British Sugar and the IED

CEA/CRF/RSC Seminar
London 22nd September 2011
Parent company: Associated British Foods plc

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British Sugar the facts today...

**UK**
- A leading UK competitor supplying all the major blue-chip customers
- Comprehensive portfolio of products
- Lowest cost sugar processor in the EU
- 1.2 million tonnes of sugar (1.056 mt quota)
- Four factories processing sugar beet
- c. 4,000 growers
- Sole processor of UK sugar beet crop
- UK’s largest single tomato glasshouse at Wissington
- Bioethanol refinery at Wissington sugar factory
How our factories operate (Wissington refinery)
How we operate

• Focus on using raw materials responsibly and efficiently
  • Recognised as one of the most efficient beet sugar processors in Europe
  • Complex heat recovery systems minimise energy demand
  • PAS 2050 carbon footprints certified by Carbon Trust for all products

• Embraced combined heat & power (CHP)
  • Reduced energy requirements per tonne sugar by 25% since 1990
  • Exports 700,000 MWhrs electricity for use in the local electricity network –
    enough to power a town of 160,000 homes

• Water usage
  • Transport, heat recovery, recycling

• Emissions recovery and recycling
  • Biogas (Methane) fuels boilers
  • CO₂ utilised in glasshouse

• Industry leading quality standards
  • Invested ~£1 billion in new & emerging technologies
The Industrial Emissions Directive

- British Sugar operates four sites under Environmental Permit
  - Main activity is food manufacture
  - All sites have up to 8 permitted activities
- All sites have CHP combustion plant integral to operations
  - Combustion plants serve our other processes
- Three sites currently operate under LCPD and NERP
  - Two have < 50 MWth boilers caught by aggregation rules
  - One site has two > 50 MWth boilers
  - One site has < 50 MWth boilers but individual stacks
  - Two sites have pre 2002 CCGT which are currently outside LCPD
- Conventional boilers are 30 to 40 years old
  - Natural gas, gas oil, HFO, coal
  - Installed to meet various constraints (footprint)
  - All will struggle to meet Annex V ELV
The Industrial Emissions Directive

• IED will be the main Legislative driver for our business
  • Tracked development since 1st draft in 2007 through to Directive in place Nov 2010
  • Numerous proposed amendments

• Strong lobbying stance
  • Directly to MEP’s
  • CEA (Defra working group)
  • FDF
  • CEFS
  • CIAA

• Lobbying beyond combustion issues
  • Environmental inspections (dependant on risk)
  • Capacity thresholds for waste (proportionate to impact)
  • Greater reliance on BREF documents to set/determine BAT
The Industrial Emissions Directive

• Main Issues

• Annex V Emissions Limit Values
  • Difficult to achieve in most cases
  • Options are LLD or TNP (time limited)
  • New plant or retrofit abatement

• Abatement options
  • Sulphur dioxide - retrofit of FGD is uneconomic for smaller boilers
  • Oxides of Nitrogen – individual boiler characteristics dictate applicability. BAT and BATNEEC upgrades already invested in and would not meet Annex V requirements
  • Particulate – Traditional options available but at huge cost which would be disproportionate to benefits achieved

• Current Combustion BREF document does not cover smaller boilers adequately
The Industrial Emissions Directive

- Determination of BAT for smaller combustion plants
  - Small size means cost of investment v environmental benefit is disproportionate
  - Integration with other processes
- Air Quality Standards must be the key driver
  - BAT should be determined on a case by case basis
- Plant efficiency
  - Abatement options impact on energy usage and CO$_2$ emissions
  - Particularly for retrofit options
  - This should be a primary consideration when determining BAT
- Load Factors
  - Plants operate at varying sometimes low loads due to steam/seasonal/weather demands
The Industrial Emissions Directive

• Combined Heat and Power
  • Efficient means to produce steam and electricity
  • Provides energy self sufficiency
  • High net energy utilisation

• Standby Fuels
  • Interruption or failure of the gas supply low usage
  • BAT should be based on main fuels use
  • No additional permit conditions/ELVs for restricted fuel use

• Best Environmental Option
  • Raw materials utilisation
  • Energy consumption
  • Parasitic loads
The Industrial Emissions Directive

- Future use of BAT Reference Documents
  - All sites have up to 8 EP activities
  - Covered by several BREF documents both sector specific and cross sector
  - Must reflect what is achievable within the sector and not just isolated examples of techniques (Food BREF)

- Sector issues
  - Integrated processes
  - Sugar regime reform continuous cycle
  - Investment cycles linked to sugar regime
  - Sugar is an international commodity competitive market
  - Recognised at risk from Carbon leakage
  - World market forces
The Industrial Emissions Directive

• Article 73(2)
  • Review the need to control emissions from combustion operations <50 MWth
  • Current consultancy project review
  • Decision by end 2012
  • Potentially affects only installation not covered by LCPD

• Maintain at 50 MWth
  • Impact of Annex V ELVs would uniquely disadvantage sector
  • Annex V goes beyond BAT on the basis of economic and technical diversity
THANK YOU

January 2010
Environment Agency, Peterborough
An introduction to British Sugar