



Clean Energy for a Secure Future

# **FutureGen 2.0**

## ***CO<sub>2</sub> Pipeline and CO<sub>2</sub> Storage Site***

DOE EIS Scoping Meetings  
Jacksonville, Illinois  
June 9, 2011

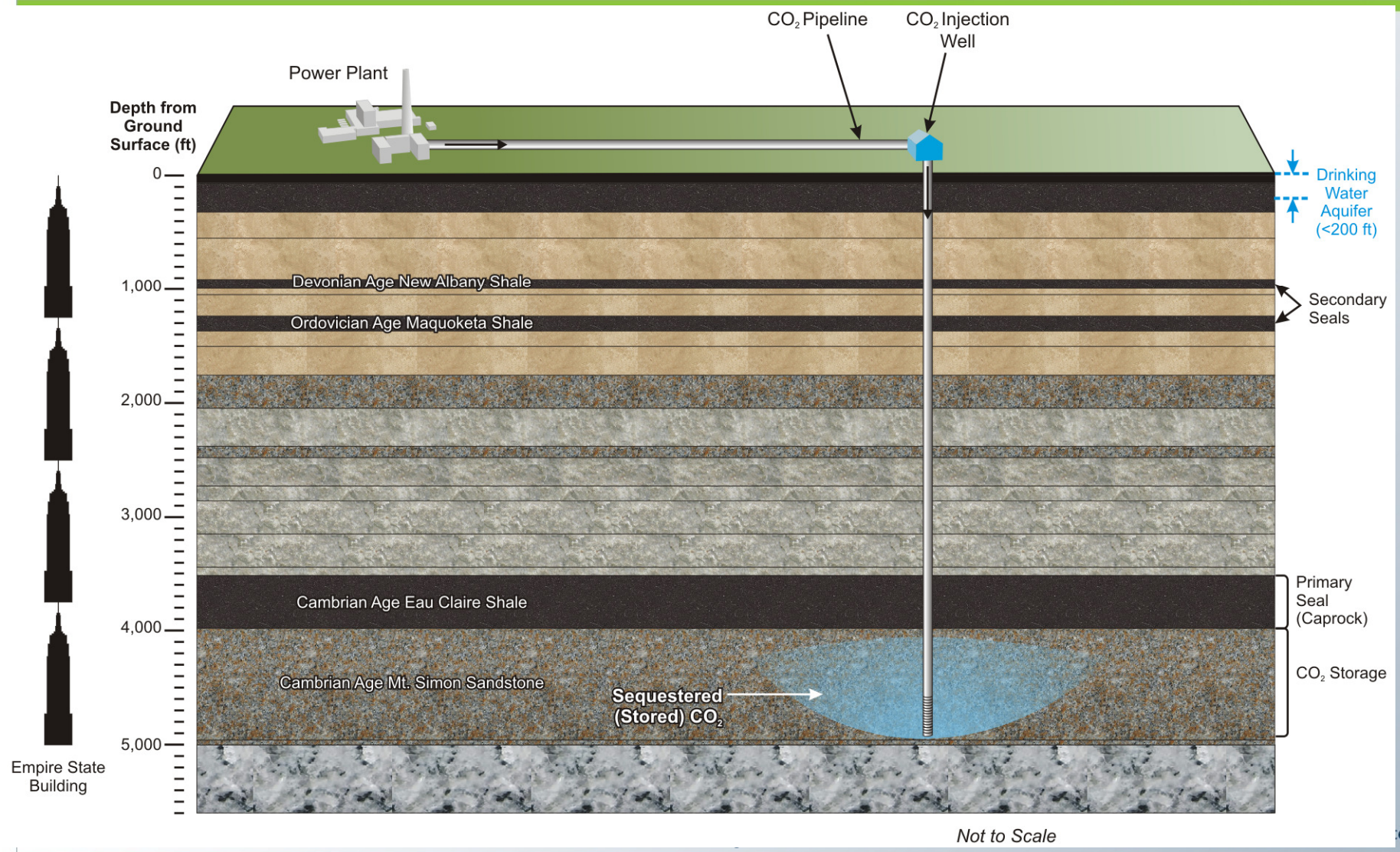
## *FutureGen Alliance*

# International Non-Profit Consortia



# Project Description

## Project Concept



## *Project Description*

# Project Goals

- Demonstrate an approach for siting, permitting, insuring, and operating CO<sub>2</sub> storage sites that are fully integrated with an upstream power plant
- Store 39-million metric tonnes of CO<sub>2</sub> that would otherwise be emitted to the atmosphere
- Demonstrate a suite of comprehensive monitoring technologies, verification techniques, and accounting protocols for stored CO<sub>2</sub>
- Establish visitor, research, and training facilities that advance carbon capture and storage technologies
- Provide a pathway to the future siting of commercial CO<sub>2</sub> storage sites in other locations across the country and around the world



