Mac Quarterly Newsletter

Municipal Advisory Council of Michigan **SPRING 2011**

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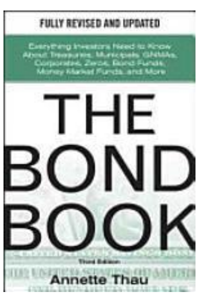
The Ripple Effect: Water Risk in the Municipal Bond Market

Water powers our economy. The mechanical energy it provides creates electricity. It is also used elsewhere — as part of a framework for special services we depend on. Public water delivers more than 80% of the nation's supply to residential and industrial consumers and today water scarcity is a real concern. If the extreme droughts we've seen recently are combined with increased demand for a resource that seems to be growing more scarce, you have a recipe for problems down the road.

What happens to utilities that depend on water when there is more competition for the scarce resource? How might analyst ratings be affected in that sector? In the report *The Ripple Effect: Water Risk in the Municipal Bond Market*, Ceres author Sharlene Leurig writes "...ratings take little account of utilities' vulnerability to increased water competition, nor do they account for climate change, which in many areas is rendering utility assets obsolete. "

See **Page 5** ***Water is Scarce***



BOOK REVIEW

The Bond Book
by Annette Thau
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Information for all.

PA 4 Emergency Management

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EPA Regulations & Coal: Public Power Analyst Ratings

How will federal environmental legislation affect the public power sector next year? Ratings agencies, among them Fitch Ratings, have issued reports aimed at evaluating the public power sector and the impact legislative and regulatory initiatives will have over the next few years. They give public power a stable outlook over the next year, but as new regulations roll out there is some concern from both analysts and utility industry professionals alike about whether the cost of complying with new rules will force plant closures or if necessary upgrades to existing equipment can be justified based on ability to recoup some investment costs from consumers while absorbing the remainder.

Many factors can and do affect analyst credit ratings in the power sector and how new environmental regulations which seem destined to force some power generator retirements will impact regions of the U.S., will partly depend on the generation mix primarily used in a particular geographic zone. Factors analysts also consider include the cost of adding renewable "greener" energy sources, what generators are slated for possible retirement in the future, how easily rates can be adjusted at generator plants that stay in operation, and what current levels of debt and leverage are, for example.

EPA: Good Carbon Bad Carbon

The Environmental Protection Agency has begun to develop greenhouse-gas emission regulations after declaring certain carbon emissions "a threat to public health." And the regulations will have a direct impact on coal supplies — the primary source of electricity in the Midwest. Mark Crisson, the president and chief executive officer of the American Public Power Association said compliance isn't the prevailing concern noting that he's in favor of evaluating all alternative energy sources — including solar, wind and natural gas. Rather, "It's the proposed rollout of changes and the consequences associated with implementation that are the real issue — and there are unanswered questions about what impact regulations might have down the road, " he said.

The Midwest gets over 70% of its power from coal. According to the Fitch Ratings report, *Time to Retire? U.S. Coal Plants in Environmental Crosshairs,* a full 51 gigawatts (GW) of coal capacity in 37 states comes from units smaller than 200 megawatts (MWs.) About one-third, 17 GWs comes from five Midwest states including Michigan, Illinois, Indiana, Ohio and Pennsylvania. In Michigan alone about 3.7GW of capacity is at risk for retirement.

Retrofit and Recoup or Retire

To meet new EPA regulations many plants in the Midwest — including Michigan, will require retrofitting to meet compliance regulations and it might prove cost prohibitive for older and smaller plants. And cost is just part of the problem. For those with a business case in favor of upgrading, getting access to the capital required to make the retrofits presents another hurdle, depending on whether a utility is investor-owned (IOU), a public power utility or merchant power company.

"Vertically integrated IOUs and public power utilities, have historically had very good access to capital markets," said Bhala Mehendale, one of the Fitch Ratings report authors. "But merchant generators tend to have less access to capital and lower willingness to make such investments," he added.

Even if capital is accessible, some generators will be better able to recoup costs associated with complying with new regulations than others. A lot depends on the category of coal plant in operation. And there are several types operating in the U.S. today. In deregulated markets there are merchant coal plants. There are also municipal and electric cooperative owners of coal-fired generation — and these typically have "more local control over rate setting" the Fitch report said, when compared to merchant plants at the "local" level which is beneficial because they more easily can recover at least a portion of the costs associated with meeting new environmental rules.

What are the upgrades?

