Public comment on the proposed Desert Rock Clean Air Act permit
Kandy LeMoine, :ace, Farmington, NM 87401-9114
10/6/2006
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Robert Baker, Air Division (AIR-3)
EPA Region 9, 75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Mr. Robert Baker,

Do not issue a Clean Air Act permit for the proposed Desert Rock power plant. This third power plant will add 10% to 15% more Nitrogen Oxides to the existing damaged air quality in the Four Corners, and 114 lbs. more Mercury.

We are surrounded by toxic fallout (mercury, volatile organic compounds and nitrogen oxide, high concentrations of ozone destroying pollution and fugitive emissions of ash from coal mining) from two existing coal-fired power plants that rank highest among the dirtiest in the nation for dumping tons of pollution into the air we breathe and the water and land we use.

If the proposed Desert Rock power plant cannot be fitted with true clean air technology that absorbs all emissions toxic and damaging to human, animal, and plant life, it will more seriously harm the quantity and quality of life in the Four Corners and all living systems down wind from its source. Please see that the two existing power plants are fitted with true anti-pollution and clean air technology that absorbs all toxic emissions, or supply a list of indoor and outdoor activities that do not require breathing or the use of water or land in the Four Corners.

We live in Farmington, San Juan County, New Mexico, located in the heart of the Four Corners. Our family takes part in numerous outdoor activities, each of which requires breathing the air. We use the water too for drinking, cooking, washing and other life sustaining activities. We also use the water for leisure and recreational pursuits such as swimming, fishing, boating, and camping. We enjoy walking on the land and take pleasure in viewing and photographing the natural, scenic beauty of the Four Corners area. In addition we repeatedly visit and take our visiting guests to all the cultural and geologic sites including all the National Parks and wilderness areas in New Mexico, Colorado, Utah and Arizona.

Eating the fish is now hazardous because of mercury poisoning. Breathing the air is risky because of the present degraded air quality from present power plant emissions and present fugitive dust from coal mining. A brown-yellow haze hanging in the air already adversely impacts visibility.

My husband and I have lived in Farmington since 1990; however, I resided for a time in Farmington in the late 1970s, but I have lived in the Four Corners area all of my life. My great-grandparents were married in Farmington, and my grandfather was born in Farmington in 1901. My parents are buried in Farmington. My children and grandchildren visit me often in Farmington.

We support what former President Thomas Jefferson believed, "The care of human life and happiness, and not their destruction, is the first and only object of good government."

Before the EPA issues a Clean Air Act permit for the proposed Desert Rock power plant, it must address the following questions of serious concern on page two of this letter.

EIS/Draft Air Quality Permit

- How can the Draft Air Quality Permit be evaluated when the Draft EIS has yet to be released?
- How does the public know that the entire proposed Desert Rock project and associated infrastructure is incorporated and evaluated in the proposed Air Quality Permit?
- Where will the power generated by Desert Rock be transmitted to and what will be the associated air quality impacts?

Emissions

- Given that the San Juan Generating Station and Four Corners Power Plant are well documented as two of the major polluting power plants in the U.S., why does the EPA consider the site of Desert Rock appropriate? What about SOx, Co and NOx emissions?
- Sithe contends that they have done, "extensive air quality modeling completed per EPA, Navajo Nation EPA and National Park Service requirements." We ask the EPA to describe, specifically, the methodology used for the air quality modeling. Why were monitors in Farmington, New Mexico and Rio Rancho, New Mexico used for background concentrations of pollutants in the modeling for Desert Rock? What was done in the modeling to analyze cumulative air quality impacts?
- Given the documented health advisories in the region for Mercury, how does the EPA plan on complying with the Clean Air Mercury Rule (2005) to permanently limit and reduce mercury emissions from coal-fired power plants? How are mercury advisories affecting Navajo Lake, McPhee Reservoir, the San Juan River, and Vallecito Lake?
- Given that ozone levels in the Farmington, New Mexico area may soon exceed ozone limits and that NOx is a necessary component in the formation of ozone, how will Desert Rock affect ozone levels in the Four Corners region?
- Given the growing consensus about global warming caused by carbon dioxide (CO2) emissions, and the likelihood that CO2 will be regulated in the near future, how can EPA ignore the vast contribution to global warming caused by Desert Rock?
- Why is the EPA allowing the high concentrations of power plants in the Four Corners region degrading public health and quality of life?
- What will occur to visibility in Class 1 areas such as Mesa Verde National Park and the Weminuche Wilderness?
- Does the Draft Air Permit take into account non-stationary air quality effects (including projected fugitive dust) associated with the proposed Desert Rock Power Plant? How are non-stationary and stationary air quality impacts of the Desert Rock Power Plant evaluated cumulatively?

