

CCSReg Project Interim Report Overview

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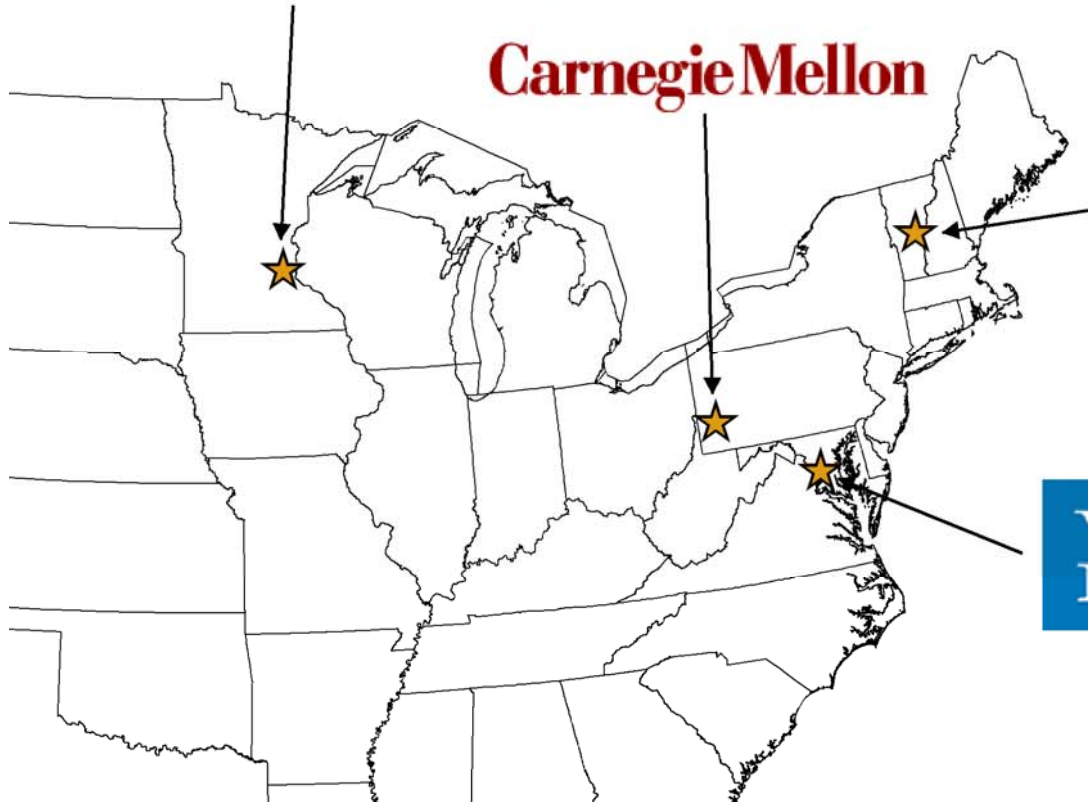
