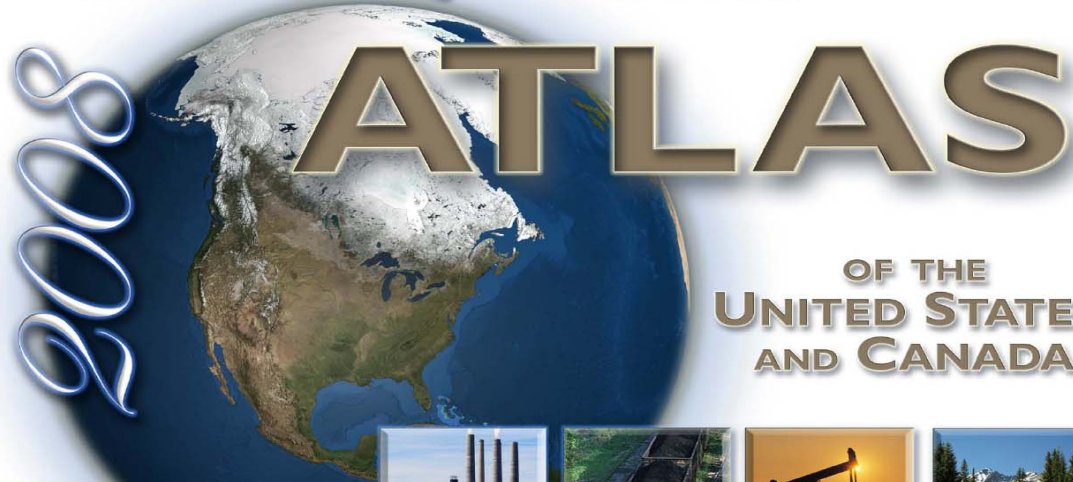




NATIONAL ENERGY TECHNOLOGY LABORATORY

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CARBON SEQUESTRATION



SECOND EDITION

Atlas II

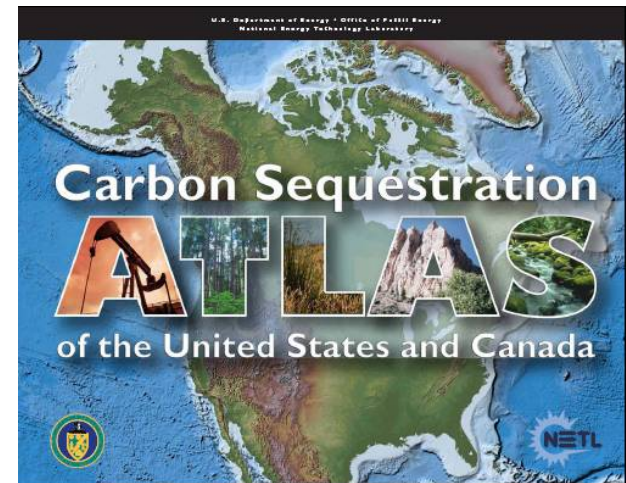
Dawn M. Deel

Project Manager – Carbon Sequestration



Atlas I – Background and Statistics

- **2007 - DOE released the first version of the Carbon Sequestration Atlas of the U.S. and Canada**
 - **Result of cooperation and coordination among carbon sequestration experts from local, state, and government agencies, as well as industry and academia**
 - **Atlas presented the first coordinated assessment of carbon capture and storage (CCS) potential across the majority of the U.S. and portions of western Canada**
-
- **Over 3,000 hardcopies released**
 - **1,000 CDs mailed**
 - **Daily downloads from NETL website**
 - **Widespread media and industry attention**
 - **Continued public interest**