## *Project Description*

# CO<sub>2</sub> Pipeline and Wells



- CO<sub>2</sub> pipeline
  - 12-inch diameter
  - >4 feet deep; greater in agricultural areas and under roads/streams
  - At least 150 feet away from residences and businesses
  - Sensitive environmental features will be avoided
- CO<sub>2</sub> wells
  - Monitoring and injection wells
  - Compatibility with surface uses is critical

## *Project Description*

# **CO<sub>2</sub> Storage Site Selection**

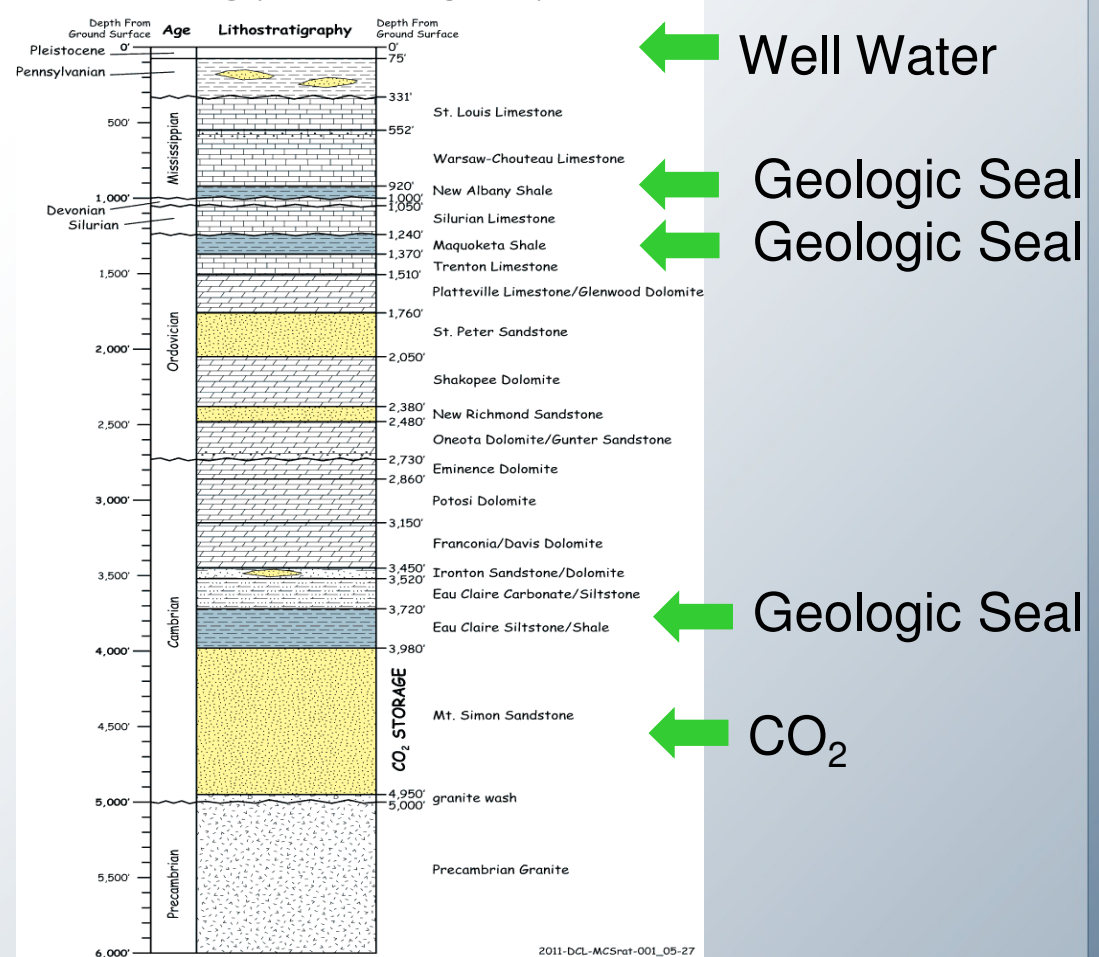
- The FutureGen Alliance has selected Morgan County (near Jacksonville) as its preferred site for the CO<sub>2</sub> storage facility
- Two alternate sites:
  - Taylorville/Christian County
  - Arcola/Douglas County
- All three sites will be analyzed in DOE's EIS

## Project Description

# Morgan County CO<sub>2</sub> Storage

- CO<sub>2</sub> storage almost 1 mile underground
  - Far below groundwater
  - Below 3 geologic seals
  - Deep in the Mt. Simon formation; known to be a high-quality CO<sub>2</sub> storage formation

