Climate Change

National Academy of Sciences

February 21 and 22, 2020 | Slides presented by Wikimedia DC

Video: https://vimeo.com/296168439

Schedule for Feb 22

10:30 Welcome and NASEM Orientation

10:45 Training by WikimediaDC

11:15 Negative Emissions Technologies Overview - Erica Belmont & Pete Psarras

11:45 Extreme Event Attribution Overview - Tom Knutson & David Titley

12:15 Lunch in West Court

1:00 Editing in breakouts (rooms TBD, expert protocols TBD):

- Negative Emissions Technologies
- Extreme Event Attribution
- Biographies

2:45 Wrap up and continuing engagement

3:00 Adjourn Wikipedia event. You are welcome to attend MisinfoCon.

Housekeeping

Wifi, safe space, restrooms, lunch break

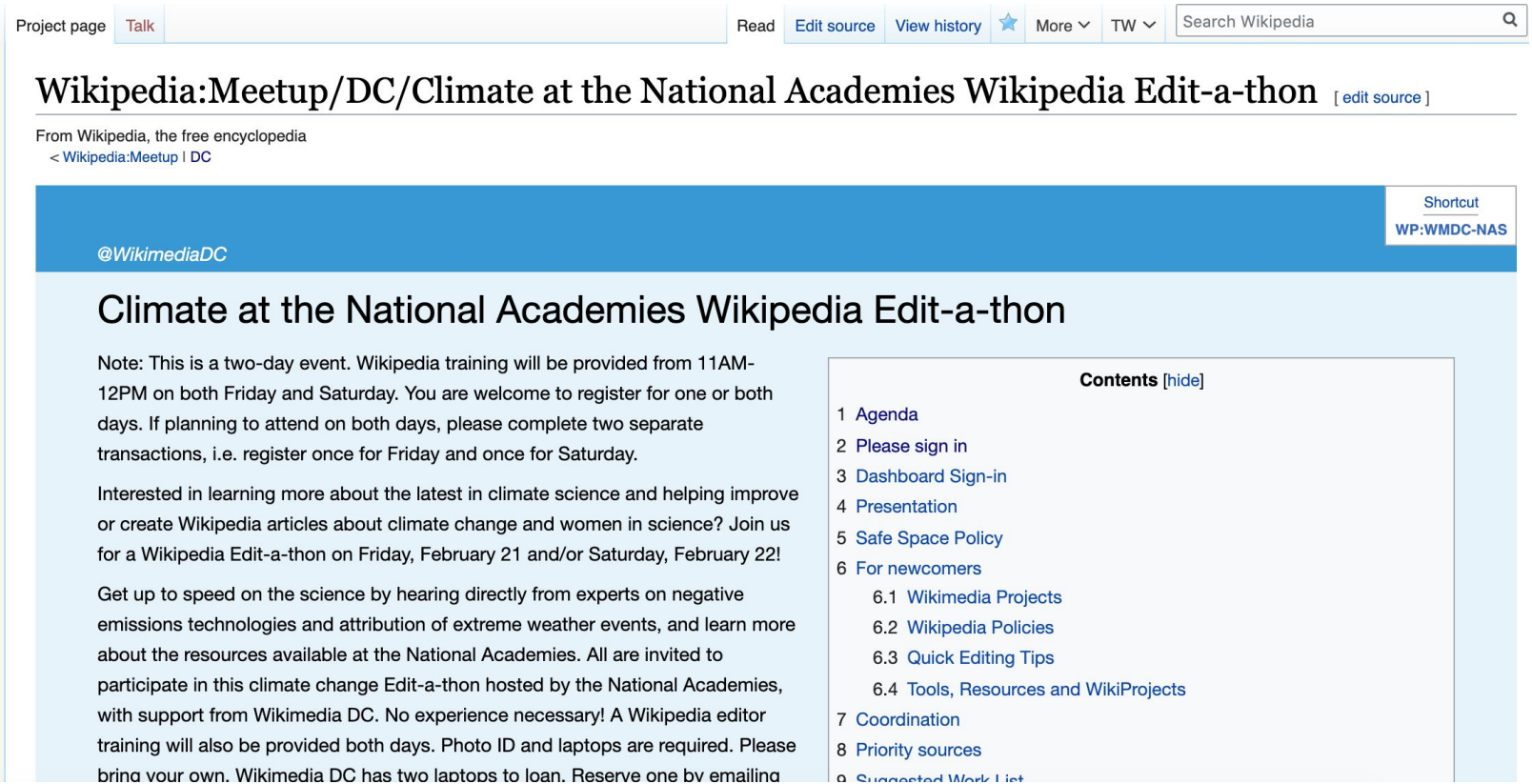
Navigate to the wiki event page

1. Go to en.wikipedia.org
2. Enter the following shortcut into the search bar (top right).

WP:WMDC-NAS

3. Bookmark this page. We will use it throughout the day.

Event Page



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Wikipedia:Meetup/DC/Climate at the National Academies Wikipedia Edit-a-thon [edit source]

