



MONTHLY ISSUE BRIEF

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Clean Fuel, Dirty Water: The Debate Over MTBE and Implications for the Northeast

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Overview

The highly publicized U.S. Energy Bill, which stalled in the Senate in late 2003, divided members among party and regional lines. The major roadblock was a provision that would grant producers of methyl tertiary butyl ether (MTBE) immunity from product liability lawsuits. MTBE, a chemical additive used to make gasoline burn cleaner, is a suspected carcinogen that has been found to contaminate groundwater.

This issue has taken center stage among Northeast lawmakers. Several senators, both Republicans and Democrats from the region, opposed liability protection for MTBE manufacturers because of the cleanup costs it could impose on state and local governments and taxpayers. The Energy Bill provision would have nullified lawsuits filed after September 5, 2003.



How did MTBE, which is used to help fuel burn cleaner in polluted areas, become the center of the administration's energy bill debate? The answer is threefold:

- **Groundwater Contamination:** The use of MTBE has resulted in its detection in drinking water. Between 5% and 10% of drinking water supplies in high oxygenate areas show traceable amounts of MTBE according to the Environmental Protection Agency (EPA). As part of the energy bill, producers of the additive would gain immunity from product liability lawsuits while the substance would be banned nationwide as of 2015.
- **Lawsuits Against MTBE Manufacturers:** The MTBE liability protection was a priority of Rep. Tom DeLay, the House majority leader, and other lawmakers from Texas and Louisiana, where MTBE is produced. Currently, several states in the ERC region have active lawsuits against MTBE manufacturers. There is uncertainty over whether the "safe harbor" would preclude lawsuits against those found responsible for gasoline filled with MTBE leaking into water supplies, or whether

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it would protect against suits claiming MTBE itself was a defective product. The National Petrochemical and Refiners Association (NPRA), which represents over 450 petrochemical companies, feels that the liability shield is justified because the use of MTBE was essentially mandated by Congress through the Clean Air Act.

No one should be penalized for obeying the law. Yet this is the position in which refiners and petrochemical producers find themselves because of these liability suits. It is only fair that any fuel producer who responds to a congressional mandate for use of a product be protected against legal action based solely upon production or use of the mandated product.
- Testimony of Bob Slaughter, President of NPRA, before the Senate Committee on Environment & Public Works - March 20, 2003

■ **Ethanol:** Produced from corn, ethanol, which is biodegradable and domestically made, provides many of the same air quality benefits of MTBE when added to gasoline. When the Clean Air Act mandated using an oxygenate in smog-prone areas, the high cost of ethanol production and shipping it to the Northeast from the Midwest, where it is produced, made MTBE a more attractive choice. Recently, however, authors of the energy bill agreed to double the use of ethanol as a gasoline additive instead of MTBE, a provision viewed as essential to building political support among farm state legislators. In addition, the ethanol provision in the bill contains liability protection for refiners that blend gasoline

State Drinking Water Regulations (EPA)
(Maximum MTBE permissible, parts per billion)
<http://www.epa.gov/swerust1/mtbe/mtbemap.pdf>

Connecticut	70ppb
Delaware	10ppb
Maine	35ppb
Massachusetts	70ppb
Maine	35ppb
New Hampshire	13ppb
New Jersey	70ppb
New York	50ppb
Pennsylvania	20ppb
Rhode Island	40ppb
Vermont	40ppb

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Background on the Connecticut and New York MTBE Bans

At the start of the 2004, several states, including New York and Connecticut, enacted bans on MTBE. Instead, reformulated gasoline (RFG), sold in these states, will contain ethanol. While the switch comes in response to cases of groundwater contamination from MTBE, the costs and benefits of the alternative, ethanol, are still being vigorously debated.

Banning MTBE on the federal level is also a hotly contested issue. Some members of Congress feel MTBE should remain the oxygen additive in gasoline, as long as the storage systems that have caused the leaks are fixed. Senator James M. Inhofe (OK) said in congressional testimony, "If we fix the tanks (UST) and thereby improve the handling of gasoline, it makes no sense to then ban a single fuel additive among the many gasoline components that may leak... if these tanks are not improved, we could start to find ethanol in our water as a result of the ethanol mandate."

