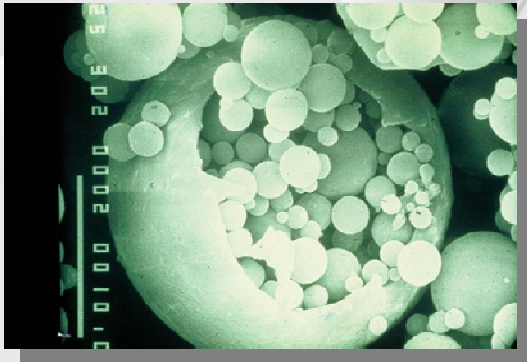




**UNITED KINGDOM
QUALITY ASH
ASSOCIATION**

Second Sustainability Report for the Coal Fired Power Station Ash Supply Industry for 2008



UK Quality Ash Association

Second Sustainability Report for the Coal Fired Power Station Ash Supply Industry

Introduction

The UK Quality Ash Association (UKQAA) responsibly sourced materials scheme was introduced in 2008 following an initiative within the Concrete Industry to work towards a sector scheme reporting the sustainability achievements. The Concrete Industry scheme is now known as the Concrete Sustainability Forum. The first reported year for the UKQAA scheme was in 2007, though this was very much a year for developing the scheme. The UKQAA scheme is designed to both support the concrete industry scheme, but is specific to the fly ash industry covering the wide variety of applications, requiring a range of ash qualities. As a result it is not wholly compatible with the Concrete Industry scheme.

This report summarises the results of the second year of reporting and outlines the operation of the scheme. A series of Key Performance Indicators are reported, which have been produced based on DEFRA and Environment Agency guideline and are similar to BRE's - BES 6001 and the draft British Standard BS8902. However, the members of the UKQAA have indicated that they are not prepared to submit the UKQAA scheme to either of these standards at this stage as both documents require third party accreditation.

The Key Performance Indicators (KPI)

The UKQAA scheme is based on five categories of performance indicator resulting in 18 KPIs or clauses A to R. The considerable majority of these KPIs are graded numerically with 1 being the best performance and 4 the worst. Some KPIs are not graded but described by a letter. These KPIs are those that have relevance to the methods of production, but are not seen as benefiting from applying a scoring system. There is no significance to the letter assigned for these KPIs; they are solely to be indicative of the production systems being operated at a power station.

The data collection for 2008 was carried out between June and December of 2009. During this period of data collection the scheme was refined using member's returns and comments. This resulted in some changes being made to the scheme to ensure it was practicable, reported useful and reliable statistics and yet without becoming over burdensome to the membership.

Twelve out of the possible eighteen power stations responded to the call for information, these are listed in the Appendix A. **United Kingdom Quality Ash Association Responsibly Sourced Materials Certificates** were issued to power stations providing data, see example in Figure 1.

The following are requirements of the Operating Procedure and explanations of the 18 KPIs (in italics) and the results from the contributing members for data collected during 2009, relating to production in 2008 and based on the Operating Procedure for the UKQAA Responsibly Sourced Materials Scheme for power station ash products, Version 9-3 – November 2009.



Figure 1 - An Example certificate

Category 1 - Sustainable Consumption and Production

Management Systems (including legal compliance)

The power station shall have systems in place to operate in a legal, efficient and financially sustainable manner with continuous improvement in the management of quality, the environment and human resources. This shall be assessed using the following KPIs:

Clause A - Environmental Management Systems: The existence of an operation Environmental Management scheme. There are four Grades as follows:

Grade 1 - ISO14001

Grade 2 - BS8555 - Level 5

Grade 3 - BS8555 - Level 4

Grade 4 - BS8555 - <Level 4

Results for 2008: All UKQAA responding member power stations operated ISO 14001 systems. The overall score was 1.0.