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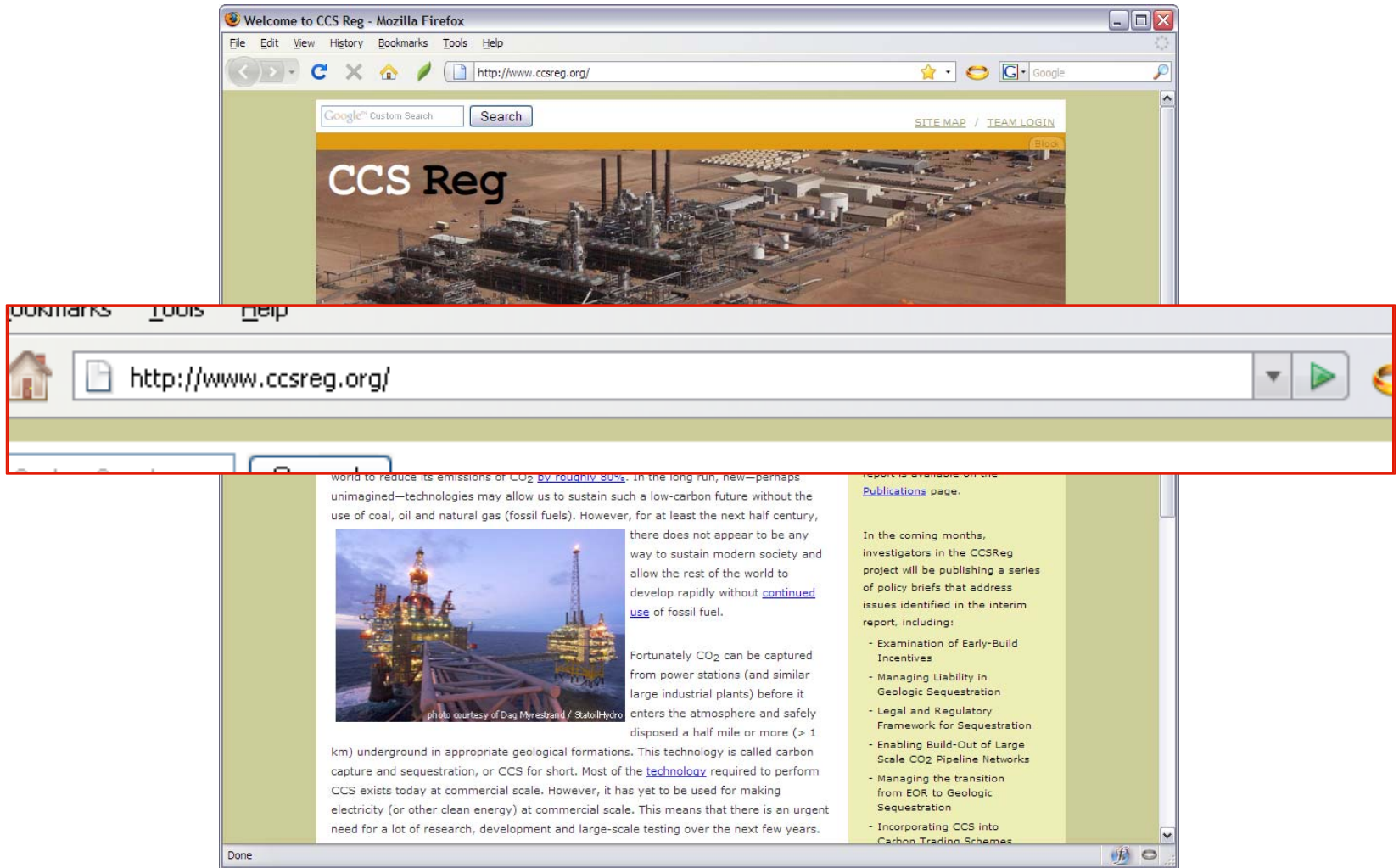
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