

Blog

Reflections on Market Pricing

The marketplace is a fantastic machine to generate profitable goods and services, for overall economic growth and the introduction of innovation and technological advances efficiently and effectively. Through global trade, we have been able to produce a remarkable array of products at lower costs and greater products than ever before. We can go to Walmart's and buy a shirt made in Vietnam for \$5 and be happy.

But are we really measuring the costs properly and are we really including in our calculations all the costs and benefits including the costs of by-products and waste?

We always imagine that the main intellectual driver for an engineer is to build to perfection to ensure maximum output and maximum safety and efficiency. On the other hand, accountants are trained to examine costs and save money wherever they can. These two professions are in permanent battle between spending and cutting and both serve the shareholder in the drive to maximize profits. Completely left out of the formula is the common good.

Engineers, due to rigorous training and code of ethics, will emphasize the importance of maintenance to ensure optimum efficiency and quality. Generally, accountants will cut maintenance budgets and delay needed repairs. Savings from maintenance are actually unrealized benefits, they cannot be easily seen or measured except in cases where there is a measurable increase in output. On the other hand, maintenance costs are realized expenses – entirely measurable.

Take the case of the accident of Lac Mégantic. Montreal Maine and Atlantic was the first rail operator to win the right to reduce the crew from 2 to 1 engineer. What is that? A savings of about \$100,000. But that one man crew was responsible for thousands of barrels of oil, the value of which is unknowable. The driver had just finished a long shift and he parked the train. The engine caught fire – for which we have no explanation. After that the engineer was required to manually put on the brakes on over a 100 cars. This involved climbing up a ladder and turning the wheel until locked. Now we are dealing with fatigue and exhaustion. It is no surprise then that the result was a runaway train that, when it crashed, left nearly 50 people dead. MMA was very quick to blame the train engineer.

In early February 2014, a coal ash pond, owned by Duke Energy, sprung a leak. So I decided to follow Duke Energy's stock price history following this event just to see if this accident, which would expose the company to a large liability, will see its stock price affected. If it dropped, then surely, the shareholders would be anticipating extraordinary costs incurred, fines and penalties imposed. This is what happened.

Date	Notable Event	Stock Price
2013/11/06	<p>Huffington Post: COST CUT: Duke Energy's net income rose 69% in the third quarter as costs to complete the company's 2012 merger with Progress Energy fell to \$88 million from \$457 million last year.</p> <p>THE BOTTOM LINE: Duke posted net income of \$1 billion on revenue of \$6.71 billion for the quarter, up from \$594 million on revenue of \$6.72 billion last year. Adjusted to remove the effects of one-time costs, Duke earned \$1.46 per share, a nickel below what analysts had expected. The big reason: Mild summer weather reduced demand for air conditioning.</p> <p>THE OUTLOOK: Duke CEO Lynn Good said higher electric rates that were approved by regulators this year will be in full effect in the fourth quarter. That will give earnings a boost, she said, and help the company hit its profit target for the year.</p>	73.21\$
2013/12/30		69.11\$
2014/01/28	Just before the spill	69.92\$
2014/02/01	<p>EDEN, N.C. (AP) reported the following: A pipe under a coal ash pond broke in northern North Carolina, releasing an unknown amount of coal ash into the Dan River, Duke Energy Corp. said Monday. The pipe broke Sunday afternoon at the now-closed Dan River Steam Station in Eden, the utility said. The ash pond covers about 27 acres, and the dam holding the water in was not affected by the leak, officials said...Environmental groups, some of which have sued Duke Energy over 14 coal ash dump sites in North Carolina, sharply criticized the utility for waiting for a day before reporting the spill to the public and not immediately releasing information such as results of water quality tests on the river.</p>	
2014/02/06	Just after the spill	70.71\$
2014/02/13	<p>U.S. Attorney's Office Probing North Carolina Officials Following Coal Ash Spill Feb 13, 2014</p> <p>Federal authorities have initiated an investigation into the North Carolina Department of Environment and Natural Resources following last week's coal ash spill in the Dan River. The Associated Press first obtained a copy of a grand jury subpoena that the U.S. attorney's office in Raleigh issued requesting emails, memos and reports from the department dating back to 2010. The subpoena compels counsel for the DENR to appear before a grand jury March 18 to 20.</p> <p>DENR spokesman Drew Elliot would not comment on the subpoena in a statement to The Huffington Post, beyond stating that, "The Department of Environment and Natural Resources will cooperate in this matter."</p> <p>Pressure has increased on the state following the coal ash spill from a retired Duke Energy facility in Eden, N.C. Initial estimates put the spill at as much as 82,000 tons, but on Thursday Duke reduced its estimate to between 30,000 and 39,000 tons of coal ash. Environmental groups in the state say that, rather than enforcing environmental laws, the DENR has protected Duke for years -- thereby allowing a spill like this to happen.</p> <p>"It's about time someone took a hard look at the disturbingly cozy relationship ...," said Gabriel Wisniewski, energy campaign director at Greenpeace US. "The need for a federal investigation is sad, but not</p>	71.43\$

