



BlueFire
ETHANOL

The Future of Ethanol



American Coalition For Ethanol Conference

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Forward Looking Statements

Statements about BlueFire Ethanol's future expectations, including future revenues and earnings, and all other statements contained herein other than historical facts are "forward-looking statements" within the meaning of section 27A of the Securities Act of 1933, Section 21E of the Securities Exchange Act of 1934, and as the term is defined in the Private Litigation Reform Act of 1995. BlueFire Ethanol's actual results could differ materially from expected results. BlueFire Ethanol, Inc. undertakes no obligation to update forward-looking statements to reflect subsequently occurring events or circumstances. Should events occur which materially affect any comments made within this objective; BlueFire Ethanol, Inc. will appropriately inform the public.

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BlueFire Ethanol, Inc.

- Publicly traded on OTCBB – BFRE
- Exclusive licensee of Arkenol Technology for North America
- Headquartered in California – Staff and majority shareholders have been involved in technology development since 1992 as Arkenol
- Experienced developer of energy projects as ARK Energy and Arkenol, Inc.
- Cellulose to ethanol pilot facility operated in California from 1995 to 2000
- Process reviewed by federal, state and local agencies resulting in permits issued in 1997 for Rice Straw to Ethanol Plant in Sacramento, CA
- Technology demonstrated by JGC Corporation (major Japanese engineering and construction company)
- Strategic alliances with qualified parties for deployment of production facilities
- Production facilities will be fully integrated in existing landfills or power plants across North America