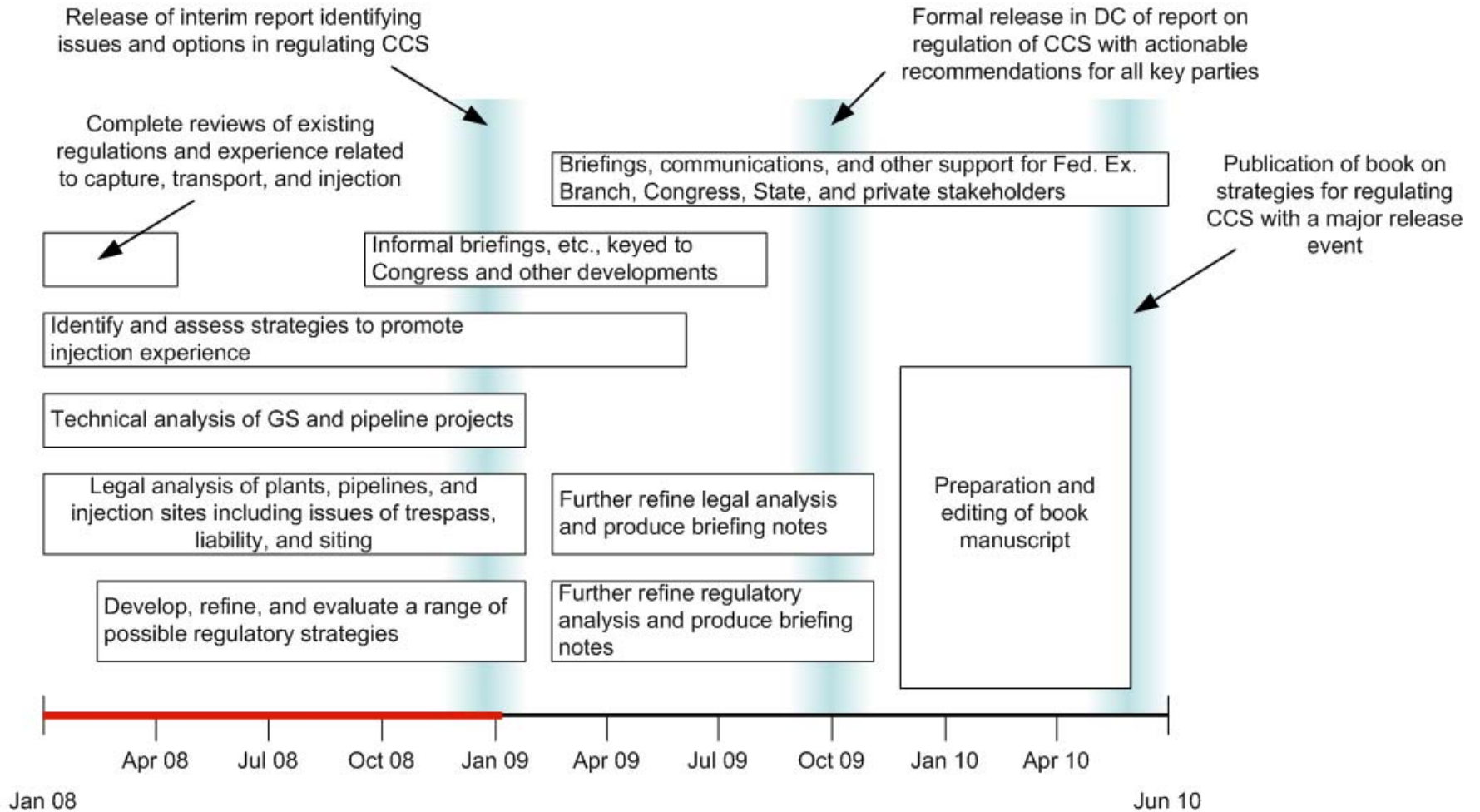
VanNess
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CCSReg Project Website