	<p>surprising."</p> <p>Duke has apologized for the spill and plugged the broken pipe that dumped the coal ash. And on Tuesday, North Carolina regulators sought to delay a settlement they had reached with the company over pollution from similar sites.</p> <p>The Waterkeeper Alliance and Yadkin Riverkeeper issued a statement Thursday saying that their independent testing of the Dan River showed that coal ash is still leaking into the river from a site about a third of a mile upstream from where the pipe broke. Duke Energy spokeswoman Lisa Hoffmann said that the area they tested is near a storm drain from another part of the plant and is "not associated with the ash basin."</p> <p>"Just to be certain we are conducting sampling and the EPA is conducting sampling as well" to determine whether there is anything leaking and they expect to have those results soon, she said.</p>	
2014/02/18	<p>Feb 18, 2014</p> <p>Duke earnings rise 58 pct in 4Q</p> <p>CHARLOTTE, N.C. (AP) — Duke Energy's fourth-quarter profit jumped 58% after rates were increased in the U.S. and a strong performance from some of its overseas operations. Net income at Duke's regulated utilities increased 22% to \$607 million thanks to the rate increases, as well as lower operating and maintenance expenses. Regulators last year approved rate hikes in North Carolina, South Carolina and Ohio. The fourth quarter of last year was the first quarter in which the company's new rates were in effect for the entire quarter. Weather also played had a role in the strong quarter.</p> <p>Net income from international operations rose 21% to \$108 million on greater energy volumes and pricing, along with lower costs related to its Brazilian operations. Duke Energy Corp., based in Charlotte, N.C., is the nation's largest electric utility. It serves 7.2 million customers in North Carolina, South Carolina, Florida, Indiana, Ohio and Kentucky. Duke earned \$688 million, or .97/share. That's up from \$435 million, or .62/share, in the same quarter the year before. Excluding one-time charges, the company posted net income of \$1 per share Tuesday, topping Wall Street expectations by a nickel.</p> <p>Revenue rose 8% to \$6.15 billion from \$5.67 billion in the year-ago period. Analysts expected \$6.48 billion.</p> <p>The results come a day after Duke announced plans to get out of the wholesale power-generation business in the Midwest because of volatility there.</p> <p>Buy the announcement followed a rejection by Ohio regulators of Duke's \$729 million rate-increase request. Duke's CEO had said the decision in that case could influence whether the company sold its generation business in the state. The company owns a stake in 11 power plants in Ohio and one each in Illinois and Pennsylvania.</p> <p>For the full-year 2013, Duke earned \$2.67 billion, or \$3.76 per share, up from \$1.78 billion, or \$3.07 per share, the year before. Revenue increased 25% to</p>	71.72\$