Waste

The power station shall manage all waste streams effectively and aim to minimise the waste disposed of to landfill. This shall be assessed by the following KPIs:

Clause B – Waste and type of production facility: Some ash is processed to produce a saleable product, particularly for the concrete and block markets. The processes considered here are those that potentially result in a waste stream and/or consume significant amounts of energy (>5kWh per tonne). They do not include normal selection techniques, which are classified as Category A. This category defines the type production facility being used as follows:

Category A = Selection and/or no processing of ash carried out.

Category B = Mechanical size classification of ash when required.

Category C = Carbon reduction equipment used when required (may include ammonia removal).

Category D = Both size classification and carbon reduction carried out (may include ammonia removal).

Category E = Size classification, carbon reduction and more complex product separation.

This KPI is not considered a measure of the sustainability of the ash production process. This is because in making some ashes saleable a degree of physical processing may be carried out. For example, the coarser fractions and/or the unburned carbon fractions may be removed in order to make the ash more suitable for sensitive applications. This inevitably involves producing some potential waste streams, though many of these residues will be used for less critical applications or within the power station boundary.

The overall intent of ash processing is to produce more saleable ash, thereby reducing the overall amount of material going to landfill. Therefore, the producers have been graded into four categories, with those operating the most sophisticated equipment either by necessity or design being indicated by the code letter.

Result for 2008:

- **Six power stations had no classification or selection systems (Category A),**
- **Two stations have mechanical size classification (Category B),**
- **Two stations have carbon reduction (Category C) and**
- **Two stations with both carbon reduction and classification (Category D).**

Emissions to air and water (excluding CO₂)

The power station shall endeavour to minimise emissions to air and water from the production process (excluding CO₂). This shall be assessed by the following KPIs:



Figure 2 - Another load of PFA

Clause C - No. of reportable environmental incidents on a per site basis: To indicate degree of control in preventing accidental dust emissions, discharges of water, etc to the natural environment. Report the number of significant dust emissions to air and releases to ground water incidents during the year. These are split into 4 grades as follows:

- Grade 1: Zero incidents
- Grade 2: 1 or 2 incidents
- Grade 3: 3 or 4 incidents
- Grade 4: More than 4 incidents

The ash sales plant is only a small part of a coal fired power station. This KPI only relates to environmental incidents associated with the ash sales facilities, such as releases of dust from silo filter, accidental loss of ash destined for sale into water courses, etc. These do NOT include releases associated with the power station that are outside of the control of the ash producer/supply division.

Result for 2008: There were no incidents of emissions to air and water reported during 2008. The overall score was 1.0

Stakeholder Engagement

Power stations shall aim to communicate and work constructively with the supply chain and other relevant stakeholders. This shall be assessed by the following KPIs:

Clause D - Communication with other parties, e.g. power station staff, ash users, etc: BS 8900 Standard for stakeholder engagement. The provision of methods for communicating with other parties affected by the production of ash products.

- A = Regular consultations with supply chain, e.g. coal buyers, power station engineers, etc.
- B = Provision of data relating to the production and sale of ash products to all parties.
- C = System for providing information to ash users, e.g. newsletters, meetings, etc.

The reported KPI is graded depending on the number of the above that are being carried out, with Grade 1 when all three are being implemented and Grade 4 when none are being implemented.

Result for 2008: Ten stations are graded as 1, having all three communications systems in place, with two stations graded as 2 having only two in place. The overall score was 1.2

Quality & Performance

A power station shall market and develop materials and products that contribute to a sustainable built environment. This shall be assessed by the following KPIs:

Clause E - Compliance with products standards: The proportion of material supplied in compliance with the appropriate product standards, for example EN450-1, EN12620, EN13055-1, Spec. for Highway Works, etc and shown on delivery documentation.

This KPI is to assess the degree of control and compliance with recognised standards for the product. Material not supplied and/or controlled in any manner shall be regarded little more than an alternative disposal route.

There are four grades defined:

- Grade 1 = 100% of material is sold to recognisable standards.
- Grade 2 = >90% and <100% sold
- Grade 3 = >80% and < 90% sold
- Grade 4 = <80% sold.