If a unit does not retire its facility, compliance with EPA rules will require that they install scrubbers, cooling towers and SCRs — the term commonly used in the power industry for selective catalytic reduction, a method of converting nitrogen oxides into diatomic nitrogen and water. APPA's Crisson said, "And many plants over 30 years old probably have not installed this equipment. It's expensive."

The Brattle Group in their own study estimated compliance costs of up to $180 billion associated with new regulations for approximately 50GW of coal plant capacity their report said was at risk for retirement.

Most industry studies suggest that only older and smaller coal plants will be retired or are at increased risk for retirement, but Dr. Metin Celebi in a webinar titled Potential Coal Plant Retirements Under Emerging Environmental Regulations said, " ...one-third of retirements will be from plants with less than 40 years of service and larger than 500 MW, resulting in significant challenges for the coal industry as a whole if the EPA regulations pass as expected."

APPA's Crisson said he believes, "Plants under 300 to 400 megawatts are more vulnerable because they are older, "noting that up to 20% of the coal fleet nationwide could be at risk. He also said that it's not a concern for everyone because some regions of the country aren't impacted like the Midwest and still other regions have different priorities. Citing the New England area as an example, he said, "There are some states that believe our coal infects their air."

Industry professionals are all asking the same questions. How will coal production be affected by changes in production? Who will ultimately pay for required upgrades and what part of the cost can consumers be asked to absorb? What happens if coal plants shut down because complying with the new regulations proves overly expensive? What are alternative sources of energy that can substitute for coal and still perform (and meet demand) as reliably?

Gas? Nuclear? Wind? Solar? Where Do We Turn?

Mehendale said their at-risk capacity is concentrated in the western PJM[1] and eastern MISO[2] regions and they believe "natural gas appears to be the fastest in terms of construction time and cleanest substitute for coal." The Brattle Group study estimated that through retirements and increased usage costs, coal demand should ultimately drop by 15% in 2020 with natural gas expected to replace it — fueling a possible 10% increase in natural gas demand. Crisson added, "Nuclear and coal supply currently the base load power for the industry while other sources can handle peak loads. And while natural gas is appealing, there are deliverability and price issues associated with it." In light of recent events in Japan and the nuclear radiation aftermath support for nuclear might now be wavering though many consider it a stable and reliable power supply.

Even if renewables play a bigger role, Mehendale said, "Intermittent resources like wind and solar would need to be backed up by quick start gas units in order to maintain reliability in case of a sudden drop in wind speed or increase in cloud cover." He sees nuclear as another possible energy substitute, but capital costs, licensing requirements, long construction schedules and recent events in Japan make it an unlikely candidate to substitute for coal in the Midwest.

Crisson supports an energy "portfolio" — he's for diversification but admits every option has limits. "Renewables are variable [energy sources] and there are integration issues," he said. "Take wind for example. It often blows well at night and that's when loads are lowest. It blows at the wrong time." Also a proponent of solar to supplement — not supplant current power sources, he said, "Solar has tremendous potential — though it too isn't available everywhere." So, he advised caution recognizing the importance of "balancing the environmental, operational and economic impact of what we are doing." Different parts of the country have different priorities. Some regions favor natural gas and others nuclear.

In the Midwest coal remains a major player — but new EPA regulations could tilt the "power" scale in a different direction.

Only recently has Congress put real effort toward "power plant planning." Not known for their expertise in the clean energy arena some have commented off the record that government involvement, specifically by Congress, doesn't necessarily lend itself to a "best of all worlds" outcome. A United States energy policy has been absent much of the last 30 to 40 years, and sudden interest has industry professionals very concerned about the consequences of any legislative actions.

Crisson said, "We're for a clean environment but implementation and its impact is an issue." He suggested a cautious approach and asked, "Can we phase in changes and evaluate the impact over time?" Commenting on the Clean Air Act he said, "It does not focus on grid reliability — the spotlight seems to be only on implementation."

And grid reliability is a serious issue that must be dealt with. Crisson also sees more need for "incentives for nuclear and a more thorough look at renewables because they are not all created equal." Different parts of the country view one energy source more advantageous to pursue than another and it varies region to region.

He'd like to see more production tax credits too — like the Treasury 1603 Grant Authority. [See US Treasury 1603 Information for more information]. "Currently public power cannot take advantage of those incentives. Clean renewable bonds would level the playing field a bit," he said. He also supports more incentives for energy efficiency.

The first week of April the Senate is slated to vote on a measure to block the EPA's regulations intended to address greenhouse gas emissions, such as carbon dioxide.

An amendment pushed by Senator Mitch McConnell would attempt to limit the scope of the legislation and is based on other legislation proposed by Representatives Upton and Whitfield in the House. House legislation is slated for a vote mid to late April.