	<p>\$24.6 billion from \$19.62 billion. For 2014, the power provider expects to post an adjusted profit of \$4.45 to \$4.60 per share. Analysts expect a profit of \$4.57 per share. In premarket trading, Duke shares edged up 31 cents to \$71.76.</p>	
2014/02/26	<p>Common Creams Feb 26, 2014 4RALEIGH, N.C. (AP) — A team of academic researchers equipped with a drone estimates about 35 million gallons of coal ash and contaminated wastewater spilled into a North Carolina river earlier this month.</p> <p>Wake Forest University researchers released results Tuesday. The study used photos collected by the drone that flew over the Duke Energy coal ash dump that ruptured Feb. 2 in Eden. The scientists used images captured by the drone to create a digital three-dimensional model of the pit, allowing them to calculate the volume of toxic ash that flowed out when a pipe collapsed. The reported amount equals about 53 Olympic-sized swimming pools. An accurate calculation of the size of the spill could be key to determining the amount of whatever fines the company may be assessed for the spill.</p>	70.88\$
2014/02/28	<p><u>Violations issued against Duke for coal ash spill</u> Feb 28, 2014 RALEIGH, N.C. (AP) — North Carolina regulators issued notice to Duke Energy on Friday that the company will be cited for violating environmental standards in connection with a massive coal ash spill that coated 70 miles of the Dan River with toxic sludge. Two formal notices issued by the state Department of Environment and Natural Resources cite Duke for separate violations of wastewater and storm water regulations. The agency could levy fines against Duke for the violations, but the amounts have not yet been determined.</p> <p>The spill began Feb. 2 when an old storm water pipe running under a 27-acre coal ash dump at a Duke's Dan River Steam Station in Eden collapsed. It took the company nearly a week to fully plug the leak. State environmental Sec. John Skvarla, whose agency has been widely criticized in the wake of the spill, issued a brief statement: "These are violations of state and federal law, and we are holding the utility accountable." The violation notices were issued three days after The Associated Press filed a public records request for a copy of Duke's storm water permit for the Dan River plant, which the company was required to have to legally discharge rainwater draining from its property into the river.</p> <p>Such a permit may have required testing and inspections that could have given early warning something was wrong before the collapse. The agency responded that no such permit existed.</p> <p>In a written statement, spokeswoman Bridget Munger said the state had historically considered the storm water pipes at the plant to be part of the facility's wastewater permit covering discharges from the ash basins. State regulators had been talking with Duke since 2011 for the company to apply for the required storm water permit, but that issue had not been resolved by the time of the spill, she said. "Staff members in the department's storm water permitting unit have been working since that time with Duke Energy to develop a template for individual storm water permits for all of their facilities that have coal ash ponds," Munger said Wednesday. "Some progress has</p>	70.88\$

been made but there are still many issues to be resolved, including monitoring, parameters for testing and other requirements." Asked directly whether Duke was in violation of state and federal laws for not having the required storm

water permits, the agency refused to answer. It is not clear why the agency had not issued Duke notice it was in violation during the years before the spill.

After issuing a news release about the violations at 5 p.m. on Friday, agency communications director Drew Elliot said his staff had been too busy in recent days to respond to the AP's question. He said the final decision to issue the violations was not made until Friday morning.

Frank Holleman, a senior attorney for the Southern Environmental Law Center, expressed dismay that the state regulators had knowingly allowed Duke to operate without the required permit for years. "It is unbelievable that Duke would knowingly have discharges from these storm water pipes without a permit and that DENR would allow them to do it," Holleman said. "Someone needs to explain why this happened."

The second violation notice issued Friday was for failing to prevent the massive spill and exceeding state water-quality standards in the river, which tests showed had high levels of arsenic, lead and aluminum — metals contained in coal ash. Public health officials have advised people to avoid contact with the river water and to not eat fish. The notices of violation invite Duke to respond within 15 and 30 days with any information on why the company should not be issued fines.

Asked for comment Friday, Duke Energy spokeswoman Paige Sheehan responded: "We will reply to the state."

Amy Adams, a former state water-quality regulator who now works for the environmental group Appalachian Voices, said the violations come too late to help the Dan River. "This is protocol. It's just a piece of paper until and unless there is rigorous enforcement that follows," Adams said. "This would have been appropriate had the coal ash spill come as a surprise, but the fact that DENR and Duke Energy both knew full well and long ago of significant coal ash problems at all of the company's facilities, well, the phrase, 'too little, too late,' comes to mind."

Duke operates 14 sites across North Carolina that contain at least 32 coal ash dumps.

