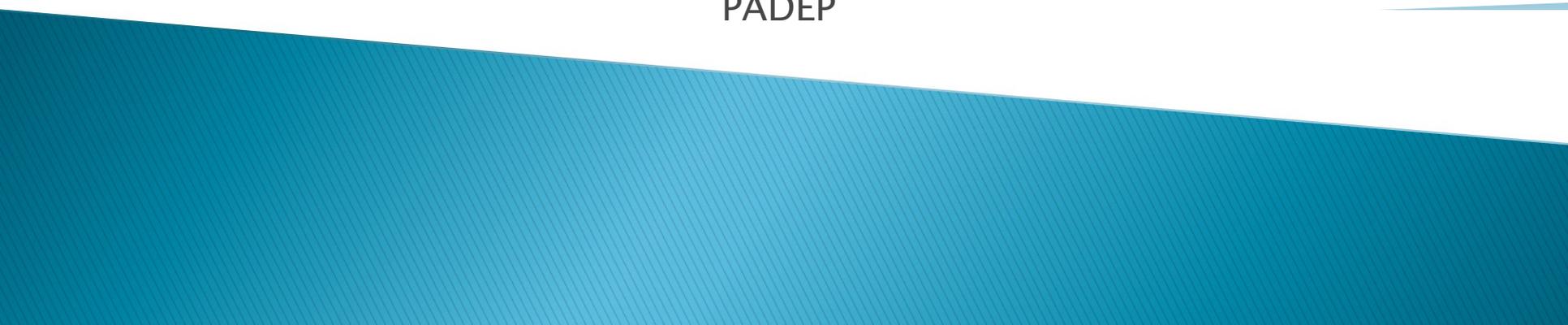


Nutrient Credit Trading

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PADEP



Formula for Nutrient Credit Trading

- ▶ DRIVEN by regulation;
- ▶ MOTIVATED by economics;
- ▶ GOVERNED by local trading rules;
 - 25 Pa. Code § 96.8 (relating to use of offsets and tradable credits from pollution reduction activities in the Chesapeake Bay Watershed (*see* 40 Pa.B. 5790, October 9, 2010)).
- ▶ BUILT on trust.

Cost-savings of Program Participation

- ▶ Participation in the nutrient credit trading program is voluntary. Those that may be able to take advantage of the cost-savings of the program are:
 - any facility subject to a nutrient or sediment load that is related to restoration and protection of the Bay, mostly wastewater treatment facilities;
 - any farmer who may voluntarily choose to implement nutrient or sediment reduction measures and thereby earn revenue;
 - any developer that seeks to create a new or expanding discharge that must meet the zero net load; and
 - any aggregator that seeks to arrange for the sale of credits generated by another person, or arranges for the credits to be certified, verified and registered.

Program Basics

- ▶ Applicable for the Chesapeake Bay Watershed
- ▶ Credit = Unit of Trade.
 - Expressed as mass/per unit time (lbs/yr).
 - Shelf life of one year (October– September).
 - Generated and traded in the same watershed.
 - Must be certified, verified and registered prior to use for permit compliance.
- ▶ Total phosphorous and/or total nitrogen reduction credits.
 - All trading must involve comparable credits (nitrogen for nitrogen).
- ▶ Nitrogen and phosphorous reductions TO THE BAY beyond baseline and threshold requirements.
- ▶ Applicable trading ratios that are being used:
 - Edge of Segment;
 - Delivery; and
 - Reserve.

Credits and Contracts

- ▶ Over a 100 proposals have been submitted
- ▶ Over 70 have been approved
 - over 3 million nitrogen (N) credits, 280,000 phosphorous (P) credits
- ▶ 10 contracts completed
 - 7 for new development
 - 2 for existing WWTP facilities
 - 1 industrial discharger
- ▶ 2 Successful Auctions have been completed by PENNVEST