From Wikipedia, the free encyclopedia
< Wikipedia:Meetup | DC

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Shortcut
WP:WMDC-NAS

Climate at the National Academies Wikipedia Edit-a-thon

Note: This is a two-day event. Wikipedia training will be provided from 11AM-12PM on both Friday and Saturday. You are welcome to register for one or both days. If planning to attend on both days, please complete two separate transactions, i.e. register once for Friday and once for Saturday.

Interested in learning more about the latest in climate science and helping improve or create Wikipedia articles about climate change and women in science? Join us for a Wikipedia Edit-a-thon on Friday, February 21 and/or Saturday, February 22!

Get up to speed on the science by hearing directly from experts on negative emissions technologies and attribution of extreme weather events, and learn more about the resources available at the National Academies. All are invited to participate in this climate change Edit-a-thon hosted by the National Academies, with support from Wikimedia DC. No experience necessary! A Wikipedia editor training will also be provided both days. Photo ID and laptops are required. Please bring your own. Wikimedia DC has two laptops to loan. Reserve one by emailing

Contents [hide]

Wikipedia

What exactly is it, anyway?

What is Wikipedia?

Wikipedia is a multilingual, web-based, free encyclopedia based on a model of openly editable content. It is the largest and most popular general reference work on the Internet. [Wikipedia] is supported by the Wikimedia Foundation, a non-profit organization which operates on money it receives from donors.

-From Wikipedia (en)

Wikipedia: the 21st-century encyclopedia

“Imagine a world in which every single person on the planet is given free access to the sum of all human knowledge. That's what we're doing.”

-Jimmy Wales, co-founder, Wikipedia

About us

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- Created and edited by volunteers
- Overseen by nonprofit Wikimedia Foundation
- All edits and versions recorded forever (revision history)
- 5+ million articles, 270+ languages
- 75k active editors/month, 11k very active editors/month

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Wikipedia Basics and Policies

Photo: Georgetown Slavery Archive Editing Workshop
Georgetown University

Source: Wikimedia Commons

Wikipedia Policies

- **Neutral Point of View** - written so all sides can agree
- **Notability** - significant independent sources -> importance
- **Verifiability** - Using reliable sources to reference information
- **No original research** - point to existing scholarship
- **Assume good faith** - start with congenial spirit
- **Conflicts of interest** - disclose and abide by terms of service

Additional policies: Wikipedia:List of policies

Tabs/Article Anatomy

Photo: Hispanic Heritage Month Edit-a-thon
National Archives

Source: Wikimedia Commons

Sample Article

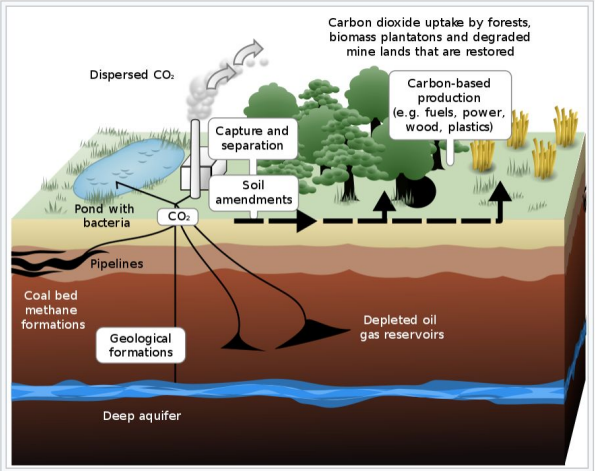
Article Talk | Read Edit Edit source View history More TW | Search Wikipedia

Carbon capture and storage [edit | edit source]

ORES predicted quality: B (3.83)
A B-class article from Wikipedia, the free encyclopedia

Carbon capture and storage (**CCS**) (or **carbon capture and sequestration** or **carbon control and sequestration**[1]) is the process of capturing waste carbon dioxide (CO_2) usually from large point sources, such as a cement factory or biomass power plant, transporting it to a storage site, and depositing it where it will not enter the atmosphere, normally an underground geological formation. The aim is to prevent the release of large quantities of CO_2 into the atmosphere from heavy industry. It is a potential means of mitigating the contribution to global warming and ocean acidification[2] of carbon dioxide emissions from industry and heating.[3] Although CO_2 has been injected into geological formations for several decades for various purposes, including enhanced oil recovery, the long term storage of CO_2 is a relatively new concept. Direct air capture is a type of CCS which scrubs CO_2 from ambient air rather than a point source.

