

FutureGen: Is a “Clean Coal” Demonstration Plant Coming to Texas?

In his State of the Union Address on January 31, 2006, President Bush announced the Advanced Energy Initiative, a federal program focused on “clean energy research” that will fund technologies such as low-pollution automobiles, nuclear energy, solar and wind energy, and zero-emission coal power plants. As part of this initiative, the Department of Energy (DOE) is investing \$1 billion in FutureGen, a 10-year project to create a coal-fueled prototype plant to demonstrate the technical and economic feasibility of producing electricity and hydrogen from coal while capturing and sequestering the carbon dioxide (CO₂) produced in the process. In partnership with the FutureGen Alliance, a non-profit consortium of 10 private sector coal producers and users, the DOE will evaluate applications to host the FutureGen plant site, determine the site location, and build a functioning plant by 2012.

In March 2006, the FutureGen Alliance issued a request for proposals to host the site of the FutureGen plant and received 12 applications from seven states. Texas submitted two proposals. One bid would take advantage of the state’s ample coal resources by building the plant close to a mine-mouth near Jewett in East Texas. The second

proposal would locate the site near Odessa in an energy-producing region of West Texas suitable for the employment of enhanced oil recovery technology utilizing captured CO₂.

On July 25, the FutureGen Alliance announced that the two Texas proposals, along with two proposals from Illinois, had been

chosen as finalists for the project. In the next year, DOE will continue the evaluation process, which includes an environmental impact review of each proposed site. The FutureGen Alliance and DOE expect to award the FutureGen grant in the second half of 2007, with construction of the plant to begin shortly thereafter.

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Long-term Costs of Retiree Health Care To Be Treated Like Pension Liabilities

A new accounting rule will change the way public pension systems, including the Teacher Retirement System (TRS) and the Employees Retirement System (ERS), must show their long-term obligations to cover retiree health costs and other non-pension benefits. In order to be considered actuarially sound, public pension systems now must demonstrate that they have sufficient assets available to fund pensions for retired employees for years in advance. However, for retiree health care and other benefits, most public pension systems, including TRS and ERS, operate on a “pay-as-you-go” basis, covering these expenses as they occur. In an effort to make clear the effects of such benefit commitments on a public employer’s overall financial condition, new national accounting standards soon will require these pension systems also to demonstrate that they have funds available to cover retiree health care and other benefits costs for years in advance, as they now do for pension costs. This change could result in large liabilities occurring on the books of public pensions systems that, if not addressed, could undermine the credit rating for state and local governments and ultimately increase the cost of government.

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The technology of “clean coal”

The FutureGen power plant is designed to generate energy from coal sources while producing significantly fewer harmful CO₂ emissions than traditional coal-fired power plants. It will employ the technology of coal gasification to generate energy and underground sequestration to store much of the CO₂ by-product.

The FutureGen plant will produce power through “integrated gasification combined-cycle” (IGCC) technology. In the gasification process, coal is fed into a high-temperature chamber called a gasifier where it reacts with steam and oxygen under high pressure. The resulting chemical reaction generates a synthetic gas known as “syngas” that consists primarily of hydrogen and carbon monoxide. Elements that do not gasify from the coal fuel convert to a by-product known as slag, which resembles coarse sand and can be used as a construction material.

Syngas is further processed to remove impurities such as sulfur and mercury, transform carbon monoxide to CO₂, and increase hydrogen content. The hydrogen can be separated from the syngas for use in the production of fuel cells. In an IGCC system, the processed syngas is burned to power a gas turbine in much the same way that natural gas is used today to generate electricity. In addition, exhaust heat from this process can be harnessed to power a steam turbine that also produces electricity.

