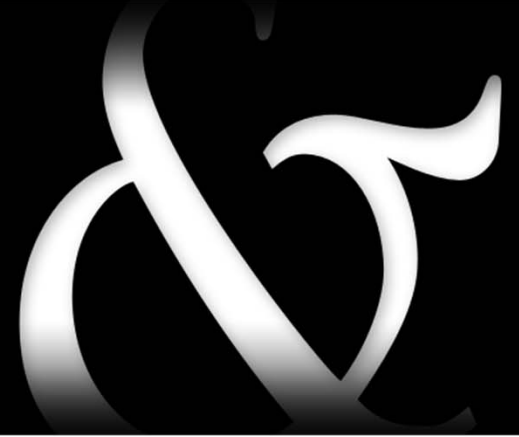


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Environmental Law and Policy Annual Review: Limits of Liability in Promoting Safe Geologic Sequestration of CO₂

Fred Eames, Hunton & Williams LLP

March 22, 2013



Managing GS Risk: Risk Factors

Low Risk

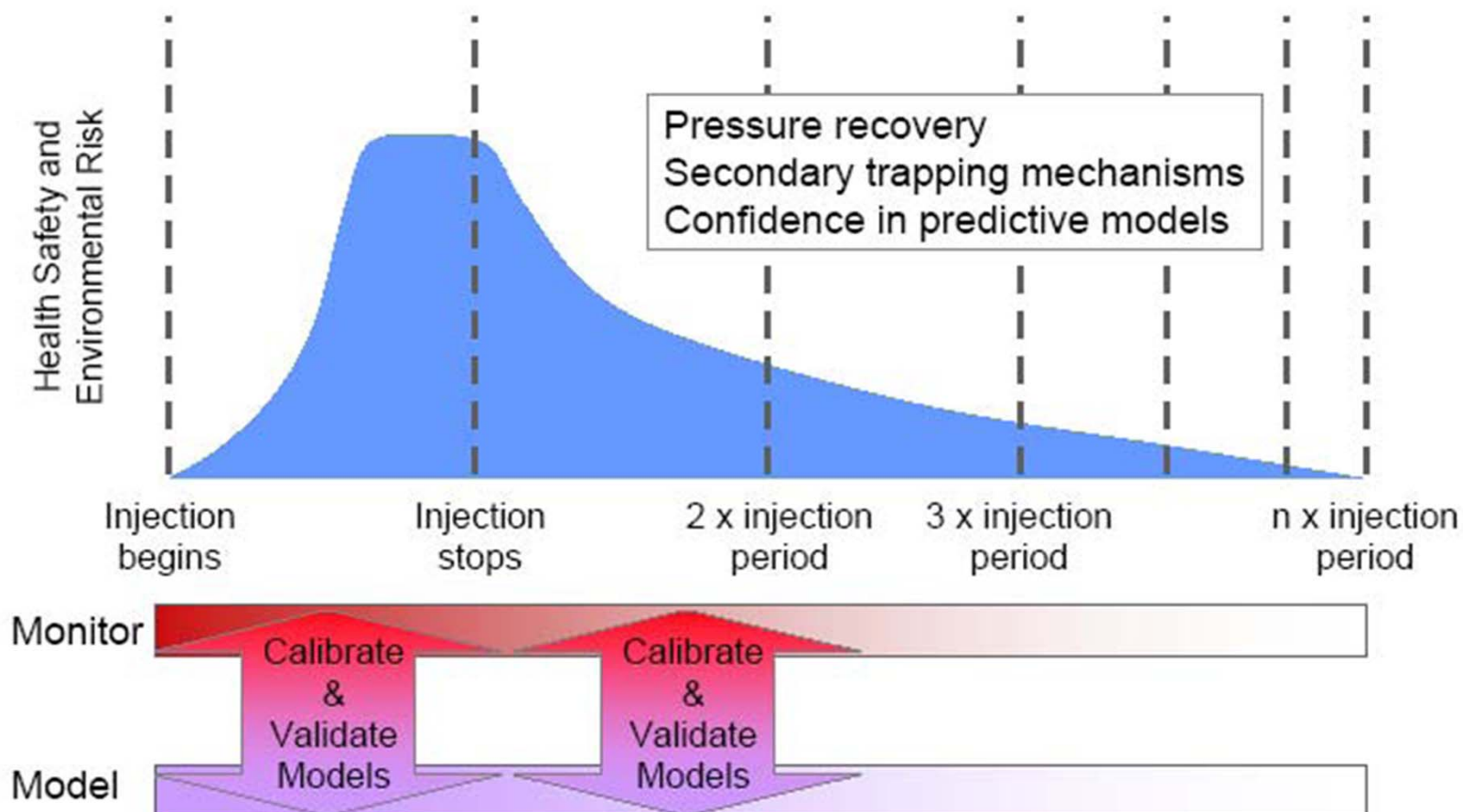
- 150 years human experience with liquids and gases subsurface
- Physics, chemistry, engineering well-understood
- Capture and storage technology used before
- CO₂ generally a benign gas