Carbon dioxide can be captured out of air, industrial source or power plant flue gas using a variety of technologies, including absorption, adsorption, chemical looping, or membrane gas separation technologies.[4] Amines are used as solvents in the leading carbon scrubbing technology.[5] CCS applied to a modern conventional power plant could reduce CO_2 emissions to the atmosphere by approximately 80–90% compared to a plant without CCS.[6] If used on a power plant capturing and compressing CO_2 and other system costs are estimated to increase the cost per watt-hour energy produced by 21–91% for fossil fuel power plants;[6] and applying the technology to existing plants would be more expensive, especially if they are far from a sequestration site. As of 2019 there are 17 operating CCS projects in the world, capturing 31.5Mt of CO_2 per year, of which 3.7 is stored geologically.[7] Most are industrial not power plants.[8]

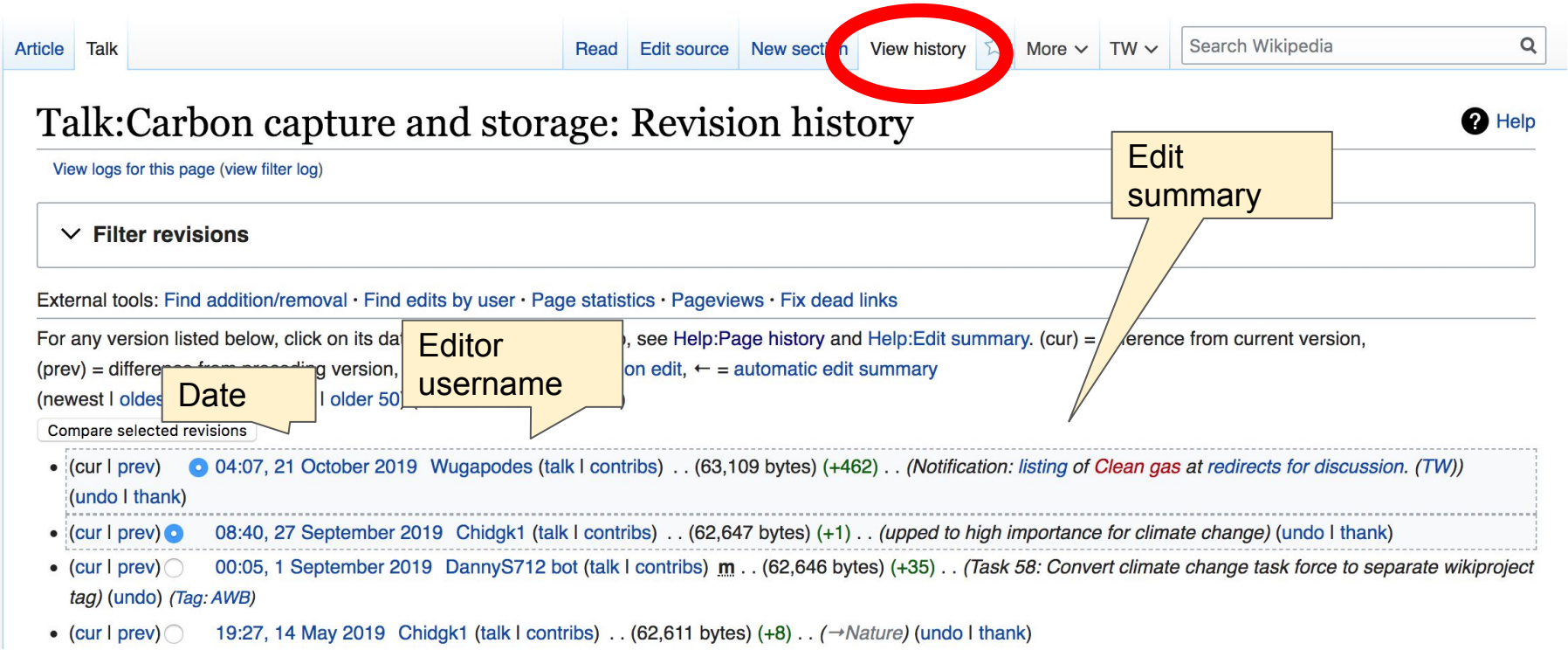


Schematic showing both terrestrial and geological sequestration of carbon dioxide emissions from a biomass or fossil fuel power station