Environmental Justice

- How will Desert Rock comply with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations?" Compliance with Environmental Justice is required for the Air Quality permit, where issues of concern include, "Disproportionate exposure to pollutants, potential health problems (respiratory, heavy metals in fish)" (USEPA Air Quality Impact Report, NSR 4-1-3, AZP 04-01)

Sincerely,

David LeMoine
Kandy LeMoine

David and Kandy LeMoine
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505-327-3294
ddesire@advantas.net

David & Kandy LeMoine, Farmington, New Mexico

Robert Baker
Air Division (AIR-3)
EPA, Region 9
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Robert Baker

We believe it is against federal law for the EPA not to have mentioned the next day's public comment meeting in Farmington on the Desert Rock Clean Air Act permit at the previous day's meeting in Shiprock.

Referring to the entire code but of particular interest is Sec. 25.4 (b), (1):

> The Code of Federal Regulations, Title 40, Volume 1, Revised as of July 1, 2004, From the U.S. Government Printing Office via GOP Access, CITE: 40CFR25.4, Page 276-278, Sec. 25.4 (b), (1): (b) Information and assistance requirements. (1) Providing information to the public is a necessary prerequisite to meaningful, active public involvement. Agencies shall design informational activities to encourage and facilitate the public's participation in all significant decisions covered by Sec. 25.2(a), particularly where alternative courses of action are proposed.

We believe proper public notification was not given for the Thursday, October 5, 2006, EPA meeting in Farmington for comment on Desert Rock. For the EPA not have mentioned the next day's meeting in Farmington at the previous day's meeting in Shiprock on October 4, 2006, was a grave over site.

We would have attended the Thursday, October 5, 2006, EPA meeting on Desert Rock had we known. Nothing was mentioned at the Wednesday, October 4, 2006, EPA meeting on Desert Rock in Shiprock that there would be a meeting in Farmington on Thursday, October 5, 2006.

We attended what we thought was the last meeting for public comment on the EPA, Region 9, Desert Rock Clean Air Act permit, held in Shiprock, NM, at the Shiprock High School Auditorium, on Wednesday, October 4, 2006, from 6 p.m. to 9 p.m. to give our public comment. We heard the concerns stated by others that no public meetings for comments had been held in Farmington or were planned for Farmington. However, in today's Saturday, October 7, 2006, issue of the Farmington Daily Times, we read that "Thursday night at the Courtyard Marriott in Farmington, the EPA held both an informational meeting and a public input session to record public sentiment in regards to the proposal."

As of the date of this letter, the meeting "at the Courtyard Marriott in Farmington" is not listed at the EPA's web site on Desert Rock, Public Notifications for Public Information Meetings http://www.epa.gov/Region9/air/permit/desertrock/index.html#info

We want to know why the public was not properly notified about the EPA meeting on Desert Rock that was held "Thursday night . . . at the Courtyard Marriott in Farmington?"

We are seriously concerned about toxic emissions from the two coal-fired power plants near Farmington. We are genuinely apprehensive about additional toxic emissions from a proposed third coal-fired power plant, Desert Rock near Farmington.

The EPA should be required to extend the closing date for public comment on the proposed Desert Rock Clean Air Act permit which ends October 27, 2006.

Please do all you can to safeguard our air, water, and land for the healthy survival of human, animal and plant life in Farmington, the Four Corners, New Mexico, our nation, and our world.

