

Concrete Industry Guidance Document on Sustainability Performance Indicators

Issue 6 - January 2012

**Supporting the Concrete Industry Sustainability Performance Report
and the Industry Guidance to BES 6001**



**Concrete Industry Guidance on Sustainability
Performance Indicators
Issue 6 – January 2012**

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BPCF	British Precast Concrete Federation	www.britishprecast.org
MPA BRMCA	MPA - British Ready-mixed Concrete Association	www.brmca.org.uk
CAA	Cement Admixtures Association	www.admixtures.org.uk
CSMA	Cementitious Slag Makers Association	www.ukcsma.co.uk
MPA	Mineral Products Association	www.qpa.org
MPA TCC	MPA - The Concrete Centre	www.concretecentre.com
UKQAA	UK Quality Ash Association	www.ukqaa.org.uk
BAR	British Association of Reinforcement	www.uk-bar.org

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INTRODUCTION

The main scope of this guidance document is to support the annual Concrete Industry Sustainability Performance Report and to illustrate the performance of the concrete industry against the sustainability performance indicators. These performance reports can be downloaded from www.sustainableconcrete.org.uk This document is intended to provide guidance to those involved in the collation of company specific and industry data and to provide more detailed and transparent information to support the concrete industry's commitment to provide data on its performance. The incremental improvements in the requirement for data also helps support the promotion of sustainable and responsibly sourced products.

The concrete sector, represented by the SCF, established a sustainability strategy in 2008 based on stakeholder consultation that includes eight key commitments. These are listed in Appendix A, which is a copy of the declaration to support the Sustainable Construction Strategy for the UK Concrete Industries.

As a result the Concrete Industry Sustainability Performance Report has been developed, together with a series of Performance Indicators (PI's) under the following headings:

- **Sustainable Consumption and Production**
- **Climate Change & Energy**
- **Natural Resources and Enhancing the Environment**
- **Creating Sustainable Communities**

The Performance Indicators (PI) will be used as a method of monitoring and measuring performance of the concrete industry against agreed targets. These measurements will allow participating companies and associations to assess their progress and to demonstrate to clients and stakeholders their commitment to continual improvement.

In order to monitor the progress across all the different sectors within the Concrete Industry, the indicators use the concept of a tonne of average "concrete" or "reinforced concrete". This approach is based on a representative market contribution (by mass) of each of the sectors to the relevant indicators. Due to the product differences across the concrete industry the reported values for the "average products" are indicative rather than absolute for any specific products. In the case of CO₂ emissions, product specific information is provided on www.sustainableconcrete.co.uk. Each Trade Association is responsible for agreeing its own specific targets against each PI and issuing suitable pro-forma spreadsheets to its members to assist with the data collation process. A data collection spreadsheet based on these Guidelines is issued to each trade association at the end of each calendar year together with the updated PI Guidance document. The information is then brought together to produce a single 'Concrete Industry' figure for annual performance and establishing pan-industry targets.

For those companies wishing to seek certification against the BRE Environmental and Sustainability Standard BES 6001 'Framework Standard for the Responsible Sourcing of Construction Products', the PI's indicated within this guidance document link directly to the requirements of this standard. Further information is available within the "Concrete Industry Guidance Document to BES 6001" (available on all relevant association web sites and www.sustainableconcrete.org.uk)

DATA REQUIREMENTS

0.1 General Data collection Requirements

1. With all the indicators please use a conversion factor of 2.38t/m^3 (representing the average density of UK concrete) where appropriate. Where lightweight or heavyweight concrete is included, please indicate the conversion factor used.
2. Fuel and freight transport conversion factors for 2011 data are provided in Appendix B together with the reference sources.
3. A number of the performance indicators are based on the production output placed into the concrete supply chain during the data collection year. In situations where significant levels of materials are stockpiled, it may be more relevant to use the sales tonnage rather than the production tonnage.
4. The data requirements only cover concrete raw materials, steel reinforcement and concrete products produced by the reporting manufacturer or the trade association.

