

DISCUSSION & REVIEW QUESTIONS:

- Towards the beginning of the video, Mr. Knowles acknowledges that Leftists often characterize Conservatives as not valuing the environment but contends: “Conservatives want to conserve things. It’s right there in the name. And one of the things we want to conserve is our environment because you can’t have a healthy community without a healthy natural environment... Conservatives love the environment every bit as much as environmentalists do.” Why do you think that the Left purposefully mischaracterizes Conservatives, especially regarding the Conservative approach to environmental issues? Explain. What, specifically, is the relationship between a healthy natural environment and a healthy community? Explain.
- Mr. Knowles goes on to explain that: “The question is: what is the best way to protect it [the environment]? And here’s where we have big differences. The environmentalists say the best way, the only way, is through massive federal and even international regulation. Conservatives say the best way to protect the environment is by protecting property rights and encouraging innovation: safer, more efficient power, nuclear, geothermal, biomass- anything that generates energy at a price consumers want, and can afford, to pay.” Why do you think that the Left believes that legislation and regulation is the only way to solve most problems and issues? Explain. In what ways, specifically, do you think that strengthening and upholding property rights can help to protect the environment? Explain.
- After explaining the differences between Conservatives and the Left in approach to environmental issues, Mr. Knowles then asks, “So how can we tell which way works best? Let’s examine the historical record. Today and for the last century, the worst environmental offenders have been big, repressive, Socialist governments. This was true in the last century. And it’s true now. China, for example, pumps roughly twice as much carbon into the air each year as the United States, even though the U.S. economy is almost 60% larger than China’s.” Why do you think that Socialist governments are the worst environmental offenders? Explain. Considering that the Left’s approach, massive government regulation, isn’t working- do you think that China should adopt the Conservative approach to environmental policy? Why or why not?
- Later in the video, Mr. Knowles explains: “...the Left favors Big Government solutions not because it’s better for the environment, but because it’s better for Leftism... Because their primary goal is increasing government power well beyond anything we’ve ever seen in America. They need this power, presumably, to save us from ourselves.” Why do you think that the Left presumes to be so certain that only they know what is best for the environment and for the U.S., but that Conservatives don’t? Why do you think that the Left values its political agenda over the environment and what is actually best for the U.S.? Explain.
- Towards the end of the video, Mr. Knowles points out that, “The left demonizes fracking even though it actually makes the environment cleaner, the country richer, and now independent of Middle Eastern oil, something thought impossible a decade ago. How does it make the environment cleaner? By releasing up to 50% less carbon dioxide into the atmosphere than coal. And, since it’s also cheaper, people are happy to buy it- not because government forces them to, but because it saves them money... innovation that produces abundant, clean energy at a fair price, without infringing on my freedom.” In what ways can innovation protect the environment, and create more freedom? In what ways does the Left’s approach, more government regulation, take away freedoms? Explain. Why is the “without impinging on my freedom” aspect of environmental policy so important to most Americans? Explain.

EXTEND THE LEARNING:

CASE STUDY: Biomass

INSTRUCTIONS: Read the articles “Algae building cladding can absorb pollutants from the atmosphere” and “Algae-fueled bioreactor soaks up CO₂ 400x more effectively than trees,” then answer the questions that follow.

- What is Photo.Synth.Etica, and what does it do? How does the product compare to trees, in terms of scrubbing CO₂ from the atmosphere? What role does algae play in the process? What happens in the final stage of the process? The founders state that their product is a new opportunity for what? What is their longer-term hope for outcomes using the product? Why have scientists been studying the phenomena of algae absorbing carbon? What product has Hypergiant made, and what does it do? How does their product compare to trees, in terms of carbon absorption? What specific type of algae does the reactor use and why? How is Hypergiant able to make their harvester so efficient? Why is the company making their designs publicly available?
- Since the U.K. and U.S. governments did not legally compel these people to solve issues related to climate change, what do you think inspired these innovators to create such products? What role, if any, do you think intellectual property rights and less government regulation played in the creation of these companies and products? Do you find these examples to be a compelling case for the Conservative approach to environmental policy? Why or why not?
- Do you agree with the main point of the video- that Conservatives are the real environmentalists? Why or why not?



QUIZ

CONSERVATIVES ARE THE REAL ENVIRONMENTALISTS

1. Which Republican had the idea of creating national parks?

- a. Abraham Lincoln
- b. Ulysses Grant
- c. Calvin Coolidge
- d. Richard Nixon

2. The Republican who established the Environmental Protection Agency was _____.

- a. Calvin Coolidge
- b. Richard Nixon
- c. Gerald Ford
- d. Dan Quayle

3. Conservatives love the environment every bit as much as environmentalists do.

- a. True
- b. False

4. Even though China was a signatory to the Paris Accord, how many additional tons of carbon did it release into the air?