It is possible for CCS, when combined with biomass, to result in net negative emissions.[9] A trial of bio-energy with carbon capture and storage (BECCS) at a wood-fired unit in Drax power station in the UK started in 2019: if successful this could remove a tiny amount of CO_2 from the atmosphere.[10]

Storage of the CO_2 is envisaged either in deep geological formations, or in the form of mineral carbonates. And pyrogenic carbon capture and storage (PyCCS) is being researched.[11] Deep

Exploring Tabs: Article history



Exploring Tabs: Talk Page

- Discuss the article with other editors
- Use is optional

Discussion

Sections: Lead Paragraphs, Info boxes

Ariel Cetrone (WMDC) 15 60 You have new messages Sandbox Preferences Beta Watchlist Contributions Log out 17:01:31

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Carbon capture and storage [edit | edit sour

Lead paragraphs

Main photo or Infobox placement

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A B-class article from Wikipedia, the free encyclopedia

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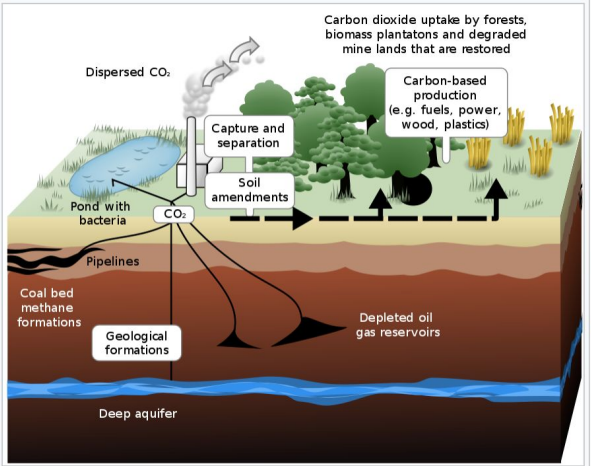

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Sections: References

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Inline citations

3. ^ a b *The U... ...deployment pathway* (PDF). BEIS. 2018.
4. ^ B... ...on A, Brown S, Fennell PS, Fuss S, Galindo... ...and storage (CCS): the way forward. Energy & E... ...ental Science. 2018;11(5):1062-176.
87. ^ a b c d e "Large-scale CCS facilities | Global Carbon Capture and Storage Institute". *www.globalccsinstitute.com*. Retrieved 2018-11-22.
88. ^ "Project Details". 2011-07-21. Archived from the original on 2011-07-21. Retrieved 2018-11-22.
89. ^ "Around the world in 22 carbon capture projects | Carbon Brief". *Carbon Brief*. 2014-

Additional Sections

Further reading [edit | edit source]

- Hester, Ronald E; R[illegible]. Harrison (2009). *Carbon capture: sequestration and storage* (Issues in environmental science and technology, 29. ed.). Royal Society of Chemistry. ISBN [illegible]-84755-917-3.
- Shackley, Simon; Clair Gough (2006). *Carbon capture and its storage: an integrated assessment*. Ashgate. ISBN 978-0-7546-4499-6.
- Wilson, Elizabeth J; David Gerard (2007). *Carbon capture and sequestration : integrating technology, monitoring and regulation*. Blackwell Publishing. ISBN 978-0-8138-0207-7.
- Metz, Bert (2005). *IPCC special report on carbon dioxide capture and storage*. Intergovernmental Panel on Climate Change. Working Group III (Cambridge University Press). ISBN 978-0-521-86643-9.

External links [edit | edit source]

- DOE Fossil Energy: Department of Energy programs in carbon dioxide capture and storage.
- 2007 NETL Carbon Sequestration Atlas
- Scientific Facts on CO_2 Capture and Storage, a peer-reviewed summary of the IPCC Special Report on CCS.
- Carbon Capture: A Technology Assessment Congressional Research Service
- Carbon Sequestration News Recent news articles on CO_2 capture and storage.

Wikimedia Commons has media related to ***Carbon capture and storage***.