Another feature of “clean coal” technology is the capture of CO₂ emissions that are released into the atmosphere during the traditional coal-burning process. The CO₂ captured in the FutureGen gasification process will be either sequestered underground or used to facilitate the extraction of oil from tapped out fields. Some of the captured CO₂ will be sealed in geologic reservoirs – spaces hewn from underground rock by saline water deposits or fossil-fuel mining, for example. Captured gas also will be used in a process known as “enhanced oil recovery,” which involves the injection of pressurized CO₂ into the porous

FutureGen legislation in Texas

The 79th Legislature enacted two bills designed to strengthen the state’s position in securing one of its bids to host the FutureGen plant site.

HB 2201 by Hughes, enacted during the 2005 regular session, provides up to \$20 million in state matching funds to the entity managing the FutureGen project, contingent on the selection of a Texas site for the project. The bill requires the Texas Commission on Environmental Quality to implement a streamlined process for issuing permits for a clean coal project, making use of public meetings, conferences, and committees to obtain the opinions of interested parties. The streamlined process would not be subject to contested case hearing requirements. HB 2201 also requires the Texas Water Development Board to allow for timely approval of amendments to the state and regional water plans to meet water demands for a clean coal project. The bill also grants a franchise tax deduction

for equipment used by a corporation in a clean coal project and tax credits on property used in connection with such a project.

HB 149 by Chisum, enacted in 2006 during the third called session, granted to the Texas Railroad Commission title to CO₂ produced by a clean coal project. The Railroad Commission will administer the interest in the CO₂ for the state. The bill also allowed the commission to sell CO₂ captured by a clean coal project for enhanced oil recovery or another beneficial use, with proceeds accruing to the general revenue fund. HB 149 also authorized the University of Texas (UT) System and Permanent University Fund (PUF) to allow the use of UT System or PUF lands for permanent storage of CO₂ captured by a clean coal project. Such a lease must indemnify the UT System and PUF against liability incurred as a result of CO₂ that escaped after it had been injected.

rock of an oil field from which most of the readily available oil already has been extracted. Residual oil in the ground reacts with the CO₂ to create a substance that flows more easily through the underground rock to the production well.

According to DOE, there currently are two commercial-sized, coal-based gasification projects in the United States – the Polk Power Station near Tampa, Florida and the Wabash River Repowering Project near Terre Haute,

Power plant permitting

Another issue related to power production from coal has been the subject of intense debate in recent months – the expedited permitting and construction of traditional coal-fired power plants in the state.

On October 27, 2005, Gov. Rick Perry issued executive order RP49, which directed the Texas Commission on Environmental Quality (TCEQ) to “prioritize and expedite” the processing of applications to generate electrical power. The order instructed the State Office of Administrative Hearings (SOAH) to hold a preliminary hearing within one week after the 30-day public notice for an electric generating facility that had been granted a draft notice. The order charged SOAH with issuing a decision on the proposed facility within six months from the referral of the application, a reduction from the previous standard that required a decision within one year.

Following Gov. Perry’s executive order, several energy producers have announced plans to build coal plants and take advantage of the new permitting process. Proposals for 16 power plants have been announced, with the majority proposed by Dallas-based TXU Corp., which would spend \$10 billion to construct 11 new coal-fired power plants at nine of its existing locations.

Industry representatives and advocates of the expedited permitting process argue that an extensive, lengthy process for evaluating proposed coal power plants inflates the cost of power plants that could be a source of inexpensive energy for consumers. This regulatory burden drives energy producers to construct natural gas plants or rely on older plants, leaving consumers more vulnerable to rising natural gas prices that drive the increase in electric bills that recently have afflicted consumers. Further, new coal plants produce fewer emissions than older, dirtier plants. New plants, coupled with the retrofitting

of existing plants that TXU has committed to undertake, would mitigate the environmental impact of coal power production. Advocates of the new plants also point to the expanded demand for energy as Texas’ population and economy grow, suggesting that consumers and businesses face high prices, insufficient supply, and the threat of blackouts if new energy sources are not found.

