



# Distillation Advanced Biorefinery Systems

## Feedstocks

- Municipalities or Farm Dams
  - Cattails - Cattails grow wild in nutrient enhanced waterways
- Landfill Operators
  - Landfill operators with the ability to segregate the carbohydrate-rich components
- Food Processing
  - Beverage Companies
    - sugar-rich surplus materials
  - Bakeries
    - waste carbohydrates (sugars and starch)
- Agriculture
  - Wheat
  - Potatoes

## Scenario

## Benefits

- high-grade alcohol end products
- Estimated 72% gross margin (28% Operating costs)
- using less energy than traditional distillation systems
- ROI 24 months

## OFFSETS

- Bioethanol (Alcohol)
  - Highest Grade/Highest Value **Nutraceuticals**
    - Herbal medicines, nutraceuticals, or other natural products can use ethyl alcohol (bioethanol)
  - Higher Grade/High Value **Pharmaceutical**
    - Ethanol can be upgraded to food-grade or USP-grade for use in product formulas
  - Low Grade/Low Value **Fuels**
    - clean, versatile, alcohol fuel
- High Protein Animal feed
- OFFSET Agreements
  - China
  - Zambia for bio stoves