CCSReg Project Timeline



Project Advisory Board

While these folks are kindly providing advice and guidance, neither they nor their organizations are responsible for the content of the interim report.

Name	Title	Organization
Carl O. Bauer	Director, National Energy Technology Laboratory	U.S. Department of Energy
Armond Cohen	Executive Director	Clean Air Task Force
Brad Crabtree	Program Director	Great Plains Institute
Dr. Ottmar Edenhofer	Co-Director, Sustainable Solutions Research Track	Potsdam Institute for Climate Impact Research
David Fleischaker	Secretary of Energy	State of Oklahoma
Jeanne M. Fox	President	New Jersey Board of Public Utilities
Kathleen A. McGinty	Former Secretary of Environmental Protection, Commonwealth of Pennsylvania	
Susan D. Hovorka	Principle Investigator, Gulf Coast Carbon Center, Bureau of Economic Geology	University of Texas at Austin
Tom Kerr	Senior Energy Analyst	International Energy Agency
Ernest J. Moniz	Director, Laboratory for Energy and Environment and Director, MIT Energy Initiative	MIT
Paul O'Neill	Former Secretary of the Treasury, CEO of Alcoa	
Michael Oppenheimer	Director, Program in Science, Technology and Environmental Policy, Woodrow Wilson School	Princeton University
Jonathan C. Pershing	Director	Climate, Energy and Pollution Program, World Resources Institute
Philip R. Sharp	President	Resources for the Future
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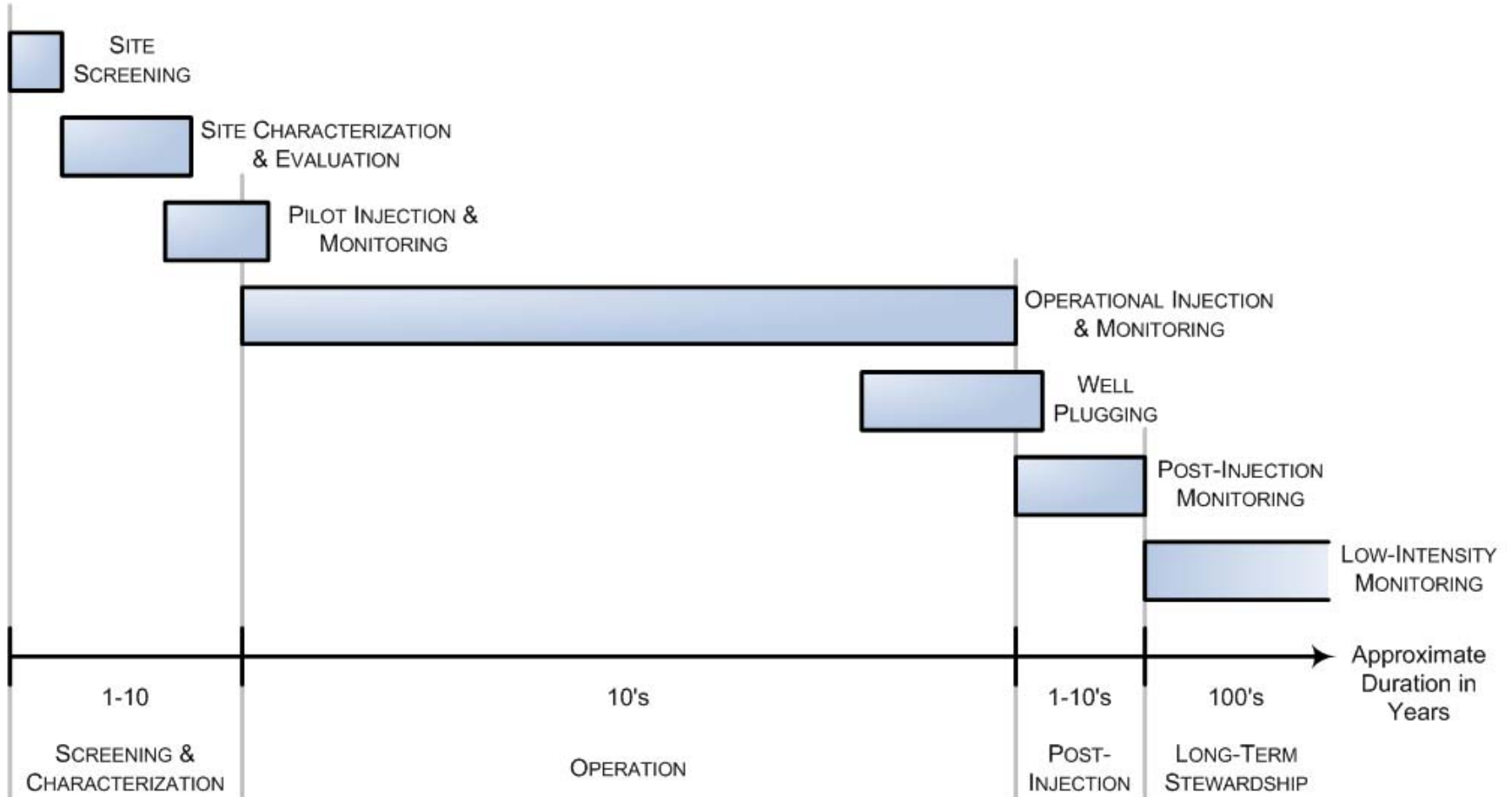
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The Life Cycle of a CCS Project

