

Patrick O'Dell- Unofficial BEST Historian
Meeting @ Energy Park, University of Florida, Jan. 18, 2006

Business:

1. Discussed the BEST Constitution and way we can get an “official” room. Group needs to officially adopt the constitution.
 2. Proposal was forwarded to have monthly club meeting for club business, in addition to regularly scheduled speakers.
 3. E-Week E-Fair is coming up on February 21st and 22nd (Tuesday and Wednesday + setup Monday night). Need to set up a schedule for tabling from 9am to 5pm Tues & Wed.
 4. Digester Committee made commitment to begin a full digester run (20 days?) using aquatic plants. Jason Evans will spearhead the aquatic plant feedstock.
 5. Kurt Roos from US EPA spoke tonight on the AgSTAR program provided by USA as well as his own independent projects in Asia and Mexico through the World Bank. Mark van Soethbergen, involved in a carbon trading program, was present.
- Cow waste is much more concentrated (on a % TS basis) than sewage. Sewage is more dilute.
 - Lagoons release large amounts of methane, a more potent greenhouse gas (GHG) than carbon, into the atmosphere which could be captured and utilized.
 - There are currently about 3000 large farms in USA = about 1 Million Metric tons of manure to be processed.
 - Currently only 4% of US cow operations use anaerobic digesters.
 - Farm Bill funds \$22 million for Anaerobic Digester Projects.
 - While Big Wind is cheapest type of renewable energy (about \$0.05. kWh), Anaerobic Digestion is a close 2nd (at about \$0.07, 0.08, 0.09 for plug flow, complete mixing, and covered lagoons respectively).
 - Anaerobic digestion principal: bugs turn acetic acid (C₂H₄O₂) into methane (CH₄ + CO₂).
 - Covered lagoons can handle about 3-5% total solids (TS) whereas plug flow works at about 10% TS.
 - HEAT is a BIG issue in northern climate. Luckily most population is around the equator (i.e. Indonesia, Vietnam, India).
 - In the US, utilities can be difficult to deal with because they prefer reliable ownership and projects that will ultimately make THEM money. Wind projects are usually BIG thus having BIG tax write-offs.
 - Germany- Anaerobic digestion is about \$0.22 per kWh because it's so sophisticated.
 - China- stone monolithic castings. Many present, but the biggest problem in most countries is actually inappropriately sized digesters – undersized.

- Plug Flows - Long sausages, can have covers which come in strips and sealed together.
- Rainwater **MUST** be kept out.
- Uses for methane include: heating, light, cooking, electricity, pumping, shaft power, etc.
- Siting is a consideration - on farm VS. a centralized digester.
- Covered lagoons with a separate storage tank are good.
- Vietnam, Thailand, & China have over 50% of the world's pigs. The pig manure goes into fishponds, is eaten by fish, and then people eat the fish. This has health risks.
- Need more trainings for people, demonstrations, monitoring and upkeep.
- More information can be found at the AGStar website:
<http://www.epa.gov/agstar/>