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Categories (+): Carbon capture and sequestration (–) (±) | Bright green environmentalism (–) (±) | Climate forcing (–) (±) | Gas technologies (–) (±) | (+)

Editing Existing Articles

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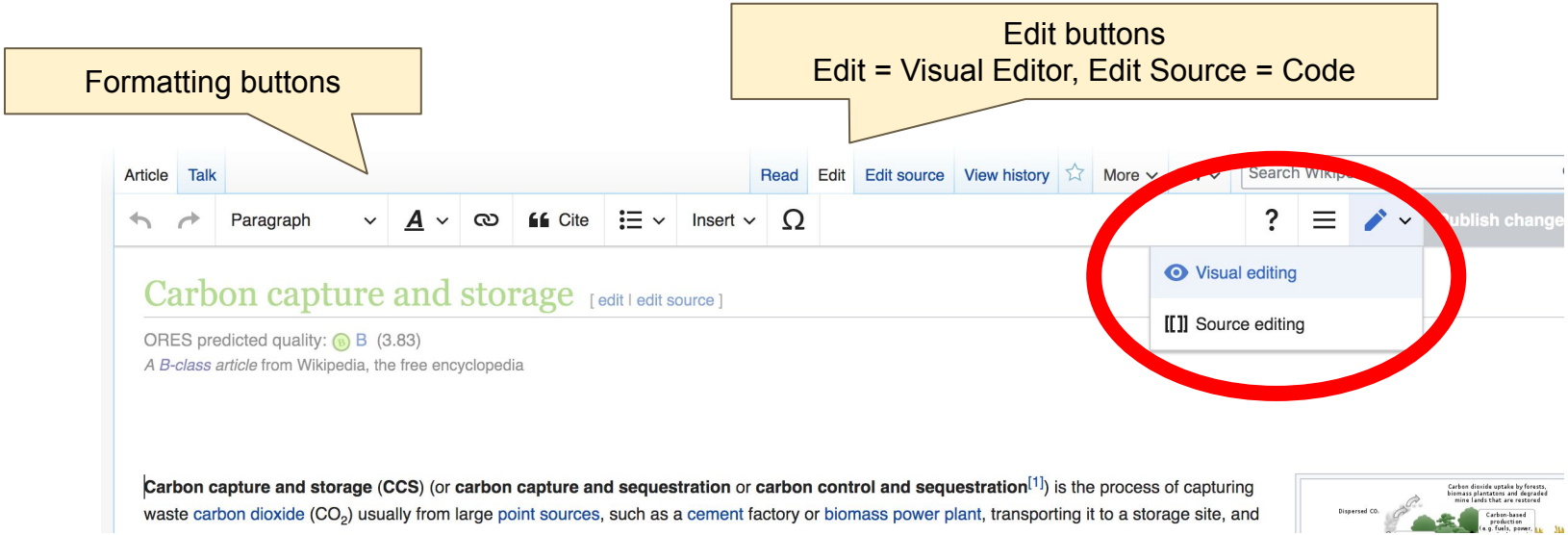

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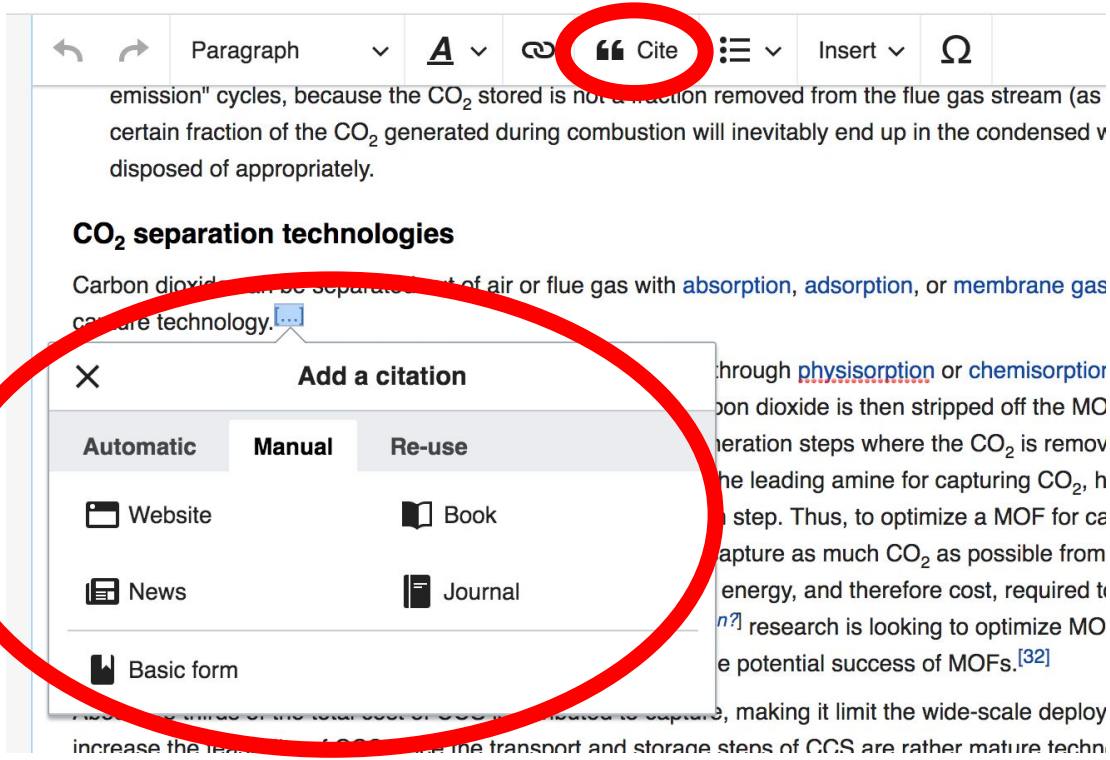