0.2 General Report output information

1. Unless specified, the indicators which are expressed on a 'per tonne' basis the impacts are aggregated based on the 'rolling mix' for concrete that was identified in the reporting year.
2. The indicators have been extended from the industry average concrete to cover the industry average reinforced concrete.
3. **Concrete:** This includes contributions from the aggregate, cement, ggbs, fly ash and admixtures raw material sectors as well as the contributions from the ready-mixed and precast concrete manufacturing sites.
Reinforced concrete: This includes all of the sectors included in 'concrete' with the addition of the steel reinforcement sector.
 - The steel reinforcement sector comprises of data from both mills and fabricators. The impact from both of these sources is allocated to the average steel reinforcement content of the total concrete produced. The 2012 targets were established based only the 'Concrete' indicator.
4. The following indicators will be reported for both concrete and reinforced concrete: 1.1, 1.2a, 1.3, 1.5, 2.1, 2.2, 3.2a, 4.1, 4.2b, 4.3.

1 Sustainable Consumption and Production PI's

1.1 Environmental Management Systems

Performance Indicator and reporting measures

Percentage of production sites covered by a 'UKAS' certified Environmental Management System (EMS)

- % production sites covered
- Total number of production sites.
- Total number of production sites with 'UKAS' certified EMS

Definition

A production site shall be classified as any UK facility producing raw materials or manufacturing the product.

Individual production facilities covered by overall site certification should be included. For example, a ready-mixed or precast facility located within a quarry, and therefore covered by the 'site/quarry' certification should be included.

The term 'UKAS' refers to certification being granted / issued by a UKAS accredited certifying body. This may be site specific or company wide dependent upon the type of certification sought. The EMS standards acceptable under these indicators are BS EN ISO 14001, Eco Management and Audit Scheme (EMAS) and BS 8555 for Small and Medium sized Enterprises (SME). Sites where the EMS has only been certified under BES6001 can also be included.

1.2a Waste Minimisation

(Reported under Natural Resource Protection and Enhancing the Environment)

Performance Indicator and reporting measures

Amount of waste to landfill as a proportion of production output.

- kg of waste per tonne of production output
- Total kg waste sent to landfill.

Definition

All controlled and licensed waste produced and disposed of to external landfill, including any waste sent to incineration without energy recovery. Any waste leaving site to be sorted for recycling and/or landfill must be assumed to be 'Landfill waste' unless evidence can be provided to indicate otherwise. Such evidence must be independent and be supplied by the 'sorting/recycling depot'.

Exclusions

Waste used for backfilling quarries and site restoration is excluded.

References

- Waste Strategy for England 2007, paragraph 34
<http://www.defra.gov.uk/environment/waste/strategy/strategy07/documents/waste07-strategy.pdf>
- HM Government - Strategy for Sustainable Construction
<http://www.berr.gov.uk/files/file46535.pdf>
- CD&E WASTE: Halving Construction, Demolition and Excavation Waste to Landfill by 2012 compared to 2008 (March 2010)
http://www.strategicforum.org.uk/pdf/Waste_Draft_Part%202_22-3-10V4.pdf
- Measuring CD&E waste to landfill in England - A METHODOLOGY (March 2010)
http://www.strategicforum.org.uk/pdf/Waste_report_4_draft_22-3-10V4.pdf

1 Sustainable Consumption and Production PI's continued

1.2b Net Waste Ratio

(Reported under Natural Resource Protection and Enhancing the Environment)

Performance Indicator and reporting measures

The amount of waste materials and by-products used in the concrete industry as a ratio of the total waste to landfill.

- This indicator is derived from other measures contained in these guidelines

Definition

The amount of waste and by-products includes the use of;

- Recycled aggregate
- Fly ash
- Ggbs
- Materials diverted from the waste stream and used as fuel

The total of waste and by-products is divided by the amount of waste sent to landfill (1.3a)

1.3 Emissions (Excluding CO₂)

Performance Indicator and reporting measures

Number of convictions for air and water emissions per annum.

- Report the number of convictions within the given calendar year.

Definition

Number of convictions only. Do not include pending or unsuccessful prosecutions.

Note - Individual associations may request additional information. However, this PI represents the minimum requirement for SCF reporting purposes.

1.4 Notes on Stakeholder Engagement Requirements

Performance Indicator and reporting measures

No Indicator currently developed; performance to be covered qualitatively and can be undertaken by relevant Associations/SCF - Please refer to the Concrete Industry Guidance Document to BES 6001 for further information and specific restrictions.

