

BP & GE Grow Desperate

by Dale Allen Pfeiffer

14/09/06 www.mountainsentinel.com. You do have to give them a hand for trying. BP & General Electric are teaming up to usher in a new world of clean coal and hydrogen fuel cell based electric generation. How thoughtful, how responsible. Wait a minute, isn't this the BP that allowed the Alaskan pipeline to deteriorate until it resulted in the largest on land spill in the history of the oil industry? And General Electric has an even worse record with regard to labor, the environment, war profiteering, and media control. (for a glimpse at the GE empire, visit <http://tinyurl.com/8gvvk>.)

So what is behind this press release about BP & GE combining forces to help usher in the hydrogen age? Desperation, most likely.

With more and more governments establishing laws limiting carbon dioxide emissions, the power companies need to find some way to clean up their act. The preferred option at the turn of the century was to move from coal to natural gas. At the time, it was believed that supplies of natural gas were bountiful. However, this has turned out not to be the case, and natural gas prices have risen as a result, while the winter supply of natural gas has become something of a dice game.

So the utilities are shifting back to coal, but they need to comply with carbon dioxide emission standards that will become increasingly stringent as time goes on. Hence BP & GE's announcement that they will commit themselves to between 10 and 15 new power generating plants that will transform dirty coal into clean hydrogen.

The press release makes it sound like this is a done deal, and all that remains is to build the plants and ship in the coal. However, the hydrogen and carbon sequestration technology are far from perfected. So this project will require a great deal of research before it ever gets off the board.

Once perfected, the technology is likely to prove very costly. Hydrogen stripping will always result in a net energy loss, thanks to the Laws of Thermodynamics. And the energy required for deep geological sequestration of carbon dioxide will require even more energy.

Coal is the dirtiest hydrocarbon. The amount of carbon dioxide that will be produced is tremendous. And, using this sequestration technology, any possible power plant site will have to be carefully assessed geologically, paying particular attention to faults and other structural weaknesses. Given the number of nuclear plants that have been built on fault lines, BP's record of faulty maintenance and GE's record of faulty construction it will probably only be a matter of time before this scheme results in disaster.

Injection of massive amounts of carbon dioxide into faulted areas could easily result in slippage along the faults, producing deadly earthquakes. This would be of prime concern in California.

In any case, BP & GE's plan depends on an abundance of cheap coal. No doubt, the corporations are following reports that coal resources will last for at least another century before depletion becomes a problem. Yet, a more careful assessment of the US coal supply suggests that coal production will peak by the year 2032. No similar study has been undertaken for the world.

Certainly, coal mining companies will do what they can to keep down their costs, mostly by suppressing worker's wages, health benefits, and safety costs. But the cost of coal will go up, and the cost of electricity generated from these plants will go up as a multiple.

By the time coal power becomes too expensive, perhaps we will have perfected the electrolysis of water using solar cells. All that will remain to be done to make this transition is to cover the entire globe with solar arrays and like in their shadow like burrowing ants. Unfortunately, most of the current solar cell designs are dependent upon hydrocarbon feedstocks.

BP and GE Develop Hydrogen Power Plants and Technologies

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BP and GE today announced their intention to jointly develop and deploy hydrogen power projects that dramatically reduce emissions of the greenhouse gas carbon dioxide from electricity generation. Vivienne Cox, BP's Chief Executive of Gas, Power and Renewables, and David L. Calhoun, Vice Chairman of GE and president and CEO of GE Infrastructure, signed the agreement today in London.

The world will continue to make extensive use of fossil fuels, such as natural gas and coal, for power generation for the foreseeable future, but technology now allows this to be done more cleanly by creating hydrogen from fossil fuels while capturing and sequestering the carbon as carbon dioxide in deep geological formations. To facilitate this advancement, BP and GE will collaborate on power, carbon capture and sequestration technologies.

“The combination of our two companies’ skills and resources in this area is formidable, and is the latest example of our intent to make a real difference in the face of the challenge of climate change,” said BP’s Vivienne Cox. “BP and GE’s strategic approaches to developing increasingly cleaner, lower carbon power options are closely aligned and our skills and strengths are highly complementary.”

“Tomorrow’s energy mix will include hydrogen – and GE and BP are taking the lead in ensuring progress begins today,” said David Calhoun of GE. “This initiative will demonstrate that our companies’ leading-edge technologies can make hydrogen production efficient, reliable, and economical for large-scale, commercial power production. Our financial strength will ensure it happens now globally, changing the way we envision our energy future.”

BP has already announced plans for two such hydrogen power projects with carbon capture and sequestration in Scotland and California, both of which will use GE technology. Subject to appropriate regulatory and fiscal regimes being in place, and necessary due diligence, the companies have an ambition to progress 10 to 15 further projects over the next decade, including the plants in Scotland and California. Subject to further exploration, the current expectation is that the most appropriate structure may be through creation of a joint venture to invest in hydrogen power projects and a joint development agreement for development of related technology. As a first step, BP and GE would jointly participate in the two hydrogen power projects with carbon capture and sequestration BP has announced – at Peterhead in Scotland and at Carson in Southern California where Scottish and Southern Energy and Edison Mission Energy are partners respectively.

Such low carbon power projects use fossil fuels such as natural gas, petroleum coke or coal for power generation combined with carbon dioxide capture and storage technology. They generate significant quantities of base-load power while capturing and storing some 90% of the carbon dioxide that would otherwise be emitted, in deep geological formations.

BP and GE will apply some of the world's leading technologies, project experience and assets to optimise the integrated design. The collaborative effort will draw upon the companies' technologies and experience in areas such as coal gasification, reforming technology, gas turbines and carbon capture and storage.

“The combination of coal gasification and carbon capture and sequestration is crucial for clean coal development and presents great opportunities for countries with substantial reserves of coal such as the USA, China and India,” says Lewis Gillies, BP's Director of Hydrogen Power.

“GE and BP are combining our resources to develop economically attractive, breakthrough technologies in the area of hydrogen to power. This will allow power producers to use abundant, low-cost fossil fuel resources to generate electricity with very low carbon dioxide emissions,” said Edward Lowe, general manager of GE Energy's gasification business.

In addition to the complementary nature of the technologies and experience of the two companies, the collaboration is expected to be further strengthened by the global reach of each of the partners. GE's operations in Houston and BP's operations in London will form the core groups for the hydrogen power collaboration.

BP Press Release