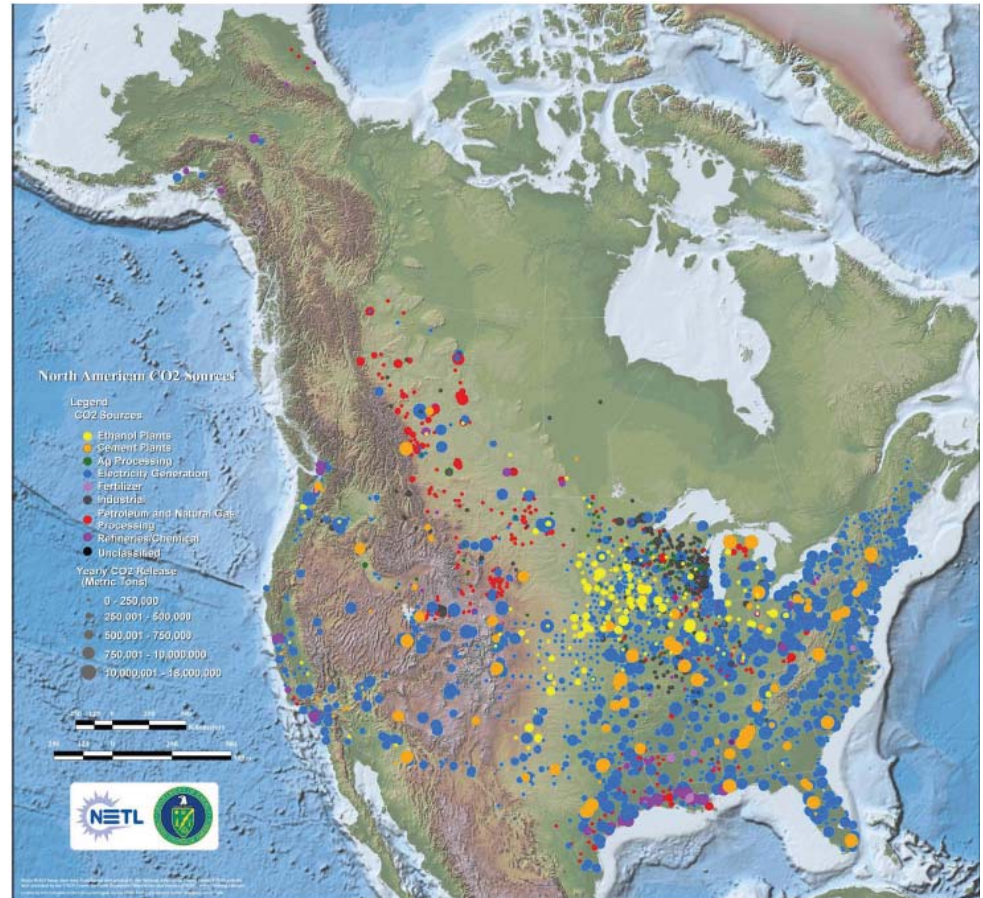


Atlas II

- **Scheduled for release in November 2008 (GHGT9)**
- **Purpose of this update:** To update the CO₂ storage portfolio, document differences in CO₂ resource and CO₂ capacity, and update information on the RCSPs
- **New information included on:**
 - CO₂ Emission Estimation for Stationary Sources
 - DOE's Carbon Sequestration Program
 - USGS Collaboration
 - Federal Lands CO₂ Geologic Storage Potential
 - CO₂ Pipeline Infrastructure
 - State CO₂ Geologic Storage Potential

CO₂ Stationary Sources

- **Stationary Source Emissions Methodology (Appendix A)**
 - Capture Working Group
 - Summarizes the calculations, emission factors, and databases employed by the RCSPs for CO₂ emission estimation
- **RCSPs have updated their stationary sources**