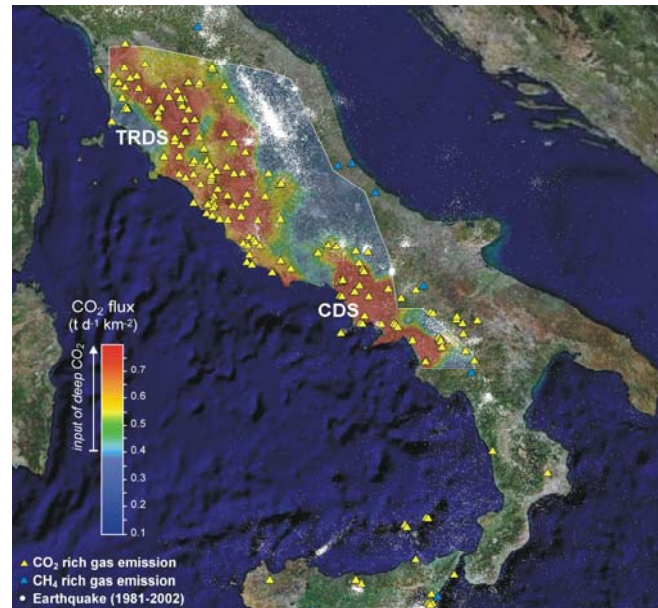


11 Key Points from the Interim Report

1. There is no feasible way for the U.S. to achieve a 50-80% reduction in emissions of carbon dioxide by mid-century without carbon capture and sequestration (CCS) as part of a portfolio of low-carbon technologies (such as energy efficiency, renewables, and nuclear). (*Ch. 1*)
2. All the technologies required for capture, transport, and geologic sequestration of CO₂ exist at commercial scale, but have yet to be integrated and applied to the control of CO₂ emissions. (*Ch. 2 and Ch. 4*)

Low Risk

3. Geoscientists believe that the risks associated with sequestration are modest and can be readily managed. A number of natural analogs suggest that, if seepage of CO₂ to the surface occurs, risks to humans will be minimal. (*Box 4.5*)



Pipelines

4. Wide-spread adoption of CCS will require a large pipeline infrastructure for which an adequate regulatory framework does not yet exist. We recommend that Congress resolve this issue in the near future to provide project sponsors with greater regulatory certainty in time for deployment of the first commercial-scale CCS projects. (Ch. 3)



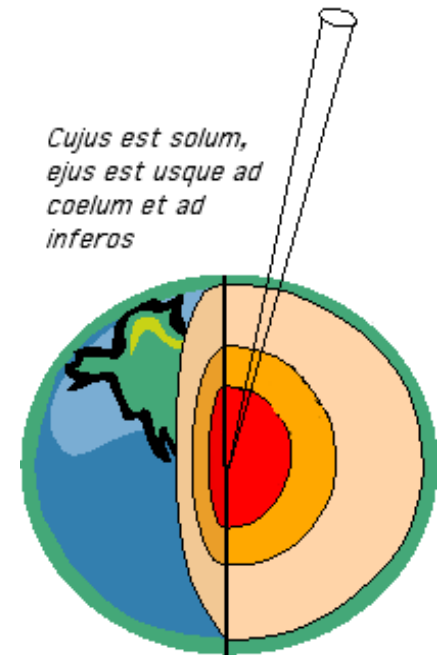
Limits to EPA Class VI proposal

5. Because the EPA proposed rule for regulating CCS has been developed under authority provided by the Safe Drinking Water Act, it does not address the two issues that we consider most critical:
 - Legal access to and use of appropriate deep geological formations for sequestration (*Ch. 5*);
 - Adequate financial, regulatory, and liability arrangements for long-term stewardship of sequestration sites after they have been closed (*Ch. 7*).

