

What do you know by Carbon Capture. Compare & contrast CCS with CO₂ removal.

Carbon capture storage is the technology that captures carbon dioxide from point sources such as refineries and stores them underground.

Carbon Capture and Removal

Both, carbon capture and removal intend to remove or reduce the carbon dioxide in the atmosphere thereby reducing global warming.

CCS	CDR
<ul style="list-style-type: none">* Carbon dioxide is removed even <u>before</u> entering in the <u>atmosphere</u>.* Relies solely on technologies such as <u>Bioenergy carbon</u>	<ul style="list-style-type: none">* Carbon dioxide present in the atmosphere will be removed.* Relies on both natural processes such as <u>afforestation</u>

CCS
capture and air
carbon capture.

* The stored carbon
can be reused
by any industries

CDR
and reforestation,
ocean fertilization
and also on technologies

* The stored carbon
cannot be reused
as it is injected
into the ground.

Need for carbon removal technologies

As per the Assessment report - 6
at current rate of carbon dioxide
emissions it will be tough to meet
the commitment to 1.5°C pledge.

So, in this context carbon
removal technologies come at place.

Challenges associated with them.

① Cost. The cost of setting up
carbon capture unit in a coal
plant is six times more expensive

than power produced from wind.

② Land shortage - the CCS technologies demand large swathes of land which can reduce the food security of the people.

③ The ICA results - As per the International Energy Agency 40 operational CCS plants reduces little more than 45 mt of carbon dioxide annually and 2.5 Giga tonnes of carbon dioxide was removed annually by carbon dioxide reduction.

Future

The carbon dioxide abatement methods are operating in trials. The COP28 opened the discourse on carbon capture which needs to scaled upon domestically and internationally.