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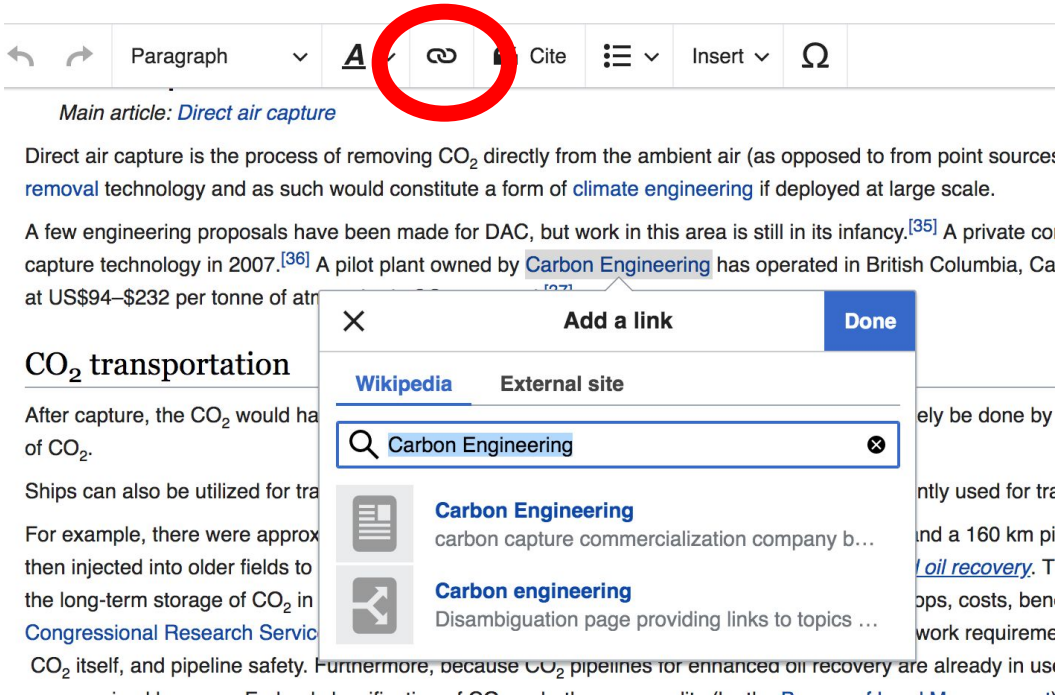