Sincerely,

David LeMoine
Kandy LeMoine

David & Kandy LeMoine

Farmington, NM 87401-9114

ddesire@advantas.net

From: Tony LITTLEJOHN 9/29/06 ~~II~~-72

Mancos, CO 81328

To: Robert Baker, Air 3
U.S. E.P.A.
75 Hawthorne St., SF, CA 94105

Dear Robert,

This is a comment of grave concern as to the proposed Desert Rock Power Plant. Long time residents of the 4-Corners have seen air quality significantly compromised by the 2 existing coal-fired plants in the Farmington/Shiprock ~~ar~~ region. The pink smear of particulate pollution routinely tarnishes one of the world's greatest landscapes, and visitors to Mesa Verde Natl. Park often express outrage at the tarnished vistas over northern New Mexico.

Beyond ~~aesthetics~~ aesthetics, SO_2 emissions have known detrimental effects to health, particularly weakened respiratory systems of the very young, the old, and those with weaker lungs.

As a matter of critical public policy, you should be leading the vanguard against carbon emissions! There can be no disagreement over global climate change, and commissioning a 3rd. plant in our region is unacceptable.

Thank you, Tony Littlejohn

II-73

Oct. 1, 2006

Dear Robert,

This letter is a statement against the construction of the Desert Rock coal-fired power plant.

With poor emission controls the pollution will cloud an all-ready compromised air quality in my 4-corners. Haze from present power plants contributes to poor visability in Mesa Verde & Weminuche Wilderness where we hike frequently.

There are many "loopholes" the government ~~has~~ is using to build this plant, so my letter will probably be of little value. This administration does not listen to the public or environmental issues, so why would this project be any different.

Sincerely,

Peggy Littlejohn

II-74

October 17, 2006

Robert Baker, Air –3
U.S. Environmental Protection Agency
75 Hawthorne St., San Francisco, CA 94105

Subject: Comments and questions regarding EPA permitting of Desert Rock Coal Fired Power Plant

Dear Mr. Baker:

My first comment is a formal complaint to the EPA. The public hearing process is grossly deficient and unfair and possibly discriminatory, because only two public hearings were held, one in Durango, CO and the other in Shiprock, NM. No official EPA public hearing on Desert Rock was held in Farmington. The EPA air quality permitting process should be suspended until a public hearing is held in Farmington. Pollution has no boundaries. Farmington, Aztec, Bloomfield and San Juan County citizens are impacted by the existing power plants and will most certainly be affected by Desert Rock.

I attended the EPA informational meeting and public hearing regarding the Four Corners Power Plant on October 5th. The attendees were allowed to make comment on Desert Rock also. That meeting was advertised as pertaining to Four Corners Power Plant; therefore, it should not be deemed a public hearing for Desert Rock. EPA officials were asked why no Desert Rock public hearing was held in Farmington. A couple of their responses indicated that "there wasnt enough money in the (EPA) budget to hold a meeting in Farmington" and "the two hearings were held in more populated areas". Both of these "reasons" are ludicrous. For example, the Farmington, Aztec, and Bloomfield area population is well over 100,000 people. Shiprock's population is about 8,200. The Durango hearing was held because a Colorado legislator stood up for the concerns of La Plata county residents.

My second comment and questions pertains to the comment made by Colleen McKaughan, Associate Director of the Region 9 EPA air division at the Durango Desert Rock public hearing. The Durango Herald article dated 9/15/06 reported that Ms. McKaughan said that the Four Corners region has air so clean that it can absorb additional pollutants without harm. She made similar comments at the Four Corners Power Plant meeting on October 5th. The Four Corners region has a blanket of brown "regional haze" that spreads over the San Juan Basin and spills over into Colorado and Arizona and stretches southward toward Albuquerque and Santa Fe. IF YOU CAN SEE IT, YOU ARE BREATHING IT!!! The Four Corners Power Plant and San Juan Generating Station are well known as two of the dirtiest coal fired power plants in the United States. The air in our area is far from being clean.
Is Ms. McKaughan's observation that Four Corners area is so "clean" that it can absorb additional pollutants without harm, indicative of the policy of EPA? Does the EPA condone adding more pollutants to an already heavily polluted area such as the Four Corners Region? Does "EPA" really mean that it is the Environmental Protection Agency?

#3: San Juan Basin residents are very concerned about their health because of the degradation of air quality. A comprehensive health study should be conducted. The study should include respiratory and cancer data at the very least. School teachers and medical people are reporting that asthma is

increasing and seems to be becoming more severe. The Four Corners Area is known as the "Valley of the Shadow of Death" and the Shiprock area is known as "Cancer Alley" to the locals.