Material sold as 'run of station' or as unspecified 'fly ash/PFA' will achieve a low grading. For example if all ash is sold as 'run of station' then this is 0% sold complying to a recognised standard, e.g. a grade 4 supplier.



Figure 3 - A rare orchid growing on PFA

Result for 2008:

- Two stations report supplying 100% of their material to recognisable standards,
- Two stations report Grade 2 compliance,
- Seven stations report Grade 4 compliance.

The overall average score was 3.2.

This is one area where significant improvements are possible by supplying material to recognised European and British standards or specifications. In comparison with 2007 results there has been no progress found. However, the Environment Agency Quality Protocol is being implemented during 2010, which has a specific requirement for compliance with product standards. It is hoped this will spur an increase in KPI compliance during 2010.

Category 2 - Climate Change and Energy

Energy Efficiency

The power station shall aim to use energy more efficiently in production and transport processes. This shall be assessed by the following KPIs:

Clause F - CO₂ Emissions (Production): Electricity consumption for processing. Some ash processes require electricity to beneficiate the ash making it saleable in some markets, e.g. concrete and block making. So the energy usage is directly associated with trying to reduce waste to landfill, e.g. such processing is beneficial. This KPI is closely associated with Clause B, Waste KPI. There are a number of differing processes available to the ash producer ranging from selection methods through to sophisticated processing equipment.

They are graded into the average electricity consumption per tonne of ash sold and split into Grades A to D.

Grade A – 0 to 5 Kwh per tonne of ash sold

Grade B – 5 to 10 Kwh per tonne of ash sold

Grade C – 10 to 20 Kwh per tonne of ash sold

Grade D – >20 Kwh per tonne of ash sold

Result for 2008: The processing of ash is beneficial to the environment in that the use of ash products reduces overall CO₂ emissions, e.g. when used as an addition to cement, and virgin aggregate use. The Categories for each station are given on the certificate. In summary;

- Nine stations are Category A stations,
- One station is category B,
- Two stations are category D.

This KPI will be increasingly relevant in future years as the sophistication and number of processing equipment increases. As boilers are fitted with more emissions equipment such as lower NO_x burners, Selective Catalytic Reduction (SCR), etc the energy consumption is bound to increase.



Figure 4 - Making a Fly Ash Bound road base

CO₂ Emissions (Transport)

Clause G: Transportation from the production facility to the construction site: This KPI reports the CO₂ emissions associated with the transportation of materials and products from the production facility to the construction site. The CO₂ associated with the production of ash is normally accepted as being part of the electricity production cycle. As power stations tend to be located away from the heavily populated areas and the larger construction markets, the resulting haulage may have a significant environmental impact and the biggest potential source of green house gas emissions. This KPI uses standard calculation techniques for CO₂ emissions from transport. These are calculated in two

ways, from the base data, e.g. the fuel consumption, the distance travelled (including any empty back haul) and tonnes carried or by use of default values using a dedicated Transport Calculator.

Many ash producers sub-contract their haulage and therefore it becomes commercially sensitive information as to the efficiency of the transport methods, whether back hauls are possible, etc. In such circumstances the producer within this scheme has no option but to use the default values. However, using the assumed road freight values only will result in being classified as Grade 4, the lowest. Transport by train and canal barge default values are also given, which are factored into the overall picture based on the tonnage moved in these ways.

The default values are as follows:

For all: 2.630 kg of CO₂ is produced per litre of diesel used.

Type 1: For road freight 0.0626 kg of CO₂ / tonne-km or 0.1007 kg of CO₂ / tonne-mile is produced. Assumes typical fuel usage.

Type 2: For rail freight 0.049 kg of CO₂ / tonne-km or 0.079 kg of CO₂ per tonne-mile is produced.

Type 3: For canal freight use 0.035kg of CO₂/ tonne-km or 0.056 kg of CO₂/ tonne-mile.

