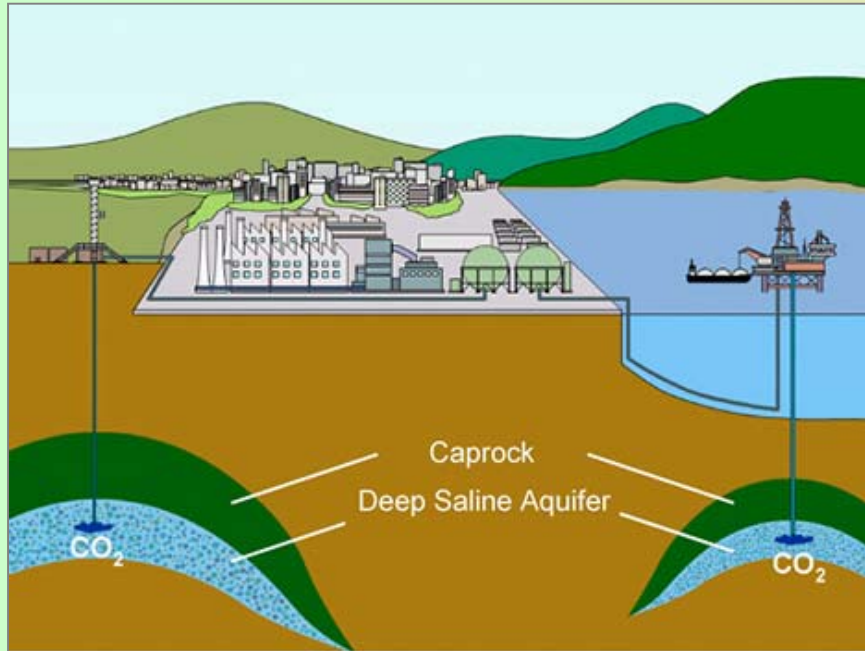


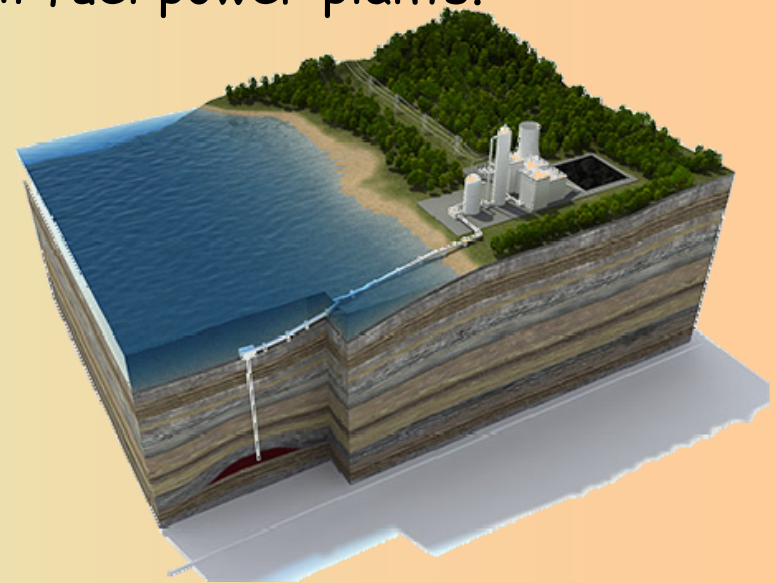
# Carbon Capture Storage (CCS)

## Carbon Capture Storage

Carbon capture and storage (CCS) is an approach to mitigating the contribution of fossil fuel emissions to global warming, based on capturing carbon dioxide ( $\text{CO}_2$ ) from large point sources such as fossil fuel power plants.