Opponents, including many environmental and consumer groups, argue that the expedited permitting decision timetable will undermine a process that is intended to fully evaluate the environmental and health effects of new power plants. They argue that energy demands in Texas should be addressed by educating consumers and businesses on conservation techniques and technologies, pointing out that conservation is the least expensive, most efficient method of managing the state’s energy needs. To the extent that additional generation capacity is needed, that demand should be met by low-emission green energy sources such as wind power or IGCC clean-coal plants, such as the one planned under the FutureGen program. Critics also point out that now would be an inopportune time to construct coal plants that could worsen pollution in areas of the state such as Dallas-Fort Worth, which is subject to EPA-mandated emissions restrictions, and Austin, which is teetering on the edge of federal non-attainment standards for air pollution.

On August 23, 2006, two administrative law judges denied a permit to the first new TXU coal plant to go before SOAH – the Oak Grove plant in Robertson County near Waco. The permit now heads to the TCEQ, where commissioners will issue a final ruling on the disputed Oak Grove permit. The SOAH judges found that the Oak Grove plant would not adequately moderate nitrogen oxide and mercury emissions. Permits for the other proposed plants remain pending with SOAH, before final consideration by TCEQ.

Indiana – as well as two in Europe. In addition, several U.S. electric power producers currently are considering or planning the construction of coal-based IGCC plants in locations across the country.

The benefits of “clean coal”

Beyond the direct investment of millions of dollars that the FutureGen project would bring to the state, proponents of the project offer several reasons to support the construction of the FutureGen plant in Texas.

Advocates note that coal is an inexpensive and plentiful source of power. Coal accounts for more than half the electricity generated in the United States and is particularly abundant in Texas, which by many estimates contains a 200-year reserve of the mineral. A major drawback of using this fuel historically has been the pollution caused by coal power plants. Coal energy production generates pollutants such as CO₂, sulfur dioxide, nitrogen oxide, and mercury, harmful emissions that contribute to soot, smog, and global warming. The promise of generating energy from abundant fuel supplies while significantly mitigating the harmful by-products of coal burning is a good reason, supporters say, to move ahead with clean coal technology.

In addition, FutureGen’s IGCC process is designed to be extremely efficient at power generation, meaning that less fuel will be needed to produce electricity. FutureGen advocates say this efficiency likely would result in lower electric rates for consumers, less demand for mined coal, and a decrease in the production of greenhouse gases.

Beyond the power generated through gasification itself, supporters say that hydrogen produced in the process also would be beneficial through its possible use in fuel cells, considered by some to be the fuel of the future in the transportation sector. Hydrogen fuel cells hold the promise of powering automobiles, homes, and businesses with a pollution-free source that would reduce the nation’s dependence on limited fossil fuels.

Advocates also point to carbon sequestration and injection as another benefit of the FutureGen project. The injection of CO₂ into wells would enhance oil recovery in

areas of the state where the extraction of residual oil is not practical today. The oil industry in Texas has decades of experience with this process, and the CO₂ provided by the FutureGen plant could help increase oil production in the state.

Concerns about “clean coal” and CO₂ sequestration

“Clean coal” technology and the FutureGen project are not without controversy. Many FutureGen critics question the safety and effectiveness of sequestering the CO₂ by-product underground. They argue that the long-term effects of CO₂ sequestration on the environment are unknown, and they worry that stored gas could escape into the atmosphere or seriously harm nearby land or aquifers. While many critics acknowledge the benefit of developing a near-zero-emission power plant and hydrogen fuel cells, they believe that the state should extensively study the environmental concerns associated with CO₂ sequestration before agreeing to host any “clean coal” project.

In addition, critics point out that “clean coal” technology would do nothing to mitigate the devastating effects of coal mining on the environment, including mountaintop removal, erosion, pollution of rivers and streams, and flooding. They suggest that money and resources allocated to the demonstration project instead should be dedicated to truly “green” and renewable sources of energy such as wind, solar, and hydroelectric power.