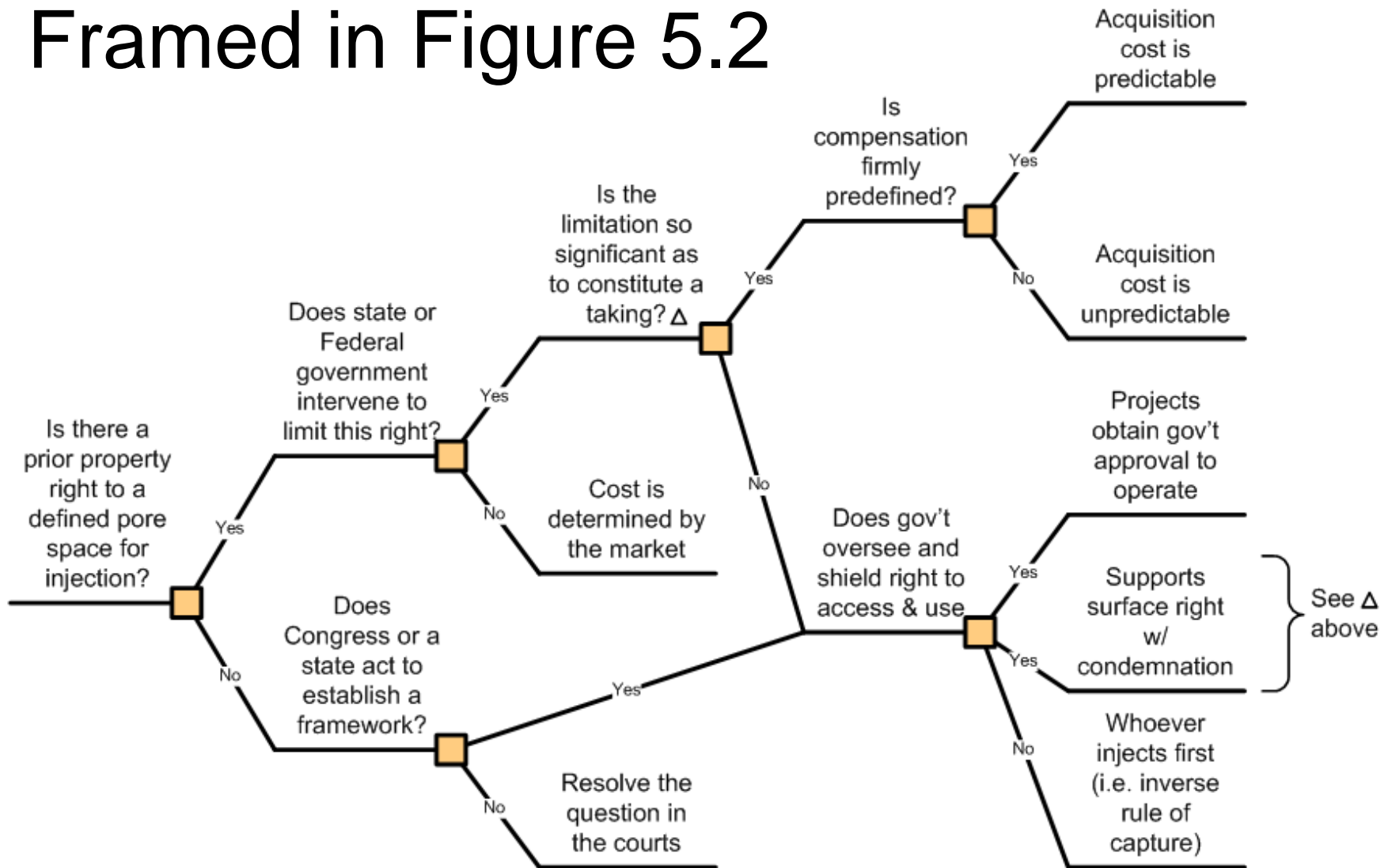
Access to Pore Space

6. In much of the world (Europe, Australia, Canada, etc.) governments own deep-subsurface resources, making access for CCS straightforward. In much of the U.S., ownership rights are undefined.