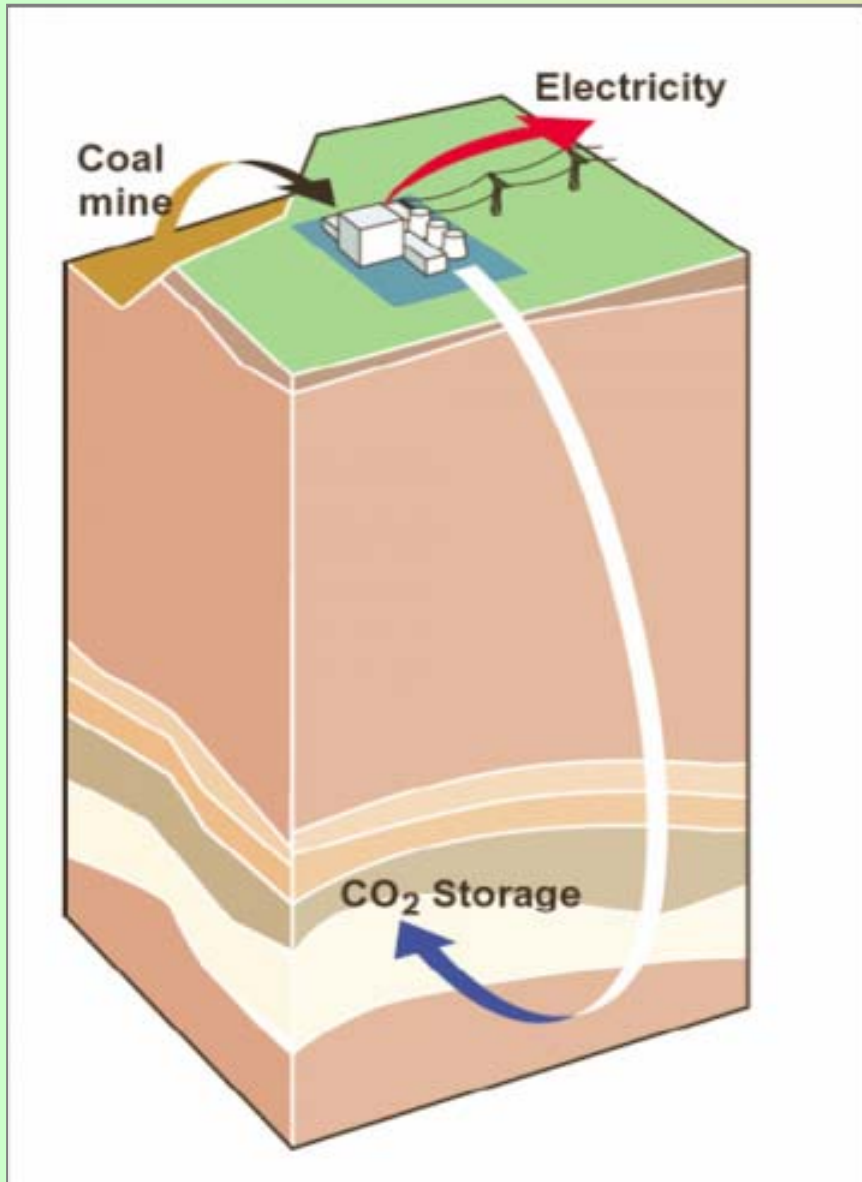


<http://www.treehugger.com/20090220-carbon-capture-storage-diagram.jpg>



<http://www.treehugger.com/20090305-carbon-capture-storage-image.jpg>

# Carbon Capture Storage (CCS)



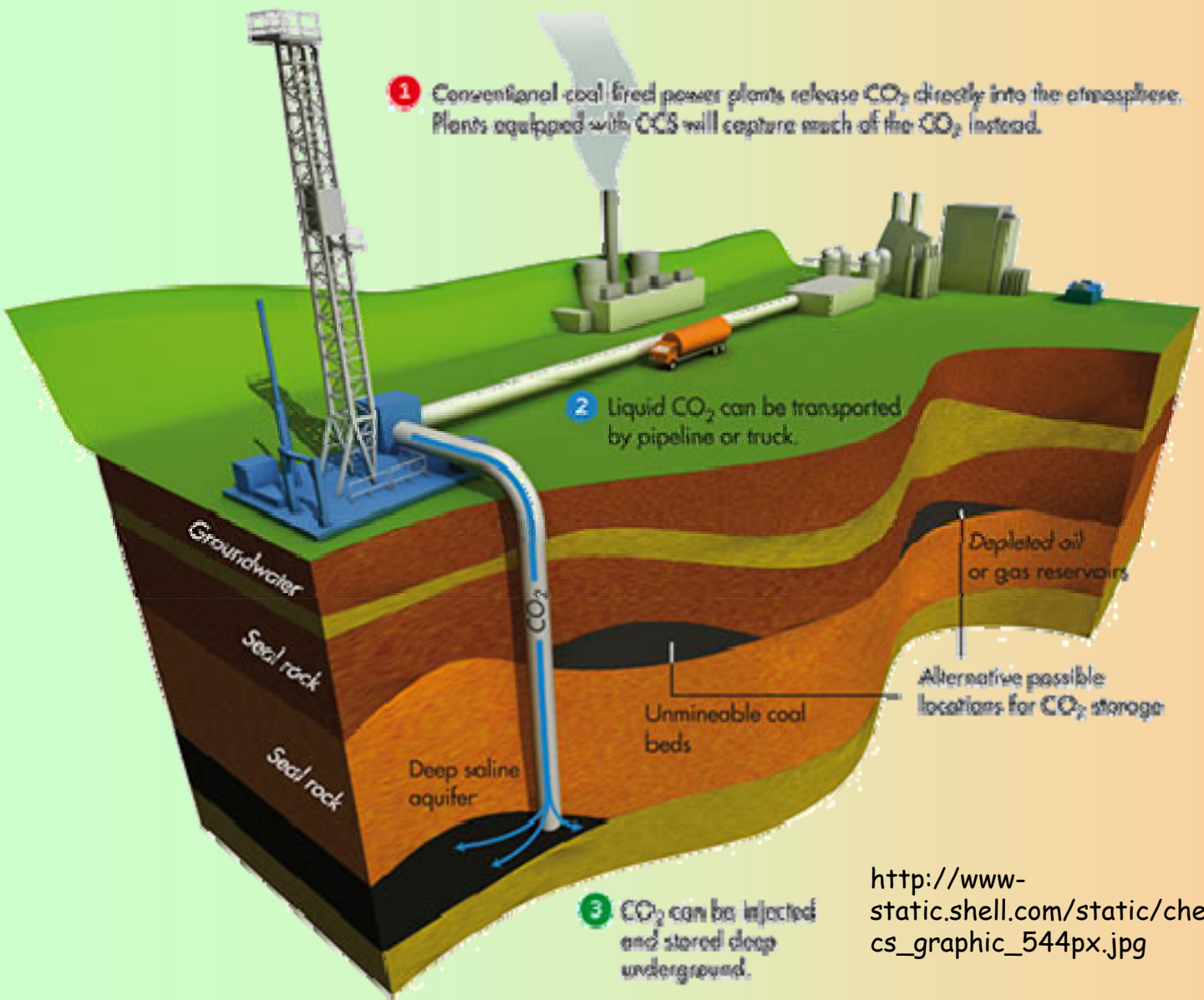
## Carbon Capture Storage

This technology separates  $CO_2$  in the combustion process before it enters the atmosphere.

The trapped greenhouse gas is afterwards stored in hope of never to be diffused again.

If we have to use coal for the energy mix in the near future we have to make sure that it is as little emissive as possible the agenda says.

