

# 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

Project page [Talk](#)

Read

[Edit source](#)

[View history](#)



More ▾

TW ▾

Search Wikipedia



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

From Wikipedia, the free encyclopedia

[< Wikipedia:Meetup](#) | [DC](#)

@WikimediaDC

[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 [\[hide\]](#)

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  - [6.1 Wikimedia Projects](#)
  - [6.2 Wikipedia Policies](#)
  - [6.3 Quick Editing Tips](#)
  - [6.4 Tools, Resources and WikiProjects](#)
- [7 Coordination](#)
- [8 Priority sources](#)
- [9 Suggested Work List](#)

# 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 Free Encyclopedia

# 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







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- Commercial re-use is absolutely allowed. Google, publishers...



# 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)

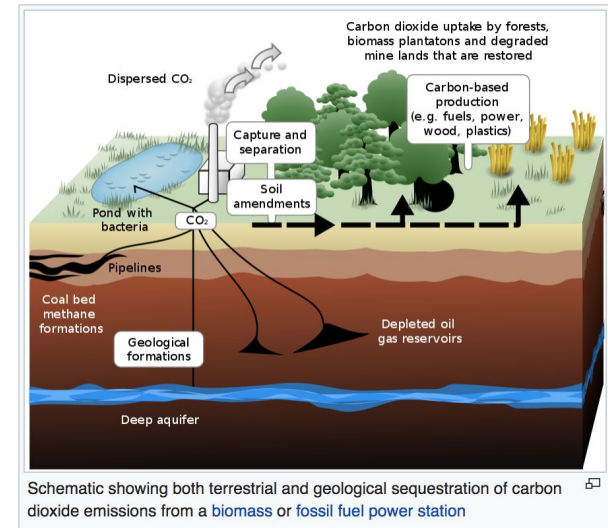
A *B-class* article from Wikipedia, the free encyclopedia

**Carbon capture and storage (CCS)** (or **carbon capture and sequestration** or **carbon control and sequestration**<sup>[1]</sup>) is the process of capturing waste **carbon dioxide** (CO<sub>2</sub>) 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<sub>2</sub> into the atmosphere from **heavy industry**. It is a potential means of **mitigating** the contribution to **global warming** and **ocean acidification**<sup>[2]</sup> of **carbon dioxide emissions** from industry and heating.<sup>[3]</sup> Although CO<sub>2</sub> has been injected into geological formations for several decades for various purposes, including **enhanced oil recovery**, the long term storage of CO<sub>2</sub> is a relatively new concept. **Direct air capture** is a type of CCS which **scrubs** CO<sub>2</sub> 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.<sup>[4]</sup> Amines are used as solvents in the leading carbon scrubbing technology.<sup>[5]</sup> CCS applied to a modern conventional power plant could reduce CO<sub>2</sub> emissions to the atmosphere by approximately 80–90% compared to a plant without CCS.<sup>[6]</sup> If used on a power plant capturing and compressing CO<sub>2</sub> and other system costs are estimated to increase the cost per watt-hour energy produced by 21–91% for fossil fuel power plants;<sup>[6]</sup> 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<sub>2</sub> per year, of which 3.7 is stored geologically.<sup>[7]</sup> Most are industrial not power plants.<sup>[8]</sup>

It is possible for CCS, when combined with biomass, to result in net negative emissions.<sup>[9]</sup> 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<sub>2</sub> from the atmosphere.<sup>[10]</sup>

Storage of the CO<sub>2</sub> is envisaged either in deep geological formations, or in the form of **mineral carbonates**. And **pyrogeic carbon capture and storage** (PvCCS) is being researched.<sup>[11]</sup> Deep



# Exploring Tabs: Article history

Article Talk [Read](#) [Edit source](#) [New section](#) **View history** [More](#) [TW](#)

## Talk:Carbon capture and storage: Revision history

[View logs for this page](#) ([view filter log](#))

**Filter revisions**

External tools: [Find addition/removal](#) · [Find edits by user](#) · [Page statistics](#) · [Pageviews](#) · [Fix dead links](#)