Despite such arguments, New York and Connecticut still felt compelled to make the switch. Studies have shown that MTBE is detected in water roughly five times more often and at higher concentrations in areas of the country where RFG is sold. In 1999, the EPA Blue Ribbon Panel on Oxygenate Additives recommended that, in order to minimize threats to drinking water, the use of MTBE should be reduced substantially.

"New York could no longer sit on the sidelines and wait for further proof of the dangers of MTBE... while the original intent was laudable, MTBE has proven to be an ineffective failure. This new law is a significant step toward protecting New York's ground water," said NY Senator Carl L. Marcellino, Chairman of the Senate Environmental Conservation Committee and former ERC Co-Chairman.

Some environmental advocacy groups believe that neither MTBE nor ethanol should be used in gasoline since both present a host of potential problems. The Clean Air Act provides states the right to request a waiver if it can be demonstrated that the provision would otherwise interfere with the state's ability to achieve desired clean air targets. New York requested a waiver from the EPA, but was denied. While the EPA feels that an oxygenate remains necessary, Senators Chuck Schumer (NY) and Diane Feinstein (CA) believe the administrations' decision was largely influenced by ethanol industry lobbyists.

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with ethanol, a stipulation important to MTBE manufacturers. Environmentalists urged lawmakers to reject liability protection for gasoline blends containing either MTBE or ethanol.

(See Sidebar for more information on ethanol)

Issues for State Officials

Like federal officials, state and local lawmakers are in the midst of an oxygenate debate. They are faced with the unusual tension between public health and environmental protection posed by MTBE. The use of the additive creates a paradox - while it helps gasoline burn cleaner, it often leaks into ground water from storage tanks where it easily dissolves, is hard to remove, and becomes potentially cancer-causing.

Health Risks: Serious or Inflated?

In 1990, Congress ordered efforts to increase the oxygen content of gasoline to improve engine efficiency and reduce air pollution. This mandate led to increased MTBE production. According to the EPA, MTBE is produced almost exclusively as a fuel additive in gasoline which is sold at the pump as reformulated gas (RFG).

The use of RFG has reduced automobile emissions that contribute to smog, carbon monoxide, haze, acid deposition, and toxic problems in the region. A study by the Northeast States for Coordinated Air Use Management (NESCAUM), an organization of state air quality experts, shows that Phase I (1995 - 2000) RFG reduced cancer risk from gasoline by about 12%, and Phase II (2000 - Present) RFG is expected to reduce cancer risk by 19%. At the same time, the use of RFG has resulted in growing detection of MTBE in drinking waters. Due to its high solubility and resistance to biodegradation, MTBE is routinely found in groundwater during investigations of leaking underground gasoline storage systems (UST).

EPA's Office of Water has concluded that there is not enough data to estimate potential health risks of MTBE at low exposure levels in drinking water... However, EPA's data also shows that MTBE is a potential human carcinogen at high doses.

<http://www.epa.gov/mtbe/water.htm>

The agency recommends keeping MTBE contamination below 20 to 40 ppb to ensure that water does not have a bad taste. Water suppliers have largely incurred the costs of treatment and remediation where there is low level contamination.

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What are the advantages of ethanol?

■ **Air quality and Biodegradation:** Like MTBE, ethanol improves air quality and has the added benefit of dissipating much more quickly in the environment. According to The Renewable Energy Action Project, blending ethanol with gasoline has a variety of emissions benefits, including reducing the toxic and sulfur content of gasoline. In addition, because ethanol is easily biodegraded when introduced into water, there would be much lower cleanup costs for contamination of water.

■ **Sustainable agriculture:** Biofuels, such as ethanol made from starch and biodiesel made from vegetable oil, can help the U.S. achieve sustainability. They clean the air, support rural economies, and improve energy independence. Currently, ethanol is mostly starch-based, but emerging technologies exist for cellulose-based ethanol. As technology develops and costs drop, agricultural waste and other byproducts may also be used to make ethanol. This would allow the Northeast to produce ethanol in the region, rather than have it shipped from the Midwest, reducing consolidation in the industry.