Word of the violations for the Dan River spill came as state regulators also expressed concern Friday about potentially contaminated water trickling from a storm water pipe at a different Duke coal ash dump, this time at the Cliffside Steam Station in Rutherford County. That pipe drains an emergency storm water basin built on top of an old coal ash dump, but is only supposed to drain water in severe storms. State officials said the corrugated metal pipe is heavily corroded and taking in groundwater, which is draining out at a rate of more than 1,100 gallons a day. Duke staff are sampling the potentially contaminated groundwater coming from the pipe for toxic metals associated with coal ash. The pipe empties into rocks a few feet from the Broad River, but the agency said there is no indication the flow has reached the waterway. It was not immediately clear whether Duke would be issued a

	notice of violation for that unpermitted discharge.	
2014/03/10	<p>Duke Energy to Customers: You Pay for Coal Ash Mess March 10, 2014 Energy Company may push cost of cleanup for its 14 coal ash sites onto North Carolina ratepayers - Andrea Germanos, Common Dreams</p> <p>Duke Energy's North Carolina customers should pay for the cleanup of its toxic coal ash ponds across the state. That's what the company's CEO, Lynn Good, said on Friday. Speaking to The Charlotte Observer after receiving the Business Woman of the Year award at Queens University of Charlotte, Good said that though the decision ultimately rests with a state regulatory board, she believes that removing the toxic sludge from its 14 sites around the state is "ultimately a part of our cost structure."</p> <p>"Does Duke expect customers [...] to pay for the closure of the ash ponds and the removal of the ash if you do that?" <i>The Charlotte Observer</i> asked Good. "We've taken responsibility for the spill and the cleanup of Dan River," Good responded. "Ash pond closure has been a plan for a very long time. We've had plans to close ash ponds, and because that ash was created over decades from generation of electricity we do believe that ash pond disposal costs are ultimately a part of our cost structure."</p> <p>Duke spokeswoman Paige Sheehan confirmed later on Friday the message that the company would try to push those costs onto ratepayers.</p> <p>Last week, a state judge ruled that Duke had to take immediate action to stop sources of groundwater contamination from the sites. Gov. Pat McCrory—who worked for Duke for almost 3 decades—issued the energy company a March 15 deadline to submit to the state its plan for the coal ash storing sites. The price tag for hauling out all this waste could be \$1 billion. "We can't comment or speculate as to what would be recoverable, and not be, until we see the specifics of a plan and what is required by state regulators," said Christopher Ayers, executive director of the Utilities Commission's Public Staff.</p> <p>David Robinson, a spokesperson with the Central Piedmont Group of the North Carolina Chapter of the Sierra Club, told Common Dreams that Good's comments may or may not represent her initial negotiating position to the Commission. What has been clear for years, though, Robinson said, is that Duke makes decisions "that will enhance returns to its stockholders over and above the damage it has done to the environment and the people of North Carolina." This track record made environmental groups in the area, including the Sierra Club, "bug Duke and the state Department of Environmental and Natural Resources for years." Yet Duke and the DENR have resisted doing anything about the coal ash problem for years, Robinson said.</p> <p>Duke's business model—one that relies on dirty, highly centralized energy, is "back in the dark ages," he said. But it's profitable, and with a board of directors representing the likes of construction companies and nuclear companies who profit from this model, of course Duke will resist moving towards decentralized, renewable energy, Robinson said.</p>	69.47\$

Environmental advocates have also said that Duke's February disaster when up to 35,000 tons of coal ash spewed into the Dan River highlights the need for better federal coal ash regulations for the many "ticking time bombs" across the nation. The disaster has also highlighted the close ties between industry and the North Carolina government.

The *New York Times* [reported](#):

Current and former state regulators said the [Department of Environment and Natural Resources], once among the most aggressive in the Southeast, has been transformed under Gov. Pat McCrory into a weak sentry that plays down science, has abandoned its regulatory role and suffers from politicized decision-making.

The episode is a huge embarrassment for Mr. McCrory, who worked at Duke Energy for 28 years and is a former mayor of Charlotte, where the company is based. And it has become another point of contention in North Carolina, where Republicans who took control of the General Assembly in 2011 and the governor's mansion last year have passed sweeping laws in line with conservative principles. They have affected voting rights and unemployment benefits, as well as what Republicans called "job-killing" environmental regulations, which have received less notice.

Critics say the accident, the third-largest coal ash spill on record, is inextricably linked to the state's new environmental politics and reflects an enforcement agency led by a secretary who suggested that oil was a renewable resource and an assistant secretary who, as a state lawmaker, drew a bull's-eye on a window in his office framing the environmental agency's headquarters.