#4: Ground level ozone is elevated in the Four Corners Region. Consideration of the existing and future ozone levels must be placed in the permitting process. Ground level ozone cannot be ignored.

#5 Emissions from over 19,000 oil and gas wells in the San Juan Basin are basically not accounted for. Only large facilities are required to be permitted. The smaller facilities are numerous and not permitted. Is there a cumulative emissions total calculated for the existing wells? Over 12,500(conservative figure) new wells will be drilled over the next 20 years. It is irresponsible for the EPA to consider issuing permits for any new coal fired power plants in the Four Corners Area without adding the cumulative totals of ALL oil and gas facility emissions plus the announced proposed oil and gas wells and related compressors, tank venting , etc. to the total.

#6 The cumulative emissions of existing power plants in the Four Corners Region and other emission sources such as oil and gas facilities, automobiles, etc. must enter into the EPA permitting process. Desert Rock claims that it will emit low emissions, but any additional emissions will add to the degradation of the environment.

#7 Four Corners area lakes and rivers are under a mercury advisory. What are the projected mercury emissions in pounds from the proposed Desert Rock Plant? The Clean Air Mercury Rule (2005) requires a permanent limit and reduction of mercury emissions from coal fired power plants. This does not mean a cap and trade option. The Four Corners region already has a mercury problem.

#8 Particulate pollution is a major respiratory health hazard in the Four Corners. Has the EPA considered particulate emissions from the proposed Desert Rock Plant as well as dust and other particulate matter from mining of the coal? What mitigation measures will be incorporated? How will the fly ash be disposed of? If it is buried or piled, will it become a Super Fund site for future generations to deal with? Does the EPA guarantee that there will be NO impact on ground water? Water is precious and must be protected from contamination.

#9 It is my understanding that the EPA has not been concerned with carbon dioxide emissions from the Desert Rock project. Why? What is the EPA doing to alleviate Global Warming AKA Global Climate Changes? What mitigation measures will Desert Rock be required to take, regarding carbon dioxide?

#10 In my comment #2, I mentioned the regional haze problems in our area. I was born and raised in this area. I remember clean air and blue sky.....and then the sky turned yellowish brown when the first coal fired power plant was fired up. The sky remains brown and hazy as far as one can see. Near the power plants, the air stinks and causes physical problems. I have visited with many people who state that they suffer from sore throats, irritated eyes and respiratory distress. Pollution is not an asset and it is certainly not healthy. Regional haze mitigation must be included in the proposed Desert Rock permit.

#11 The Draft Environmental Impact Statement has not been released, yet the comment period for the air quality permit closes October 27, 2006. Why is the public being deprived of the opportunity to comment on the Draft EIS? The Draft EIS is of major concern to the public. It is important that the comment period be extended to a reasonable time after the Draft EIS is made public. Is there any reason to rush through the permitting process?

#12 Desert Rock CLAIMS that it will be a low emission facility. Can the EPA guarantee that the facility will indeed be low emission? Who will regulate and enforce Desert Rock??

This area is already home to two of the dirtiest power plants in the United States. The Four Corners Plant is said to be the top emitter of NOX in the USA. Mercury levels from both plants is high. These existing power plants and the EPA and Navajo Tribe have a bad track record. Even though the two local power plants are notorious for being dirty, the EPA claims that they are in emission compliance. That does not speak well for the EPA nor the plants. The Navajo Tribe has done nothing in spite of ongoing complaints about dirty power plants on Tribal Land from the Navajo people and numerous folks who live in the area under the "great brown cloud". Complaints have fallen on deaf ears for decades.

Law suits seem to be the only lever to force the local dirty power plants to clean up. A lawsuit filed by the Sierra Club jarred the EPA and Four Corners Power Plant into action according to comments made by EPA officials at the October 5th meeting. San Juan Generating Station has to comply with clean up orders thanks to a lawsuit. What is wrong with this picture???
I find it very difficult to trust EPA, the Navajo Tribe, or Desert Rock to stick to the proposed agreements. The Four Corners Region air quality is in the toilet and no one seems to be accountable. Legalized pollution is not acceptable.