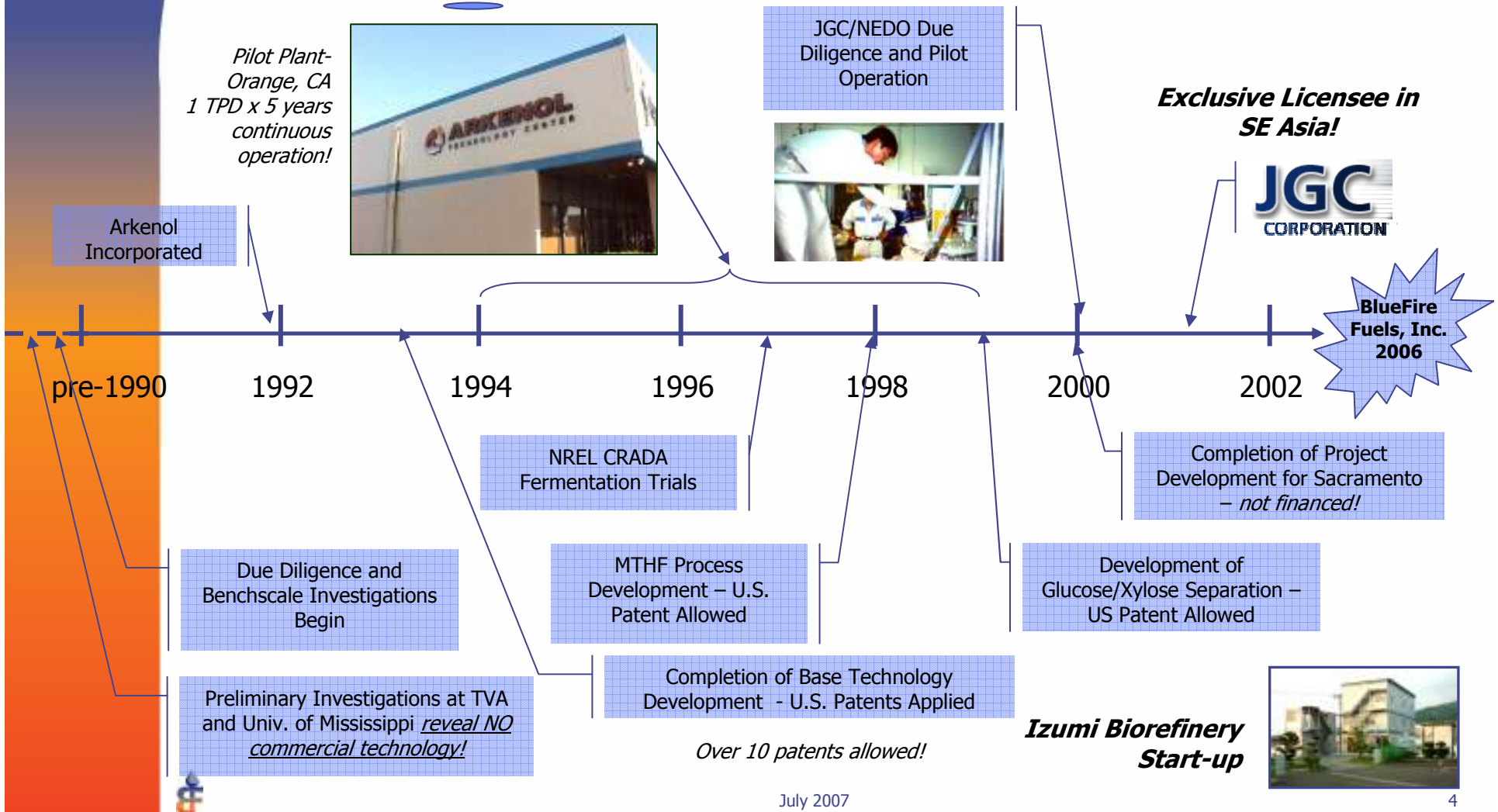


Arkenol...12 years from “idea” to “deployment”!

BlueFire Ethanol, Inc. Confidential



It starts with the search for a portable thermal host...





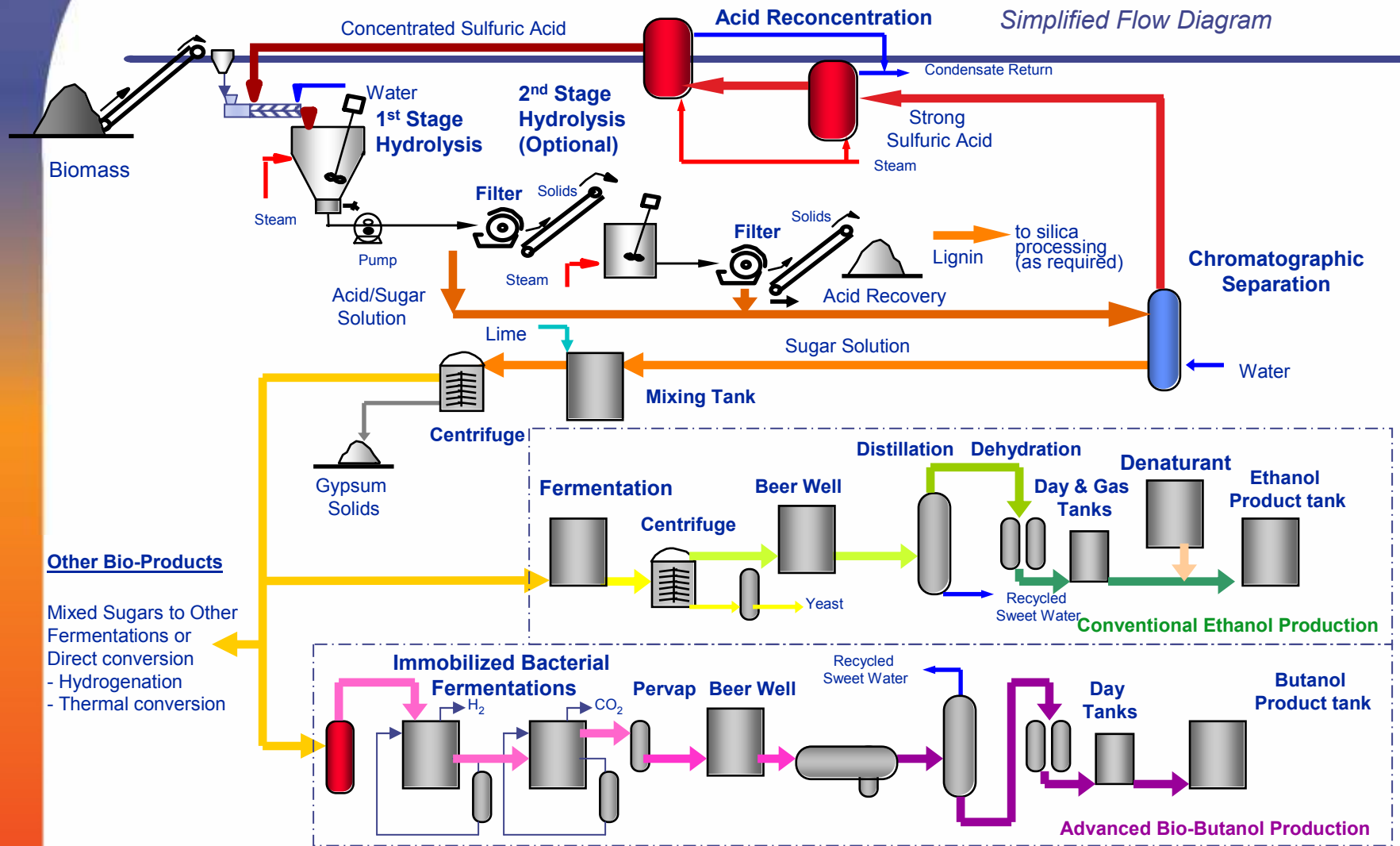
What Makes BlueFire Different?