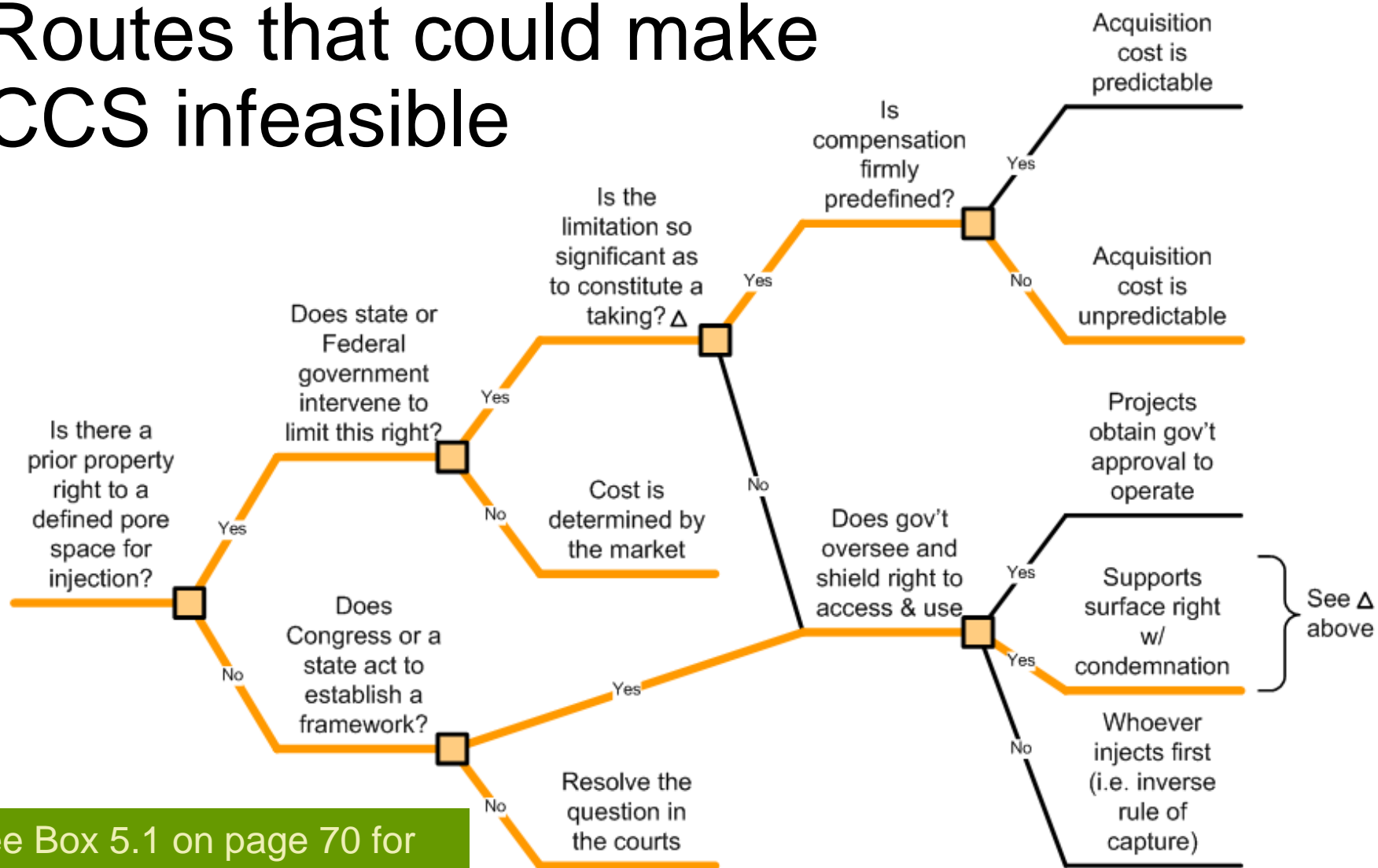
We outline several ways in which this ambiguity might be resolved, many of which could make CCS economically infeasible. Our current thinking is that a federal solution is likely to be superior to a state-by-state solution or resolution in the courts. (*Ch. 5*)