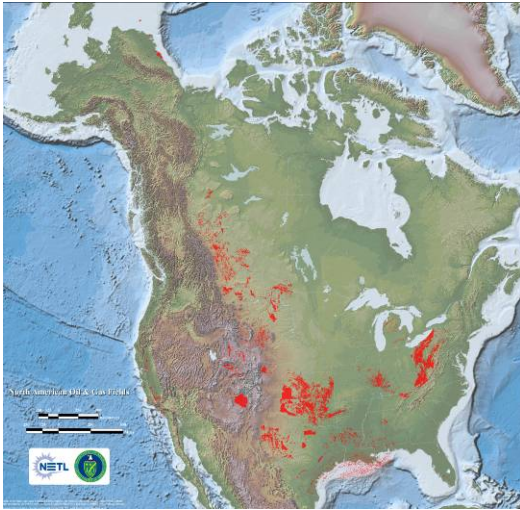


Methodology for Development of Geologic Storage Estimates for CO₂

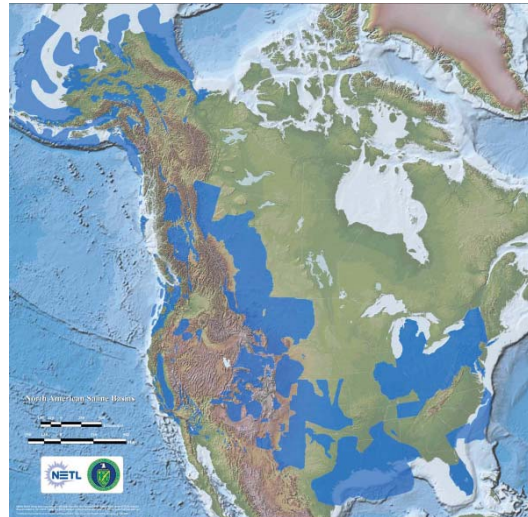
Focus of Update: To detail the difference between **CO₂ Resource** and **CO₂ Capacity**

- **CO₂ Resource Estimate** - the volume of porous and permeable sedimentary rocks available for CO₂ storage and accessible to injected CO₂ via drilled and completed wellbores, reflecting physical and chemical constraints or limitations (including potable water protection) – reflects a high degree of **uncertainty**
- **CO₂ Capacity Estimates** - refined CO₂ resource estimates with present economic and regulatory considerations included (site specific) – reflects a high degree of **certainty**
- **Capacity and Fairways Subgroup of the Geologic Working Group**
- **Screening criteria has been refined for each geologic formation based on RCSP experience**
- **Equations for CO₂ resource calculation**
- **Addition information provided:**
 - storage development scenarios affecting CO₂ estimates
 - injectivity, regulations, and economics for these estimates
 - static vs. dynamic methods for estimating CO₂ storage potential

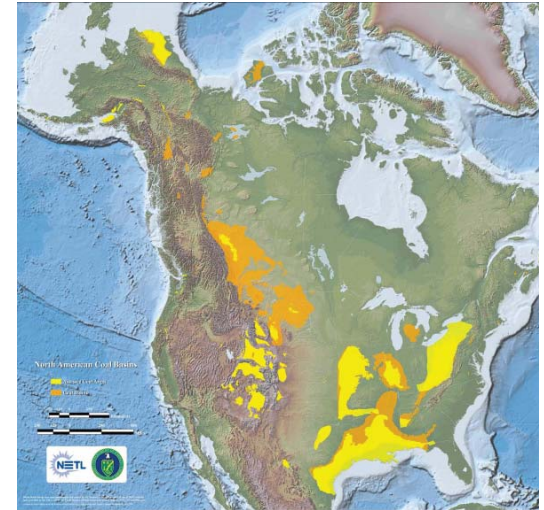
Potential CO₂ Resource Estimates



Oil and Gas



Saline



Coal

Regional Perspectives

- Regional stationary sources estimates
- Regional CO₂ resource estimates for oil and gas reservoirs, saline formations, and coal seams (basalts and shales – if available)
- Updates on Validation Phase Projects
- Information on Deployment Phase Projects
- Commercialization Opportunities



Appendices

- **A:** Methodologies Used to Estimate CO₂ Stationary Source Emissions
- **B:** Methodology for Development of Geologic Storage Estimates for CO₂
- **C:** State Estimates of CO₂ Resource Potential

Availability

- **Hardcopies at GHGT9 or by mail**
- **Downloads from NETL Internet**

- **Updated every 2 years**