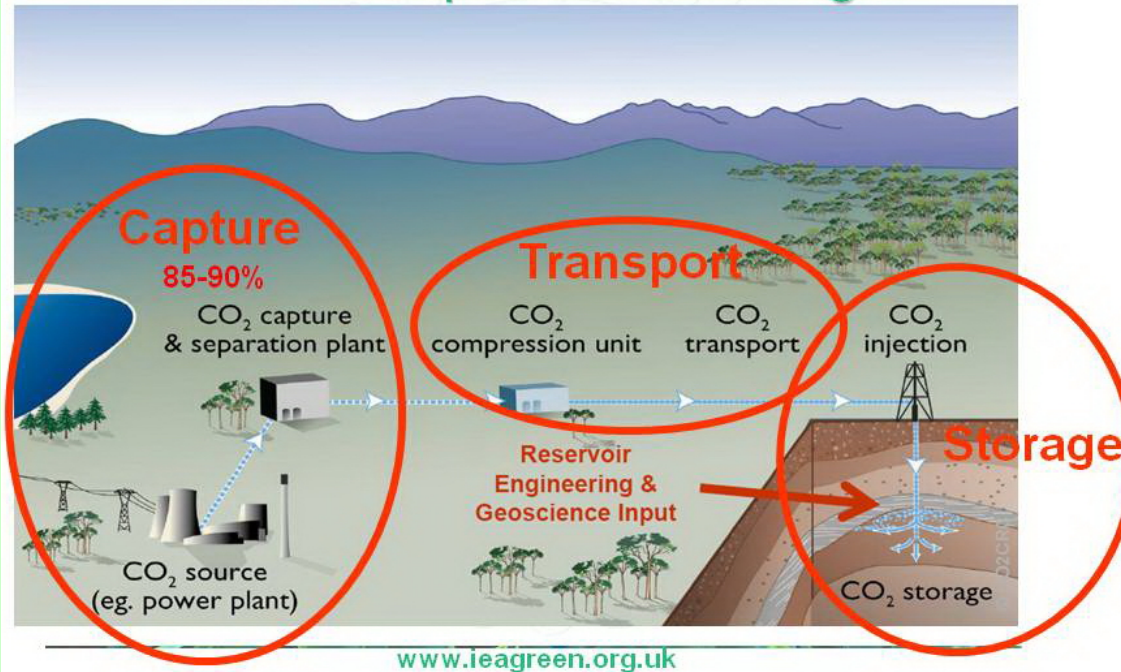
# Carbon Capture Storage (CCS)



[http://www-static.shell.com/static/chemicals/imgs/general/cs\\_graphic\\_544px.jpg](http://www-static.shell.com/static/chemicals/imgs/general/cs_graphic_544px.jpg)

# Carbon Capture Storage (CCS)

## Carbon Capture and Storage



## Carbon Capture Storage

CSS applied to a modern conventional power plant can reduced CO<sub>2</sub> emissions up to 80-90%.

The capturing and compressing CO<sub>2</sub> on the other hand would increase the fuel needed in such power plant about 10-40%, scientists estimate.

Economically spoken the costs of energy generated in power plants with CSS would raise about 30-60%.

However, Carbon Capture and Storage is seen as one credible approach to mitigate climate change.

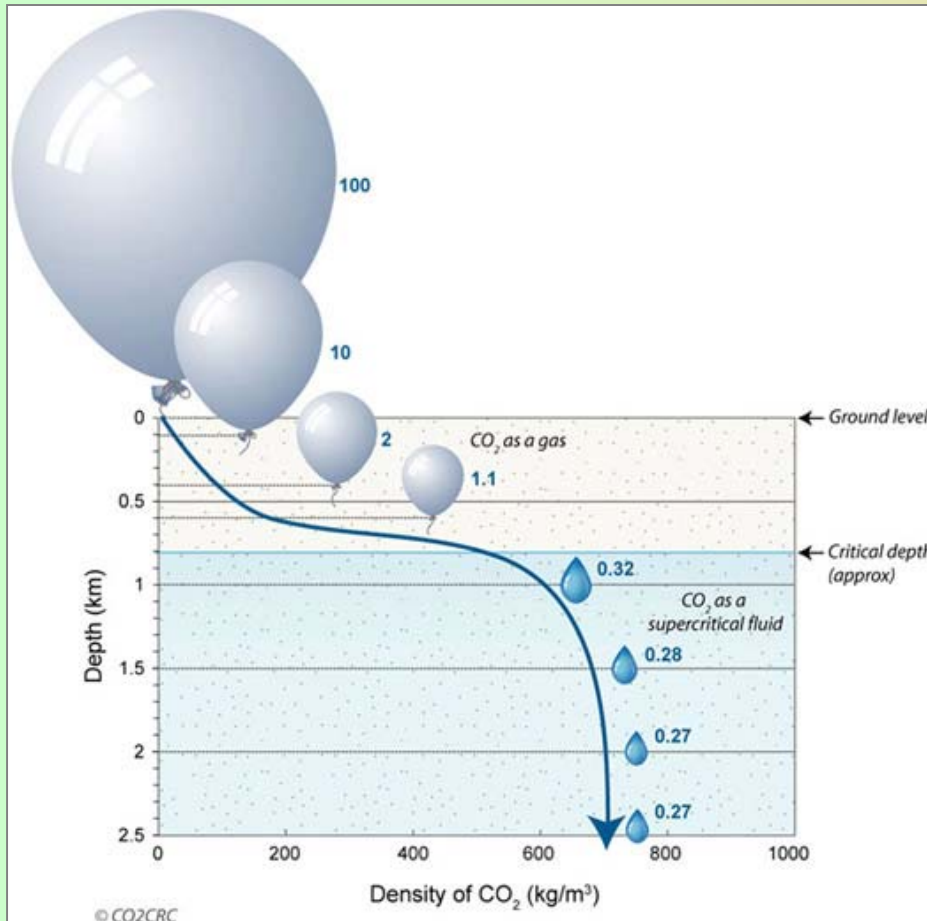
# Carbon Capture Storage (CCS)