From this the overall CO₂ emissions are graded as follows:

Grade 1 – <0.06 kg of CO₂/ tonne-mile

Grade 2 – 0.06 to <0.08 kg of CO₂/ tonne-mile

Grade 3 – 0.08 to <0.10 kg of CO₂/ tonne-mile

Grade 4 – ≥0.10 kg of CO₂/ tonne-mile

Result for 2008: Though delivery by standard road freight vehicles is the predominant norm, two members are now reporting actual fuel usage values, which is both cases are better than the DEFRA average values. The overall average score is 3.8.

Provision of Transport information and reduction in impacts

Clause H - Provide information on the environmental impacts of transportation to site of the ash to each contract. This KPI is designed to encourage ash producer and hauliers to keep records of the distances and modes of transport used in the supply of ash products. There are three records as follows:

A = Record delivery miles by transport mode on delivery ticket.

B = Collaborate with partners in reduction of transport impacts, by arranging return loads, etc.

C = Use alternative fuels and methods of transport to reduce impacts wherever possible, e.g. bio diesel, canal, rail, etc.

From these the various permutations are graded as follows:

Grade 1 – A, B & C

Grade 2 – A and C or A and B

Grade 3 – A only

Grade 4 – None

Result for 2008: The range of results does vary significantly from station to station. In summary;

- **Two stations report compliance with Grade 1,**
- **Three stations comply with Grade 2,**
- **Two stations comply with Grade 3 and**
- **Four stations comply with Grade 4.**

The overall score was 2.8.

Clauses G & H are areas where the use of more efficient vehicles, rail or even barge deliveries could have significant benefits. Closer liaison between hauliers and power stations may produce some immediate results by encouraging fewer empty return journeys, for example.

Category 3 - Natural Resources and Enhancing the Environment

Materials Efficiency

The power station shall aim to minimise the disposal of ash products to landfill where they can be utilised within the construction industry. This shall be assessed by the following KPIs:

Clause I - Annual Utilisation of PFA (fly ash): This recognises the need to use all primary, secondary and recycled materials in the most efficient manner. This is designed to encourage the producer to market their fly ash (PFA) as much as possible for beneficial use within the construction market. Land reclamation has been excluded as this, though more preferable than disposal is less preferable than the product being sold for construction applications.

This is expressed as percentage of total annual production (dry weight) sold to the construction market. This KPI is split into four groups as follows:

Grade 1 - >80% of production sold

Grade 2 - >50% but < 80% sold

Grade 3 - >20% but <50% sold

Grade 4 - <20% sold

Result for 2008: This KPI depends on the location of the power station relative to construction markets, the nature of the ash being produced, the generation profile, etc. For example coal fired power stations that provide base load electricity produce in general a lower Loss On Ignition fly ash, which is more suitable for use in concrete. In summary;

- Four power stations were Grade 2,
- Six stations were Grade 3,
- Two stations were Grade 4.

The overall result was 2.8, indicating there is some way to go before 100% ash utilisation is achieved in the UK. With the introduction of the Quality Protocol for PFA and FBA (for Bound and Grouts) in 2010 it is hoped this will encourage more to use PFA!

Clause J - Annual Utilisation of Furnace Bottom Ash (FBA): This recognises the need to use all primary, secondary and recycled materials in the most efficient manner. This is designed to encourage the producer to market their FBA as much as possible for beneficial use within the construction market. Land reclamation has been excluded as this, though more preferable than disposal is less preferable than the product being sold for construction applications.

This is expressed as percentage of total annual production (dry weight) sold to the construction market. This KPI is split into four groups as follows:

Grade 1 - >90% of production sold

Grade 2 - >70% but < 90% sold

Grade 3 - >40% but <70% sold

Grade 4 - <40% sold

Result for 2008: Even though there has been a recession during 2008, ten stations reported selling all their FBA into the block market. One station, due to operational reasons, was scored as Grade 3.

Complaints

Clause K – Complaints: This KPI is designed to record the number of complaints/incidents associated with the production and supply of ash products to the construction industry. It is a measure of the producer's customer care strategy.