- **To date, the only technology proven by an independent third-party to convert Municipal Solid Waste (MSW) to Ethanol.**
- **Experienced Management Team specializing in project finance, technology commercialization, and project development; Together secured over \$1 Billion in Non-Recourse financing**
- **The only process to be fully licensed permitted in the State of California (most difficult permitting in the USA)**
- **Business Plan is to build 20 Cellulose to Ethanol Plants in the next eight years generating over \$2 Billion in Revenues by 2013 with Pre-Tax Income of over \$1.2 Billion**
- **Sub \$1.00/gal Production Costs on plants 2 through 20**
- **Average 20-year Pre-Tax IRR from 55MMGPY Plant is over 67%, with a plant payback in less than 3-years**
- **Equity and Debt funding for the projects will be done on the Project level, not the Corporate level, which means little or no dilution to current shareholders**
- **Pilot Plants were operating prior to this in Orange, CA and Japan for a combined total of over 8 years**



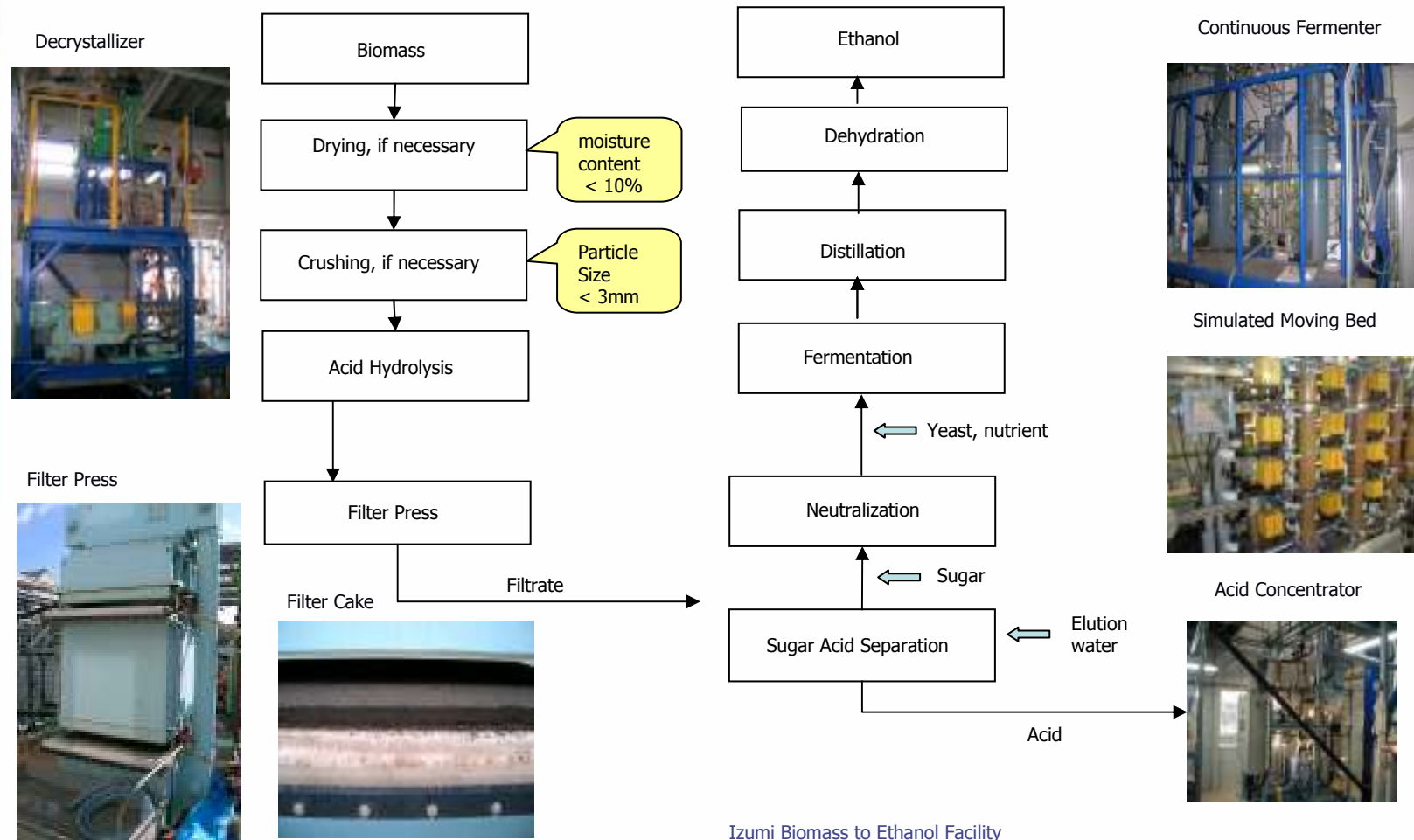


Conversion of Cellulose/Hemicellulose to Mixed Sugars Using Arkenol's Concentrated Acid Hydrolysis