McConnell in response to a question about the proposed EPA rules, said they would, "raise the price of everything from electricity, gasoline, fertilizer, to the food we eat…"

Other rules from the EPA that will impact consumers and the utility sector:

- **Clean Air Transport Rule from 2010.** This rule targets 180 coal-fired power plants across 31 eastern states and the District of Columbia. "Downwind" areas whose air quality is compromised by power plants to their west must meet federal standards. By 2014, the EPA claims when combined with other state and federal measures the new ruling should/will reduce power plant sulfur dioxide emissions 71 percent and nitrogen oxides emissions 52 percent from levels seen in 2005.

- **Cooling water intake requirements.** Water is pulled from lakes and rivers into power plants and then used to cool generating equipment. Under the federal Clean Water Act there are specific standards cooling structures must meet, requiring plant operators to use "best available technology" to protect the environment. Some older coal facilities might not be able to install the equipment due to space limitations.

- **Coal ash debate.** Fly ash and other residues produced by coal-fired power plants, should be disposed of responsibly. The EPA would like to designate the 130 million tons of coal combustion byproducts a " hazardous waste." What does it mean? The cost: billions. And recycling will be more difficult.

[1]PJM Interconnection is a regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia, an area that includes more than 51 million people.

[2]States covered: All or most of North Dakota, South Dakota, Nebraska, Minnesota, Iowa, Wisconsin, Illinois, Indiana, Michigan and parts of Montana, Missouri, Kentucky, and Ohio. Midwest ISO (MISO) (established 2002) administers a two-settlement (day ahead and real-time) energy market known as the Day-2 market. It produces hourly locational marginal prices that are rolled up into 5 regional hub prices. MISO also administers a monthly financial transmission rights (FTR) allocation and auction.

WATER IS SCARCE - From Page 1

Without planning and adequate investment in conservatism increasing population growth and higher per capita water use in certain areas, Los Angelos for example, will account for a 48% increase in U.S water use over levels seen in 2005, by the time 2030 arrives, the report states.

It also highlights areas in the country where there is currently a short water supply, for example the Red River Basin, which separates Oklahoma from north Texas. Current water use there is outstripping local supplies. And this forces Texas water utilities to look "north of the border" and purchase supplies from Red River tributaries. Now Oklahoma legislators are worried; and wanting to protect their own supplies.

When there is an increase in population, there is an increase in energy use and electric power plants account for 41% of freshwater withdrawals in the U.S. today. Cooling power plant equipment causes some of the increased demand too. And some energy gets consumed just getting water where it needs to go — even delivery and wastewater treatment/services require power.

To meet demand requirements, many western cities are beginning to look at bond financing as a method of raising capital. Drought is a persistent demon in certain parts of the U.S., in fact many regions can be affected, and not just states out west. Droughts exist in the southeast U.S. too but thankfully Michigan has seen a rise in precipitation — as shown graphically in the report and is not impacted to the degree that other states are.

The issue gets more serious when persistent reductions in water flows impact infrastructure making it obsolete and result in new demands for upgrades — we start to see unanticipated capital costs grow.

Keep in mind: when you hear discussion about intake systems for water, those intake systems are fixed at a depth. What happens when the table falls below that depth — water is suddenly "out of reach." And a rebuild is costly.

Beyond drought, in the future there will be contamination (water) and climate changes that the U.S. will need to deal with on a larger scale too. And government regulations will also pose costly problems municipalities will be expected to address.

Though perhaps not today, eventually, many public utilities will need to increase their debt burden in an effort to pay for investments in system upgrades. It's one way to address water supply concerns.

There will probably also be more need for investigations into water risk disclosure and management practices within public utilities the report says.

Water is a necessary resource and since 80% of the U.S. population relies on it almost daily, utilities stand a better chance of recouping investment costs because they have a ready "demand" market for their products and services. Eventually even the strongest of pipes will leak and dams will break, necessitating repairs. And the Ceres report says that over the next 5 years large water systems will see a 40% increase in long-term debt, and mid-size systems will see a 50% increase. And this does not even address what might be required if we are to adequately handle additional volatility in supplies due to mother nature's actions.

Concerns stressed in the report include the fact that many states facing water shortages currently charge very low rates for water — so supply does not match rates paid. Other factors noted are concerns about erosion of future debt capacity — ratio of revenues to debt service expenses.