Records of problems associated with the production and delivery of ash products reported by public, site staff, etc are to be kept and reported on an annual basis. It is split into four grades as follows:

Grade 1 – No incidents p.a.

Grade 2 – 1 to 2 incidents

Grade 3 – 3 or 4 incidents

Grade 4 - >4 incidents

Result for 2008: Some complaints were received during the year as follows;

- **Eight stations were Grade 1, e.g. no complaints were received,**
- **One station was Grade 2, and**
- **Two stations were Grade 4.**

Overall the grading was 1.8.

Category 4 – Creating sustainable communities

The power station shall aim to minimise accidents by adopting health and safety management systems, by engagement with their workforce, by offering education and training and fair employment practices and liaise with the local community. This shall be assessed by the following KPIs:

Health and Safety

Clause L – Health and Safety Lost Time Accidents. This KPI is a measure of the H&S culture and its importance within a company. It is based on the RIDDOR lost time accidents, see <http://www.hse.gov.uk/riddor/guidance.htm>, and reported as the number of days resulting from lost time accidents expressed as the number of days lost per member of staff per annum.

There are four gradings as follows:

Grade 1 – NIL lost days per staff

Grade 2 - <1 lost day per staff

Grade 3 - <3 lost days per staff

Grade 4 - >3 lost days per staff

Result for 2008: There were a number of lost time accidents, though the majority of stations were accident free. In summary;

- **Nine stations were Grade 1, e.g. accident free,**
- **Two stations were Grade 2 and,**
- **One station was Grade 3.**

This is one area where improvements are possible. The overall grading was 1.3.

Clause M - Health and Safety Management Systems: This KPI is a measure of the level of interest and compliance in Occupational Health and Safety Management Systems (OHSAS) within the company. To demonstrate a competent H&S management system is in operation there are three options as follows:

A = Compliant with OHSAS 18001

B = RoSPA awards

C = Annual UKAS compliance verification carried out



Figure 5 - Unloading a PFA train at Northwich

These are graded depending on the number of initiatives the company is involved with as in the following:

Grade 1 - All of A, B & C compliant

Grade 2 –Two only of A, B & C carried out

Grade 3 –One only of A, B & C carried out

Grade 4 – None

Result for 2008: Nine power stations reported compliance with all three H&S Management systems, e.g. Grade 1, whereas one was Grade 2 and two stations were Grade 3. The overall grading was 1.4.

Clause N- Engagement with workforce. This KPI is an indication of the producer's interest in their staff and working conditions and to provide the opportunity of constructive engagement with employees. The three options are as follows;

A = Investors in People

B = Liaison with Trade Union or Employee Councils

C = Regular staff meetings.

Which are graded as follows:

Grade 1 – A, B & C

Grade 2 – Any two of A, B & C

Grade 3 – Any one of A, B & C

Grade 4 – None

Result for 2008: All power stations are graded as 1.

Clause O – Education and training: This KPI is to assess the investment in vocation training and/or professional education courses plus whether any staff training and development programmes are in place. The options are split into four groups as follows:

Grade 1 - Training programme and professional education courses offered

Grade 2 - Training programme only or professional education courses only

Grade 3 - Supervised on the job training only

Grade 4 - No formal training given

Result for 2008: All power stations are graded as 1, with one exception which was graded 3. The overall grading was 1.2.

Clause P – Employment: This KPI is to assess the interaction with local communities on employment issues. There are three options as follows:

A = Have a published equal opportunity policy

B = Provide evidence of local recruitment initiatives

C = Provide evidence of established links with local schools/colleges.

These are grouped as follows:

Grade 1 - A, B & C

Grade 2 - A & one other

Grade 3 - A

Grade 4 – None

Result for 2008: The overall average result was 1.2, with only one station being graded as two.

Clause Q – Local Community: This KPI is to assess the planning and design of operations in a manner that provides an acceptable quality of life for the local community. It indicates the degree of liaison with the local community and the response to complaints. There are four grades as follows:

Grade 1 – Community engagement programme, a formal system of complaints, the provision of work experience positions and support for community projects including school visits.