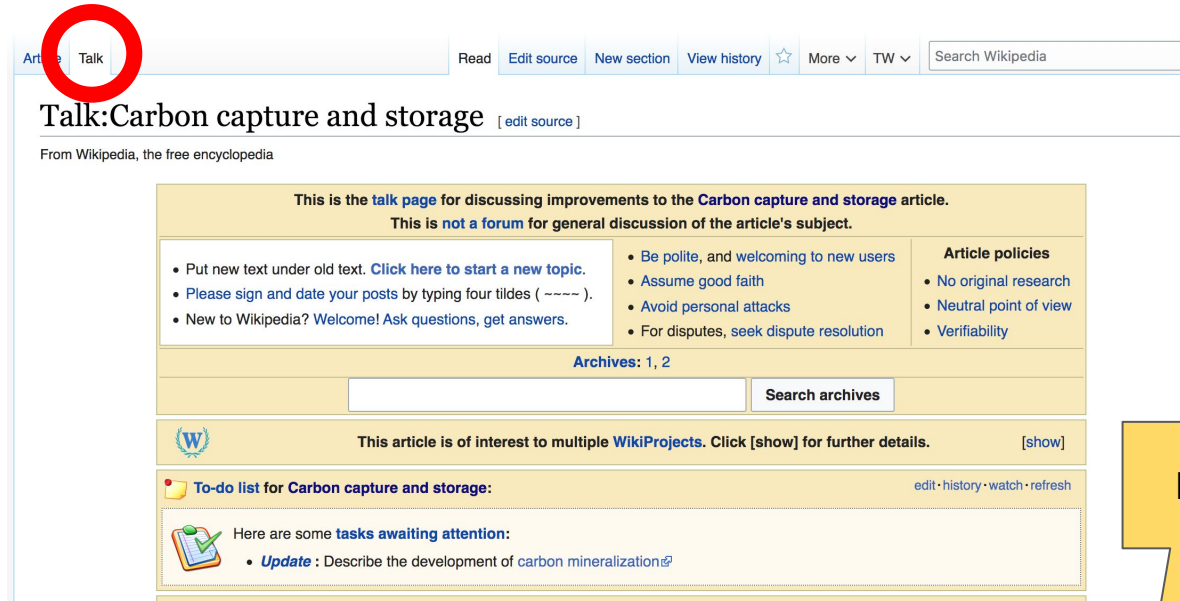
For any version listed below, click on its date, see [Help:Page history](#) and [Help:Edit summary](#). (cur) = reference from current version, (prev) = difference from preceding version, (newest | oldest) | older 50

Compare selected revisions

	Date	Editor username	
<input type="radio"/>	04:07, 21 October 2019	Wugapodes (talk   contribs)	.. (63,109 bytes) (+462) .. <i>(Notification: listing of Clean gas at redirects for discussion. (TW))</i> (undo   thank)
<input checked="" type="radio"/>	08:40, 27 September 2019	Chidgk1 (talk   contribs)	.. (62,647 bytes) (+1) .. <i>(upped to high importance for climate change)</i> (undo   thank)
<input type="radio"/>	00:05, 1 September 2019	DannyS712 bot (talk   contribs)	.. (62,646 bytes) (+35) .. <i>(Task 58: Convert climate change task force to separate wikiproject tag)</i> (undo) (Tag: AWB)
<input type="radio"/>	19:27, 14 May 2019	Chidgk1 (talk   contribs)	.. (62,611 bytes) (+8) .. <i>(→Nature)</i> (undo   thank)