Individual companies to supply data to their relevant Associations. Associations to publish this by product and also supply all PI data to SCF 'data collection body' for further onward use.

Definition

An organisation's communication tools serving to demonstrate evidence of stakeholder communication and engagement. These may include, but are not restricted to:

- a. Annual corporate concrete industry sustainability report
- b. Annual company social responsibility report
- c. Annual company environmental performance declaration
- d. National stakeholder engagement forum/workshop or similar
- e. Community newsletters
- f. Association/SCF reports and/or website literature
- g. Open days, liaison groups or council meetings
- h. Other as appropriate

The above enables the organisation to demonstrate transparency and openness to its stakeholders, and can be undertaken by the relevant Trade Association/SCF on behalf of the organisation, provided that the organisation can demonstrate that it has supplied data to support such activities.

1.5 Quality and Performance

Performance Indicator and reporting measures

Percentage of production sites covered by a 'UKAS' certified BS EN ISO 9001 quality management system.

Report % production sites covered, as well as the total number of production sites.

- % of sites covered
- Total number of sites
- Total number of sites covered by 'UKAS' certified EN ISO 9001

Definition

A production site shall be classified as any facility producing raw materials or manufacturing the product.

Individual production facilities covered by overall site certification should be included. For example, a ready-mixed or precast facility located within a quarry, and therefore covered by the 'site/quarry' certification should be included.

The term 'UKAS' refers to certification being granted / issued by a UKAS accredited certifying body. This may be site specific or company wide, dependent upon the type of certification sought.

1.6 Responsible Sourcing

Performance Indicator and reporting measures

% of concrete production volume reported which is certified to BES 6001.

- % concrete production volume certified to BES 6001.
- Total concrete certified to BES 6001 (tonnes)
- Total concrete certified to BES 6001 at the pass level (tonnes)
- Total concrete certified to BES 6001 at the good level (tonnes)
- Total concrete certified to BES 6001 at the very good level (tonnes)
- Total concrete certified to BES 6001 at the excellent level (tonnes)
- % steel reinforcement production volume certified to BES 6001.
- Total steel reinforcement certified to BES 6001 (tonnes)
- % steel reinforced precast concrete production volume which is certified to BES6001.
- Total steel reinforced concrete production volume which is certified to BES6001.(tonnes)

Total steel reinforced concrete production volume (tonne)

Definition

This indicator refers to the availability of the delivered product. The 'concrete' indicator covers both ready mix and precast concrete delivered to sites as a percentage of the production volume.

In order to integrate steel reinforcement, the scope of this indicator needs to be expanded. In addition to the existing reporting measures, the indicator needs to cover the steel reinforcement and reinforced precast concrete. In relation to the coverage of BES 6001 in steel reinforcement this will be based on the coverage of fabricators rather than that of the mills. In the case of precast concrete the measure would cover product where both concrete and reinforcement are both certified to BES6001.

References

- HM Government - Strategy for Sustainable Construction
<http://www.berr.gov.uk/files/file46535.pdf>

2 Climate Change and Energy PI's

2.1 Energy Efficiency

Performance Indicator and reporting measures

Energy used in production as a proportion of production output. Energy used per tonne of production output (kWh)

- Total energy used (kWh)

Definition

kWh of delivered electricity (consumed power) and fuels (converted to kWh) consumed in manufacturing at the production site (excluding external transport). Using the conversion factors found in Appendix B.

Material produced	Source of energy / CO ₂	Quantity of fuel consumed	kWh	Kg CO ₂
Cement	Process emissions	N/A	N/A	1,234,567
Aggregate	Gas Oil	5,678 litres	62355.79	15709.32
Etc.				

A production site shall be classified as any facility producing raw materials or manufacturing the product.

Production output is the total tonnage or volume of the product produced.

For '*Primary fuels used in cement and reinforcing steel production*' which is required to participate in EU ETS, the conversion factor will be determined in accordance with the EU ETS monitoring and reporting guidelines. We consider that EU ETS is an International regulatory convention which takes precedence in reporting carbon data. Where activities are not regulated by measures such as EU ETS then Defra defaults are used. Therefore, in the case of sectors and energy sources not covered under EU ETS then the gross calorific conversion values should be used. The more common conversion factors are provided in Appendix B.