I am a member of the Four Corners Ozone Task Force, now known as the New Mexico Four Corners Regional Air Quality Task Force. Our team has worked on air quality issues for several years. It does not make sense to add another coal fired power plant to our already stressed area that will further degrade public health and quality of life. What about future generations?? Is the almighty dollar more valuable than the environment and the health of living things?

I strongly suggest that the Environmental Protection Agency takes a good hard look at the "big picture" before proceeding to issue a permit for Desert Rock.

Thank you. I look forward to the EPA's response to this letter.

Shirley J. McNall

Shirley (Sugar) J. McNall

Aztec, NM 87410

Raemy Mitchell
Box
Sheepwings, N.M. 87364

VI-75

November 10, 2006

Robert Baker
EPA Air Quality (AIR-3)
USEPA Region 9
San Francisco, CA 94105

Dear Mr. Baker:

I object to the issuance of the PSD air quality permit to Sithe Global Power for the Desert Rock Energy facility. The recent public hearing did not address the cumulative health impacts of another coal fired plant in the Four Corners region. Two existing plants in the vicinity have been called **two of the worst point-sources of pollution** in the U.S. **by EPA.** The existing plants spew forth concentrations of a number of pollutants proven to be damaging to human health and the environment.

Why when safer and cleaner energy is available and the impact on health of coal fired power plants is well documented, **why** does EPA choose to ignore the evidence and our plea for serious consideration of the issue of pollution on the health of the Navajo people? When considering the proposed Desert Rock Power Plant my specific question is: why is the EPA allowing the **high concentration of power plants** in the Four Corners region which results in degraded public health and quality of health?

We need answers to questions not even considered in the Air Quality Permit. High emission levels from Four Corners and San Juan Power Plants have severely affected agriculture in the San Juan basin. I object to subjecting the land to more air pollution which will have severe repercussions on agriculture and the pastoral lifestyle on which local residents' incomes rely. Additionally, I object to the violent treatment of the earth that is an unavoidable result of strip mining.

Before the permit to Sithe Global Power for the Desert Rock energy Facility is approved it is critical that the above concerns are addressed. More important, **data** needs to be **collected** from the **area of the proposed plant** rather than using data from a hundred miles away when justifying the air as clean enough to build a third power plant.

Sincerely,

Raemy Mitchell

XI-76

Aztec, NM 87410
October 24, 2006

Robert Baker, Air -3
U.S. EPA
75 Hawthorne St.
San Francisco, CA 94105

The following comments relate to the proposed Desert Rock coal fired electricity generating plant that is to be located near Burnham, NM. There is little doubt that there is a need for additional electricity that the plant would provide, However, it is imperative that overall air quality for the region be considered for both health and environmental reasons.

I have enclosed an article that describes an algal system for the generation of biodiesel that uses carbon dioxide and heat from coal fired electricity generating plants. Would'nt it be great to be able to couple these two technologies? It would be a win-win situation. There needs to be a push to check out this algal system because of its enormous potential. If it proves to be practical, this kind of technology is even more deserving of governmental subsidies than oil, gas, or nuclear.

Thank you for taking my comments.

Sincerely,

Mary Mueller

Mary Mueller
P.O.Box 1300
Aztec, NM 87410

From smokestack to gas tank

Power plants emit carbon dioxide, algae make sugar and oil out of it. It's time to put the two together

PHIL MCKENNA, BOSTON

"IF YOU'RE working at a power plant, you just saw your carbon dioxide turned into something you can drive home with." So says Isaac Berzin of GreenFuel Technologies in Cambridge, Massachusetts, which is developing a way of producing biofuel from the noxious emissions of power plants.

Two of the world's greatest energy users are electricity generation and transport. Both are responsible for huge quantities of greenhouse gas emissions, as most power plants and vehicles still rely on fossil fuels. Now GreenFuel and others are hoping to marry the two together with an emerging technology that uses a by-product of one to supply fuel to the other. Doing so could dramatically reduce their overall carbon dioxide emissions.

At the heart of the technology is a plastic cylinder full of algae, which literally sucks the CO_2 out of a power plant's exhaust. The algae can in turn be converted into biofuel, creating a cycle that takes the carbon from the smokestack to the gas tank before it enters the atmosphere.