■ **Affordability:** It still remains unclear whether New York and Connecticut will experience price fluctuations at the pump due to the ethanol switch (it will depend on summer grade gasoline production). Still, ethanol proponents contend that using the additive is good public policy. It may minimize fluctuations at a time when there is turmoil in the oil producing countries in the Middle East.

What are the shortcomings of ethanol?

■ **Environmental Problems:** When gas blended with ethanol is stored in portable plastic tanks, or moves through rubber hoses on motor vehicles, hydrocarbons can seep out into the air. Pesticides used to grow corn needed for ethanol are also a danger to environment.

■ **Transport and Refining:** Ethanol can't be mixed with gasoline and transported long distances; thus, it has to be refined locally. Connecticut and New York have no local refining capacity and are dependent on other states.

■ **Supply Snags:** Transition problems may occur in the spring when production of summer grade gasoline begins. Adding ethanol in place of MTBE increases the gasoline's rate of evaporation which occurs more rapidly in the summer and can contribute to air quality problems. This reduces the volume of ethanol blended fuel that can be produced from a barrel of crude oil.

Weighing the costs involved with both additives may lead more states to seek oxygenate waivers from the EPA. Some feel the oxygenate requirement no longer provides its original air quality benefits due to technological advancements in automobile design. ■

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Only about one percent of contaminations are more than 20 ppb according to the 1999 EPA Blue Ribbon Panel Report on Oxygenates in Gasoline. Shirley Neff, a Senior Advisor for domestic energy practice at Goldwyn International Strategies, believes that MTBE at low levels is "innocuous from a public health standpoint."

Moreover, she feels that the culprit has been infrastructure or the USTs, not the actual additive. "The infrastructure has failed somewhere along the line... whoever has the faulty infrastructure should clean up," she said.

NESCAUM has found that the Northeast states have made substantial progress in removing existing USTs and replacing them with upgraded tanks.

"These efforts and further improvements have and will continue to greatly diminish the potential for contamination of water resources by gasoline," said Jason S. Grumet, former Executive Director of NESCAUM, in congressional testimony in 1999.

Economic Costs of MTBE Contamination

At the same time, NESCAUM acknowledges that MTBE contamination, innocuous or not, poses an economic threat to the region. MTBE contamination, even at low levels, adds \$34 million to the cost of cleaning up gasoline spills in the Northeast. Placed in context with annual expenditures on gasoline, MTBE cleanup costs are equal to raising the price of gasoline sold in the Northeast by 0.25 cents per gallon over the course of a year according to NESCAUM.

California has the most severe contamination with 127 systems serving more than 30 million people reporting MTBE contamination somewhere in the system. Outside of California, the most extensive contamination is in New England and the Mid-Atlantic states where Massachusetts, New York, and New Hampshire each have over 150 water systems with MTBE contamination

Useful Links

I. Status of State MTBE Bans

www.eia.doe.gov/oiaf/servicerpt/mtbeban/

II. A Survey of State Experiences with MTBE Contamination at LUST Sites

www.neiwpc.org/mtbees.html

III. Northeast States for Coordinated Air Use Management

www.nescaum.org

IV. EPA's MTBE Guide

<http://www.epa.gov/mtbe/>

problems according to the Environmental Working Group, an environmental advocacy group.

Several states in the ERC region have initiated cleanup orders and well shutdowns. Nationwide, municipal governments in 14 states have filed lawsuits against MTBE manufacturers seeking billions of dollars in damages in order to clean groundwater. In addition, some states have set their own MTBE limits (chart on page 2).

Legislation that would ban or restrict the use of MTBE in fuel has been passed in 16 states: California, Colorado, Connecticut, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, New York, Ohio, South Dakota, and Washington.

Some state and federal officials voiced concern that the energy bill would nullify their lawsuits and cleanup efforts. Supporters of the bill point out that a provision, often overlooked in the MTBE contamination debate, is that states could receive substantial funds from the Federal Leaking Underground Storage Tank Trust Fund over the next five years to fund and enforce state or local regulations. The trust fund has a balance of over \$2 billion.

Critics contend that \$2 billion just scratches the surface. In 1996, the city of Santa Monica learned that two of its drinking water wells were contaminated at high levels of MTBE. In response, the two wells, representing 50% of the city's drinking water supply, were shut down and the city began purchasing replacement water. The city won a major lawsuit in which Shell, Chevron/Texaco and Exxon/Mobil will pay \$92.7 million for clean up and build a water treatment plant center. The case prompted the state legislature to ban MTBE.