2.2 CO₂ Emissions (Production)

Performance Indicator and reporting measures

CO₂ emissions as a proportion of production output kg of CO₂ per tonne of production output

- Total CO₂ produced (tonnes)

The calculation of CO₂ emissions should be compiled based on all activities that contribute as sources of CO₂. An example of the underlying data set is shown below.
Direct CO₂ emissions:

Direct CO₂ emissions:

Note- 5678 litres multiplied by kWh/litres conversion factor of 10.982 (see Appendix B).
5678 multiplied by CO₂/litre conversion factor of 2.7667 (see Appendix B)

Definition

Production output is the total tonnage or volume of the product produced.

CO₂ emissions are directly and indirectly generated in production, and will include:

- (i) Direct CO₂ emissions, i.e. the release of CO₂ emissions into the atmosphere directly from the sources at the production site. These include both the 'combustion CO₂ emissions' and the 'process CO₂ emissions', for example CO₂ emissions generated in cement manufacture from the combustion of fuels and the calcination process.

'For cement production', which is required to participate in EU ETS, carbon emissions for primary fuels and calcination are determined in accordance with: EU ETS Monitoring and Reporting Guidelines. Any biomass used for fuel is considered 'carbon neutral'.

In the case of sectors and energy sources not covered under EUETS then the Defra conversion values should be used. The more common conversion factors and source references are provided in Appendix B.

- (ii) Indirect CO₂ emissions, as generated by the consumption of electricity, converted to CO₂ using kg CO₂/kWh conversion factor in Appendix B.

For reinforcing steel production' only, conversion to CO₂ is made using factors agreed with DECC (Underlying Climate Change Agreement for the Steel Sector and Climate Change Agreements: Conversion factors and procedures, Nov 2008).

This indicator excludes external transport emissions.

The data collected for this indicator will be presented as a 'rolling concrete mix' or a 'standardised concrete mix'. The 'rolling mix' will be calculated on the CO₂ emissions from the annual reported use of the concrete components. The standardised mix will be calculated from the annual concrete production using the ratio of components for the average concrete established in 2008. The 'rolling mix' will indicate the net actual changes in CO₂ emissions which is a combination of production efficiencies and changes of product mix in the market. The 'standardised mix' will indicate improvements in production efficiency on an annual basis. The 2012 target was originally developed based on the 'standardised mix' but there is increased transparency in reporting both versions of the indicator against the target.

References

- <http://www.ghgprotocol.org/standards/product-and-supply-chain-standard>

2 Climate Change and Energy PI's continued

2.3a Transport - Delivery distances

Performance Indicator and reporting measures

Total and average delivery distance in km travelled per mode (from factory gate to customer and the return journey).

Report the total and 'average' delivery distance for the product in km, combining all forms of transport, as well as the average km travelled for each (i.e. road, rail, water and other as appropriate).

- Total road delivery distance travelled (km)
- Average delivery distance for road transport (km)
- Total rail delivery distance travelled (km)
- Average delivery distance for rail transport (km)
- Total water delivery distance travelled (km)
- Average delivery distance for water transport (km)

Definition

This covers delivery of all constituent materials and concrete.

Average distance travelled by road vehicle, train, or vessel, whilst making a delivery, including any associated empty return journey.

Where appropriate the number of deliveries can be calculated by total delivery distance divided by the average load size per mode (2.3c)

This measurement is for external transport between different sites rather than for internal transport within the same site.

While this is not used directly as an indicator it is used to communicate the average transport distance of concrete products and sectors.

Examples

From concrete production facility to site.

Raw material transport to concrete production facility

All transport via local supply depots should be included

All transport data should include return journeys

Multimode transport should be broken down and reported against each mode

Milk rounds should be included as a single journey with a total load

2 Climate Change and Energy PI's continued

2.3b Transport Mode

Performance Indicator and reporting measures

Total tonnes of product moved and split by three modes: Road, rail, water.

Report the total concrete products or raw materials used in concrete, transported (tonnes) and the total moved by each mode of transport (road, rail, water and other as appropriate).

- Total products transported (tonnes)
- Total moved via road (tonnes)
- Total moved via rail (tonnes)
- Total moved via water (tonnes)

Definition

Tonnes of the product transported from factory gate to customer gate (as defined in 2.3a), provided as a total and split into each modes of transport.