Higher Risk

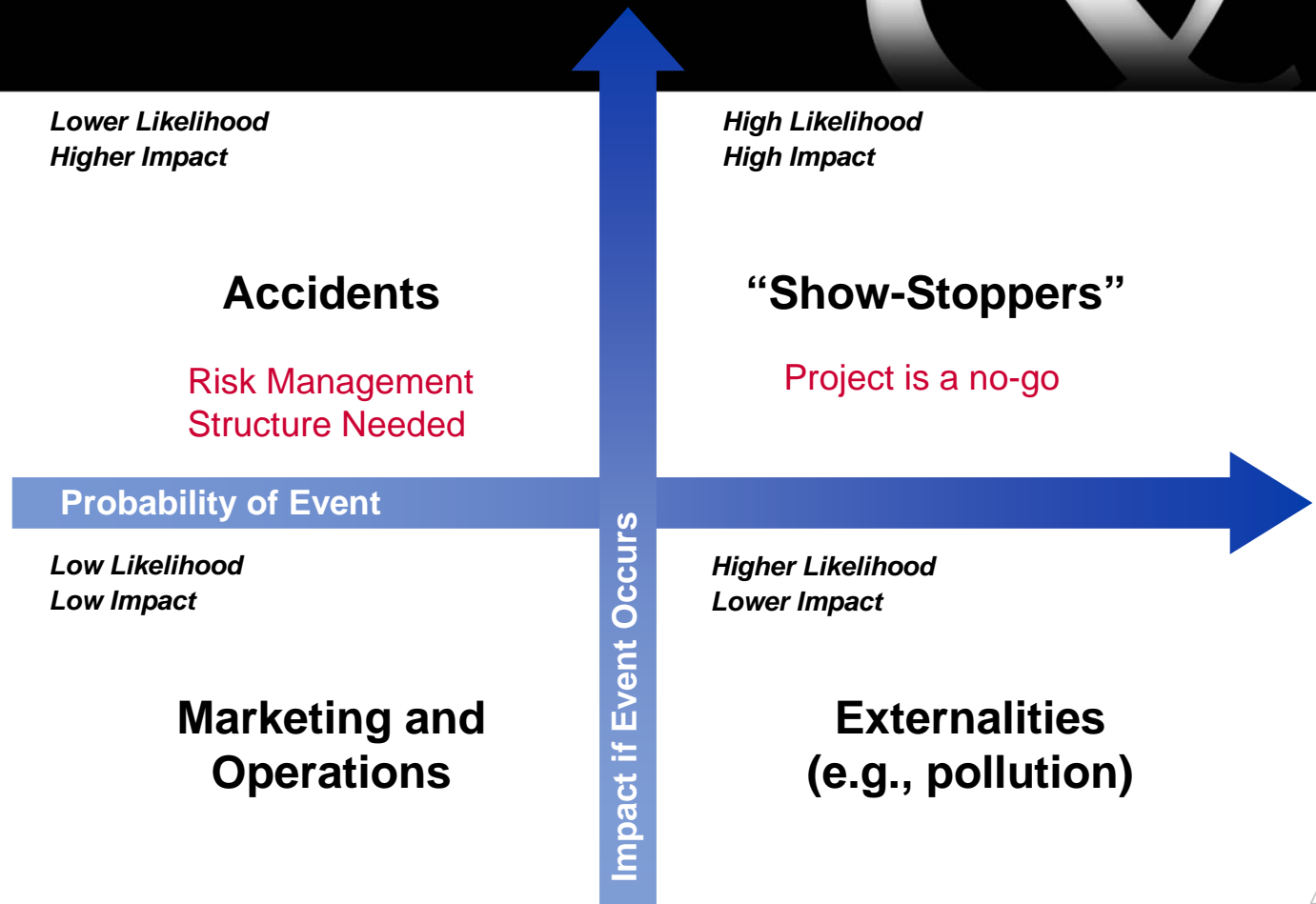
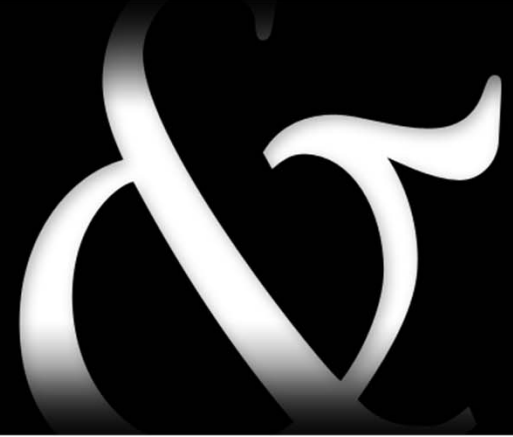
- Never before tried on this scale
- Geologic formations not previously used
- Buoyancy: injected CO₂ will attempt to rise
- Potential mobilization of subsurface toxics



