

# NonPoint Source Offsets

## Options & Potential

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October 14, 2016

Executive Order 52 Stakeholder Committee

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# My Underlying Assumption

- ▶ Point Source Credits are NOT a Permanent Fix to Offset New Loads
- ▶ Allocations Will Never be Permanently Transferred
- ▶ Using Excess Pt. Source Allocations Provides No “Additionality”
  - ▶ i.e., No Water Quality Benefits
- ▶ So We MUST Find a Way to Make NonPoint Source Offsets Work
- ▶ Doing So Will Also Address Much Needed Ag Reductions
  - ▶ Which are Woefully Underfunded



# Offset Options

- Bundling Ag Conservation Practices
  - Land Conversion
  - Waste-to-Energy
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# Bundling Ag Conservation Practices

- ▶ Price Can't Compete with Cheap Point Source Credits
  - ▶ Incentivize?
  - ▶ Prioritize above Point Source Credits?
- ▶ Need Certainty that Demand will Materialize
  - ▶ State Buys Credits? (Nutrient Offset Fund § 10.1-2128.2)
  - ▶ Stock up a Surplus for Economic Development Enticement?
- ▶ Needs to be Enough of a Buffer "Above Baseline"
  - ▶ Remember...2:1 Offsets Required
  - ▶ The MOST you get in the James Basin (East of I-95)
    - 4.99 #s/acre (TN)                      0.19 #s/acre (TP)
    - Early Cover Crop & 15% N Reduction on Corn & Cont. No-Till
  - ▶ e.g., 10,000 pound TN offset would need 4008 Acres
- ▶ Need to Develop Brokerages
  - ▶ Private Market can do this (easily) if issues above are addressed

# Land Conversion

- ▶ Working Fabulously for VA Stormwater Program
  - ▶ Credit Prices are Market-Based with Multiple Competing Providers
- ▶ Land Intensive for Large Offsets
  - ▶ e.g., The MOST you get in the James Basin (East of I-95)
    - 13.35 #s/acre (TN)                      2.16 #s/acre (TP)
    - e.g., 10,000 pound TN Pt. Source offset would need to convert 1498 acres!!
- ▶ Are the Reductions Efficiencies Overly-Conservative?
- ▶ Numerous (unaccounted for) Co-Benefits – Wildlife, Carbon, Land Conservation, etc.
- ▶ Is it Time to Revisit/Revise/Incentivize?



# Waste (Manure)-to-Energy

- ▶ It's time...enough talking about it...
- ▶ State Law Already Allows It (encourages?)...calls it out specifically
- ▶ Considered a Pt. Source in Law --- only a 1:1 Offset Requirement
  - ▶ § 62.1-44.19:15 (D) - New or expanded facilities
- ▶ Prioritized for Funding (Nutrient Offset Fund § 10.1-2128.2)
- ▶ Areas of Surplus Animal Manure are Well-Documented
- ▶ Private Market Willing to Invest (no state/fed funds)
- ▶ Cost Competitive with Pt. Source Credits
- ▶ It's a True "Fix" to Offset New/Expanded Loads (dealing with a known problem)
- ▶ Co-Benefits --- Addresses Clean/Alt Energy Needs



# An On-the-Ground Example

## The GES Animal Waste to Energy Solution

- The GES System converts animal waste to energy through a closed loop zero-emissions process;
- This permanent nutrient reducing system is both modular and scalable, and can be right-sized for virtually any WTE/Nutrient-Reduction application;
- A 50 Ton per Day animal waste conversion plant is currently under construction in Duplin County, North Carolina and will begin commercial operation in Q1 2017;
- The GES Build-Own-Operate model puts all of the technology risk on the technology provider, so the respective end-users pay only for the power, REC, Char, or Nutrient Credits delivered.
- Duke Energy, Smithfield Foods, and Dominion Resources (VEPCO) are participants in the NC project via PPA, REC, Waste Supply, and Char-Offtake Agreements.



## Regulatory Friendly

- The Code of Virginia has already codified the use of animal-waste-to-energy conversion as an approved Point Source Nutrient Offset practice, thereby conveying a River Basin wide Service Area at a 1:1 ratio of nutrient reduction pounds to nutrient credits.
- The larger service area and lower credit ratio allow for economies of scale that are difficult if not impossible to achieve through Non-Point Source credit generation practices, which in turn allows for credit pricing closer to the General Permit defaults of **\$4.60/N lb.** and **\$10.10/P lb.**
- The GES credits are not regulatory-derived paper allocations that can be reduced or eliminated with each 5 yr. permit cycle, rather they are actual laboratory verified permanent nutrient reductions within the watershed that can be contractually obligated for virtually any term.
- The GES credits can be electronically tracked, remotely monitored by regulators via smart phone, tablet, laptop, or PC, and easily transferred and assigned, making them ideal for both permit compliance and economic development.





# Waste (manure)-to-Energy

## Enabling Conditions

- ▶ Streamlined Certification/Approval Process
- ▶ Guaranteed Source of Manure (long-term contract)
- ▶ Guaranteed Purchaser of Credits (State via Nutrient Offset Fund)
- ▶ Power Purchase Agreement



# Options Are Limited, but...

- ▶ Can Incentives Increase the Viability?
  - ▶ There is a Willing/Eager Private Market
  - ▶ Higher Reduction Efficiencies?
  - ▶ Lowered Offset Ratios?
  - ▶ State-Purchase of Credits?
  - ▶ Streamline the Process?



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