Other modes of transport may be listed if appropriate. In the case of water transport the type of vessel should be identified e.g. inland barge etc. If there is more than one type of water transport, each should be identified and reported.

This measurement is for external transport between different sites rather than for internal transport within the same site.

Examples

From concrete production facility to site.

Raw material transport to concrete production facility

All transport via local supply depots should be included

Transport from licence site to wharf should be included in the production CO₂ emissions for marine aggregates.

Importation from outside the UK of raw materials used in concrete production facilities should be included

Multimode transport should be broken down and reported against each mode

Milk rounds should be included as a single journey with a total load

2.3c Transport average load size

Performance Indicator and reporting measures

Average load moved for each mode (tonnes).

Report the average load size in tonnes for each mode of transport (road, rail, water and other as appropriate).

- Average load size - Road (tonnes)
- Average load size - Rail (tonnes)
- Average load size - Water - barges (tonnes)
- Average load size - Water - marine vessels (tonnes)

Definition

This covers the average load moved for external transport to the site and is used to determine the appropriate Defra conversion factor as well as the number of deliveries.

2 Climate Change and Energy PI's continued

2.3d CO₂ Emissions (Transport)

Performance Indicator and reporting measures

CO₂ emissions of external and internal delivery transport through the supply chain of concrete as a proportion of total products transported. (kg CO₂ / tonne)

Report the overall kg of CO₂ per tonne resulting from transport, as well as the total kg of CO₂ produced from transport by the organisation within the concrete industry.

- Total CO₂ emissions for transport (kg CO₂ /tonne transported product)

Additional reporting requirements, if available;

- Type default vehicle option in Defra conversion factors to be used.
- % laden weight if different from the default value of 50% used in the spreadsheet.
- Actual average GHG emissions per vehicle per km/tonne for reported vehicles/vessels

Definition

CO₂ emissions resulting from the total transport impact reported in relation to the production output.

Onsite transport associated with extraction and manufacture within sectors of the concrete supply chain should be reported under CO₂ emissions (production)

In the cases where sectors of the concrete supply chain share the same site the transport impact is likely to be minimal or could be included in the transport element of the production emissions. The difference between the total products transported (2.3b) and the total production volume reported for the concrete market (production output), will be assumed to have no transport emissions. If this is not the case these emissions should be reported separately.

References

- <http://www.defra.gov.uk/environment/business/reporting/pdf/101006-guidelines-ghg-conversion-factors.pdf>
- Strategic Forum for Construction & Carbon Trust Construction carbon 15% target by 2012 Data and methodology paper - <http://www.strategicforum.org.uk/pdf/0009%20Data%20and%20methods%20paper%20Rev%20A%20for%20public%20release.pdf>
- <http://www.ghgprotocol.org/standards/product-and-supply-chain-standard>

3 Natural Resources and Enhancing the Environment PI's

3.1a Materials Efficiency

Performance Indicator and reporting measures

Material diverted from the waste-stream for use as a fuel source as a % of total energy use.

- % of energy use from materials diverted from waste stream as a fuel source compared to the total energy use.
- Total waste used as defined above (tonnes).

Definition

Includes all waste or waste-derived fuels (e.g. meat bone meal, packaging, paper, plastic, chipped tyres, waste oils, sewage sludge) and other waste fuels used in the cement production process.

The total energy use is that of concrete calculated from the data collected under indicator 2.1 Energy Efficiency.

Exclusions

It does not include any energy recovery from waste that could occur in the other concrete sectors.

3.1b Materials Efficiency

Performance Indicator and reporting measures

% of additional cementitious materials (GGBS, fly ash etc.) as a proportion of total cementitious materials used.

- % of additional cementitious material as a proportion of total cementitious materials
- Total tonnes of additional cementitious materials used.

Not applicable to all constituent materials of concrete.

Definition

This indicator is intended to demonstrate the amount of CEM I use, in concrete, which has been saved by the use of additional cementitious materials.

Additional cementitious materials' are defined as GGBS (GGBS to BS EN 15167-1) and fly ash (Fly ash to BS EN 450 Part 1, Category N and S, where they are used to replace CEM I in concrete.), limestone, quicklime, silica fume and any waste, recycled, secondary or by-product materials that can be shown to have cementitious properties, used in the UK as separate additions.

