

# BECCS

## BIO-ENERGY WITH CARBON CAPTURE AND STORAGE

### WHAT IS BECCS?

'BECCS' stands for Bio-energy with carbon capture and storage. This means the Carbon Dioxide is caught and removed from the atmosphere. The way in which this removal occurs is through the growth of biomass taking in the CO<sub>2</sub>. Energy can then get extracted in forms such as heat, biofuel and electricity, allowing it to be put to use.

Conversion methods such as combustion, fermentation and pyrolysis are ways in which the biomass can be fertilized. Some of this carbon can then be converted to biochar or CO<sub>2</sub>. BECCS is a negative emissions technology because this CO<sub>2</sub> and biochar is then stored by 'Geologic Sequestration' or land application and no longer remains in the atmosphere.

### summary

- "Bioenergy with carbon capture and storage"
- Grow plants, which suck up carbon dioxide through photosynthesis
- Burn these crops for bioenergy
- Capture the carbon that is released from burning them using CCS technology
- Store the captured CO<sub>2</sub> in long-term geological storage underground

### POSITIVES

- BECCS is included in the IPCC's reports and so is considered a legitimate method of carbon removal.
- It can, in theory, remove huge amounts of carbon dioxide, in ways that allow it to be stored permanently in geological storage: no saturation problems
- Deploying BECCS also creates a saleable commodity (the energy that it stores) as well as captured CO<sub>2</sub>
- The technology essentially already exists, and can use pre-existing infrastructure and capacities

### NEGATIVES

- Land use problems: BECCS at scale uses a lot of land, up to more than 2x the size of India. This may displace food production, reducing food security; in a warming world, food security is already a major concern. Forest land and other important natural sinks may be cleared to make way for BECCS, potentially releasing huge amounts of CO<sub>2</sub>
- It would also have a huge water footprint, which is problematic in a warming world
- Most consider it unable to deliver at the scale of negative emissions required.

