

BENEFITS FOR AD PROJECTS

Is Nutrient Trading Poised For A Surge?



Many anaerobic digestion projects that avoid nutrient runoff from feedstocks that otherwise would be land applied may be able to realize long-term revenues from nutrient credit sales.

DESPITE decades of discussion, proposals and federal or state agency guidance, nutrient trading lags far behind what emissions trading approaches have achieved for clean air. This may be due in part to factors such as: 1) Relatively few trading partners on some water bodies; 2) Poor knowledge of how much water trading work already has been done; and 3) Cautious initial restrictions that precluded highly cost-effective trades — for example, between reductions in urban storm water runoff (often costing thousands of dollars per pound) and agricultural runoff (generally costing tens of dollars per pound).

It also may be due to the fact that water agencies encountered the limited ability of traditional “command and control” regulation to deal with dispersed non-factory sources much later than their air counterparts, who were wrestling with intractable smog traced to emissions from sources such as auto body, dry cleaning and print shops in

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Part II

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the 1970s. As one environmental advocate recently noted, he now supports nutrient trading “because he was ‘out of ideas’ on how to reduce pollution from nonpoint sources ... Nothing else has worked.”

Whatever the reasons, even for water bodies like the Chesapeake Bay — America’s largest estuary and *de facto* nutrient trading model, with seven affected states and thousands of nitrogen and phosphorus contributors — the situation does not much differ from when *BioCycle* surveyed the nutrient scene in 2012 (“How to Generate Tradeable Nutrient Reduction Credits,” June 2012; “Understanding The

Value of Nutrient Credits,” Aug. 2012).

Virginia, for example, enacted a nutrient trading law solely for wastewater treatment plant (WWTP) point sources in 2005, expanded it to allow WWTP storm sewer overflow trades just for nitrogen in 2012, and still limits phosphorus trades to narrow circumstances. Pennsylvania issued point source compliance and offset rules solely for WWTPs in 2012, but still has not included storm water discharges. Maryland nominally adopted point-point and point-nonpoint regimes in 2008 but limited them to offsets for new or expanding WWTPs. It began moving just last year to allow point/nonpoint trading between two or more existing sources.

None of the Chesapeake Bay states (see box p. 49) currently allows interstate nutrient trades — a scenario with the greatest potential to mobilize reductions due to source mix, geographic

Nutrient Trading (often called “water quality trading”) to reduce flows of nitrogen and phosphorus is still a struggle for the Chesapeake Bay and elsewhere, beset by concerns that air emissions trading resolved decades ago. How those air resolutions were achieved contains important lessons for implementing “market-based” nutrient trades.

Part I of this article (“Lessons from the Birth of Emissions Trading,” May 2016) traced why emissions trading became an air-world paradigm, how simultaneous developments under the Clean Water Act laid the foundation for potentially robust nutrient trading, and why core principles for environmentally-sound air trading apply to both worlds. Part II examines why nutrient trading has lagged far behind air emissions trading, and why that seems poised to change.

Chesapeake Bay Watershed

The Chesapeake Bay Watershed stretches approximately 524 linear miles from Cooperstown, New York to Norfolk, Virginia. It includes parts of six states — Delaware, Maryland, New York, Pennsylvania, Virginia and West Virginia — and the entire District of Columbia, comprising a total area of about 64,000 square miles. Representatives of Maryland, Pennsylvania and Virginia are members of the tri-state legislative Chesapeake Bay Commission, created in 1980 to halt further degradation and coordinate long-term restoration of the Bay. Representatives of other affected states also participate. See <http://www.chesbay.us/>.

by those seeking creditable reductions — should be enough. That seems particularly true if the program includes “phase downs” where overall limits periodically decrease by a fixed percentage, so that any questionable reductions will be neutralized over time as the trading baseline is reset and moves down.

- Start small if necessary, but get a workable opportunity out on the street to be used. A trading program without current or imminent users has few constituents with skin in the game to support, improve or expand it.

- Give users maximum possible certainty. For example, the Final ET Policy grandfathered air applicants against trading rule changes adopted while their applications were pending. It also encouraged liability for insufficient or undelivered credits to be enforced against the credit generator, not entities that acquire those credits for compliance.

And perhaps the two most important “air ET” lessons:

- Use a fair yardstick to measure “progress.” The proper yardstick for “progress” compares trading to what the Clean Water Act would produce in the real world of source-specific variances, repeated compliance extensions, poor-

scope and resulting market liquidity for “surplus” reductions in discharges. And largely from resistance to any regulation by many agricultural sources — plus citizen group concerns about urban “hotspots” of concentrated pollution absent uniform across-the-board reduction mandates, or “inflated” farm credits that might allow WWTPs to discharge without compensating “real” reductions — few in-state trades have occurred.

Nevertheless, EPA’s Bay-wide Total Maximum Daily Loading (TMDL) Rule ([link in online version of this article](#)) recently was affirmed over national agricultural group opposition (*American Farm Bureau Federation v. EPA*, 3rd Circuit, July 2015, cert. denied, U.S. Supreme Court, Feb. 29, 2016). The Bay TMDL sets maximum allowable nutrient loadings for both point (mainly WWTP) and nonpoint sources, providing a meaningful interstate baseline for the first time. It also requires Bay states to develop enforceable reduction measures for runoff sources whose “control requirements” largely had been voluntary.