# Exploring Tabs: Talk Page

- Discuss the article with other editors
- Use is optional



The screenshot shows the top navigation bar of a Wikipedia article page. The 'Talk' tab is highlighted with a red circle. Below the navigation bar, the page title is 'Talk:Carbon capture and storage' with an '[ edit source ]' link. The main content area contains a yellow box with the following text: 'This is the talk page for discussing improvements to the Carbon capture and storage article. This is not a forum for general discussion of the article's subject.' Below this are two columns of guidelines and policies. The left column includes: 'Put new text under old text. Click here to start a new topic.', 'Please sign and date your posts by typing four tildes ( ~~~~ ).', and 'New to Wikipedia? Welcome! Ask questions, get answers.'. The right column includes: 'Be polite, and welcoming to new users', 'Assume good faith', 'Avoid personal attacks', 'For disputes, seek dispute resolution', and 'Article policies' which includes 'No original research', 'Neutral point of view', and 'Verifiability'. Below the guidelines is an 'Archives: 1, 2' section with a search box and a 'Search archives' button. Further down is a 'WikiProjects' section with a 'show' link. At the bottom is a 'To-do list for Carbon capture and storage' section with a 'refresh' link and a list of tasks, including 'Update: Describe the development of carbon mineralization?'. A yellow speech bubble on the right side of the page contains the word 'Discussion'.

Discussion



# Sections: Lead Paragraphs, Info boxes

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

Lead paragraphs

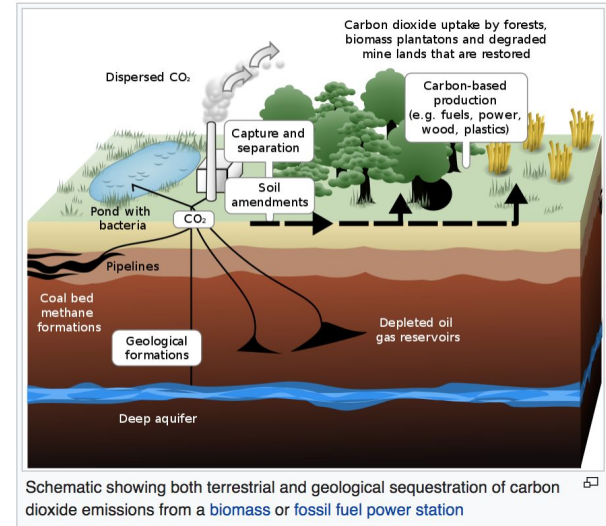
Main photo or Infobox placement

**Carbon capture and storage (CCS)** (or **carbon capture and sequestration** or **carbon control and sequestration**<sup>[1]</sup>) is the process of capturing waste **carbon dioxide** (CO<sub>2</sub>) 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<sub>2</sub> into the atmosphere from **heavy industry**. It is a potential means of **mitigating** the contribution to **global warming** and **ocean acidification**<sup>[2]</sup> of **carbon dioxide emissions** from industry and heating.<sup>[3]</sup> Although CO<sub>2</sub> has been injected into geological formations for several decades for various purposes, including **enhanced oil recovery**, the long term storage of CO<sub>2</sub> is a relatively new concept. **Direct air capture** is a type of CCS which **scrubs** CO<sub>2</sub> 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.<sup>[4]</sup> Amines are used as solvents in the leading carbon scrubbing technology.<sup>[5]</sup> CCS applied to a modern conventional power plant could reduce CO<sub>2</sub> emissions to the atmosphere by approximately 80–90% compared to a plant without CCS.<sup>[6]</sup> If used on a power plant capturing and compressing CO<sub>2</sub> and other system costs are estimated to increase the cost per watt-hour energy produced by 21–91% for fossil fuel power plants;<sup>[6]</sup> 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<sub>2</sub> per year, of which 3.7 is stored geologically.<sup>[7]</sup> Most are industrial not power plants.<sup>[8]</sup>

It is possible for CCS, when combined with biomass, to result in net negative emissions.<sup>[9]</sup> 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<sub>2</sub> from the atmosphere.<sup>[10]</sup>

Storage of the CO<sub>2</sub> is envisaged either in deep geological formations, or in the form of **mineral carbonates**. And **pyrogenic carbon capture and storage** (PyCCS) is being researched.<sup>[11]</sup> Deep