Other critics argue that while the FutureGen plant may be a worthy pursuit, Texas’ involvement in cleaner-burning coal plants should not be linked exclusively to the project. There is no guarantee that Texas will win the FutureGen project, and policymakers should not wait to begin a shift away from traditional coal-fired power plants to cleaner technologies such as IGCC power generation. By implementing limitations on carbon emissions and encouraging energy producers to reduce pollution by adopting proven gasification and combined-cycle technologies, policymakers could move the state toward a cleaner and more efficient energy industry regardless of whether Texas ultimately is chosen as the site for FutureGen.

– by **Tedd Holladay**

(Benefits, from page 1)

The new standards

The new accounting standards were adopted by the Governmental Accounting Standards Board (GASB), an independent nonprofit organization that sets financial accounting and reporting guidelines for state and local governments. In June 2004, the organization issued GASB Statement No. 45, "Accounting and Financial Reporting by Employers for Postemployment Benefits Other Than Pensions," which establishes new accounting standards for state and local governments for reporting such non-pension costs as retiree medical care, prescription drugs, and life and dental insurance. These costs, referred to as "other postemployment benefits" (OPEB), consist primarily of costs related to retiree health care. In Statement No. 43, GASB issued related standards for retiree health care plans, such as those administered in TRS and ERS.

GASB 45 applies to any public employer that provides health insurance and other non-pension benefits for retirees. Those subject to the new rule include state and local governments as well as state universities, state hospitals, and publicly owned utility companies. The new standard requires these employers to switch their method of accounting for OPEB benefits from "pay-as-you-go" to the "accrual" method, in which the cost of providing the benefits is reported as an expense during the years that employees perform services in exchange for the benefits. The amount to be reported as an expense each year will include that year's normal cost, or service cost, and an additional amount sufficient, if contributed regularly, to amortize the accrued obligation for unfunded past service cost over a period not to exceed 30 years. This is the method currently used to calculate pension liabilities.

According to GASB, the purpose of the change is to "provide those who use government financial reports with improved information about the cost of providing post-employment benefits, the commitments that governments have made related to those benefits, and the extent to which those commitments have been funded."

GASB standards do not have the force of law but are "generally accepted accounting principles." Therefore, government auditors and financial institutions normally

consider compliance with GASB standards as a benchmark for financial reporting. According to Fitch Ratings, a credit rating firm, "failure to comply would prevent auditors from releasing a 'clean' audit opinion."

Under GASB 45, governments are not required to fund their OPEB obligations, only to measure and report them. However, most analysts expect governments to consider alternative funding mechanisms in an effort to offset at least a portion of the unfunded liabilities that are expected to be highlighted as a result of the accounting change.

Implementation timeline

The new accounting standards are being phased in over several years. TRS and ERS, which as employer health plans are subject to GASB 43, will begin reporting OPEB liabilities in fiscal 2007. The state of Texas, as an employer with annual revenues of more than \$100 million, is subject to the first phase of GASB 45 implementation and will begin to report OPEB liabilities in fiscal 2008, as will the University of Texas and Texas A&M systems. Requirements for mid-sized and smaller employers will be implemented over the following two years.

Every two or three years, depending on the number of members in the plan, employers will have to complete an actuarial valuation of their OPEB plans to determine their liabilities. The actuarial valuation also will be used to determine the amount that the employer must contribute annually to cover normal cost – the amount of benefits that is "earned" in the current period – and to amortize any unfunded liability.

An employer initially will not have to report its entire unfunded OPEB liability as a financial statement liability. The new standard allows governments to apply GASB 45 prospectively, which means that in the first year of implementation employers will begin with zero financial statement liability. But they will accumulate a liability called the "net OPEB obligation" from that point forward if the employer contributes less towards OPEB costs than this annually required contribution.

According to GASB, "The net OPEB obligation will increase rapidly over time if, for example, a government's OPEB financing policy is pay-as-you-go, and the amounts

paid for current premiums are much less than the annual OPEB cost.”

The standards also will require disclosure of the funded status and funding progress of the OPEB benefits, including disclosure of the total unfunded obligation and disclosure of the percentage of the annual OPEB cost that the employer actually paid or contributed.