The report also discusses water's impact on electric power plants — public power and cooperatives and in the end makes several recommendations for utilities, underwriters, investors and rating agencies. Chief among them for bond underwriters — "assist utilities in disclosing sensitivity to water stress and plans for mitigating risk." And "help to secure competitive cost of capital for utilities managing water risk." The report suggests that rating agencies consider factoring water intensity into the rating opinions given for electric utilities.

Read the entire report here: CERES - RIPPLE EFFECT - WATER IS SCARCE.

Ceres (pronounced "series") is a national network of investors, environmental organizations and other public interest groups working with companies and investors to address sustainability challenges such as global climate change. Visit www.Ceres.org to learn more.

Public Act 4 & Emergency Management

The Michigan legislature recently passed House Bill 4214 — Public Act 4, which replaces Public Act 72.

Public Act 4 of 2011 is also known as the Local Government and School District Fiscal Accountability Act. It's the statute authorizing state officials to intervene in local governments when there is evidence of severe fiscal strain or a state of financial emergency. The act applies to local and municipal governments where "municipal" might refer to a city, village or township for example — or even a county.

A total of 18 conditions can "trigger" the Act including requests from unpaid creditors for monies in excess of $10,000 — or one percent of the annual general fund budget, taxes in arrears and the like. A complete list is available for review at the Michigan State Government website (FAQs on PA 4.)

The new Act outlines the steps in a financial emergency. It is not too dissimilar to Act 72, which it replaces but gives emergency financial managers more "say" in how to implement a turn-around within a distressed municipality. In essence, "it puts the emergency financial manager in a stronger position of authority, giving the individual power more like what a chief executive officer might have within a corporation, when compared to a chief operating officer," explained Dr. Eric Scorsone, of the State and Local Government Program Department of Agricultural, Food and Resource Economics at Michigan State University.

Within PA 4, the emergency manager has broader authority to modify contracts and to reject them. Some argue this raises constitutional questions because the United States Constitution cannot "impair contracts." A good example is pensions: In Michigan pensions are guaranteed within the constitution for state employees. Healthcare and other benefits might not be so protected, nor existing wages and benefits under the new Public Act 4 rules.

"The goal," said Scorsone, "is to allow the emergency manager broad latitude when appointed — more authority over finances. We want to keep the state out of it, if possible, but to do that, the [emergency] manager needs more control over operations."

Some of the changes evaluated during proceedings included a consent agreement, whereby the governor could argue against bringing in an EFM and instead sign a contract with local officials — a contract with parties agreeing to comply with a list of steps aimed at turning around a distressed local government. It's considered an intermediate step, prior to bringing in an EFM, an opportunity for "locals to take control and work on the problem themselves," said Michael McGee, principal at Miller Canfield Paddock & Stone PLC.

Nobody wants circumstances to become so dire that a manager is necessary. A community can enter into an agreement with the Department of Treasury and exercise some of the powers within the Act," explained McGee. Perhaps "communities will get involved sooner," said McGee, "because the later you try the harder it will be." The emergency manager is considered a "final step" in a downward spiral of fiscal unsoundness — one everyone hopes to avoid.

Scorsone acknowledges that Michigan is in a state of fiscal stress. And the federal government cannot interfere with local governments [states], so "we must figure out how to fix it in the long run," he said, adding, "There's an acute crisis. And the answers are different depending on the specifics of each situation. In an economic decline the problem is not fixable overnight. There is a lack of jobs and a direct result is fiscal stress. So how do we go about fixing it?" PA 4 is one solution.

McGee said the bill addresses some known weaknesses in the prior bill that many EFMs had complained about. EFMs have always had "some power but it was not so clear that existing officers did *not* have powers," he explained. "Most lawsuits filed against Public Act 72 were brought against managers. Someone on a council or a board of trustees, or perhaps even a mayor would argue that they had authority under the law and would compete with the EFM on who had the final decision-making authority." Under the new Act, the EFM role is clearly defined — with the title emergency manager replacing *financial* manager and the scope of authority painted with a broader brush. The emergency manager is in charge when appointed and authority supersedes that of a mayor or other official — elected or otherwise.

Many specialists were involved in drafting PA 4 verbiage, including McGee, Scorsone, labor attorneys, finance directors and members of the Michigan Government Finance Officers Association. Robert Daddow Deputy Oakland County Executive is credited with providing a "blueprint" for the bill's draft — "he wrote a white paper for a transition team" explained McGee.