If successful, the technology could capture all of a power plant's CO_2 emissions. "Right now, when you say CO_2, people want to hide under the table. Carbon dioxide is not something you want to pump underground, it's something you want to reuse," says Berzin.

To produce fuel from CO_2, the flue gases are fed into a series of transparent "bioreactors", which are 2 metres high and filled with green microalgae suspended in nutrient-rich water. The algae use the CO_2, along with sunlight and water, to produce sugars by photosynthesis, which are then metabolised into fatty oils and protein. As the algae grow and multiply, portions of the soup are continually withdrawn from each reactor and dried into cakes of concentrated algae. These are repeatedly washed with solvents to extract the oil.

The algal oil can then be converted into biodiesel through a routine process called transesterification, in which it is processed using ethanol and a catalyst. Enzymes are then used to convert starches from the remaining biomass into sugars, which are fermented by yeasts to produce ethanol.

GreenFuel is testing a pilot facility at the Redhawk power station in the Arizona desert. The size of a couple of trailers, it treats a only a tiny fraction of the plant's exhaust, but it works, and has so far produced several gallons of algal oil, which the company is planning to convert into biodiesel for the first time this week. A second, larger prototype of around 1300 square metres is now under construction.

This new facility will also capture the heat produced by the plant and use it to help dry the algae before the oil is extracted and converted to biodiesel. This excess heat could also make it easier to recover the solvent from the oil after extraction. "The main energy requirement is recovering the solvent from the oil once it is extracted," says Berzin. "Seventy per cent of a coal-burning plant's energy is lost as heat. That's a lot of waste heat to use."

GreenFuel has so far received more than $18 million in venture capital funding, and hopes to install a full-scale algal farm at least 1 kilometre square near the Redhawk plant by 2009. Berzin calculates that if the farm has enough algae to absorb all the CO_2 produced by the 1000-megawatt plant, GreenFuel could ultimately produce more than 150 million litres of biodiesel and 190 million litres of ethanol a year. To do this, it would need a farm of between 8 and 16 square kilometres.

The idea of producing biofuel from algae is not new. The US Department of Energy began investigating algae in the 1970s during the global oil shortage. Researchers scoured the US, collecting more than 3000 different strains of "extremophile" algae that could withstand the high temperatures, salinity and pH required to absorb the exhaust from power plants.

The Aquatic Species Program, as it was known, grew the algae in open pond test sites in Hawaii, California and New Mexico, but was mothballed in 1996 when lower crude oil prices made it difficult for alternative fuels to compete. "It's an entirely different world now," says John Sheehan,

