Scientists close to turning air into fuel

11th June, 2018

Scientists at the Canadian company Carbon Engineering have said they are close to making carbon capture work. Carbon capture is the process of capturing waste carbon dioxide (CO2) from places like power plants and then storing it so it does not harm the environment. Carbon Engineering say its scientists are close to capturing CO2 from the atmosphere and turning it into carbon-neutral fuel. This could be a big step forward in the fight against global warming. The scientists also said they have greatly reduced the cost of carbon capture, to as low as $94 per ton of CO2 captured. Many scientists believed carbon capture would cost about $1,000 per ton captured.

The technology works by sucking air into special industrial towers. The CO2 is mixed with an alkaline liquid and frozen. It is then heated and combined with hydrogen. This produces liquid fuels like gasoline and jet fuel. The founder of Carbon Engineering, Professor David Keith, was optimistic about the future of this process. He believes his company could help to combat climate change. He said: "After 100 years of practical engineering and cost analysis, we can confidently say that while air capture is not some magical cheap solution, it is a viable and buildable technology for producing carbon-neutral fuels in the immediate future, and for removing carbon in the long run."

Sources: *ecowatch.com / boingboing.net / sciencemag.org*

Writing

Scientists will reverse global warming. Discuss.

Chat

Talk about these words from the article.

scientists / carbon / CO2 / the environment / power plants / atmosphere / fight / technology / industrial / liquid / hydrogen / gasoline / climate change / in the long run

True / False

a) A French company is turning CO2 in the air into fuel. T / F

b) Carbon capture is the processing of waste CO2. T / F

c) The fuel made from carbon capture could be carbon neutral. T / F

d) The new method could cost less than $100 per ton of captured carbon. T / F

e) The new carbon capture process sucks air to extract CO2. T / F

f) The new technology will not be able to make jet fuel. T / F

g) A professor said carbon capture technology is 100 years old. T / F

h) The professor said carbon capture was a "magical cheap solution". T / F

Synonym Match

(The words in **bold** are from the news article.)

1.	**process**	a.	hopeful
2.	**plants**	b.	advance
3.	**storing**	c.	eradicating
4.	**step**	d.	factories
5.	**greatly**	e.	evaluation
6.	**combined**	f.	fix
7.	**optimistic**	g.	technique
8.	**analysis**	h.	considerably
9.	**solution**	i.	keeping
10.	**removing**	j.	amalgamated

Discussion – Student A

a) What do you think about what you read?

b) What harm does carbon dioxide do the environment?

c) What do you do to cut CO2?

d) How useful do you think this process could be?

e) How optimistic are you about our planet's future?

f) What other carbon-neutral energy sources are there?

g) Will Earth ever recover from human activity?

h) What questions would you like to ask the scientists?

Phrase Match

1. they are close to making	a. run
2. from places like power	b. ton captured
3. This could be a big	c. industrial towers
4. they have greatly	d. plants
5. cost about $1,000 per	e. with hydrogen
6. sucking air into special	f. solution
7. It is then heated and combined	g. carbon capture work
8. optimistic	h. reduced the cost
9. some magical cheap	i. step forward
10. removing carbon in the long	j. about the future

Discussion – Student B

a) What is carbon?

b) How exciting is carbon capture?

c) What does your country do to cut CO2?

d) What things produce CO2?

e) What can we do to fight global warming?

f) What is a carbon-neutral fuel?

g) How useful is a carbon-neutral fuel?

h) What will happen when fossil fuels run out?

Spelling

1. Carbon capture is the erpssco
2. sweta carbon dioxide
3. harm the nmitnnvreoe
4. its nsicteisst are close
5. This could be a big step oafrdrw
6. greatly cddueer the cost
7. special iulrntasdi towers
8. mixed with an alkaline uqilid
9. fuels like oailsgen and jet fuel
10. Professor David Keith was ittoiscipm
11. 100 years of paatrccil engineering
12. not some magical cheap soilonut

Answers – Synonym Match

1. g	2. d	3. i	4. b	5. h
6. j	7. a	8. e	9. f	10. c

Role Play

Role A – Go Solar
You think going solar is the best way to stop global warming. Tell the others three reasons why. Tell them what is wrong with their ways. Also, tell the others which is the least effective of these (and why): reducing waste, planting trees or eating less meat.

Role B – Reduce Waste
You think reducing waste is the best way to stop global warming. Tell the others three reasons why. Tell them what is wrong with their ways. Also, tell the others which is the least effective of these (and why): going solar, planting trees or eating less meat.

Role C – Plant Trees
You think planting trees is the best way to stop global warming. Tell the others three reasons why. Tell them what is wrong with their ways. Also, tell the others which is the least effective of these (and why): reducing waste, going solar or eating less meat.

Role D – Eat Less Meat
You think eating less meat is the best way to stop global warming. Tell the others three reasons why. Tell them what is wrong with their ways. Also, tell the others which is the least effective of these (and why): reducing waste, planting trees or going solar.

Speaking – Global Warming

Rank these with your partner. Put the best ways to prevent global warming at the top. Change partners often and share your rankings.

- Use less hot water
- Plant a tree
- Eat less meat
- Turn off lights
- Drive less
- Go solar
- Recycle
- Reduce waste

Answers – True False

a	F	b	T	c	T	d	T	e	T	f	F	g	F	h	F

Answers to Phrase Match and Spelling are in the text.

