



UNITED KINGDOM
QUALITY ASH
ASSOCIATION

Fourth Sustainability Report for UKQAA Members Operating Coal Fired Power Stations in 2010



Fly ash concrete being used to construct a windmill base

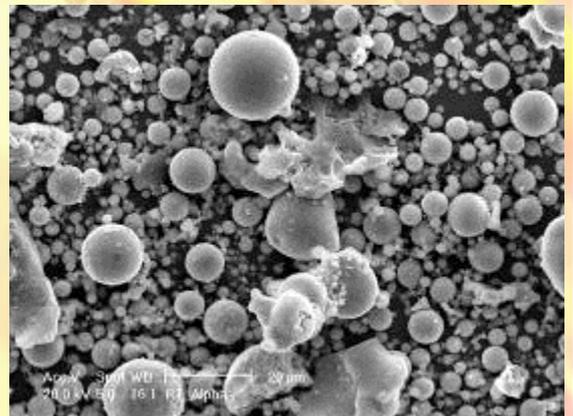


Photo micrograph of fly ash particles

UK Quality Ash Association

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

2010

Published
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The UK Quality Ash Association (UKQAA) responsibly sourced materials scheme has been in operation since 2008, supporting the Sustainable Concrete Forum (SCF) scheme, see <http://www.sustainableconcrete.org.uk/> for more information. The UKQAA scheme 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 SCF scheme; however, the UKQAA fully supports the initiative and reports the various KPIs within the bounds of the UKQAA scheme.

This report covers the fourth year of reporting, for 2010. The full details of the scheme are available, currently in version 10.3 of January 2012, from the UKQAA web site, <http://www.ukqaa.org.uk/sourcing.htm> for more information. A series of Key Performance Indicators are reported, which have been produced based on SCF, DEFRA and Environment Agency guidelines and are similar to BRE's - BES 6001 and the British Standard BS8902 requirements. 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, 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 2010 was carried out between June and December of 2011. 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.

Six 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 2010 Certificates** were issued to power stations providing data, see Figure 1. The Certificate design is changed annually so as to avoid confusion with previous versions and prevent alterations.

It should be recognised that a number of power stations are operating only to produce electricity at peak load times, resulting in the practice of 'double shifting'. This results in ash of quality not suitable for any cementitious application, which is why some stations do not see any benefit in completing returns for the UKQAA scheme.

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 2011, relating to production in 2010 and based on the Operating Procedure for the UKQAA Responsibly Sourced Materials Scheme for power station ash products, Version 10.2 – July 2011.



Figure 1 - An Example 2010 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 2010: All UKQAA responding member power stations operated ISO 14001 systems. The overall score was 1.0 (100%). Coal fired power stations are assessed annually for compliance with environment permitting and ISO 14001 compliance is effectively a requirement of permits.

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 of 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 five categories, with those operating the most sophisticated equipment either by necessity or design being indicated by the code letter.

Result for 2010:

- **Four power stations (67%) had no classification or selection systems (Category A)**
- **One station (17%) have mechanical size classification (Category B)**
- **One station (17%) with both carbon reduction and classification (Category D)**



Figure 2 - Road reinstatement using FABM
Tixall, Staffordshire

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:

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 2010: There were no incidents of emissions to air and water reported during 2010. The overall score was 1.0 (100% compliant)

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 is the standard for stakeholder engagement. The station shall make provision for methods of 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 2010: All six stations are graded as 1, having all three communications systems in place. The overall score was 1.0 (100% compliant with all three requirements)

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, Specification 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.

Note: For 2010 onwards this KPI shall indicate levels of compliance with the Quality Protocol for Bound applications and the Regulatory Position Statement for Unbound applications. This shall become a specific reported KPI on the power stations certificate.

Result for 2010:

- **Four stations (67%) reported supplying 100% of their material to recognisable standards**
- **Two stations (33%) report Grade 4 compliance**

The overall average score was 3.2.

The Quality Protocol has made a significant difference to those supplying within England, Wales and Northern Ireland as compliance is dependent on supplying to recognised standards. However, arrangements are somewhat different in Scotland where such compliance is not required.

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 2010: 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;

- **Five stations are Category A stations**
- **One station is category B**

Dependent on the amount of processing applied and the mix of material sold into the cementitious, block making and embankment/grouts market, this KPI will vary with time. More processing is often required for the cementitious market, because of the pozzolanic performance desired, whereas for the other markets little or no processing is needed.

