

## A Few Simple Facts about the Proposed Coal Plant in Linden

A small Massachusetts company, SCS Energy, has proposed a modern 750-megawatt coal power plant in Linden, N.J. (Union County), called PurGen.

The coal plant will capture its own hazardous waste carbon dioxide gas (CO<sub>2</sub>), plus waste CO<sub>2</sub> piped to it from other emitters in the region, compress the CO<sub>2</sub> into a liquid, pipe it 70 miles out to sea, and then pump it a mile and a half beneath the floor of the Atlantic Ocean, hoping it will stay there forever. CO<sub>2</sub> is the main global warming gas that is causing the climate crisis (larger storms, rising sea levels, and more severe droughts, floods, and wildfires). During the life of the coal plant, PurGen will bury a trillion pounds (500 million tons) of hazardous waste CO<sub>2</sub>. This is called “carbon capture and sequestration,” or CCS for short. It is a huge experiment and the people of Linden (and all of northern NJ, plus Staten Island) are the guinea pigs – and so are the fish in the sea.

### 1. Why bury CO<sub>2</sub> beneath the ocean floor?

The short answer is, because the coal industry needs to demonstrate “clean coal.” Coal is the most polluting and most environmentally damaging energy source, bar none. It destroys the land, pollutes water, and creates massive amounts of dangerous by-products, including air pollution and toxic wastes (liquid and solid). Coal produces 12% of all U.S. energy (not just electricity) but emits 20% of all U.S. carbon dioxide – the main global warming gas.

Because of all this pollution, plans for at least 101 new coal power plants in the U.S. have been canceled or delayed in the last few years. The coal industry is getting desperate. Their response is a PR campaign for so-called “clean coal” – meaning their untested plan to capture and bury CO<sub>2</sub> below ground.

The purpose of CCS – the *only* purpose, really – is to bail out the coal industry by diverting investment away from clean, renewable sources of energy. We'll invest in coal with CCS or we'll invest in renewable energy – but we won't in-

vest in both. If the coal industry cannot get CCS going on a grand scale, their future looks grim. Likewise, the oil and automobile industries see CCS as a “get out of jail free card.” With CCS, they could extract CO<sub>2</sub> from the atmosphere, pump it underground, and continue burning fossil fuels until they run out.

But what if we discover 50 years from now that buried CO<sub>2</sub> is leaking into the atmosphere uncontrollably, ruining the planet as a place suitable for humans? Scientists working on behalf of the coal industry say it won't happen. But what if they're wrong? Are they infallible?

**2. This coal plant will make bad air pollution worse.** Union, Hudson, Middlesex and Essex Counties already fail to meet minimum federal health standards for air pollution. The NJ Department of Environmental Protection (DEP) estimates that soot alone is causing 594 deaths (plus 16,590 cases of asthma) each year in these counties. Furthermore, in addition to soot, there are hundreds of other chemicals in the air that exceed levels that the DEP considers safe.

Based on the air permit application that Purgen has filed with NJ DEP, we know that PurGen will add 5.3 million pounds (2,659 tons) of air pollution to New Jersey each year, including 57 tons of volatile organic compounds (VOCs), 383.4 tons of nitrogen oxides, 286.9 tons of sulfur dioxide and 135 tons of soot (fine and ultra-fine particles).

U.S. EPA [Environmental Protection Agency] says the cancer risk from 187 toxic air contaminants in Union county is already 41% above the national average. In Hudson, the risk is 86% above average; in Essex, it's 33% above and in Middlesex 17% above.

EPA has identified 2,312 major “environmental hazards” in N.J. Ranking counties by the number of these hazards per square mile, Hudson is #1, Union is #2, Essex is #3, and Middlesex is #4. Along with Staten Island, these are the counties that would be most directly impacted by a new coal plant in Linden. These counties already have far more than their fair share of pollution and the health problems that go with it. Enough is enough.

**3. The PurGen coal plant will create new environmental injustices.** In 2004, N.J. state government designated Linden an “environmental justice” community because Union County is 22.7 percent Black (56% higher than the statewide average) and 25.1% Hispanic (57% higher than the statewide average) and because children’s asthma rates are high. So the PurGen power plant will be adding serious contamination to an area where state government has acknowledged that Blacks, Hispanics, and people of below-average income are already unfairly burdened by pollution. This is outrageous.

**4. A sub-seabed CCS experiment in Norway is having problems.** At Sleipner in Norway, the StatoilHydro company has been pumping one million tons of CO2 per year (1/10th the size of the PurGen proposal), plus oily hazardous waste, into the Utsira formation, a geologic layer beneath the North Sea, since 1996. Now it turns out that the Utsira formation has been leaking oily waste. And Sleipner's CO2 has moved horizontally through the formation at a rate 25 times as fast as was predicted. Furthermore, a study by the Norwegian Petroleum Directorate has reversed previous estimates of CO2 storage capacity in the Utsira formation from "able to store all European emissions for hundreds of years" to "not very suitable."

**5. Concentrated CO2 is dangerous, and at least 1.8 million people live within 10 miles of the proposed coal plant.** Collecting and processing a trillion pounds of CO2 in such a densely-populated area could pose serious dangers. CO2 is odorless, colorless, tasteless, and heavier than air. If it escapes, CO2 can form an invisible puddle that excludes oxygen, asphyxiating everything in its path, including plants, animals, and people. In 1986, in Cameroon, CO2 escaped from a lake and smothered 1,746 people in their sleep. Can a trillion pounds of liquid CO2 be processed in Linden without any accidents or leaks?

**6. CCS will be exceedingly expensive and every dollar spent on CCS is a dollar that cannot be spent on renewable sources of clean energy** like efficiency, solar, wind and geothermal. To make a real dent in the global-warming problem by burying CO2 in the ground

would require massive investment. A consultant to the Linden coal plant has said we may need to bury 2 trillion tons of CO2 this century, worldwide. That would require 4,000 projects the size of the Linden coal plant, which is currently estimated to cost \$6 billion. Four thousand projects, each costing \$6 billion, would require an investment of \$24 trillion – half again as large as the annual gross domestic product (GDP) of the U.S.

And even if we spend the \$12 to \$24 trillion, we will still inevitably run out of affordable coal because coal is not a renewable resource. Then we'll have to invest again – in conservation, solar, wind and geothermal power.

**7. Purgen would produce 1.3 million tons of nitrogen-rich fertilizer** (urea) each year – but nitrogen is already causing massive pollution damage to the world's oceans, so this not a benefit – it is another harm from PurGen. See <http://goo.gl/NGeN> and <http://goo.gl/8iwK>

**8. CCS can trigger earthquakes.** Professor Leonardo Seeber at Columbia University’s Lamont-Doherty Earth Observatory said recently that carbon sequestration “has huge implications for triggering earthquakes.” And we know that earthquakes already occur every year or two in Northern New Jersey.

**9. PurGen is not needed.** A study by the Rutgers Center for Energy, Economic and Environmental Policy and by KEMA, Inc. concluded in 2004 that affordable energy efficiency measures can eliminate the need for 4,186 megawatts of new power plants in New Jersey between 2004 and 2020. PurGen’s electric power is not needed. Furthermore, energy efficiency projects and renewable energy plants would create many more good jobs than the PurGen proposal.

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