New Generation BIOFUELS

Advanced Renewable Technology

Providing Fast Renewable Solutions for Power Generation Challenges

New Generation Biofuels (NGBF)

- **New Generation Biofuels is** a publicly traded (NGBF) **technology company focused on solving energy, economic and environmental challenges using its unique proprietary biofuel technology.**

- Our biofuels displace fossil fuels in energy applications with environmentally superior attributes and provide excellent fuel/combustion performance.

- Our biofuels address many needs of the Power Generation marketplace:
  - We qualify as biomass under the American Clean Energy Security Act of 2009.
  - We meet most state definitions of biomass.

- NGBF technology = ***liquid biomass***: a strong value proposition for Power Generation
  - ***Fastest low cost*** way to meet state RPS and pending federal RES
  - Limited capital outlay for users to make existing infrastructure renewable
  - Significant NOx and SOx emissions reductions

NGBF's Biofuel Advantages

- Renewable with reduced lifecycle greenhouse gas emissions
- Great feedstock flexibility
  - Allows us to address performance needs
  - Provides increased supply availability
- Low NO_X emissions
- Essentially zero SO_X emissions
- Excellent cold flow properties
- Competitively priced with Ultra-Low Sulfur Diesel
- Formulated to be used neat (at 100%) or blended
  - Co-fired with coal and/or solid biomass
  - Blended with #2 fuel oil and/or #6 fuel oil

NGBF Biofuels: Classic and Ultra HF

Classic – Extraordinary pour point, field tested atomization and ignition, biodegradability

Ultra HF – High flash point, increased energy content, enhanced viscosity

All of our products are formulated for low metals content.

	Classic	Ultra HF
Flash Point (°F, minimum)	77	210
Heat of Combustion (BTU/gal, typical)	92,000	100,000
Kinematic Viscosity @ 40C (cSt, typical)	53	28
Bottom Sediment & Water (%, maximum)	0.05	0.5
Pour Point (°F, typical)	-49	5

Comparison to Fuel Oils

- In comparison to fuel oils, NGBF fuels have
  - Lower ash
  - Much lower sulfur
  - Higher lubricity
  - Better low-temperature flow properties
  - Reduced NOX emissions
  - Different flash points
  - Lower energy content/gallon
  - Higher viscosity

Production Process Advantages

- Production process is a precision blending or emulsification process with high energy yield:
  - Low production costs
  - Energy costs are only 11 watt hours/gallon
  - No significant by-products, wastes, emissions or discharges, so “BTU yield” of process is greater
- Small plant footprint, production can be located to leverage existing storage and transportation infrastructure
  - 25M GPY sits on <15,000 sq. ft., excluding storage and logistics
  - Significantly lower capital costs vs. alternatives
    - NGBF Plant capital costs are $.20 - $.30 per gallon of annual capacity (excluding storage and logistics) i.e. 25M GPY Plant Capex ranges from $5M - $7.5M

Blending with #2 and #6 Fuel Oils

- NGBF biofuels can be easily blended at different ratios with #2 and #6 fuel oils up to 35% by volume

- Final blended fuel has improved rheological properties (pour point and viscosity) and **highly improved performance in terms of emissions during combustion**

Boiler Applications

NGBF's biofuel is being used in a series of boiler applications including:

- Cleaver-Brooks fire-tube boilers
  - 150, 250, & 500 HP
- Babcock & Wilcox utility steam boiler
  - Light off and flame stabilization
  - Steam plant for electricity generation
- Smith Cast Iron boilers
- Infern-O-Therm hot water boilers

Conversions required only simple tuning

- 45 minutes for first conversion

Main results were:

- SO_2 essentially eliminated
- 45% reduction in NOx emissions
- Very good ignition and combustion stability

NOx and SO2 Credits

- Emissions tests conducted with NGBF's fuel show 30% or greater reduction in NOx
- Nearly 100% reduction in SO2
- NOx and SO2 Credits (as reported by Evolution Markets, March, 2010)
  - $475 to $510/ton Annual NOx
  - $40 to $50/ton Seasonal NOx
  - $32 -$34/ton SO2
- EPA has indicated high likelihood of acceptance of NGBF's fuel to reduce emissions under CAIR or NOx SIPCall
  - Petition EPA under 40 CFR Part 75 Appendix D Methodology

NGBF Feedstock Position

No one is better positioned than New Generation Biofuels to optimize feedstock supplies.

Why?

-Formulation Technology-

-Feedstock Flexibility-

-Partnerships-

-Our Business Model-

NGBF Feedstock Position

Partnerships

- NGBF Has Relationships With Global Reach
- Feedstock Flexibility Creates More Partnership Opportunities→
  - Generates More Sources→ Not Locked In to Limited Suppliers
  - Allows Us to Reach Non-Traditional Supply Sources
- Unique Opportunities
  - Emerging Supply Sources/Technologies
  - Integration

NGBF Feedstock Position

NGBF Business Model = Viability

- Low Cost of Capital for All Involved
  - NGBF Blending Facilities→ < $0.30/Gallon of Production Capacity
    - Ethanol → $2.00/Gallon of Capacity
    - Biodiesel→ $1.00-$1.15/Gallon of Capacity
  - Customer Conversions
    - Solid Biomass→ Potentially Huge Investments
    - NGBF→ Minor, Quick, Inexpensive

NGBF Feedstock Position

NGBF Business Model = Viability

- Supply Chain Advantages
  - Multiple Feedstocks/Sources = More Options for Logistics
  - Our Technology Can Be Stand Alone or Co-Located
- Overall Costs
  - Low Cost Manufacturing/Low Energy Inputs
  - Formulation Technology

NGBF Feedstock Position

Examples of NGBF Feedstock Options

- Traditional
  - Soybean Oil
  - Palm Oil
  - Recycled Vegetable Oils
- Typically More Challenging…For Others
  - Off Spec Plant Refined Oils
  - Animal Fats
  - Used Commercial Cooking Oils
- New Upcoming Technologies
  - Jatropha
  - Algae
  - Pyrolysis