This indicator includes both additional cementitious materials added during cement production as well as those added during the manufacture of concrete.

The indicator is primarily based on data collected from the concrete manufacturers. The amounts of CEM I and blended cements used are collected by type and in the case of blended cements the additional cementitious materials are broken out and included in the respective totals reported.

As a default condition, the combination cements will be assumed to have the following composition.

CEM II = 70% CEM I and 30% Fly Ash
CEM III = 50% CEM I and 50% ggbs
CEM IV = 50% CEM1 and 50% fly ash.

This data is also cross checked against data collected from cement manufacturers on the amount of composite cements enter cement supplies to the concrete industry.

3.1c Materials Efficiency

Performance Indicator and reporting measures

Recycled/secondary aggregate use as a proportion of total aggregate use within concrete production

- % Recycled/secondary aggregate use as a proportion of total aggregate use within concrete production (on a mass/mass basis)
- Total recycled/secondary aggregate use (tonnes)

Definition

'Recycled/secondary aggregate' may be classified as below:

- Materials that have previously been used and subsequently re-processed, for example from demolition, rail ballast and/or hardened concrete (when re-processed known as Recycled Concrete Aggregate - RCA), and/or waste/by-product materials such as china clay, fly ash, glass, furnace bottom ash, steel slags and filler dust.
- Materials that do not attract an aggregate levy.

The information for this indicator is collected from ready mix and precast concrete production.

3 Natural Resources and Enhancing the Environment PI's continued

3.1d Materials Efficiency

Performance Indicator and reporting measures

% of waste derived and recovered material as a proportion of total raw material used in the manufacture of cement.

- % of waste derived and recovered material as a percentage of total raw material used in the manufacture of cement
- Total used on a dry mass basis (tonnes).

Definition

Waste derived and recovered material used in the manufacture of cement is defined as material that is:

1. Classified as waste or would be used within other recovery operations
2. A by-product or residue from internal or external production processes
3. Re-processed and meets the 'End of Waste Protocol' specifications

References

- CD&E WASTE: Halving Construction, Demolition and Excavation Waste to Landfill by 2012 compared to 2008 (March 2010)
http://www.strategicforum.org.uk/pdf/Waste_report_4_draft_22-3-10V4.pdf

3.1e Materials Efficiency

Performance Indicator and reporting measures

% of recycled ferrous scrap metal as a proportion of total constituent raw materials used.

- % of additional ferrous scrap metal as a proportion of total constituent raw materials used.
- Total tonnes of constituent raw materials used.

Definition

This indicator is intended to demonstrate the amount of recycled content used in the manufacture of reinforcing steel.

Constituent raw materials are defined as those added at the point of crude steel production which are inherent in the finished product. Examples include ferrous scrap metal, iron ore, carbon, and ferroalloys. Process materials used to aid manufacture are not considered.

The information for this indicator is collected from steel mills only.

3 Natural Resources and Enhancing the Environment PI's continued

3.2a Mains Water Use

Performance Indicator and reporting measures

Mains water use as a proportion of production output.

- Mains water use litres per tonne
- Total mains water use, litres

Definition

Mains water only, including that used within production sites, associated offices, canteens, toilets etc. Production output is the total tonnage or volume of the product produced.

3.2b Controlled Water Use

Performance Indicator and reporting measures

Controlled groundwater use a proportion of production output.

Report as litres per tonne of production output as well as the total volume of water withdrawn in litres.

- Controlled groundwater use, litres per tonne
- Total ground water use, litres

Definition

Controlled groundwater is defined as all water abstracted from boreholes and other surface water features such as rivers and streams, lakes, ponds, reservoirs, springs (which may be interconnected) and which needs an abstraction licence, known as a 'Full Licence' in the Water Act 2003. Any abstraction which does not exceed 20 cubic metres per day and therefore does not need an abstraction licence should be included. If not measured, 20 cubic metres (20,000litres) per operational day can be assumed. Production output is the total tonnage or volume of the product produced.

Exclusions

- Any water abstracted from one part of the ground water source and then returned to another part of that source without being used; typically this will be quarry dewatering water which is discharged to a river without use. This is water requiring a transfer licence under the 2003 Water Act.
- Water used from closed systems (e.g. lagoons in a closed washing system) in which it is recycled, and from rainwater sumps for which an abstraction licence is not required.

