PRACTICAL APPLICATIONS OF COOKING FUEL STANDARDS

CASE STUDIES IN HAITI & UGANDA

Standards Alliance workshop on Standards for Liquid Cooking fuels

Session 5
Lusaka, Zambia
November 1, 2018
28 PLANTS
1,800 EMPLOYEES

SEE THE WORLD DIFFERENTLY

$200 MILLION (average) contribution to each plant’s local economy

$6 BILLION in annual revenue

4 BILLION KILOGRAMS of distillers dried grains produced annually and distributed to countries throughout the world.

14 PLANTS produce Voilà biorefined corn oil

6.4 BILLION liter production capacity.

800% GROWTH since 2000.
UNIQUE IN OUR INDUSTRY
POET'S INTEGRATED BUSINESS MODEL

- Ethanol Marketing
- Design & Construction
- Biomass
- Clean Cooking
- Research
- Biorefining
- Co-Product Marketing
- Plant Management
- Grain Sourcing
ROOTED IN A TRADITION OF AGRICULTURE.

+ THOUSANDS of farmer investors
+ OVER 550 MILLION bushels of grain purchased annually
+ AGRICULTURAL IMPACT
  - Increased farm income
  - Sustainable grain prices
  - Increased land values
  - Local jobs
+ OVER 20,000 farmer suppliers
OPPORTUNITY IS EVERYWHERE

IF YOU KNOW WHERE TO LOOK.

In addition to producing fuel and feed, many POET plants also capture CO₂ for use in other industries.

100% HOME GROWN.
0% WASTED.

FUEL
STARCH
STARCH CONVERTED TO ETHANOL.

FOOD & FEED
PROTEIN, FIBER AND FAT CONVERTED TO DISTILLERS GRAINS, CORN OIL AND OTHER RENEWABLE PRODUCTS.

STARCH

PROTEIN, FIBER AND FAT

DakotaGold
VOILÀ!
FANTASY FUEL

- Farmers collect 280,000 tons of crop residue annually.
- 20-25 MG PY of cellulosic ethanol, waste stream used for power generation.
- 83% lower GHG emissions than gasoline.

Project Liberty
a POET-DSM joint venture
RENEWABLE FUEL STANDARD
HOW AMERICA CAN PRODUCE ITS OWN FUEL

U.S. Ethanol A Major Supplier
The 2007 RFS sets a goal of producing 36 billion gallons of renewable, domestic fuel by 2022. The targets can be met with a variety of biofuels - grain ethanol and cellulosic ethanol being major contributors.
POET IN HAITI
POET’S INVOLVEMENT IN HAITI

• POET began after the January 2010 earthquake
• More than 98% deforested, charcoal use prevalent
• Donated two isotanks of ethanol to provide fuel for ethanol cookstoves (50,000 liters)
• Formed commercial relationship with local company, Novogaz
  • POET supports and enables the development of a market for ethanol cookstoves and fuel
  • Software to track and monitor business and impacts
Impacts To-Date

• A total of 5 isotanks have been shipped to Haiti for home cooking
• ASTM E3050 used for third isotank shipped from POET’s
• Over 3,000 stoves distributed
• Partner’s business warehouse, storage and distribution infrastructure established
• Marketing and civil education campaign launched to promote and educate consumers on the benefits of ethanol.
• Currently, demonstrating the positive impacts for a strong ethanol policy
REGULATORY CHALLENGES

• No standard for shipping ethanol as a cooking fuel

• Most ethanol shipped around the world is as a blending fuel for transportation (denatured with gasoline/hydrocarbon)
CUSTOMS PROCESS-HAITI

ISOTANKER ARRIVES AT PORT
• 90-118 days transit time

SAMPLE IS TAKEN
• Delegates from Ministry of Trade, Haitian Bureau of Standards, etc.

SAMPLE IS PROCESSED
• Delay of weeks or months
• Industrial ethanol
• Pharmaceutical grade ethanol

TAXES AND DUTIES ARE ACCESSED
• Not based on the fuel’s application
All other fuels have tax regulations:

- **LPG**: not taxed
- **Kerosene**: not taxed
- **Charcoal**: not taxed but arguably 50 – 80% of cost is transportation (fuel) and gasoline is not taxed and additionally subsidized
HOW E3050 BENEFITS HAITI & CONSUMERS

• Avoids possible fuel interruption delays as customs process is streamlined by providing a classification for a new product:
  • Imports & local production
  • Potential cost savings
    • If duties reassessed, ethanol would be even more affordable for consumers and create more value to retailers
• Provides dedicated VAT revenue to the government
• Denaturant known-ethanol as a cooking/appliance fuel cannot enter beverage market and no fear of ingestion
• Provides a basis for policymakers to access tax structure versus other fuels
POET IN UGANDA
• Workshop held in Uganda November 2016 to promote quality ethanol fuel standards for household appliances.

• Uganda adopts a national standard (US-685) for cooking fuel in July 2017, based on ASTM E-3050
THANK YOU