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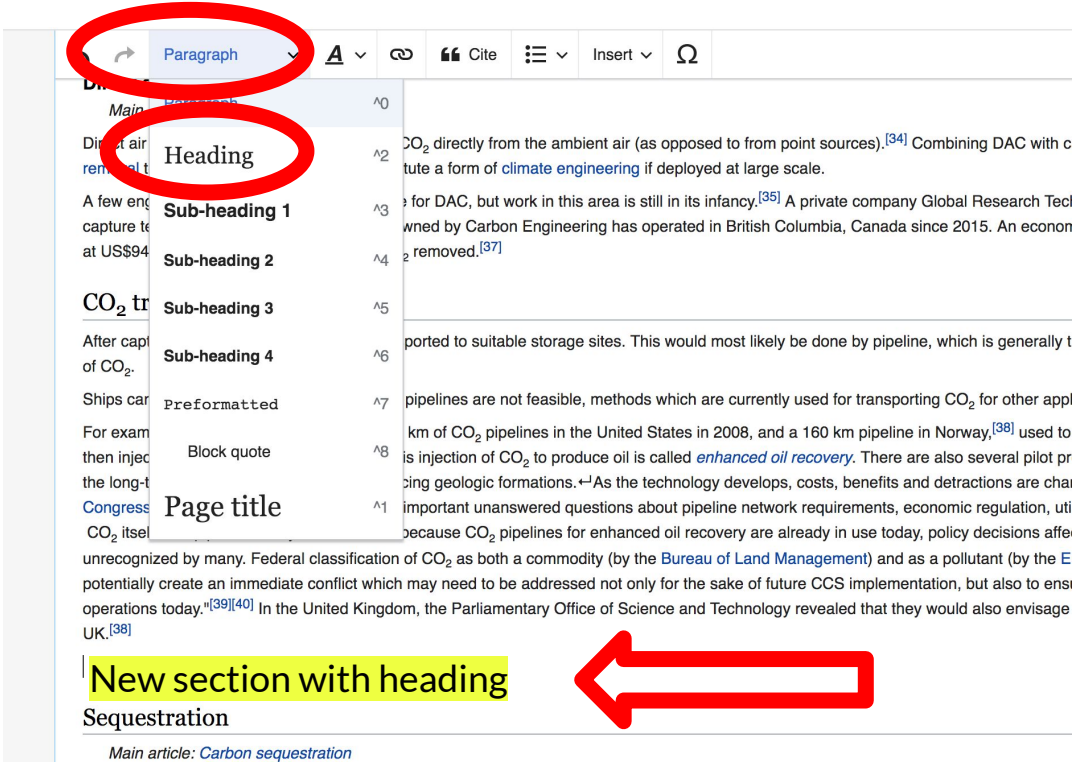

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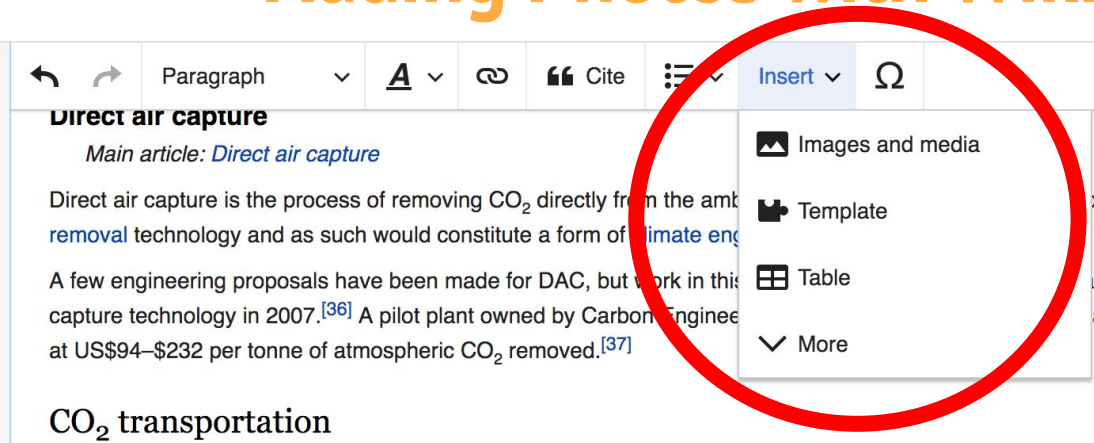

Direct air capture

Main article: Direct air capture

Direct air capture is the process of removing CO_2 directly fr m the amb ources).[34] Combining DAC with carbon storage could act as a carbon dioxide removal technology and as such would constitute a form of limate eng

A few engineering proposals have been made for DAC, but ork in this te company Global Research Technologies demonstrated a pre-prototype of air capture technology in 2007.[36] A pilot plant owned by Carbon Enginee a, Canada since 2015. An economic study of this plant in 2018 estimated the cost at US$94–$232 per tonne of atmospheric CO_2 removed.[37]

CO_2 transportation

After capture, the CO_2 would have to be transported to suitable storage sites. This would most likely be done by pipeline, which is generally the cheapest form of transport for large volumes of CO_2.

Ships can also be utilized for transport where pipelines are not feasible, methods which are currently used for transporting CO_2 for other applications.