3 Natural Resources and Enhancing the Environment PI's continued

3.3 Site Stewardship

Performance Indicator and reporting measures

- % of 'relevant' production sites that have a 'site specific action plan' as a proportion of the total number of 'relevant' production sites
- Total number of relevant production sites
- Total number of production sites operating 'site specific action plans'
- Total number that have statutorily agreed restoration plans
- Total number that have biodiversity action plans which are monitored under an ISO14001 management system or other third party audit scheme.
- Total number that have geodiversity action plans which are monitored under an ISO14001 management system or other third party audit scheme.

Definition

A production site shall be classified as any facility producing raw materials or manufacturing the product.

This indicator covers mineral extraction sites in the cement and aggregates sectors.

It is recognised that certain sites have less or no need for site stewardship plans and therefore the organisation shall hold a list of 'relevant' sites for the purposes of 'site stewardship', together with justification of exclusions. The term 'relevant' refers to production sites such as quarries or cement works that can directly impact on the local community and/or the environment. However, the vast majority of single production plants/sites such as 'ready-mixed concrete' and 'precast' plants would be excluded as they are generally located within industrial areas and have little or no direct impact upon their immediate community.

The term 'Site specific action plans' refers to restoration plans, biodiversity and geodiversity schemes

4 Creating Sustainable Communities PI's

4.1 Health and Safety

Performance Indicator and reporting measures

Lost Time Injuries for 'direct employees' per 1 million hours worked

- Number of Lost Time Injuries per annum
- Lost Time Injuries per 1 million hours worked and the total number of 'direct employees'
- Total number of direct employees

Definition

Lost time Injuries per million hours worked is commonly referred to as 'Lost Time Injury Frequency Rate' (LTIFR).

Lost Time Injury is defined as an occupational injury resulting in the absence of the injured party for one or more working shifts.

The term 'direct employee' means all employees on the company payroll and excludes any contract workers.

4.2a Employment and Skills

Performance Indicator and reporting measures

% of employees covered by 'UKAS' certified BS EN ISO 9001, BS EN ISO 14001 and OHSAS 18001 systems (i.e. Training and competence sections).

- % number of employees covered by a 'UKAS' certified BS EN ISO 9001, BS EN ISO 14001 and OHSAS 18001 system as a proportion of total employees,
- Number of employees covered by a certified ISO 9001, ISO 14001 and OHSAS 18001 scheme.
- Total number of employees.

Definition

The term 'UKAS' refers to certification being granted / issued by a UKAS accredited certifying body. This may be site specific or company wide, dependent upon the type of certification sought.

All employees working under such a management system classify for inclusion.

Note - The higher percentage should be shown (i.e. If BS EN ISO 14001 % = 60% and BS EN ISO 9001 % = 100%, show 100%).

4 Creating Sustainable Communities PI's continued

4.2b Employment and Skills

Performance Indicator and reporting measures

% of employees covered by an environmental and health & safety management system following the principles of BS EN ISO 14001 and OHSAS 18001.

- % number of employees covered by environmental and health & safety management systems following the principles of BS EN ISO 14001 and OHSAS 18001 as a proportion of total employees (4.2a).
- Number of employees covered systems following the principles of ISO 14001 and OHSAS 18001 schemes.

Definition

All employees working under such a management system classify for inclusion.

Note - This PI directly links directly to the mandatory requirements of BES 6001 sections

3.3.2 and 3.3.3. The higher percentage should be shown (i.e. If BS EN ISO 14001 % = 90% and OHSAS 18001 % = 100%, show 100%).

4.3 Local Community

Performance Indicator and reporting measures

% of relevant production sites with community liaison activities.

- % of 'relevant' production sites that have 'Liaison activities' as a proportion of the total number of 'relevant' production sites.
- Total number of production sites operating 'Liaison activities'.
- Total number of relevant sites.

Definition

The term 'community liaison activities' can refer to, but is not exclusively limited to the following:

1. Liaison groups or council meetings
2. Open days
3. Public meetings
4. Community Newsletters
5. Social, recreational and educational activities involving the local community
6. Other as appropriate

The term 'relevant' refers to mineral extraction sites which potentially have a significant impact on the local community and/or the environment. This may apply to production sites within close proximity to sensitive receptors. It is expected that any production site that generates a high level of complaints would be considered a 'relevant' site.