In 2013, Duke Energy made [\\$2.7 billion in profits](#), while a recent study [showed](#) that it was among 26 Fortune 500 companies that paid no federal corporate taxes over the past five years.

Virginia Officials Look For Long-Term Damage From North Carolina Coal Ash Spill March 10, 2014

RICHMOND, Va. (AP) — Virginia is examining any potential long-term environmental damage from a North Carolina coal ash spill on the Dan River and will hold Duke Energy "fully accountable" if any is found, the director of the Virginia Department of Environmental Quality said Monday. The department said sampling of public drinking supplies in Danville and South Boston have met or exceeded state and federal standards. The department now is turning to additional monitoring of water supplies and aquatic life to assess any damage over a period of several years.

The news from Director David K. Paylor was welcomed in Southside, a section of the state where the Dan River meanders along the North Carolina-Virginia state line and is a source of drinking water for Danville and South Boston. Andrew Lester, executive director of the Roanoke River Basin Association,

	<p>said while the river has shed the visible pollution of the Feb. 2 spill, mollusks and other marine life have washed up on the banks of the river since then.</p> <p>"We don't know what that's coming from. We don't know if the ash is killing them or something else is going on," he said. "It's unusual to see."</p> <p>The environmental department said its long-term monitoring with the federal government includes bottom-dwelling organisms that are part of the food chain. Bald eagles are among the many species that are part of that chain.</p> <p>The monitoring will also seek to identify so-called heavy metals linked to the spill accumulated in fish tissue. Coal ash contains hazardous chemicals that include arsenic, lead and mercury. The results of that testing is expected soonThe spill occurred in Eden, N.C., about 10 miles from Virginia, when a storm-water pipe running beneath a 27-acre coal ash dump collapsed. The spill coated 70 miles of the Dan River with a toxic gray sludge. Paylor said the Virginia monitoring is aimed at ensuring the long-term health of the Dan River following the Eden spill. "We intend to hold Duke Energy fully accountable," he said in a statement. "It is likely that several years of monitoring will be required and we want to ensure that people and the environment remain protected."...Lester said local officials simply don't know all the implications of the spill....</p>	
<p>2014/03/12</p>	<p><u>Emails show close ties between Duke, NC regulators</u> March 12, 2014</p> <p>RALEIGH, N.C. (AP) — Internal emails between staff at North Carolina's environmental agency suggest state regulators were coordinating with Duke Energy before intervening in efforts by citizens groups trying to sue the company over groundwater pollution leeching from its coal ash dumps.</p> <p>The emails were provided Thursday to The Associated Press by the Southern Environmental Law Center, which had filed notice in January 2013 of its intent to sue the nation's largest electricity company under the Clean Water Act.</p> <p>Within days, the emails show a Duke lobbyist contacted the N.C. Department of Environment and Natural Resources to set up a meeting. The emails suggest the company and regulators were in frequent contact, with a lawyer for Duke even advising the state on legal strategy at one point. At the time, lawyers for the environmental law center were worried that Duke and state regulators would work out a deal without any input from the citizens groups. They told the state that the groups couldn't legally be blocked from participating.</p> <p>But in an April 30, 2013 email, Duke lawyer Charles Case tried to find a case law that could be used by the state's lawyers to convince a judge otherwise. The email with a copy of an old case attached was forwarded by Special Deputy Attorney General Kathy Cooper to Lacy Presnell, the top lawyer at the state environmental agency, on May 15. Cooper had been assigned to represent the state in the lawsuit. "Mr. Presnell asked during our meeting for an example of participation by an intervenor on a non-party basis," Case</p>	<p>70.36\$</p>

wrote, adding that he looked forward to speaking with the state officials in an upcoming meeting.

On July 3, a transcript shows Cooper went before Wake County Judge Paul Ridgeway and argued that the citizens groups should be excluded from the legal proceedings. Ridgeway allowed the groups to be heard. "They tried to keep us from being full parties in the case," said Frank Holleman, a senior attorney for the law center. "Duke is the lawbreaker. DENR is the law enforcement agency. They are supposed to be protecting the people. Instead, they are working with the lawbreaker to find a way to limit the participation of the citizens groups in the law enforcement proceedings in the way that will benefit the lawbreaker. It's astonishing."