# Sections: References

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.<sup>[4]</sup> Amines are used as solvents in the leading carbon scrubbing technology.<sup>[5]</sup> CCS applied to a modern conventional power plant could reduce CO<sub>2</sub> emissions to the atmosphere by approximately 80–90% compared to a plant without CCS.<sup>[6]</sup> If used on a power plant capturing and compressing CO<sub>2</sub> and other system costs are estimated to increase the cost per watt-hour energy produced for fossil fuel power plants;<sup>[6]</sup> and applying the technology to existing plants would be expensive, especially if they are far from a sequestration site. As of 2019 there are 17 operational CO<sub>2</sub> capture projects in the world, capturing 31.5Mt of CO<sub>2</sub> per year, of which 3.7 is stored in geologic storage. 14 are industrial not power plants.<sup>[8]</sup>

3. <sup>^ a b</sup> [The U.S. Carbon Capture Users' Guide](#) (PDF). BEIS. 2018.
4. <sup>^ B</sup> Galindo J, Jackson P, Feron A, Brown S, Fennell PS, Fuss S, et al. Pre-combustion and storage (CCS): the way forward. *International Science*. 2016;11(5):1662-176.

Inline citations

87. <sup>^ a b c d e</sup> "Large-scale CCS facilities | Global Carbon Capture and Storage Institute" [↗](#). [www.globalccsinstitute.com](http://www.globalccsinstitute.com). Retrieved 2018-11-22.
88. <sup>^</sup> "Project Details" [↗](#). 2011-07-21. Archived from [the original](#) [↗](#) on 2011-07-21. Retrieved 2018-11-22.
89. <sup>^</sup> "Around the world in 22 carbon capture projects | Carbon Brief" [↗](#). *Carbon Brief*. 2014-11-18.

# Additional Sections

## Further reading [ edit | edit source ]

- Hester, Ronald E; Brown, W. Harrison (2009). *Carbon capture: sequestration and storage*<sup>?</sup> (Issues in environmental science and technology, 29. ed.). Royal Society of Chemistry. ISBN 978-1-84755-917-3.
- Shackley, Simon; Clair Gough (2006). *Carbon capture and its storage: an integrated assessment*<sup>?</sup>. Ashgate. ISBN 978-0-7546-4499-6.
- Wilson, Elizabeth J; David Gerard (2007). *Carbon capture and sequestration : integrating technology, monitoring and regulation*<sup>?</sup>. Blackwell Publishing. ISBN 978-0-8138-0207-7.
- Metz, Bert (2005). *IPCC special report on carbon dioxide capture and storage*<sup>?</sup>. 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<sup>?</sup>
- Scientific Facts on CO<sub>2</sub> Capture and Storage<sup>?</sup>, a peer-reviewed summary of the IPCC Special Report on CCS.
- Carbon Capture: A Technology Assessment <sup>?</sup> Congressional Research Service
- Carbon Sequestration News<sup>?</sup> Recent news articles on CO<sub>2</sub> capture and storage.



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

**Authority control** <sup>?</sup>   GND: 7628985-0<sup>?</sup> · LCCN: sh2007000915<sup>?</sup>

**Categories** <sup>(+)</sup>: Carbon capture and sequestration <sup>(-)</sup> <sup>(±)</sup> | Bright green environmentalism <sup>(-)</sup> <sup>(±)</sup> | Climate forcing <sup>(-)</sup> <sup>(±)</sup> | Gas technologies <sup>(-)</sup> <sup>(±)</sup> | (+)

# Editing Existing Articles

Photo: Category: Wikimedia DC meetups

Source: Wikimedia Commons



# Editing w/ Visual Editor

1. Locate an article
2. Select 'Edit'
3. Unsure if you are in Visual Editor?  
Select the Pencil (red arrow), select 'Visual editing'
4. Edit as you would in a word processor

Formatting buttons

Edit buttons  
Edit = Visual Editor, Edit Source = Code

The screenshot shows the Wikipedia editing interface for the article "Carbon capture and storage". The article title is in green. Below the title, it says "ORES predicted quality: B (3.83)" and "A B-class article from Wikipedia, the free encyclopedia". The editing toolbar is visible, with the "Edit" button highlighted. A red circle highlights the "Edit" button's dropdown menu, which contains two options: "Visual editing" (with a pencil icon) and "Source editing" (with a code icon). The "Visual editing" option is selected. The "Publish change" button is visible on the right side of the toolbar.

