



UK's First Fuel Ethanol Plant .. now on Stream!



British Sugar plc, Wissington, Norfolk.



## MESSAGES

### Praj Industries Limited



It has been our privilege to be associated with the Wisington Bioethanol Project of British Sugar in U.K. Being the first plant to service the British Government's *Renewable Transport Fuel Obligation* is only part of the reason why we are so proud of this project. We are also

overwhelmed by the fact that we were selected by one of the leading sugar Companies in Europe for their first fuel ethanol project. Our engagement with the British Sugar team has been very successful and the plant based on our technology highlights our ability to work across different raw materials, in this case it is beet syrup.

I wish to thank all those involved in the project as well as the management of British Sugar for their support. We look forward to a long-term relationship with British Sugar.

We are committed to the European Biofuels industry with solutions meeting the highest standards. We have strengthened this resolve by launching a JV with Aker Kvaerner, Netherlands - BioCnergy Europa B.V. This will allow us to be closer to the customer.

With Best Wishes !

Pramod Chaudhari - Chairman

October 2007

### British Sugar plc.



In January 2006, British Sugar embarked on a journey to build the UK's first bioethanol plant for the production of 70 million litres per year of bioethanol for our customers in the road transport fuel market.

British Sugar selected Praj based on their cost competitiveness, expertise in sugar ethanol plants and progressive approach to R&D. Throughout the project a strong joint team ethic quickly developed between the British Sugar & Praj teams, which invested heavily in knowledge transfer. This has enabled British Sugar to build a strong technical & operations capability at Wisington, whilst Praj have delivered to the design standards required for UK manufacturing.

I am very pleased to report that the bioethanol plant began production trials on September 3rd 2007 and safely reached design throughput within the first 2 weeks of operation. Furthermore, the plant also produced fuel grade bioethanol (to specification) within 3 days of its start-up. The early signs from these production trials are very promising.

May I congratulate Praj for taking this first step with British Sugar into the UK. This provides an excellent platform for our further growth.

Karl Carter - Group Development Director

October 2007



## BACKGROUND



### British Sugar

British Sugar, the leading supplier of sugars to U.K., is part of the £6.0 bln Associated British Foods (ABF). British Sugar operates four factories in U.K., producing more than 1 million tonnes of white sugar each year from sugarbeet. Approximately 5,000 farmers contract with British Sugar each year to provide more than 7 million tonnes of raw material: sugar beet, which is grown on 125,000 hectares. British Sugar is a major sugar producer in Africa, China and Poland as well.

ABF recently entered into an agreement with BP and DuPont on an investment to build a world-scale wheat based biofuel plant in UK. ABF will hold 45% of the JV. Once again, Praj is privileged to have been chosen as Technology Licensor for this Project. Praj, along with partner Aker Kvaerner is currently carrying out Front End Engineering & Design (FEED) assignment for this project.

The plant will produce bioethanol from whole wheat and will be built at a cost of £200m at Saltend, Hull. Its capacity will be 420m litres (330,000 tonnes) of bioethanol per year and is planned to come on stream in late 2009.

### Uk's Fuel Ethanol Mandate



The Renewable Transport Fuel Obligation (RTFO) is due to become the UK's primary mechanism to develop a market for transport biofuels as well as delivering the objectives of the Biofuel Directive. The RTFO will require road transport fuel suppliers to ensure that a proportion of the road fuel they supply in the UK comes from renewable sources. The UK Government is due to introduce the RTFO in April 2008 which will also require suppliers to report against environmental and sustainability measures such as 'reduction in

emissions of GHG, e.g. carbon'.

The 2006 Budget announced that the level of obligation for the years leading up to 2010 would be 2.5% of total fuel sales in 2008/9; 3.75% in 2009/10, leading to 5% in 2010/11. These targets have been set on a volume basis. They are expected to deliver a net saving of around 1 MtC per year by 2010.



# THE PROJECT

## Capacity:

70 million litres per annum of fuel grade bioethanol.

## Project Timeline:

Jan'06 (Project kick-off)

Feb'06 (Groundbreaking)

Dec'06 (Equipment delivery)

Apr'07 (Training)

Sept'07 (Start-up, commissioning and Handing Over)

## Raw Material:

Sugar Beet Syrup

## Location:

Wissington, Norfolk, UK

## Services:

Licence, Design & Engineering of Fermentation, Distillation, Evaporation, Molecular Sieve Dehydration plant including piping, instrumentation, supervision of commissioning and supply of proprietary equipment.

## Highlights:

- Manufacture of CE marked equipment in Praj workshop in Pune, India.
- UK based 3rd party inspection of Design & Manufacture.
- Safety assessment of design and operations by Praj & British Sugar's teams.
- Construction managed by British Sugar.
- Laboratory benchmarking by Praj and British Sugar's scientists
- Recycle of Vinasse upto 75% ensuring lower wastewater volume and virtually no fresh water requirement.
- Continuous Fermentation with yeast recycle.
- Use of high performance granulating yeast for separation by gravity - eliminating expensive mechanical separators.
- High fermentation efficiency - over 91%.
- Low by-product formation and chemical consumption.
- Evaporated syrup(vinasse) used as cattle-feed.





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