- a. 40 million tons
- b. 80 million tons
- c. 120 million tons
- d. 160 million tons

5. Even though the Left demonizes the practice, fracking actually _____.

- a. makes the environment cleaner
- b. makes the country richer
- c. makes the country independent of Middle Eastern oil
- d. All of the above



QUIZ - ANSWER KEY

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<https://airqualitynews.com/2019/11/01/algae-building-cladding-can-absorb-pollutants-from-the-atmosphere/>

Algae building cladding can absorb pollutants from the atmosphere

01.11.2019

Innovation, News, Technology

Pippa Neill

Ecologic Studio has created a building cladding made up of algae that has the ability to turn buildings into air pollution filters.

Called Photo.Synth.Etica, the bio-digital cladding is created with micro-algae which can capture solar radiation and absorb CO₂ and air pollution from the atmosphere ten times more effectively than trees.

Every two square meters of the cladding can absorb, on average, the same amount of CO₂ as a fully grown tree, which is roughly 22kg of carbon a year.

Unfiltered urban air enters the bottom of the cladding and as the air bubbles naturally rise through the watery medium within the cladding panels, they come into contact with the algae microbes.

The CO₂ molecules and the other air pollutants are then captured and stored by the algae, this then allows the algae to grow into a usable material in the form of biomass.

This biomass can be easily harvested and sold on for the creation of other products such as, bioplastic raw materials, biofuels or fertilizers.

In the final stage of the process, the freshly photosynthesized oxygen is released out of the top of the cladding, successfully pumping out clean air into the urban atmosphere or the building interior.

According to Ecologic Studio, the cladding has the ability to successfully turn buildings into bio-power plants which act as carbon sinks and air pollution filters.



The founding partners Claudia Pasquesro and Marco Poletto have said that Photo. Synth. Etica is a new opportunity for future company's and organisations to reach sustainability goals, while also contributing to citizen's well-being by drastically reducing the impact of air pollution in the urban area.

The partners hope that this cladding will enable building managers and local community groups to introduce new buildings which will accelerate the creation of green cities.

In related news, scientists in Bristol are developing a 'revolutionary' new type of intelligent building that incorporates living fungi to react with changes in air pollutants, light and temperature.

Photo Credit – Pixabay

<https://newatlas.com/environment/algae-fueled-bioreactor-carbon-sequestration/>

Algae-fueled bioreactor soaks up CO2 400x more effectively than trees

By [Nick Lavars](#)

September 18, 2019



Hypergiant Industries plans to share further details about bringing its bioreactor to market in 2020
Hypergiant Industries

When it comes to organic processes that we can leverage to tackle the runaway problem of climate change, the carbon-absorbing abilities of algae may be one of the most potent tools at our disposal. For years, scientists have been studying this natural phenomena in hope of tackling greenhouse gas emissions and producing eco-friendly biofuels, and now US company Hypergiant Industries has packaged the tech up into a box-shaped machine that can soak up as much carbon from the atmosphere as an acre of trees.

Through the process of photosynthesis, the aquatic plant algae soaks up carbon dioxide, water and sunlight to produce energy. Naturally, the plant will use this energy to multiply and grow, but scientists have been experimenting with ways to capture it and convert it into biofuels instead, with some promising results.

The newly announced Eos Bioreactor might look like someone left a giant Xbox in the garden, but Hypergiant Industries isn't looking to play games here. The reactor measures 3 x 3 x 7 ft (90 x 90 x 210 cm) and is designed to be installed in urban environments where it captures and sequesters carbon from the atmosphere, and produces clean bio-fuels that could be used to further reduce a building's carbon footprint.



The algae inside the Eos Bioreactor lives inside a tube system and water tank within the device, which is pumped full of air and exposed to artificial light

Hypergiant Industries

The reactor uses a specific strain of algae called *chlorella vulgaris*, which is claimed to soak up much more CO₂ than any other plant. The algae lives inside a tube system and water tank within the device, which is pumped full of air and exposed to artificial light, giving the plant the food it needs to thrive and produce biofuels for harvesting.

Hypergiant Industries claims that the harvesting technology packed into its Eos Bioreactor is so efficient it is 400 times more effective at capturing carbon than trees taking up the same footprint. It attributes this to its machine learning software that oversees the whole process, managing light, temperatures, and pH levels for maximum output.

The company is still a little ways of offering a commercial product, however. It says later this year it will make the designs for the bioreactor publicly available in the hope that it will inspire others to come up with similar solutions. It plans to share further details about bringing the reactor to market in 2020.

Source: Hypergiant Industries