In the Northeast, a number of lawsuits are pending against MTBE manufacturers and several states are banning the additive. Here are some recent developments:

Delaware

None of the state's large public water systems are contaminated, but low levels appear in several systems. Health officials set one of the toughest MTBE guidelines in the nation - 10ppb.

New Hampshire

New Hampshire was the first state to sue 22 oil companies, including ExxonMobil and Lyondell Chemical Company, over water pollution caused by MTBE. As of 2002, MTBE was detected in more than 15% of the public water supplies tested statewide.

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The lawsuit, filed in Merrimack County Superior Court, claims the companies produced a defective product and added it to New Hampshire's gasoline even though they knew that it would contaminate water supplies. The state alleges that the manufacturers and refiners should be held responsible for all costs associated with addressing the problem including investigation and cleanup costs.

"Clean water is a precious resource that we depend upon for drinking, recreation and every aspect of our health and economic well being. MTBE has become a significant and costly threat to our drinking water, said Attorney General Peter W. Heed during an October press conference. "These companies knew of the dangers that adding MTBE to gasoline posed to water resources. They, and not the state or its citizens, should pay the bill to fully address this environmental problem."

New Hampshire is awaiting congressional approval to be removed from the oxygenated fuel program.



About 680,000 UST systems nationwide store petroleum or hazardous substances that can harm the environment and humans if the USTs release their stored contents.

New Jersey

New Jersey was among the first states to develop a drinking water standard for MTBE, at a time when the EPA did not consider the additive a threat.

Seventeen utilities are now demanding that oil companies pay the costs to purge MTBE from drinking-water sources. Their lawsuit, filed in October, contends that the oil companies have known since at least 1980 that MTBE would cause ground water contamination. The Environmental Working Group estimates that MTBE contamination may have affected close to two million people in the state.

New York and Connecticut

Both NY and Connecticut have pending lawsuits against MTBE manufacturers and past lawsuits that have recently been dismissed. On January 1, 2004, Connecticut and parts of NY made the switch from MTBE to ethanol. See sidebar on the potential costs and benefits of the switch.

Maine

Maine does not plan to impose a ban on MTBE, but former Governor Angus King signed legislation in 1999 opting out of the RFG program and doing away with high MTBE content gas in Maine. The state was able to pass this legislation because Maine is not required by the EPA to use RFG.

This action by Governor King came on the heels of a 1998 class action lawsuit brought by plaintiffs against MTBE producers ARCO and Lyondell. In January 2001, the plaintiffs settled without going to trial. The plaintiffs claimed that a well they had used for drinking water had levels of 6,000 ppb after a sports utility vehicle overturned and spilled gasoline onto the ground. According to the Maine Department of Environmental Protection, there are no current lawsuits pending in the state against MTBE manufacturers.

"There are still instances where the water is contaminated," said Deborah Garret, spokesperson for the Maine DEP. "But we are not seeing a flurry of new discoveries."

Pennsylvania

Philadelphia is mandated by the EPA to be in the RFG program. Recently, the Pennsylvania House of Representatives voted unanimously in favor of legislation that would prohibit the sale or distribution of gasoline containing MTBE effective January 1, 2005. House Bill No. 1918 is currently pending in the state Senate.

Rhode Island

In 2002, the EPA awarded \$1 million to the Rhode Island Department of Environmental Management to help clean up contaminated groundwater in the Pascoag Utility District in Burrillville. The MTBE was traced to a leak from a Mobil gas station. The district is suing ExxonMobil for clean up costs and damages for the residents who had to use bottled water for several months. The suit is pending.

Vermont

Vermont is the most recent addition to states with pending MTBE lawsuits. The town of Hartland is suing several oil companies for damages. Hartland officials contend ExxonMobil, Texaco, Shell Oil and other oil companies polluted water supplies by using MTBE despite knowing it was harmful. The lawsuit comes after a 1997 gasoline spill in the central Vermont town that contaminated numerous private wells with MTBE. Environmental groups believe that the cleanup costs to taxpayers will be significant without compensation from the oil companies. ■

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