Pore Space Options are Framed in Figure 5.2



Routes that could make CCS infeasible

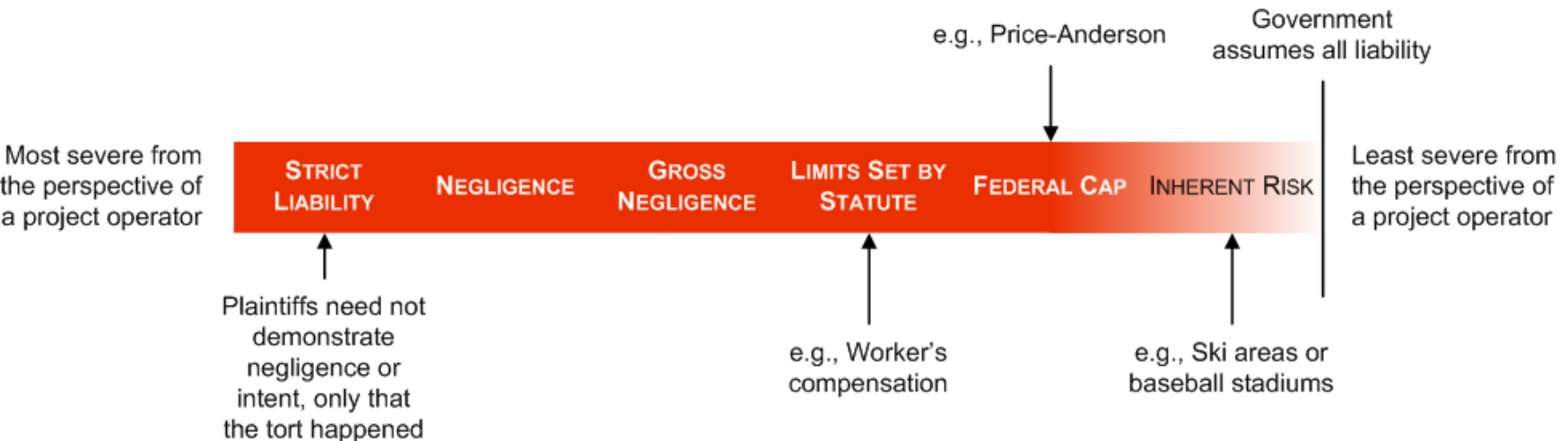


See Box 5.1 on page 70 for an illustration in the context of Pennsylvania.

Our current inclination is to recommend a substantial Federal role in providing access to deep pore space for use in CCS.

Liability

9. Liability through the injection phase of a project can probably be managed with the same mechanisms employed by other large-industrial projects. Less conventional mechanisms, probably involving government, will be needed for long-term stewardship. (Ch. 8)



A Two-Stage Approach

10. Rather than finalize all regulatory details now, we argue for a "two-stage" approach in which a Presidential-Congressional Commission monitors experience with 10 to 15 projects and then recommends how to handle specific details on the basis of this experience. (*Ch. 4 and Ch. 11*)

Broader Issues

11. If CCS is to be adopted on the necessarily substantial scale, an attractive and predictable commercial environment must be created (*Ch. 9*). It must also be compatible with any future national emissions control regime for greenhouse gases. (*Ch. 10*)

Over the coming few months...

...we plan a variety of briefings and other events to gather additional input.

We will be developing prescriptive briefing notes on:

- Examination of Early-Build Incentives
- Managing Liability in Geologic Sequestration
- Legal and Regulatory Framework for Sequestration
- Enabling Build-Out of Large Scale CO₂ Pipeline Networks
- Managing the transition from EOR to Geologic Sequestration
- Incorporating CCS into Carbon Trading Schemes
- Removing Barriers to Commercial Deployment

On May 7 and 8, we'll hold a face-to-face project meeting to review policy recommendations across the issues addressed above.

It is time for the U.S. to stop talking, talking, and talking about CCS and start building some commercial-scale facilities!



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