Grade 2 – Community engagement programme and a formal system of complaints.

Grade 3 – A formal system of complaints.

Grade 4 – No community engagement or complaints system.

Result for 2008: All power stations are graded as 1.



**Figure 6 - A concrete tree – the chimney of a gas works!
An early form of being environmentally friendly.**

Category 5 – Overall Business Responsibility

The power station parent company shall aim for the highest standards of corporate responsibility. This shall be assessed by the following KPI:

Clause R – Business in the community – The Corporate Responsibility Index¹: *Business in the Community's CR Index is the UK's leading benchmark of responsible business. The Index assesses the extent to which corporate strategy is integrated into business practice throughout an organisation. This KPI is not restricted just to the ash producing aspects, but to the whole power station business. The index issues awards on an annual basis and these are graded as follows:*

Grade 1 – Platinum Award

Grade 2 – Gold Award

Grade 3 – Silver Award

Grade 4 – Bronze Award

Grade 5 – Participant in alternative scheme

Grade 6 – None participant in any scheme

Result for 2008: There are three companies that are none participating in this scheme. Though the overall result was 2.2 including the non-participants, with seven stations having Platinum awards and two stations with Gold awards.

Analysis of the Key Performance Indicators

The Basic analysis of the KPIs

The Key Performance Indicators are analysed to produce an overall percentage sustainability rating which ranges from 0% to 100%. The individual KPI gradings are not weighted in any manner. The numeric KPIs are summed to produce a total KPI grading score. The alphabetic KPIs, Clause B and Clause F that relate to the energy consumption and type of processing being carried out are excluded. This total score may range from 16 to 65.

Overall Sustainability figure: The overall sustainability rating is calculated using the following formula and can range from 0 to 100%:

$$\text{Sustainability rating in \%} = \left[1 - \frac{(\text{Score} - 16)}{49} \right] \times 100$$

Issue of certificates: A certificate bearing the logo of the UKQAA shall be issued to all the power stations providing information:

- The power station name
- The company name
- The sustainability rating in %
- The production plant type

Overall Results for 2008

The overall average UKQAA Sustainability Rating for the power stations that submitted returns for 2008 was:

Average Score	27.9
Average Sustainability Rating	75.7%

Setting Targets for 2009 and onwards

The overall aim of the scheme is for continuous improvement. Therefore, it is not expected that any KPI will reduce in comparison with previous years, with the possible exception of Clause R. However, Clause R may be changed in the future to be more indicative than prescriptive as the Corporate Responsibility index is not available to all UKQAA full members.

The number of power stations contributing to the scheme has increased from nine to twelve, representing 67% of the operation coal fired power stations within the UK. It should be noted that one coal fired power station does not supply the National electricity grid and considers the UKQAA scheme to be specifically for electricity generators. Therefore, they at the current time declined to supply the sustainability information. With the larger numbers of co-operating stations, some KPIs would seem to have declined, rather than improved. This is simply due to the statistics from the greater proportion reporting.

The scheme will continue and collection for 2009 data is currently in progress. One primary aim is to collect data from all UKQAA members' power stations, e.g. all 18 operational coal fired power stations. An annual report shall be produced as soon as practicable after all the data is collected and analysed.

The following KPIs are those identified where substantial improvements could be made in 2009 and subsequent years.



Figure 7 -Celtic Manor - site of the 2010 Ryder Cup



Figure 8 - Compacting PFA on the M4, Jnc. 11.

Clause E - Compliance with products standards

The compliance with recognised Product Standards rather than the ubiquitous 'run of station' material supply is one area where significant improvements are possible. The introduction of the draft Quality Protocol for Bound and Grouting (QP) Applications for England and Wales from April 2010 will force ash suppliers to supply to standards, for this is a basic requirement of the QP. For many applications compliance is relatively straightforward to achieve and this is seen as an area where great gains can be easily made.

