents commonly expressed the need for both standards and certifications as well as funding, incentives, and policy to support scale-up and commercialization efforts.
- Major commercialization is expected to commence in the early to mid 2030’s.
- The respondents claimed that CO_2 conversion would reduce CO_2 emissions. Details were scant for the market scale/emissions reduction potential of individual technologies and products, but several reports were cited that indicated that the CO_2 conversion market would see expansive growth and use up to several gigatons of CO_2 per year.
- Economic support to Underserved Communities, due to CO_2 conversion commercialization, would be provided due to the creation of new jobs ranging from construction, to product manufacture, to product value chains.

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