Flue gases bubble through the bioreactors

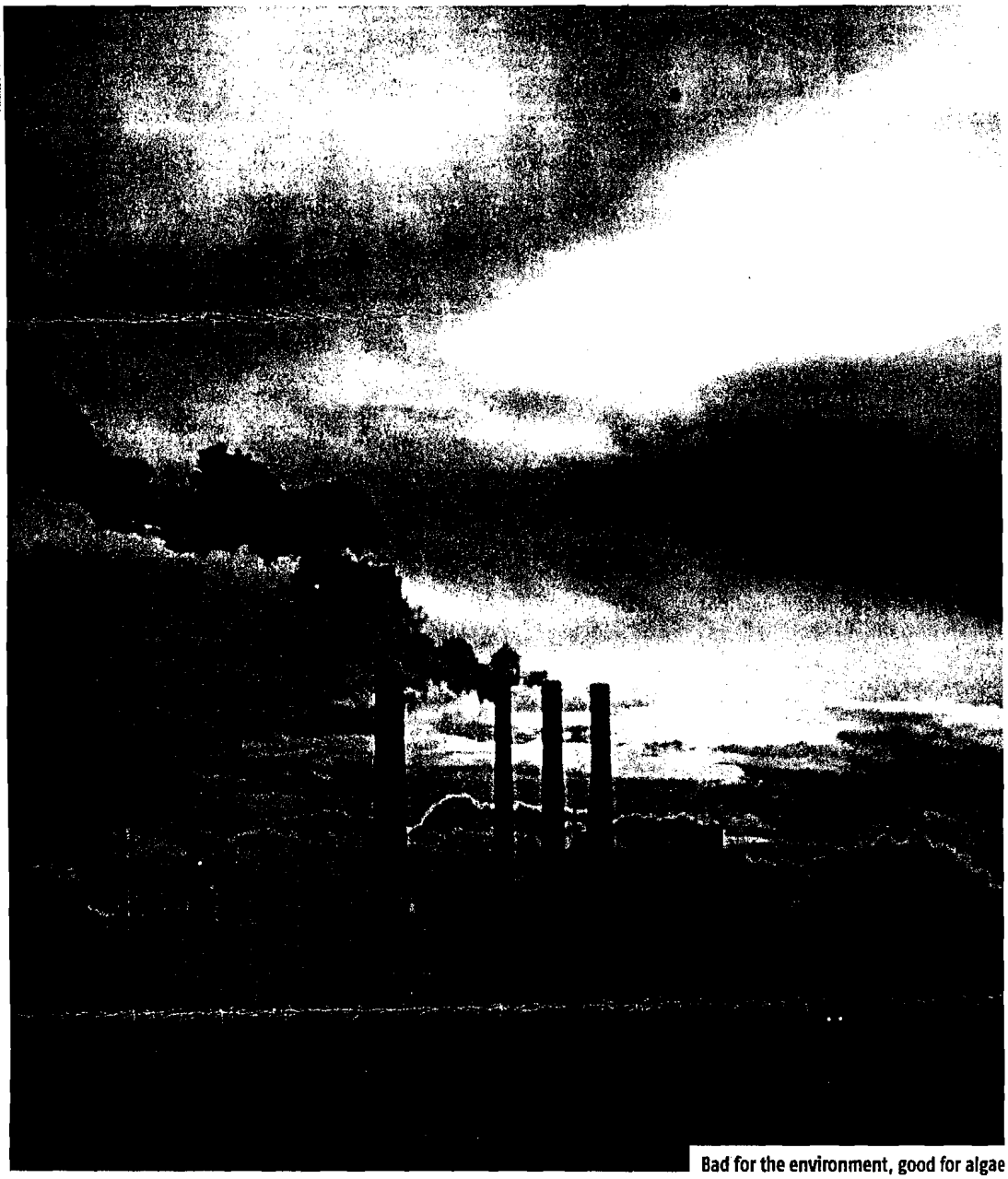
A TASTE FOR SEWAGE

Carbon dioxide is not the only waste substance algae can convert into biofuel. Algae also like to munch on the organic matter in human waste, producing a carbon-rich oil.

Aquaflow Bionomic of Marlborough, New Zealand, is extracting oil from the algae that grow naturally in wastewater treatment facilities. In May the company produced its first 300-millilitre test batch of biodiesel, and hopes to have enough to fuel a vehicle test drive this year.

"There is a certain elegance to unlocking the waste flow and turning it into a significant asset," says Nick Gerritsen of Aquaflow. "If you leave a bucket outside your back door anywhere in the world it will turn green with algae. We are basically leveraging existing assets, because sewage ponds exist all over."

MIKKEL OSTERGAARD/PANOS



Bad for the environment, good for algae

an analyst with the National Renewable Energy Laboratory in Golden, Colorado, who worked on the project. "I've had a call or email a week enquiring about it."

Although ahead of the competition in terms of developing prototype bioreactors, GreenFuel is not the first to use algae to produce samples of biofuel from power plant exhaust. In March Laurenz Thomsen and his team at the Greenhouse Gas Mitigation Project at the International University Bremen in Germany used microalgae to produce 10 millilitres of biodiesel. Thomsen is now working on a possible joint venture with GreenFuel to develop algae farms at CO_2-belching coal-fired plants in eastern Europe.

"Using technology based mainly on GreenFuel, we can mitigate 50,000 tonnes of CO_2 per square kilometre per year," he says. Building a 1-square-kilometre facility would cost approximately $20 million, he estimates, but the payoffs would be equally large. "I think we are close to the point where we can gain $5 to $10 million a year by selling the fuel."

Another company building a pilot algae reactor is New York-based Greenshift. The company plans to begin testing its reactor at a bioethanol plant in Iowa in early 2007, where waste CO_2 is emitted when corn is converted into ethanol. "Roughly one-third of the corn that goes into a facility comes out as ethanol," says Kevin Kreisler of Greenshift. "With algae and other technologies we can increase that to two-thirds." Like GreenFuel, the company eventually plans to use the technology at power plants.