CO_{2e} Emissions (Transport)

Clause G: Transportation from the production facility to the construction site: This KPI reports the CO_{2e} 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 greenhouse gas emissions. This KPI uses standard calculation techniques for CO_{2e} 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: 2.672 kg of CO_{2e} is produced per litre of diesel used. (DEFRA/DECC 2010 data – Scope 1 Total Direct)

Type 1: For road freight 0.0878 kg of CO_{2e} / tonne-km or 0.1413 kg of CO_{2e} / tonne-mile is produced. This assumes typical fuel usage.

Type 2: For rail freight 0.0316 kg of CO_{2e} / tonne-km or 0.0508 kg of CO_{2e} per tonne-mile is produced.

Type 3: For canal freight use 0.0294kg of CO_{2e} / tonne-km or 0.0474 kg of CO_{2e} / tonne-mile.

From this the overall CO₂ emissions are graded as follows:

Grade 1 – <0.06 kg of CO_{2e} / tonne-mile

Grade 2 – 0.06 to <0.08 kg of CO_{2e} / tonne-mile

Grade 3 – 0.08 to <0.10 kg of CO_{2e} / tonne-mile

Grade 4 – ≥0.10 kg of CO_{2e} / tonne-mile

Note: For 2010 this KPI was converted to CO_{2e} to reflect Total Green House Gas emissions using DEFRA/DECC 2010 data.

Result for 2010: Though delivery by standard road freight vehicles is the predominant norm, three members (50%) reported actual fuel usage values, which are in all cases better than the DEFRA average values. This difference is presumed to be due to them always carrying full loads and the operators using modern efficient vehicles. The overall average score is 2.8.



Figure 3 - Placing lime/fly ash based FBM1 HBM

It is noted that the method of data entry used for 2010 where distance from delivery point to site one way only was required, but diesel figures for ALL journeys has caused some confusion. For 2011 a revised system has been adopted where data can be entered two ways, hopefully resolving the data entry confusion.

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 producers and hauliers to keep records of the distances and modes of transport used in the supply of ash products. There are three methods 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 2010: The range of results does vary significantly from station to station. In summary;

- **Three stations comply with Grade 2**
- **Three stations comply with Grade 4.**

The overall score was 3.0, which is greater than found in 2009. This is because of the mix of stations making returns being reduced.

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 1 - 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 from this, though more preferable than disposal is less preferable than the product being sold for construction applications.*

This is expressed as a 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 2010: This KPI depends on the location of the power station relative to construction markets, the nature of the ash being produced, the generation profile, the amount of processing capacity available, etc. In summary;

- **One power station was Grade 1**
- **Two stations were Grade 2**
- **Two stations were Grade 3**
- **One stations was Grade 4.**

The overall result was 2.5, indicating a slight decrease over 2009.

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 from this, though more preferable than disposal is less preferable than the product being sold for construction applications.

This is expressed as a 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 2010: All six stations reported selling all their FBA into the block market. The overall score was 1.0.

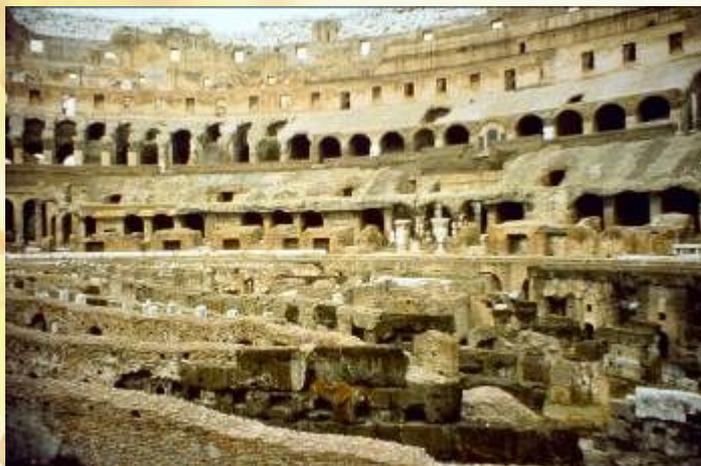


Figure 4 - The Coliseum, Rome
Roman concrete made with volcanic ash and lime

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 2010: Some complaints were received during the year as follows;

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

Overall the grading was 2.2, which is an increase on the previous year's result – indicating more complaints were received.

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 2010: There were no lost time accidents reported during the year. In summary;

- **All six stations were Grade 1, e.g. accident free,**

The overall grading was 1.0, an excellent result.

