Overview

• Introduction to ECS
• Introduction to Ernst Biomass
• Benefits of Switchgrass
• Existing and Potential Markets
• Industrial Sorbent
• Considerations

Ernst Conservation Seeds

• Established in 1964 - Meadville, PA
• Family-owned
• Native/naturalized species for conservation, land reclamation, biomass, wildlife habitat, restoration
• Approximately 400 species
• Current production in PA, FL, SC, MD

Ernst Conservation Seeds

• 30+ years’ experience with switchgrass establishment, management, seed harvest, processing.
• Currently participating in and encouraging the development of numerous markets for switchgrass biomass.
Ernst Conservation Seeds

- Approximately 9,000 acres under production
- 75+ full-time employees
- 7/19 50th Anniversary Community Field Day
  - 10:00 a.m. – 4:00 p.m.
  - Field/Farm Tours

Ernst Biomass

- Production started slowly in Aug. 2012
- Original target market was residential heating
- Other applications/markets realized
- 6 full-time employees
- One of a kind
- YTD 2014 Production: 2,147 Tons

Benefits of Switchgrass

- Environmental Benefits:
  - Improved soil quality
  - Improved air quality (carbon sequestration)
  - Improved water quality (nutrient uptake)
  - Wildlife habitat
- Economic Benefits:
  - Utilization of idle and marginal land
  - Supports local and rural economies
  - Stable cost of production vs. byproducts
- Domestic Resource
Existing and Potential Markets

- Animal Bedding
  - Horse Bedding (Pellets)
  - Dairy (Ground)
  - Poultry (Ground/Crumbles)
- Compost/Mulch
- Bio Packaging/Building Materials
- Plastic Substitute/Replacement
- Industrial Sorbent

Industrial Sorbent – Process
Industrial Sorbent

- Packaged in one-ton super sacks.
- Product must be packaged to sit outside.
- Consistent appearance and balanced packaging are most important factors.
Industrial Sorbent

- Three forms:
  - Pellets
    - Loose, “poor” pellets without the shiny surface
  - Crumbles
  - Fines
- Form is chosen by customer to fit needs.
- Smaller particles have a better volume:surface area ratio which allows for a faster reaction.
Industrial Sorbent- O&G

- Used to solidify drill cuttings/tailings.
- Allows for easier disposal.
- Must solidify any free liquids in the mix prior to waste leaving drilling site.
Considerations

- Biomass markets are currently available.
- Focus must be regional.
- The highest market value with the lowest processing cost will attract the most fiber.
  - Lower processing costs equate to lower capital costs.
- Within the same industry, similar markets can usually be found.

Questions??

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