Instead of exposing the algae directly to sunlight, Greenshift uses an array of mirrored troughs and fibre optics to carry sunlight to the plants. Algae don't need strong sunlight for photosynthesis, so the bioreactors could feasibly be housed in buildings or underground. "It's all about efficiency," says Kreisler. "By diffusing the light we can take one square metre of sunlight and spread it out over 10 square metres of growth plates, thus reducing the amount of land we need by a factor of 10."

Indeed, one key advantage of algae farms over other sources of biofuel such as corn and soybeans is that they need much less space (*New Scientist*, 23 September, p 36). In Germany, where rapeseed is the primary crop used for biodiesel, it would take up to 33 times as much land as is needed by the algae bioreactors to produce the same amount of fuel, Thomsen says. What's more, unlike other biofuel crops, algae do not require precious commodities like fresh water or fertile land. That makes the technology suitable for use in the deserts of the American south-west and China. "If you really want to make an impact on CO_2, you have to look at the US and China," Berzin says.

If the technology is to be successful, though, the energy industry will need to be convinced. Barry Worthington of the US Energy Association in Washington DC, which represents the electricity generators, says the economics of algal biofuel still have to be borne out. But he is optimistic about its potential. All the conventional ways of reducing CO_2 emissions are considered a cost, he says. "This changes the dynamics dramatically." ●

D L Nicholas

Aztec, NM 87410-1020

EPA: AIR 2 Division
Region 9
Attn Rebecca Roe
75 Hawthorne
San Francisco CA. 94105

Penny O'Keefe
Durango, CO 81303

XI-77

Penny O'Keefe

From: "Penny O'Keefe" <pennytax@frontier.net>
To: <desertrockairpermit@wpa.gov>
Sent: Monday, October 23, 2006 10:39 AM
Subject: Permit for Desert Rock Power Plant

I am concerned about building another coal fired power plant in our area. I have lived here since 1976 and have noticed a significant deterioration in our air quality. I have hiked our mountains and enjoyed the clear views, which are not as clear as they used to be. Much of our air comes with the prevailing winds from the west. I can see the smog. Our reservoirs are polluted with mercury. My friends with asthma can feel the difference with their breathing. Another plant will only make our air quality worse. Please do not issue a permit for another coal fired plant in this area.

Penny O'Keefe

Dear Robert,
This is a copy of an email I sent. Please no more coal fired power plants to pollute our air and water.

Penny O'Keefe

IV-78 Oct. 16, 2006

Dear Mr. Baker:

This letter is to voice my concern regarding the Desert Rock Clean Air Act permit.

As a resident of southwest Colorado, I'm fully aware of the yellow haze that drifts north from coal-fired power plants in New Mexico. We are now unable to eat fish from our reservoirs due to mercury contamination. In addition, the San Juan Basin is undergoing unprecedented gas drilling expansion, which further degrades air quality with the requisite pumps, compressors, and vehicle traffic. The Navajo Nation, seemingly the only winner in this game, is still reeling from its last "Development Opportunity" of uranium mining, and all the health consequences that came with it, during the Cold War. Clearly, not all that glitters is gold.

I encourage you to look long and hard at the Desert Rock permit, and reject this request in the name of our air quality, water quality, future generations, and what we hold dear in the Four Corners.

Very sincerely,

David Peters

David Peters

VI-79

United States Environmental Protection Agency

Mr. Robert Baker
Air Division (Air-3)
USEPA Region 9
75 Hawthorne St.
San Francisco, CA 94105

Public Comment Form

(Please Print)

Name Jay F. Powell JAY F. POWELL

Address 12 Ln

Bayfield, Co. 81122

Affiliation Vallecito Community Council

Telephone

Email JAY and ELEANOR POWELL @ YAHOO.COM

Would you like to be added to our mailing list? ☑ Yes ☐ No

Comments: The Desert Rock energy facility mentions adding 10 to 20% more pollutants. This will be disasterous for S-W Colorado and our children & grandchildren.

Any increase should be matched with an equal reduction (that you can prove) on plants in the same area.

Economic Development has been mentioned over & over. Our economy at Vallecito Colorado has been destroyed after our lake being posted for Mercury contamination. Help.