For example, there were approximately 5,800 km of CO_2 pipelines in the United States in 2008, and a 160 km pipeline in Norway [38] used to transport CO_2 to oil production sites where it is

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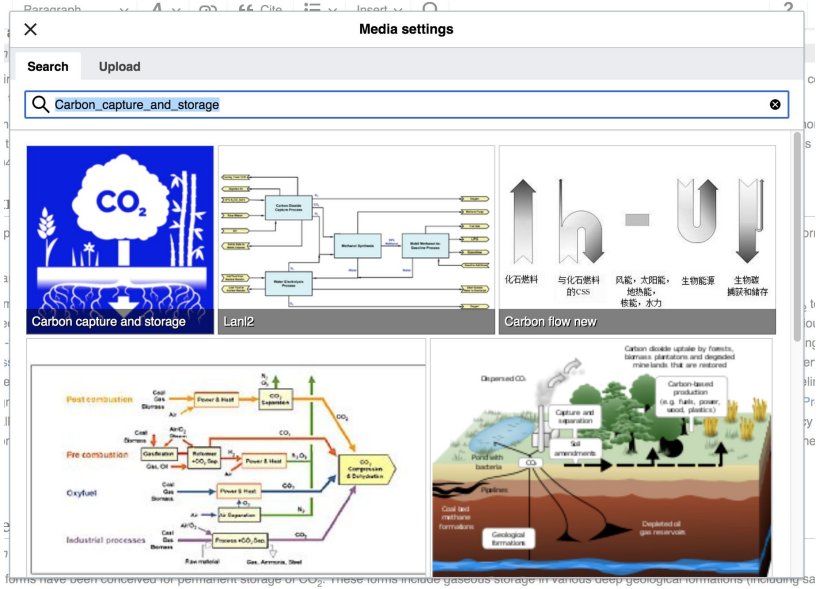

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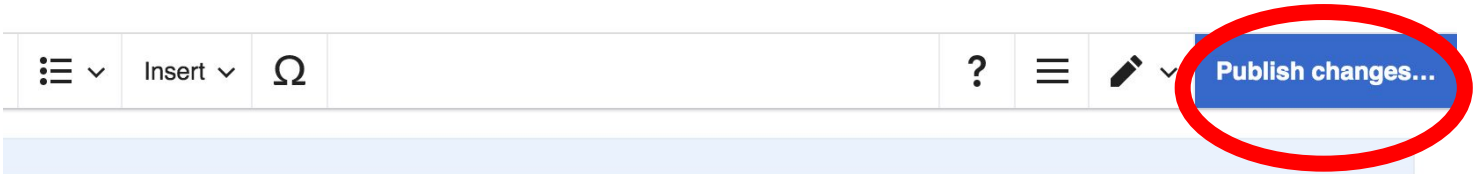

ɔm the ambient air (as opposed to from point sources).[34] Combining DAC with carbon storage could act as a carbon dioxide climate engineering if deployed at large scale.

work in this area is still in its infancy.[35] A private company Global Research Technologies demonstrated a pre-prototype of air on Engineering has operated in British Columbia, Canada since 2015. An economic study of this plant in 2018 estimated the cost

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pelines in the United States in 2008, and a 160 km pipeline in Norway,[38] used to transport CO_2 to oil production sites where it is CO_2 to produce oil is called *enhanced oil recovery*. There are also several pilot programs in various stages of development to test

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Dominguezlfirst19=Marialurl=http://aura.abdn.ac.uk/bitstr
eam/2164/10642/1/Minx_2018_Environ._Res._Lett._13_
063001.pdf}}</ref> Among such technologies are [[bio-
energy with carbon capture and storage]], [[biochar]],
[[ocean fertilization]], [[enhanced weathering]], and
[[direct air capture]] when combined with storage.<ref
name=RoyalSociety /> CDR is a different approach from
removing {{CO2}} [[Flue gaslfrom the stack emissions]]

Dominguezlfirst19=Marialurl=http://aura.abdn.ac.uk/bitstr
eam/2164/10642/1/Minx_2018_Environ._Res._Lett._13_
063001.pdf}}</ref> **It is a subset of [[Greenhouse gas
removal]] technologies.** Among such technologies are
[[bio-energy with carbon capture and storage]],
[[biochar]], [[ocean fertilization]], [[enhanced weathering]],
and [[direct air capture]] when combined with storage.
<ref name=RoyalSociety /> CDR is a different approach

Carbon dioxide removal: Difference between revisions

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K4rolB (talk | contribs)	**(undo) (thank)**
(corrected link)	Andrewjlockley (talk | contribs)
(Tag: Visual edit)	*(+GGR)*
← Previous edit	*(Tags: Mobile edit, Mobile web edit, Advanced mobile edit)*
former revisions	Next edit →
	later revisions

Line 3:

{{Use mdy dates\|date=January 2019}}

{{Short description\|Atmospheric cleanup process}}

Line 3:

{{Use mdy dates\|date=January 2019}}

{{Short description\|Atmospheric cleanup process}}

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