**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**<sup>[1]</sup>) is the process of capturing waste **carbon dioxide** (CO<sub>2</sub>) usually from large **point sources**, such as a **cement** factory or **biomass power plant**, transporting it to a storage site, and

Dispersed CO<sub>2</sub> Carbon dioxide uptake by forests, biomass plantations and degraded mine lands that are restored Carbon-based production (e.g. fuel, paper)

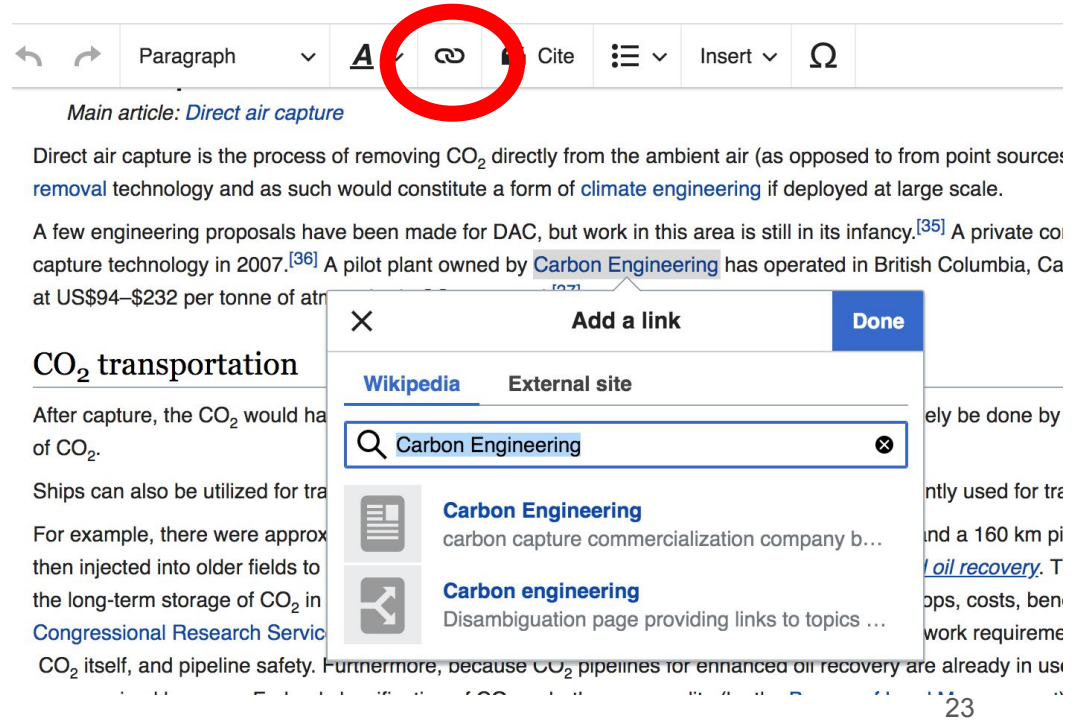
# Cite your sources

1. Place cursor in desired location, select 'Cite'
2. Follow prompts

The screenshot shows a document editor interface. In the top toolbar, the 'Cite' button (represented by two quotation marks) is circled in red. Below the toolbar, a paragraph of text is visible, followed by a section header 'CO<sub>2</sub> separation technologies'. A red circle highlights the 'Add a citation' dialog box that appears over the text. The dialog box has a close button (X) and three tabs: 'Automatic', 'Manual', and 'Re-use'. Under the 'Manual' tab, there are five citation options: 'Website', 'News', 'Basic form', 'Book', and 'Journal'. The background text in the document includes phrases like 'emission" cycles, because the CO<sub>2</sub> stored is not a fraction removed from the flue gas stream (as certain fraction of the CO<sub>2</sub> generated during combustion will inevitably end up in the condensed v disposed of appropriately.', 'Carbon dioxide can be separated out of air or flue gas with absorption, adsorption, or membrane gas capture technology.', 'through physisorption or chemisorption', 'Carbon dioxide is then stripped off the MC', 'eration steps where the CO<sub>2</sub> is remov', 'he leading amine for capturing CO<sub>2</sub>, h', 'step. Thus, to optimize a MOF for ca', 'apture as much CO<sub>2</sub> as possible from', 'energy, and therefore cost, required to', 'n?) research is looking to optimize MO', 'e potential success of MOFs.[32]', 'making it limit the wide-scale deploy', 'increase the team... of CCS... the transport and storage steps of CCS are rather mature techn