Certified Reduction Activities

Agricultural BMPS	No-till, cover crops, riparian buffer, stream bank fencing, rotational grazing, field lane stabilization, manure storages, mortality composters, poultry manure export
Manure Technology	<ul style="list-style-type: none">- Bion Environmental Technologies - Dairy Manure Processing- Cove Area regional Digester (CARD) - Dairy Manure Processing- EnergyWorks - Poultry Manure Processing- ElectroCell – Hog Manure Processing
Point Source	<ul style="list-style-type: none">- Milton Regional Sewer Authority- City of Lancaster Advanced Wastewater Treatment Plant- Northwestern Lancaster County Authority- Bellefonte Wastewater Treatment Plant- Elizabethtown Borough Wastewater Treatment Plant- Berwick Area Joint Authority

Nutrient Credit Clearinghouse

- ▶ The Nutrient Credit Clearinghouse will:
 - Purchase nutrient credits as needed to establish a portfolio of available nutrient reduction credits; and
 - Sell nutrient reduction credits for a set price and time period.
- ▶ 2 Auctions were held in the Fall of 2010. As a result, PENNVEST will purchase 62,000 nitrogen credits for a total of \$176,590.

Clearinghouse Summary

- Benefits of purchasing credits through PENNVEST nutrient credit clearinghouse – absolves regulated point sources of:
 - Adhering to regulatory procurement requirements
 - Search costs
 - Negotiation costs
 - Evaluating counterparty credit-worthiness
 - Contract enforcement
- Benefits to credit sellers: can facilitate an increase in demand that makes undertaking credit-generating projects more viable
- Participants free to execute transactions bilaterally & not use PENNVEST

Types of Market Events

- Forward auctions for multiyear delivery for certified credits that are not yet verified
 - Focus on this option since most pressing initially & likely to serve as greatest quantity of credits transacted
 - Spot auctions at end of compliance year (Oct – Nov) for verified and issued credits
 - PENNVEST serving as an intermediary between PS with identified credit project – may be appealing if preference for geographically local projects
 - PENNVEST will have the ability to match bids to buy and offers to sell by “filling-in” from multiple sources, which is not possible under bilateral trades
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Frequency of Market Events

- Initially may be designed to accommodate impending Phase 1 POTW compliance planning decisions
 - Frequency likely to vary depending on type:
 - Forward auctions: specified schedule (e.g., quarterly)
 - Spot auctions: annually at end of year during Oct. / Nov.
 - Bilateral contracts: case-by-case basis
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Procedure for Competitive Auction

- PENNVEST auction announcement
- Participants establish eligibility to participate
- Participants submit bids & offers
- PENNVEST closes auction, announces auction results (market-clearing price and quantity)
- Execution:
 - PS makes payments to PENNVEST on agreed schedule
 - Sellers deliver verification reports to PENNVEST at agreed schedule
 - PENNVEST pays sellers contingent on receiving verified credits

Benefits of Using Auctions

- Bids and offers submitted to PENNVEST are binding
 - A successful auction participant is automatically entered into a contract with PENNVEST under the terms and conditions of the auction results
- Auctions are a competitive procedure to
 - Ensure fair and transparent guidelines
 - Keeps costs of credit purchases low and ensures credit sales accrue to point sources with greatest need
 - Establish firewalls to prevent conflicts-of-interest situations arise whereby PENNVEST may provide funding for a project and then have access to view bids/offers from other participants
 - Minimize transaction costs

Outcome of Fall 2010 Auctions:

<u>3 year- 21,000 N credits exchanged at \$3.04</u>		
Buyer	Seller	Credits Exchanged
PPL EnergyPlus LLC	County of Lycoming (AG generated)	9,153 lbs/yr
	ElectroCell Technologies (AG generated)	12 lbs/yr
	City of Lancaster (PS generated)	11,835 lbs/yr
<u>1 year- 41,000 N credits exchanged at \$2.75</u>		
Buyer	Seller	Credits Exchanged
PPL EnergyPlus LLC	County of Lycoming (AG generated)	3,722 lbs/yr
	Elizabethtown Borough (PS generated)	7,369 lbs/yr
	City of Lancaster (PS generated)	29,908 lbs/yr

Where to go for more information?

PA DEP's Nutrient Trading Website:

<http://www.depweb.state.pa.us>

Keyword: "Nutrient Trading"

PENNVEST's Website:

[http://www.portal.state.pa.us/portal/server.pt
/community/nutrient_credit_trading/19518](http://www.portal.state.pa.us/portal/server.pt/community/nutrient_credit_trading/19518)