TRS and ERS currently are determining the criteria for the first actuarial valuations. Neither plan has issued preliminary estimates of their OPEB liabilities, which they will be required to report in financial statements as of August 31, 2007.

TRS administers TRS-Care, which provides health insurance coverage for public school retirees who are not eligible to participate in state higher education or state employee plans. In August 2005, TRS-Care provided insurance for 182,700 retirees and their dependents. The total state contribution for TRS-Care for fiscal 2006-07 was \$506.6 million. (School districts and active employees also contribute a portion of the cost of TRS-Care.)

ERS provides health insurance for retired state employees as part of the same health insurance program offered to active employees. As of July 2006, ERS provided health insurance for 69,585 retirees. For fiscal 2004-05, the state contributed \$594.8 million for retiree health care coverage. Retirees also may purchase life and dental insurance through the state for an additional premium.

Expected growth in unfunded liabilities

For large states such as Texas that have significant OPEB obligations, analysts expect OPEB liabilities to build rapidly, particularly if no efforts are made to reduce net OPEB obligations. The state of New York recently estimated OPEB obligations of \$47 billion spread over the next three decades. A study conducted for Maryland estimated that state's OPEB liabilities at \$20.4 billion. A recent report by the California Legislative Analyst's Office projected that California would have OPEB liabilities of between \$40 billion and \$70 billion.

“Identifying and quantifying the OPEB liability will, for many entities, result in the realization of a potentially significant unfunded liability,” according to an April 2005 article by the bond rating company Standard & Poor's, “because in the vast majority of cases assets have not been set aside to fund these future OPEB costs.” The company predicts that the costs of delivering OPEBs will continue to grow as they have in the past. This factor, combined with the increasing life expectancy of beneficiaries, likely will compound the OPEB liability of many entities, although Standard & Poor's acknowledged that there will be significant variation in OPEB liabilities from one government to another because of differences in the level of benefits and benefit structures. “It is possible,” the company concludes, “that an employer's unfunded OPEB liabilities could exceed the level of its unfunded pension liabilities.”

Effect on bond ratings

One of the primary concerns about the new accounting standards is the effect that rising unfunded liabilities will have on bond ratings and credit costs. A state's bond rating determines the cost of credit for a variety of projects funded by general obligation bonds, such as prison construction, school facilities backed by state bonds, and water project loans. Any adverse change in the state's bond rating could result in higher interest rates, which would increase the overall long-term cost of these projects. Conversely, a positive change in bond ratings could result in more favorable interest rates and lower project costs.

Although large states such as Texas may accumulate significant OPEB liabilities, bond rating companies are taking a “wait-and-see” approach in determining how they will respond to the change. Fitch Ratings expects that the departure from the “pay-as-you-go” funding method may substantially affect a state's credit rating, although the company believes that “meeting actuarial funding requirements for OPEB will be a stabilizing factor and protective of credit over time.” According to Fitch, the ability of a state government to devise a sound plan for addressing its OPEB liabilities will be key to determining its credit worthiness. Evidence of “steady progress toward reaching the actuarially determined annual contribution level,” according to the company, “will be critical to sound credit quality.” Fitch also expects that governments

may alter benefit plans or take “other actions to ensure long-term solvency.” Similarly, Standard and Poor’s, in a December 2005 report, says that credit ratings will depend in part on how successfully each state manages its OPEB liabilities and the extent to which these obligations affect an employer’s financial position or flexibility.

Funding alternatives

While some public employers already have initiated program changes in anticipation of GASB 45, most still are studying the new requirement and examining funding alternatives. Some of the most widely discussed measures include advance funding of benefits, debt financing, and benefit redesign.

Advance funding of benefits. One way to reduce future retiree health care liabilities would be to prepay all or a portion of the projected cost in the same way that pensions are funded, primarily by payments made to a pension fund during employees’ period of active employment. While most governments cover retiree health care on a pay-as-you-go basis, some have chosen to prefund retiree health care as well as pensions. More governments are expected to consider this approach after GASB 45 takes effect.