# Create links between articles

1. Select text
2. Select link icon
3. Select article and 'Done'



The screenshot shows the Wikipedia editing interface. The toolbar at the top includes icons for undo, redo, Paragraph, Bold, Link (circled in red), Cite, List, Insert, and Omega. The main text area contains the following content:

*Main article: [Direct air capture](#)*

Direct air capture is the process of removing CO<sub>2</sub> directly from the ambient air (as opposed to from point sources: [removal](#) technology and as such would constitute a form of [climate engineering](#) if deployed at large scale.

A few engineering proposals have been made for DAC, but work in this area is still in its infancy.<sup>[35]</sup> A private company developed a direct air capture technology in 2007.<sup>[36]</sup> A pilot plant owned by [Carbon Engineering](#) has operated in British Columbia, Canada at US\$94–\$232 per tonne of atmospheric CO<sub>2</sub> captured.

## CO<sub>2</sub> transportation

After capture, the CO<sub>2</sub> would have to be transported to a storage site. This can be done by pipeline, ship, or truck. Pipelines are currently used for transporting CO<sub>2</sub> from a 160 km pipeline in the North Sea to a storage site. [Oil recovery](#). Trucks, ships, costs, benefits, and network requirements are discussed in the [Congressional Research Service report](#) on CO<sub>2</sub> pipelines for enhanced oil recovery and direct air capture. Furthermore, because CO<sub>2</sub> pipelines for enhanced oil recovery are already in use, they can provide a valuable test bed for CO<sub>2</sub> pipelines for direct air capture.

The 'Add a link' dialog box is open, showing search results for 'Carbon Engineering'. The results include:

- [Carbon Engineering](#) (Wikipedia article): carbon capture commercialization company based in British Columbia, Canada.
- [Carbon engineering](#) (Disambiguation page): Disambiguation page providing links to topics related to Carbon engineering.

The 'Done' button is highlighted in blue.