Continued Next Page

The STEPS:

Summary of Local Government and School District Fiscal Accountability Act Process continued on next page

1) If at least one condition that indicates probable financial stress in a local unit of government exists, the State Financial Authority (SFA) can perform a review — after notifying the local unit.
2) Within 30 days of the review's start, the SFA must decide whether or not there is probably financial stress and notify the governor.
3) The governor must put in place a review team if there is financial stress. There are specific members appointed to the review team as summarized on the Michigan state website.
4) Within 60 days of team appointment, the team must notify the governor of the state of stress: whether it is likely to occur, whether conditions already exist and the severity of any financial stress they deem present — mild or severe — or in need of emergency management. Specific steps are outlined for each level of severity.

There are now plans underway to hold a national conference on "municipality stress" in the future and the hope is to have professionals from neighboring states, and outside the Midwest — including the Rust Belt, in attendance.

The Bond Book
by Annette Thau

The year 2008 was memorable but not for anything good, most will agree. As events in the world markets unfolded, many investors were left a bit shaken by the experience. But from the tumult a great learning opportunity arose and one author seized upon that opportunity: Annette Thau, who wrote *The Bond Book.* She had already planned to update the book to reflect the most current market information before the market collapsed in 2008. But afterward, she saw a more pressing need and soon began work on the third edition.

Do you want to learn the ins and outs of fixed income investing? Then this is the book for you.

Thau said that her primary target audience is the individual investor, but just about anyone will find it a good book to have on the shelf. The book discusses GNMAs, municipals, treasuries, in short — everything you want to know about bonds. Some firms such as Vanguard consider it a handy desk reference for new employees.

The book offers both neophyte and professional investors ample information about everything from portfolio diversification to "credit and interest rate risk," and a large section of the book is devoted to bond funds and the difference between buying an individual bond versus a bond fund. The advantage of buying individual bonds is that when a bond matures an investor gets back principal in full no matter what has happened to interest rates. But for bond funds there is no way to predict the value at any time in the future, she explained. "In the book, I describe risk factors for bond funds, and those are explained in the context of historical returns of these funds," Thau added.

What bonds are safe? What should you look for in the emerging market sector? What are BABs, Build America Bonds? Thau tackles these questions and much more. She talks straight "to" the reader using a no-nonsense style many will find refreshing — a welcome change from some of the dull and more complicated bond texts written by other revered professionals.

The Bond Book is both timely and timeless, in the sense that it provides readers with what they need to know to navigate today's bond market, but at the same time, guides in a way that will benefit readers far into the future. Thau saw a need to update the text because "So many things in the market have changed," she said adding, "Much more information is available online via the Internet today, A number of websites free to the public — including Investinginbonds.com; EMMA and FINRA.org/market data now provide pricing data and bond information that in prior years was available only to brokers.

How do you wade through large amounts of information to glean the "morsels" you'll want and need to weigh and understand before purchasing or selling a bond? Thau will show you but smartly cautions, "Never buy what you don't understand. Do your research. It's critical if you are going to understand risk." She follows her own advice and she says that it has served her well for decades.

Here are just some of the topics covered in the text: yield, call risk, junk bonds, duration, bond ratings, premiums and discounts, bond mutual funds, closed end funds, bond ETFs, and tax issues buyers should know about. There are many more.

Thau has added a list of questions to ask a broker before buying bonds or bond funds. These are added at the end of most chapters. She also stresses that it is important to understand where the revenues to pay debt service on the bond originate. For example, for municipal bonds, if the bond is a general obligation bond, the source of revenue is the taxing power of the entity issuing the bond; for a revenue bond, such as a toll road, the source of revenue is the tolls paid by users of the road. She drove home the point: sources of revenue should be clear to the investor. Again, if you don't understand it, don't buy it.

Are you pressed for time, or interested in specific topics covered in the book? Thau suggests that everyone who buys the book read the introductory chapters, five in all. Those explain how the bond market works, how it differs from the stock market, and the risks unique to this market. Then if you're feeling a bit impatient, dive in and read the remaining chapters which deal with individual securities; and with bond funds. These can be read on a stand-alone basis. I read a friend's copy and suggest the following: read the entire book. It's informative, to the point, and definitely eye-opening. Trust me, it won't disappoint.

Click on THE BOND BOOK by Annette Thau to learn more. It's available at www.Amazon.com and www.BarnesandNoble.com.

Annette Thau, Ph.D., is a former municipal bond analyst for Chase Manhattan Bank. She earned her Ph.D. from Columbia University and has received numerous awards, including a Woodrow Wilson Fellowship, a National Endowment for the Humanities Fellowship for Younger Humanists, and University Fellowships from Columbia University. She lives with her husband in New Jersey.

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