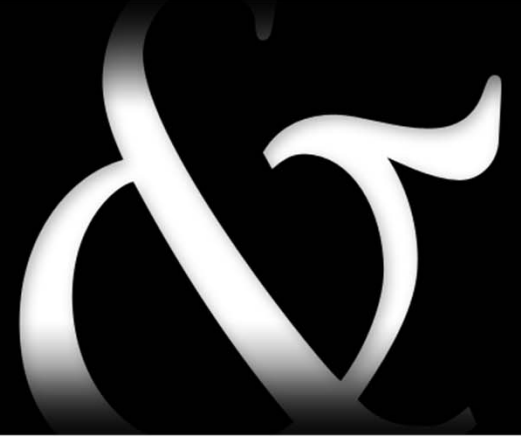
Quantitative Assessment of Long Term Liability and Risk Management Strategies



Risk Management Looks to Likelihood And Severity of Risk



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**Low
probability, and
apparently
high impact**





Participants in Proposal Development

- Southern Company
- Environmental Defense Fund
- Duke Energy
- Zurich



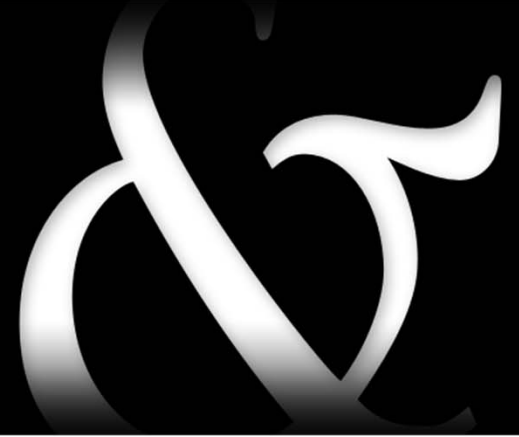
Principles for Risk Management

- Provide risk management when it's needed most
- Skin in the game: operator retains first-dollar obligation
- Rely on private market as much as possible
- Limit scope to anticipate market maturation as experience is gained
- Risk-based pricing encourages good siting and operation
- Maintain cost-effective options



Risk Management Structure

- Voluntary program: applicants seek cooperative agreements with DOE
- Limited scope: designed to apply to ~ 80 facilities
- Shared risk structure: risk layers covered by
 - Operator – if obligation exceeded:
 - Industry risk pool – if obligation exceeded:
 - Federal government – if obligation exceeded:
 - Operator
- Applies to all phases: operation, site care, post-closure



Thoughts on Trust Funds

- Useful mechanism to set aside large amounts for future contingencies, *but . . .*
- Poor history with federal trust funds
 - Superfund, LUST, Social Security, Medicare
 - Lessons: poor management and/or hard to get money out
- Liability limitations may be revisited (see 2010 Gulf oil spill)
- Money less available when risks are highest, keeps accumulating when risks are decreasing



Trust Fund for Long-Term Infrastructure Maintenance

Remediation covered
Separately under risk
Management structure
Described above

- DOE responsible for post-closure IM/MMV
- Creates the Carbon Sequestration Maintenance Trust Fund to cover IM/MMV costs
- Fund is private, not a federal trust fund, but contribution is a condition of receiving cooperative agreement
- Private board (Carbon Sequestration Maintenance Authority) manages fund and sets per ton injection fees, makes funding available to DOE as needed



Orphan Sites

- All facilities, even those that do not receive a cooperative agreement, pay a small fee per ton of CO₂ injected to cover remediation, infrastructure maintenance and monitoring, measurement, and verification for sites where no responsible entity remains.