## Geological Storage

Geologic storage is most efficient at depths greater than 0.8 km.

CO<sub>2</sub> increases in density with depth and becomes a supercritical fluid at pressures that naturally exist at depth.

Supercritical fluids take up much less space, and diffuse better than either gases or ordinary liquids through the tiny pore spaces in storage rocks.

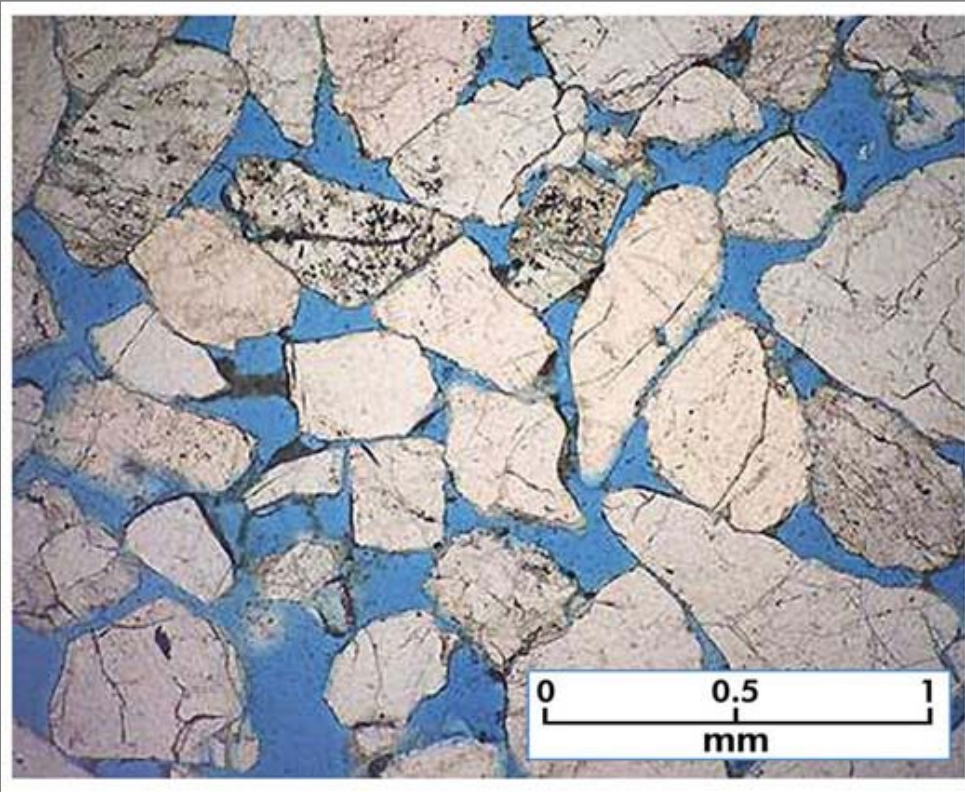


<http://www.wvcarb.org/images/figures/cc-02.jpg>

# Carbon Capture Storage (CCS)

## Geological Storage

CO<sub>2</sub> will be trapped as a supercritical fluid in tiny pore spaces in the storage rock, as is shown by the blue spaces between the white grains of quartz in this photograph of a microscopic section of storage sandstone



<http://www.wvcarb.org/images/figures/cc-03.jpg>