

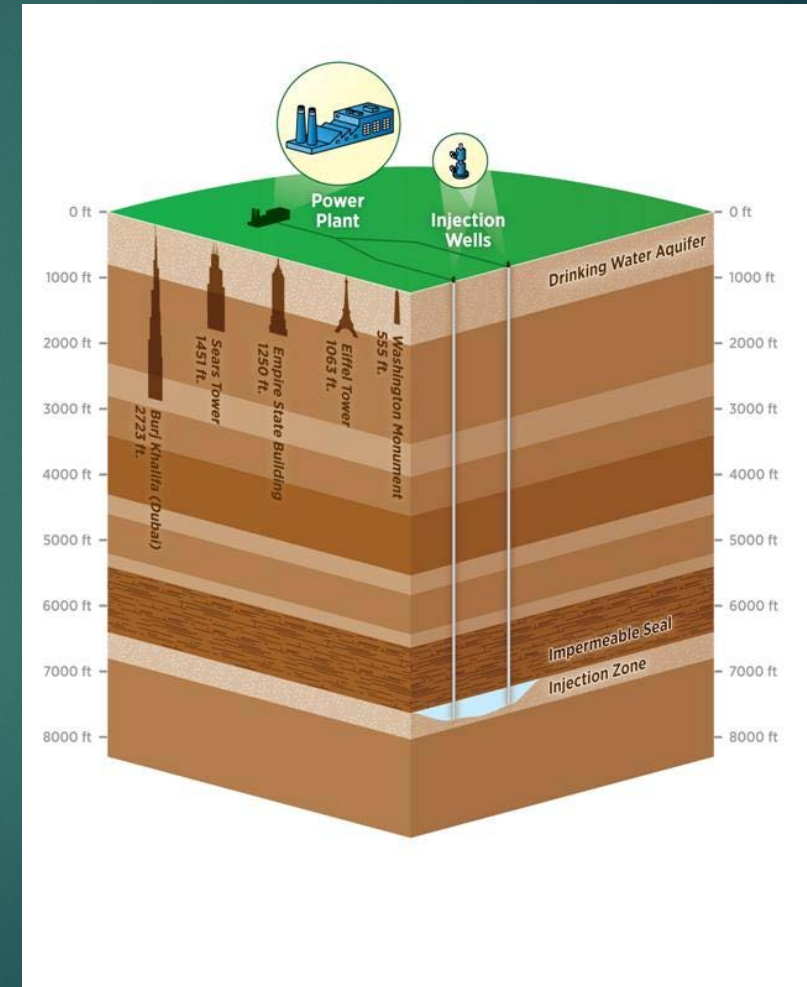


# Carbon Capture & Sequestration

JACK LEMA – MORAVIAN COLLEGE

# Carbon Capture and Sequestration (CCS)

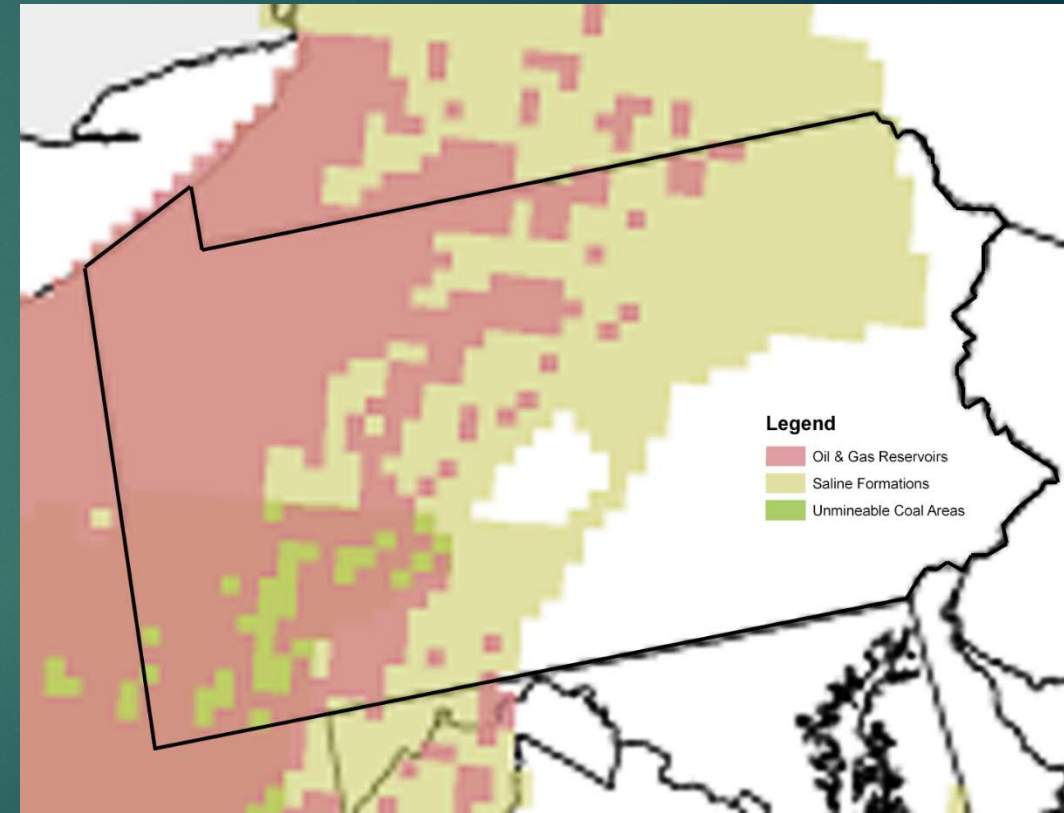
- ▶ CCS is the geological storage of carbon dioxide (CO<sub>2</sub>) is the process of injecting atmospheric CO<sub>2</sub> underground into the pore space of permeable rock layers.
- ▶ CO<sub>2</sub> is stored by using injection wells that tap into injection zones where CO<sub>2</sub> cannot escape.





# Possible Storage Location of CO<sub>2</sub>

- ▶ Pennsylvania has a geographical advantage for CO<sub>2</sub> sequestration.
- ▶ Roughly  $\frac{2}{3}$  of Pennsylvania can be used to store CO<sub>2</sub>.
- ▶ Pennsylvania has the capability of storing 250 years worth of Pennsylvania's current rate of CO<sub>2</sub> emissions.
- ▶ Transportation and storage is capable through pipelines and truck transportation.





# Cost Analysis

- ▶ Cap and Trade would be the primary source of funding of CCS projects and technology.
- ▶ CO<sub>2</sub> collection and recycling will increase through incentives and regulations.
- ▶ 80% of projected cost for CCS is in implementation of carbon capturing from emission sources.
- ▶ Several existing CO<sub>2</sub> pipelines belonging to private companies can be utilized to earn back initial cost for CCS technology.

**Figure S-9:** Pipeline from PA/OH to the Mt. Simon and Frio Sandstones [15]





# Summary

- ▶ Pennsylvania has a geographical advantage for CCS.
- ▶ ~ $\frac{2}{3}$  of Pennsylvania is optimal for CO<sub>2</sub> sequestration.
- ▶ Transportation and storage can be done through existing pipelines and through truck transportation.
- ▶ CCS projects and technology can be funded through cap and trade.
- ▶ Private pipeline use will reduce initial costs.