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

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 2010: Two power stations reported compliance with all three H&S Management systems, e.g. Grade 1, whereas three were Grade 2 and one station was Grade 3. The overall grading was 1.8.

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 2010: 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 2010: All power stations are graded as 1.0.

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



Figure 5 - Dam construction using fly ash concrete in the USA

Result for 2010: The overall result was 1.0, with all stations reporting full compliance.

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 2010: All power stations are graded as 1.

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 2010: Five stations received Platinum awards, with one station not being involved with the CR Index scheme. The average score was 1.7.

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%:

$$\text{Sustainability rating in \%} = \left[1 - \frac{(\text{Score} - 16)}{50} \right] \times 100$$

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 2010

The overall average UKQAA Sustainability Rating for the power stations that submitted returns for 2010 was:

Average Score	25.0
Average Sustainability Rating	82.0%

This indicates a slight reduction in the sustainability rating. This results from fewer stations submitting returns for 2010, thereby changing the base.

Setting Targets for 2011 and onwards

The overall aim of the scheme is for one of continuous improvement.

The number of power stations contributing to the scheme has decreased from twelve in 2008, ten in 2009 and only six in 2010, representing only 33%% of the operational coal fired power stations within the UK. This is rather disappointing, but questioning those that have declined from responding to the request for completion of the reports cite that users of ash products are not demanding their suppliers are compliant with the scheme. Considering there has been a significant relative increase in the utilisation of ash in the cement and concrete markets in recent years and the creation and increasing influence of the Sustainable Concrete Forum, this is rather surprising result. Additionally the UKQAA scheme has been accepted as counting towards BREEAM assessment criteria. All these factors do not appear to be sufficiently encouraging for users to demand compliance from the producers of ash products with the UKQAA scheme. However, for 2011 we are setting a target of persuading >50% of power stations to submit returns. The Technical Director and Chairman of the Technical Committee

are both working hard to achieve this aim by continually reminding members that this is their scheme and they should be part of it.

The scheme is continuing and collection of 2011 data is proceeding. The following KPIs are those identified where substantial improvements could be made in 2011 and subsequent years.

Clause E - Compliance with product 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 Quality Protocol for Bound and Grouting (QP) Applications for England and Wales from January 2011 will result in a far greater compliance ratio, for this is a basic requirement of the QP. For many applications compliance is relatively straightforward to achieve as it is simply demonstrating producing and testing to product standards and this is seen as an area where great gains can be easily made. For Unbound applications a Regulatory Position Statement applies, for which if stations are compliant, will be accepted within this KPI.

The aim for 2011 is for an overall average grading of <1.2 and the 2010 target was just about achieved. However, it should be noted that compliance with the Quality Protocol is voluntary and does not apply to ash supplies in Scotland, hence why a target of 1.0 is not possible.

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 become more comprehensive over the years this scheme has been operational. However, the data entry system has caused confusion and has been improved for 2011. In addition, we have moved to CO_{2e} 'Grand Total' figures, which encompass all emissions associated with transport, not just CO₂. The stated aim for 2010 is Clause G <3.0 and Clause H <2.2, which were realistically achievable. The Clause G target was achieved with 2.8, but clause H remained stubbornly stuck at 3.0!

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

The targets for 2009 onwards were for Clause I to be <2.3 overall and Clause J <1.1. For 2010 the Clause I (Utilisation of fly ash) KPI was only 2.5, though considering the recession the target does now look somewhat optimistic. For clause J (Utilisation of FBA) 100% of production was sold, primarily to the block market, so the target of <1.1 was achieved. We shall retain the target of <2.3 for Clause I and <1.1 for FBA for 2011.

Clause L – Health and Safety Lost Time Accidents

For 2011 the aim is the same as for 2008, 2009 and 2010, the need to eliminate lost time due to RIDDOR accidents completely, e.g. an overall average grade of 1.0. This has been achieved in 2009 and 2010 and it is hoped that 2011 will also remain accident free.

General

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 2010. Copies of their certificates in PDF format are available from the UKQAA. 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

Drax Power Ltd (Power Minerals Ltd)

- Drax

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

**UK Quality Ash Association
Maple House
Kingswood Business Park
Holyhead Road
Albrighton
Wolverhampton
WV7 3AU**

Tel: 0 {+44} 1902 – 373365
Web site: www.ukqaa.org.uk
Email: enquiries@ukqaa.org.uk

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 2012

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