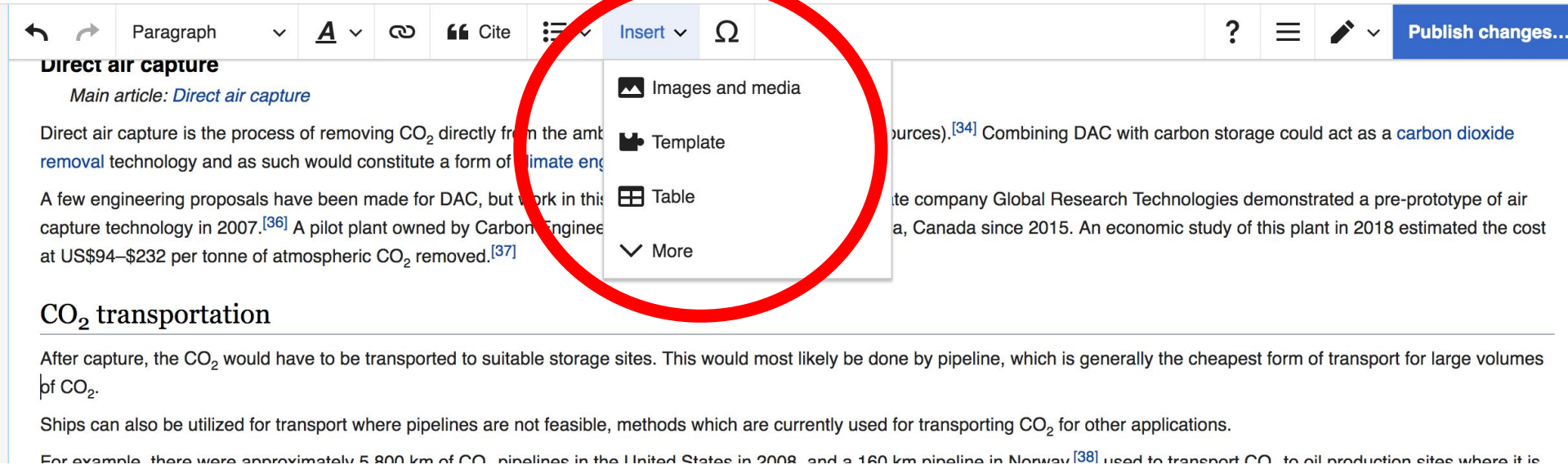
# Adding Sections

1. Place cursor
2. Select 'Paragraph'
3. Select 'Heading'

The screenshot shows a text editor interface with a dropdown menu open. The 'Paragraph' option is circled in red. Below it, the 'Heading' option is also circled in red. The main text area contains several paragraphs of text, including a paragraph about CO<sub>2</sub> directly from the ambient air. At the bottom of the page, a new section titled 'New section with heading Sequestration' is highlighted in yellow. A large red arrow points to this new section. The page footer includes the text 'Main article: Carbon sequestration'.



# Adding Photos with Wikimedia Commons



The screenshot shows the Wikipedia editing interface. The 'Insert' menu is open, and the 'Images and media' option is highlighted with a red circle. The page content includes a section on 'Direct air capture' and 'CO<sub>2</sub> transportation'.

**Direct air capture**  
*Main article: Direct air capture*

Direct air capture is the process of removing CO<sub>2</sub> directly from the ambient air (see [Direct air capture](#) for more details). It is a form of [carbon dioxide removal](#) technology and as such would constitute a form of [climate engineering](#).

A few engineering proposals have been made for DAC, but work in this area is still in the early stages. In 2012, the engineering company Global Research Technologies demonstrated a pre-prototype of air capture technology in 2007.<sup>[36]</sup> A pilot plant owned by Carbon Engineering in British Columbia, Canada since 2015. An economic study of this plant in 2018 estimated the cost at US\$94–\$232 per tonne of atmospheric CO<sub>2</sub> removed.<sup>[37]</sup>

**CO<sub>2</sub> transportation**

After capture, the CO<sub>2</sub> 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<sub>2</sub>.

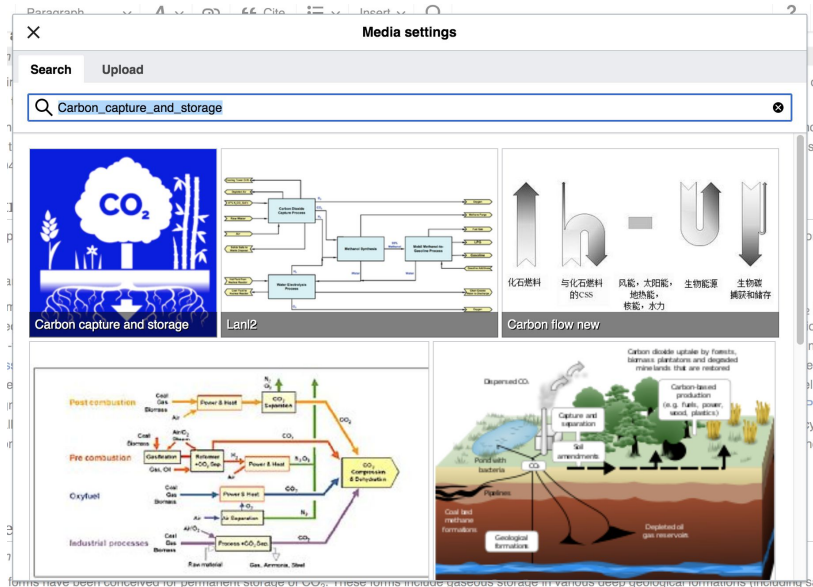
Ships can also be utilized for transport where pipelines are not feasible, methods which are currently used for transporting CO<sub>2</sub> for other applications.