The aim for 2009 is for an overall average grading of <3.0 and for 2010 an overall average grading of <2.0 for this KPI. When the QP for unbound applications is complete, which is due in 2011, this KPI should move towards 1.0 if QP compliance is to be fully maintained.

Clause G: Transportation from the production facility to the construction site and Clause H -

Provide information on the environmental impacts of transportation to site of the ash to each contract.

The collection of haulage data, mileage, fuel use, etc has increased since 2007. When these data are compared with the DEFRA UK average figures, the supply of ash seems relatively efficient. This is presumably due to the use of dedicated supply vehicles and full loads being sent out predominantly.

Stated aims of a Clause G grading of <4.0 was achieved in 2008, but the aim of <2.5 for clause H was not.

The aim for 2009 is for an overall average Clause G grading of <4.5 and a Clause H rating of <2.5. In late 2009 one station gained access to a boat by which conditioned ash can be shipped around the coast, reducing overall transport impacts.

Clause I - Annual Utilisation of PFA (fly ash) and Clause J - Annual Utilisation of Furnace Bottom Ash (FBA)

The target of <2.5 for Clause I (PFA Utilisation rate) for 2008 was not achieved. The target of <1.2 for FBA for Clause J for 2008 was just achieved.

This has been the long term aim of the members of the UKQAA for many years, to increase utilisation of ash products thereby preventing material being land filled. The 2008/10 recession has not helped particularly in the sale of PFA and FBA due to the severe downturn in the housing market and therefore, the block market and the general malaise within the construction industry. However, the sale of FBA has been maintained year on year. For PFA the utilisation rate has remained static at ~70% in comparison with 2007, but this masks a general downturn on coal fired power station generation and therefore a reduction in the overall ash utilisation and production. With less base load generation the ash quality tends to reduce, making it less suitable for the critical markets such as cement, aircrete and concrete.

Members are actively considering providing more storage of ash from the Winter generation period to supply the Summer markets. Also more processing equipment, e.g., carbon reduction plants, etc is being considered where commercially viable.

The aim for 2009 and onwards is to achieve a utilisation grading of <2.5 for PFA (Clause I) and <1.2 for FBA (Clause J).

Clause L – Health and Safety Lost Time Accidents

The number of loss time accidents reduced from 2007 to 2008 from 1.9 to 1.3. This is a significant improvement, but does still indicate that more needs to be done. As for 2009 the aim is the same as for 2008, the need to eliminate lost time due to RIDDOR accidents completely, e.g. an overall average grade of 1.0.

General

This report covers only the second year of operation of the UKQAA Sustainability scheme. More power stations are willing to be involved, especially as concrete producers are beginning to ask for copies of the power stations certificate in order to demonstrate compliance with the various sustainability standards. At least one scheme is accepting UKQAA certificates as showing ash is a sustainability sourced material.

Those power stations which decline to be involved will continue to be encouraged to join the scheme. However, they are generally the smaller stations, many of which are due to close in the relatively near future due to the Large Combustion Plant Directive being enforced.

If you have any queries or comments about this document, please contact the UKQAA.

Appendix A

The following power stations have contributed to the collection of KPIs for 2008. The UKQAA would like to thank them for their hard work in collecting the statistics:

RWE Npower;

- Aberthaw B
- Didcot A
- Tilbury B

ScotAsh;

- Longannet
- Cockenzie

EDF Energy;

- West Burton
- Cottam

Drax Power;

- Drax

Scottish & Southern (now known as SSE)

- Ferrybridge

E.ON;

- Ironbridge
- Ratcliffe

International Power

- Rugeley



Figure 9 - The UKQAA at Ecobuild 2010

For contact details for the above UKQAA members, please see the UKQAA web site.

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In general usage the term 'fly ash' is used for pulverized coal ash but it can also cover ash from burning other materials. Such 'fly ash' may have significantly differing properties and might not offer the same advantages as ash from burning pulverized coal. UKQAA datasheets only refer to PFA / fly ash produced from the burning of predominantly coal in power stations.

March 2010

ⁱ See <http://www.bitc.org.uk/index.html> for full details.