Employer-sponsored health care trust funds are one method of prefinancing retiree health care costs. TRS-Care was established in 1986 as a prefunded separate trust, but since 2001 has been funded on a biennial basis. By contrast, Ohio’s retirement system, OPERS, has been prefunding retiree health care for the past several decades, with current employees and employers each contributing a share of health costs. In 2005, the state’s health care trust fund had nearly \$12 billion in assets, and OPERS estimates that it has funds set aside to adequately fund 17 years of health care costs.

The Fire and Police Retiree Health Care Fund, San Antonio, is a health trust established in statute (Vernon’s art. 6243q) in 1997. Under this statute, active employees and the city of San Antonio each contribute a portion of current payroll to fund both current and future retiree health care costs. Contribution levels are determined as part of the collective bargaining process.

An actuarial study conducted in 2004 determined that current funding and benefit levels were not sufficient to make the fund “actuarially sound.” Without any changes, the study concluded that assets in the fund would be depleted in 2027.

In 2005, the House passed HB 2747, which would have established fire and police retiree health plan contribution levels for the San Antonio fund in statute, rather than their being determined as part of the collective bargaining process, and would have changed certain retiree benefits. The bill died in the Senate.

As an alternative to employer-sponsored trust funds, some employees participate in voluntary employees’ beneficiary association trusts (VEBAs), in which assets and earnings are earmarked for the sole purpose of providing the intended benefits to members of the association, their dependents, or their beneficiaries. Other possible funding mechanisms include establishing retiree medical accounts within a pension plan and stand-alone health savings accounts (HSAs) that replace traditional health coverage with high-deductible policies and contributions to accounts established to pay for health costs in the future.

Debt financing. In 2003, the 78th Legislature enacted SB 1696 by Wentworth, which authorizes Texas municipalities to issue pension obligation bonds to cover all or part of their unfunded liability for pensions. Dallas and Houston since have issued pension obligation bonds to fund a portion of the liabilities for their municipal employees’ pension funds, and El Paso currently is considering issuing pension obligation bonds.

The entity that sponsors a pension plan may issue pension obligation bonds and deposit proceeds from bond sales into a pension trust fund for investment. The issuing government repays the bonds with general funds. According to Standard & Poor’s, “The goal is for the sponsor to realize savings by paying lower carrying charges for pension contributions and debt service than what is earned by their asset pool.” In other words, the interest payable on the bonds should be less than pension investment earnings. For example, if a city’s pension plan earns 8 percent in investment returns while paying 6 percent interest on pension obligation bonds, the city comes out ahead.

Opponents of pension obligation bonds argue that these financing instruments amount to a “kiting” scheme in which a city borrows from one source of credit to pay another. In issuing these bonds, cities would have an expectation of paying a lower interest rate on bonds while earning a higher percentage rate over time with fund monies. However, if the pension fund did not achieve overall earnings, the losses on the bonds would be added to the pension fund’s unfunded accrued liability, compounding overall costs. Cities could be confronted with the double burden of owing on pension obligation bonds while still failing to cover the unfunded liabilities of their pension funds.

Authorization for the municipal use of pension obligation bonds could be extended to allow issuance of similar debt instruments for the full or partial funding of OPEB liabilities. However, additional statutory authority would be required for cities or other local governments to

issue OPEB bonds. If state lawmakers wanted to use general revenue to fund state OPEB bonds, voters likely would need to approve a constitutional amendment specifically authorizing the state to issue general obligation bonds for this purpose in accordance with Art. 3, sec. 49 of the Texas Constitution, which otherwise prohibits state debt.

Benefit redesign. Another alternative that some employers have considered is cutting back on retiree health benefits to reduce current and future liabilities. Although health care benefits do not have the same specific constitutional protections as pensions, many analysts believe that reducing vested benefits for current employees or retirees would be problematic. One option would be a tiered structure with different benefits for future employees to limit long-term benefit costs. Another would be to increase current state or retiree contributions to cover a portion of current costs.

– by **Betsy Blair**

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