Judicial endorsement removes substantial TMDL uncertainty and should clear the way for further state action. That seems especially true because the Bay states were full participants in the TMDL’s development, and none of them objected to it. The *Farm Bureau* challenge was pursued only by parties that were not directly affected by the TMDL and were mainly concerned with its possible “ripple effects” to other jurisdictions. Notwithstanding questions about these parties’ legal “standing” to challenge the Rule, the Third Circuit went straight to the merits of their claims and rejected them. Such objections should become even more difficult to maintain as the TMDL is implemented and asserted disasters either do not materialize or are reduced to facts rather than speculation.

“AIR ET” LESSONS

As the Bay states, other jurisdictions, and their stakeholders move forward with nutrient trading, they may want to keep in mind some “early Emissions Trading” lessons from the air world:

- Outreach is crucial. Listen *with care* to stakeholders before (and while) rolling out new or expanded nutrient trading programs. Sources and citizens should listen *with equal care* to what agencies are saying, not what they preconceive is being said. Then all parties should *keep listening*. Whether friendly or hostile, active participants can help identify workable compromises and keep tweaking the program towards general acceptance.

- Stakeholder trust *must be earned*. This takes input, transparency, credible

feedback loops, and *time*. Agency staff should report positive developments as well as negative ones, and should not be stampeded by the inevitable “phony trade” that pushes an envelope too far. Such “horror stories” often are valuable to inform mid-course corrections.

- Be proactive. Prime trading prospects typically are those with the most to save or earn from trades. But trading applications also represent risks for applicants who put resources and their jobs on the line. Thus prospects may hold back due to “first in line” syndrome. At least in the beginning, agencies may have to invite them in to generate applications — or go find them. Applicants may have to trust that perceived risks will be manageable, in order to respond. Clusters of farms may have to negotiate mutual “compliance contracts” in order to trade as a group, minimize fees from reduction aggregators, and spread non-compliance risks.

- Don’t overpromise — and don’t seek perfection either. Trading is a tool, not a silver bullet. It may reveal but not by itself be able to cure larger program flaws. Thus mid-course adjustments can’t be avoided. Stakeholders should expect (and be invited to join in) them.

At the same time, nothing in environmental law requires a watertight trading system with 100 percent confidence that each pound of reduction “truly is surplus.” Common-sense trading weighs likely pollution reduction gains against possibly foregone pollution reductions from traditional approaches. Reasonable assurance that gains will prevail over such “foregone reductions” *in the longer run* — taking into account improved information about real reductions, better data on the performance of runoff measures, and better compliance

Point vs. Nonpoint Source

Point Source: A pipe or other discrete conveyance from which pollutants are discharged. Examples include outfalls to navigable streams from wastewater treatment plants and industrial facilities.

Nonpoint Source: Anything not considered a point source from which designated pollutants originate and directly affect navigable streams. Examples include runoff from agricultural fields, urban centers and suburban landscapes.

What constitutes a “navigable stream” sufficient to trigger Clean Water Act jurisdiction historically has been and continues to be a controversial issue. Relevant links in online version of this article.

ly quantified reductions, and partial settlements. Nutrient trading should not be measured by what a perfect “command and control” nutrient program might achieve, let alone one that conforms precisely to often ambiguous statutory parameters. The pertinent question is: *Progress compared to what?*

- Saving affected sources money is not trading’s goal. *Improved environmental results is the goal*. Potential savings are levers to secure better compliance, more efficient programs, and faster environ-

CPP + Tax Credits + FERC Ruling + COP 21 = AD Opportunity

BIOCYCLE has covered the potential benefits to the anaerobic digestion industry from the EPA's Clean Power Plan (issued October 2015) and the recent 2-year extension of federal tax credits for biomass (including AD) facilities (links in online version of this article). Other converging developments include:

- The Federal Energy Regulatory Commission (FERC)'s directive that large electric utilities fairly compensate generator demand-response capacity recently was upheld by a substantial majority of the Supreme Court (FERC Order 745; *FERC v Electric Power Supply Assn.*, Jan. 25, 2016). This decision likely will reinforce other FERC rulings enhancing the potential value of selling capacity – not merely energy —

for baseload power generators like AD projects.

- Mutual Greenhouse Gas (GHG) reduction pledges by over 180 countries in the recent Paris Accords (COP-21, Dec. 2015) not only oblige the U.S. to reduce its overall GHG emissions by about 28 percent from 2005 levels by 2030, but are estimated to require over \$12 trillion in global renewable energy investment to reach the Accords' threshold goal: holding worldwide temperature increases to less than 2°C above preindustrial levels. These pledges apply not just to CO₂ but to all significant GHGs, including methane from landfills and manure lagoons. They should encourage regulators to allow emission reduction credits for AD projects that reduce or avoid such emissions.

mental progress. If this requires, for example, 140 percent trade ratios to minimize nonpoint reduction uncertainties, or having large credit purchasers such as WWTPs and big industrial dischargers like paper plants or refineries fund independent third-party consultants to monitor contracted reductions from nonpoint sources, savings and progress still can be achieved.

Many anaerobic digestion projects which avoid nutrient runoff from feedstocks that otherwise would be land applied or held in retention ponds,

may be able to realize long-term revenues from nutrient credit sales, once program changes in the Chesapeake Bay's judicially-approved TMDL reach the 20 or so other states with nutrient trading regimes.

Expanded nutrient trading credits, combined with recent policy developments and a Supreme Court ruling (see sidebar), may create a brighter scenario than AD has seen for years. ■

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