The agency used its authority to intervene in the citizen lawsuit, quickly negotiating a proposal where the \$50 billion company would pay a \$99,100 fine to settle environmental violations but be under no requirement to actually clean up its pollution.

Environmentalists have derided the proposal as a "sweetheart deal" by compliant state regulators to shield Duke from far harsher and more expensive penalties the company would have likely faced had the citizens groups been allowed to move forward in federal court.

That proposed settlement was tabled last month after a massive spill from a Duke dump in Eden that coated 70 miles of the Dan River in toxic gray sludge. Coal ash contains a witch's brew of dangerous chemicals, including arsenic, lead, mercury and selenium. Duke spokeswoman Paige Sheehan said Thursday that the company wouldn't comment on the "content of any specific emails." In a letter this week to state regulators and Gov. Pat McCrory, Duke President Lynn Good said it would take the company at least two years to clean up the Eden dump. She said the company will move its remaining ash away from the river to either a lined landfill or a "lined structural fill solution."

Good said the company will be responsible for the disaster, though it is not clear how the miles of contaminated river bottom might be restored or how long that might take. Public health officials have advised people to avoid contact with the water in the Dan and not to eat the fish. Good said the company will also move ash dumps in the Asheville and Charlotte area, and are looking at options for the Sutton pits near Wilmington. She said the company will continue to work on long-range plans for 11 other sites where the company has leaky unlined ash pits.

But state environmental Secretary John Skvarla on Thursday called the plan inadequate, saying he wanted more answers from Duke. Federal prosecutors have launched a criminal investigation in the wake of the spill, issuing at least 23 grand jury subpoenas to Duke executives and state officials. The first batch of subpoenas was issued the day after an AP story raised questions last month about whether North Carolina regulators had helped shield Duke from a coalition of environmental groups that wanted to sue under the U.S. Clean Water Act to force the company to clean up its coal ash pollution. Among the items subpoenaed are all communications between the state agency and Duke regarding the lawsuits.

	<p>Skvarla and McCrory, a Republican who worked for Duke Energy for more than 28 years before retiring to campaign for the state's highest elected post, have bristled at suggestions they were acting to benefit Duke.</p> <p>"Any allegation that DENR and Duke got together and made some smoky back-room deal with a nominal fine is just absolutely not true," Skvarla said last month.</p> <p>The nonprofit law center first filed notice of intent to sue Duke over groundwater contamination on Jan. 24, 2013. Under federal law, the lawsuit could proceed if the state did not take enforcement action within 60 days. George Everett, the director of environmental and legislative affairs for Duke Energy, wrote a message the following week to Presnell. Everett says he wants to "preview" a private meeting between Duke and state regulators scheduled for later that month.</p> <p>Following that meeting, Cooper emailed a draft copy of the state's enforcement action against Duke to Debra Watts, supervisor of the groundwater protection unit. Cooper tells Watts she needs to check with Presnell about "how Duke wants to be sued" — referring to her uncertainty about which of the company's corporate names should be on the documents. Duke had merged with its primary in-state rival, Progress Energy, the prior year.</p> <p>Agency spokesman Jamie Kritzer denied the emails showed evidence of collusion between state officials and Duke. He also tried to distance the agency from the lawsuits filed on its behalf, noting that many of the email exchanges included a lawyer from the office of Attorney General Roy Cooper, a Democrat who is expected to run against McCrory for governor in 2016. Kathy Cooper is not related to Roy Cooper.</p> <p>"Attorney General Roy Cooper, through special deputy attorneys with his office, filed these actions against Duke Energy only after DENR requested the suits be filed," Kritzer said. "The Attorney General's Office was extensively involved and, with the assistance of technical experts within DENR, played an active role in preparing all of the lawsuits."</p>	
2014/03/18		70.24\$
2014/03/19		66.71\$
2014/03/20		69.17\$
2014/03/24		66.93

<http://www.bloomberg.com/quote/DUK:US>

One thing that is surprising, that the sudden exposure to a potential liability as big as last year's net income doesn't seem to concern the shareholders. I will leave it to the reader to consider the implications of this observation.