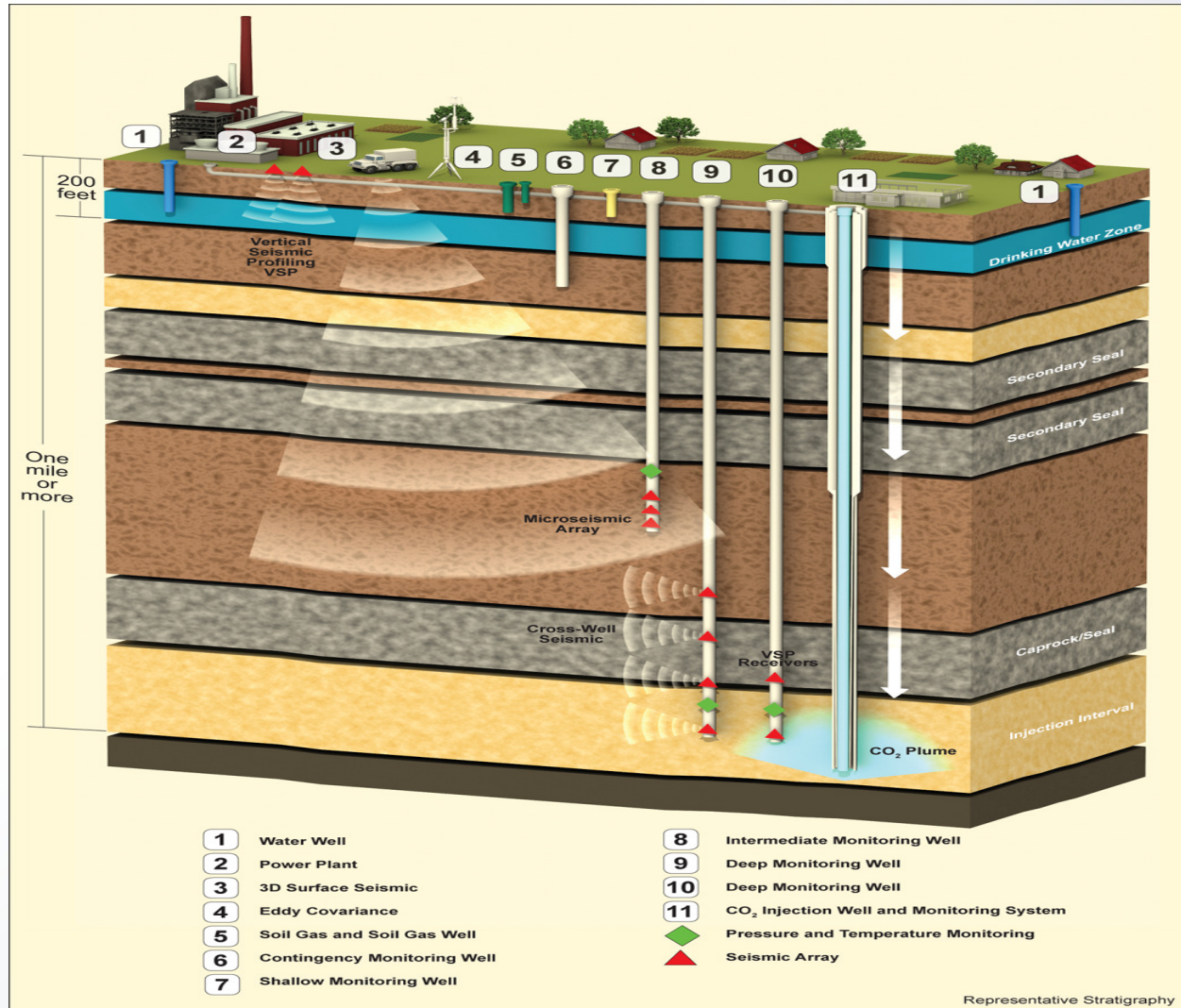
Generalized Stratigraphic Column for Morgan County Well Location





## Project Description

# CO<sub>2</sub> Monitoring Activities





# Summary

- FutureGen 2.0:
  - Is the world's first near-zero emission power plant
    - High rate of carbon dioxide capture (i.e., >90%)
    - Near-zero levels of other traditional emissions
    - Full integration with a CO<sub>2</sub> pipeline and geologic storage
  - Enables the cleaner use of Illinois basin coal
  - Creates construction and permanent jobs
  - Provides additional revenue for those landowners whose deep underground pore space is used for CO<sub>2</sub> storage
  - Increases county tax revenue
  - Constructs \$25M to \$50M in local research and training facilities
    - Increases county tourism/visitors
    - Creates expanded educational opportunities