Concentrated Acid Hydrolysis for Cellulose to Ethanol Production



Izumi Biomass to Ethanol Facility



Strategic Relationships In Place For Commercialization

- **JGC Corporation – Process Design and Operating Experience**
- **MECS (Formerly Monsanto) – lead EPC Contractor, experts in sulfuric acid industry**
- **Feedstock supplies – A Publicly Traded Major Landfill Operator and others**
- **Ethanol Off-take - Petro-Diamond (a Mitsubishi Subsidiary) and others**
- **Strategic Partnerships under development**





Advantages of Using Cellulosic Feedstocks

- Use of urban feedstocks allows for plants to be located close to end use markets for cellulose ethanol = Transportation Advantage
- Can achieve lower production costs = Low Feedstock Costs
- Does not use food as a feedstock source = Avoid Food vs. Fuel Issue
- Allows for co-location to reduce incremental environmental impacts
 - In landfills - use landfill gas and infrastructure
 - Adjacent to biomass power plant - provide lignin, cogen
 - Adjacent to MRFs - divert residuals after recycling from landfills





Superior to Other Cellulose to Ethanol Technologies

- Demonstrated by third party (JGC) for over 4 years of operation
- No enzyme risks (e.g., cost, health, workplace)
- Use of common, less toxic sulfuric acid under mild conditions minimizes health and workplace hazards
- Higher sugar concentration and more efficient acid recovery means lower operations cost
- No requirement for high pressure/temperature vessels means lower capital costs
- Does not require energy intensive grinding to small particle size compared to enzymatic; less energy, and less capital required
- Higher sugar concentration also means less energy required
- Smaller waste stream
- No need to re-design process for each feedstock type creates feedstock flexibility





Results in Competitive Advantages

- Corn-based ethanol profitability linked to feedstock costs → • BlueFire feedstock pricing is predictable over life of project
- Corn based facilities located close to feedstock supplies and require transportation to fuel markets → • BlueFire facilities using urban waste can be located within transportation fuel markets
- Dilute acid hydrolysis results in formation of fermentation inhibitors reducing yield → • BlueFire (Arkenol Process) does not result in fermentation inhibitors resulting in higher yields
- Enzymatic process feedstock preparation is energy intensive → • BlueFire has minimum feedstock requirements – $\frac{3}{4}$ inch minus Lower energy and capital costs
- Enzymatic process is feedstock specific → • BlueFire can use a wide variety of feedstock from agricultural to urban to forest wastes





Landfills –The New Energy Source

Status Quo of Landfills

- Major source of methane gas emissions in the United States (20x more potent GHG emissions)
- Creates smog-causing volatile organic compounds (VOCs), and air toxics, pollutants known or suspected of causing cancer and other serious health hazards as the waste decomposes
- Becoming difficult to expand and build new landfills
- Takes-up valuable land that could be utilized more productively

The Possibility With BlueFire

- Access to urban transportation fuel market from co-location
- Economic source of landfill gas to generate power and steam for ethanol biorefinery
- Extended useful life of landfill—create air space
- Existing landfill regulatory oversight simplifies permitting process for ethanol biorefinery
- More beneficial use of waste; ethanol production
- Generate GHG credits
- Utilize new as-yet untapped bio-fuel reserves





Challenges to Commercialization

- Project Finance Model
 - Investors Consider Three General Areas of Potential Project Risk





Project Risk Mitigation



Provider of Feedstock

- *Credit Worthy*
- *Specified Term (matching project loan term)*
- *Quality Specification*
- *Quantity Specification*
- *“Put or pay” requirement*
- *Damages for nonperformance*

Project Execution Team

- *Credit Worthy*
- *Mechanical Guarantees*
- *Schedule Guarantees*
- *Process Guarantees*
- *Fixed Price*
- *Liquidated Damages (damages for nonperformance)*

Buyer of Feedstock

- *Credit Worthy*
- *Specified Term (matching project loan term)*
- *Quality Specification*
- *Quantity Specification*
- *“Take or pay” requirement*
- *Damages for nonperformance*



Guarantees composed of:

- **Partial Process Guarantee from Technology Provider**
- **Partial Process Guarantee from EPC Provider**
- **Experience of Team**
- **Additional Equity**





BlueFire Technology Provides Competitive Entry into Bio-based Chemicals and Target Market Segments

Raw Material

Technology

Chemical Class

Bio-Based Chemicals

End Markets