For example, there were approximately 5,800 km of CO<sub>2</sub> pipelines in the United States in 2008, and a 160 km pipeline in Norway<sup>[38]</sup> used to transport CO<sub>2</sub> to oil production sites where it is

1. Place cursor
2. Select: 'Insert' + Media'
3. Enter search term
4. Select photo + 'Use this image'

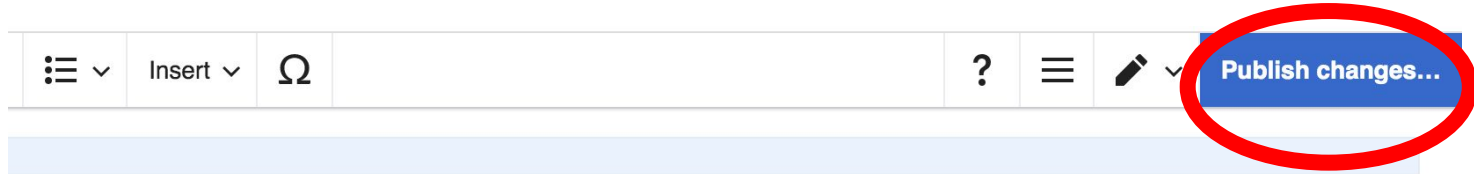
# Adding Images with Wikimedia Commons

All images must exist in Wikimedia Commons prior to inclusion in Wikipedia



5. Search for image and select 'insert'.
6. Add captions and alternative text

# Don't forget to 'Publish Changes'



from the ambient air (as opposed to from point sources).<sup>[34]</sup> 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.<sup>[35]</sup> 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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able storage sites. This would most likely be done by pipeline, which is generally the cheapest form of transport for large volumes

not feasible, methods which are currently used for transporting CO<sub>2</sub> for other applications.

pipelines in the United States in 2008, and a 160 km pipeline in Norway,<sup>[38]</sup> used to transport CO<sub>2</sub> to oil production sites where it is CO<sub>2</sub>, to produce oil is called [enhanced oil recovery](#). There are also several pilot programs in various stages of development to test

# Add articles to your watchlist

Article [Talk](#) [Read](#) [Edit](#) [Edit source](#) [View history](#)  [More](#) ∨

## Carbon dioxide removal [ [edit](#) | [edit source](#) ]

From Wikipedia, the free encyclopedia

# Check your watchlist regularly to see what's changed

Dominguez|first19=Marialurl=http://aura.abdn.ac.uk/bitstream/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 gas|from the stack emissions]]

Dominguez|first19=Marialurl=http://aura.abdn.ac.uk/bitstream/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

From Wikipedia, the free encyclopedia

Browse history interactively

**[restore this version]**

**Revision as of 09:45, 10 January 2020 (edit)**

**K4rolB** (talk | contribs)

*(corrected link)*

*(Tag: Visual edit)*

[← Previous edit](#)

former revisions ▾

**[restore this version]**

**Revision as of 15:02, 25 January 2020 (edit)**

**(undo) (thank)**

**Andrewjlockley** (talk | contribs)

*(+GGR)*

*(Tags: Mobile edit, Mobile web edit, Advanced mobile edit)*

[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}}
```

## Let's login to the Dashboard!

- Go to Wikipedia
- Go to WP:WMDC-NAS
- Go to Please sign in
- Click February 22: Please sign in HERE using the Outreach Dashboard with your Wikipedia account.