

# CO<sub>2</sub>-HYBRID

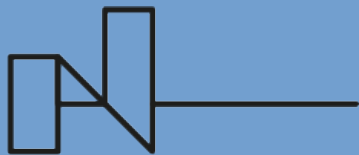
## *Monthly Project Newsletter*

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Source :<https://www.bbc.com/future/article/20210310-the-trillion-dollar-plan-to-capture-co2>

## THE DEVICE THAT REVERSES CO<sub>2</sub> EMISSIONS

"We have a climate change problem and it's caused by an excess of CO<sub>2</sub>," says Carbon Engineering chief executive Steve Oldham. "With DAC, you can remove any emission, anywhere, from any moment in time. It's very powerful tool to have."

Supplying a fleet of DAC plants big enough to capture 10 gigatonnes of CO<sub>2</sub> every year will require around four million tonnes of potassium hydroxide, the entire annual global supply of this chemical one and a half times over.

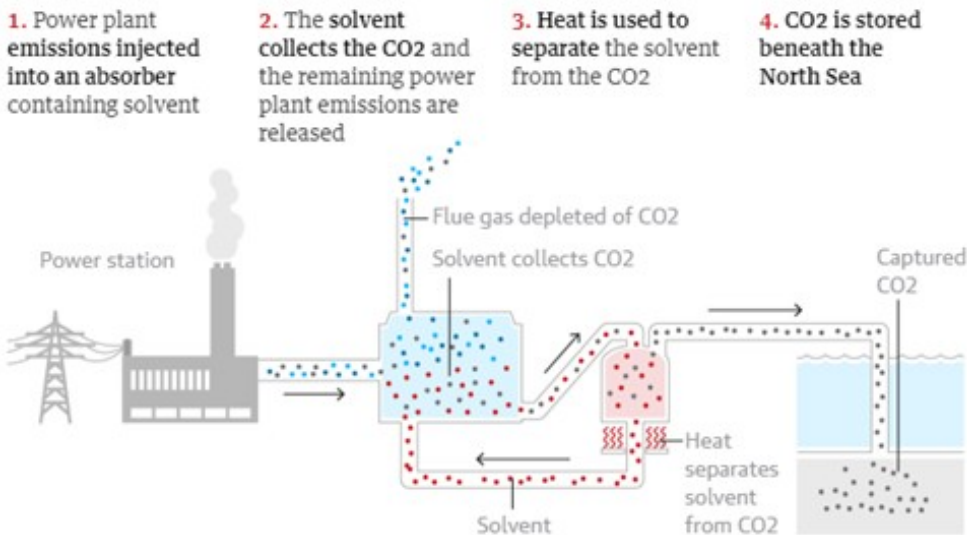
The Intergovernmental Panel on Climate Change (IPCC) has warned that limiting global warming to 1.5 °C by 2100 will require technologies such as DAC for "large-scale deployment of carbon dioxide removal measures" – large-scale meaning many billions of tonnes, or gigatonnes, each year.

Enhancing the growth of vegetables in greenhouses is one application for the CO<sub>2</sub> captured from the air by DAC. Another direct air capture company, Climeworks, has 14 smaller scale units in operation sequestering 900 tonnes of CO<sub>2</sub> a year, which it sells to a greenhouse to enhance the growth of pickles.

Estimates of how much it costs to capture a tonne of CO<sub>2</sub> from the air vary widely, ranging from \$100 to \$1,000 (£72 to £720) per tonne.

# CARBON CAPTURE IS VITAL TO MEETING CLIMATE GOALS

## Carbon capture technology can trap and store carbon emissions



Guardian graphic. Source: Drax, C-Capture

Carbon capture and storage involves the extraction of emissions from power plants and factories, condensing them and then pumping the resulting carbon dioxide into underground stores.



Source: <https://www.hopcementworks.co.uk/>,  
<https://www.theguardian.com/environment/2021/jan/16/carbon-capture-vital-meeting-climate-goals-scientists-cut-emissions>

Britain is considered to be well placed to develop and operate such technology given its many depleted North Sea oil fields where this sequestered carbon dioxide could be stored.

Several CCS development programmes have been launched over the past 20 years but have been cancelled as governments have vacillated over funding.

Source: <https://www.theguardian.com/environment/2021/jan/16/carbon-capture-vital-meeting-climate-goals-scientists-cut-emissions>

“Carbon capture and storage is going to be the only effective way we have in the short term to prevent our steel industry, cement manufacture and many other processes from continuing to pour emissions into the atmosphere”

“If we are to have any hope of keeping global temperature [increases] down below 2 degrees C then we desperately need to develop ways to capture and store carbon dioxide.” said Professor Stuart Haszeldine, of Edinburgh University.

Boris Johnson – as part of his commitment to fight climate change – has pledged £1bn of public funds to help develop four major CCS schemes in Britain by 2030 as part of his plan for a “green industrial revolution”.

At present, most successes in reducing UK carbon emissions have come from the power industry where renewable energy sources have taken over electricity generation from coal, gas and oil plants.

Source:  
<https://www.theguardian.com/environment/2021/jan/16/carbon-capture-vital-meeting-climate-goals-scientists-cut-emissions>



### Important Dates

**10 May 2021**

**Abstract Submission Date**

**17 May 2021**

**Notification of Acceptance**

**11 June 2021**

**Full Paper Submission Date**

**16 July 2021**

**Notification of Acceptance  
Date**

**3 September 2021**

**Final Paper Submission Date**

### Topics

**Electrical Power Systems &  
Smart Grids**

**Energy Efficiency**

**Environmental Impact and  
Clean Energy**

**Fluid Mechanics and  
Technical Applications**

**Renewable Energies**

**Power Engineering**

**Smart cities & digital  
transformation in energy**

### Round Table

**Solvents and membrane for  
accelerating CO2 capture  
processes development**



**It is a honour to invite you to attend The 10th International Conference on ENERGY and ENVIRONMENT (CIEM)**

The International Conference on ENERGY and ENVIRONMENT (CIEM) is organised by the Academy of Romanian Scientists, University POLITEHNICA of Bucharest in partnership with World Energy Council - Romanian National Committee.

The aims of CIEM is to respond to challenges in the rapidly developing fields of Energy and Environmental Engineering, and to inspire both research studies and practical applications by promoting interaction among scientists from universities, research institutions, and industry.

Like the previous events, the conference will provide an ideal venue for the development of new partnerships. Therefore companies, institutes and universities are invited to participate to CIEM 2021!

***Accepted papers will be submitted for inclusion into IEEE Xplore subject to meeting IEEE Xplore's scope and quality requirements. They will be also submitted to SCOPUS and Clarivate Analytics Conference Proceedings Citation Index – CPCI (ISI Web of Science) for evaluation for inclusion in the list.***

The last 2 editions of CIEM (2017, 2019) have been already included in Clarivate Analytics Web of Science, IEEE Xplore and Scopus.