The vast majority of single production plants/sites such as 'ready-mixed concrete' and 'precast' plants are expected to be excluded as they are generally located within industrial areas and have little or no impact upon their immediate community. Where plants/sites are excluded from the mainstream 'liaison activities' stated above, records should be maintained in relation to any other discussions held with their local community as appropriate.

It is recognised that the impact of certain sites on the local community are less significant than others and therefore the organisation shall hold a list of 'relevant' sites for the purposes of community liaison activities, together with justification of exclusions.

Appendix A (Concrete industry sustainability strategy)



Sustainable Construction Strategy

FOR THE UK CONCRETE INDUSTRIES

We the undersigned, agree to contribute to the fulfilment of the UK Concrete Industries' vision to be recognised as leaders in sustainable construction; to support the four strategic objectives and to deliver the eight commitments, as outlined in the Concrete Sustainable Construction Strategy dated 14 July 2008 and as summarised here.

We agree as companies to implement these fully, or as trade associations to encourage our members to do so. We will communicate the strategy both internally and externally to try and ensure the commitments become a reality.

As instruments of change, trade associations will facilitate the collection of performance data from members, establish performance benchmarks, agree performance targets with their membership, take part in periodic target setting and reviews at association and industry levels, and contribute to a published annual performance report for the UK concrete industries.

Vision

By 2012, the UK concrete industry will be recognised as the leader in sustainable construction, by taking a dynamic role in delivering a sustainable built environment in a manner that is profitable, socially responsible and functions within environmental limits.

Strategic objectives

1. Agree and adopt a common framework.
2. Improve our environmental profiles.
3. Enable our clients to achieve sustainable construction.
4. Communicate our progress and solutions.

Commitments

1. To launch an annual Sustainability Performance Report for the UK Concrete Industries commencing in March 2009.
2. To set targets for Performance Indicators by the end of 2009.
3. To design an industry R&D Programme to reduce CO₂ and other impacts.
4. To design an industry Skills Transformation Programme aimed at positioning the industry to play a leading role in meeting the challenge of sustainable construction.
5. To provide clients with industry data for LCA (life cycle analysis) models.
6. To develop sustainable construction solutions.
7. To provide clients with the knowledge and tools to adopt new solutions.
8. To demonstrate the benefits of concrete in the built environment.

[Signed] on behalf of [Company]

_____ Aggregate Industries
 _____ CEMEX
 _____ Hanson
 _____ Lafarge
 _____ Tarmac
 _____ Brett Group
 _____ Marshalls plc
 _____ Trent Concrete

[Signed] on behalf of [Trade Association]

_____ BCA
 _____ QFA
 _____ BPCF
 _____ CSMA
 _____ CAA
 _____ UKQAA
 [Signed] on behalf of The Concrete Centre
 _____ The Concrete Centre

30 July 2008

Appendix B1 (Fuel conversion factors for 2011 data)

Fuel Type	Units	kg CO ₂ per unit	Derived conversions	
Electricity Grid	kWh	0.52114		
Natural Gas	kWh	0.18322		
	therms	5.3697		
Gas Oil	tonnes	3190.00000	kWh/tonne	12664
	kWh	0.25191	litres/tonne	1153.0
	litres	2.76670	kWh/litre	10.982
Diesel (100% mineral diesel)	tonnes	3164.30000	kWh/tonne	12663
	kWh	0.24989	litres/tonne	1198.0
	litres	2.6480	kWh/litre	10.597
Petrol (100% mineral petrol)	tonnes	3135.00000	kWh/tonne	13083
	kWh	0.23963	litres/tonne	1362.0
	litres	2.30180	kWh/litre	9.6056
Fuel Oil	tonnes	3212.50000	kWh/tonne	12071
	kWh	0.26613	litres/tonne	1010.6
	litres	3.13000	kWh/litre	11.761
Burning Oil (Kerosine & Paraffin)	tonnes	3149.70000	kWh/tonne	12823
	kWh	0.24562	litres/tonne	1245.0
	litres	2.52990	kWh/litre	10.300
Industrial Coal	tonnes	2339.00000	kWh/tonne	7166.7
	kWh	0.32637		
Domestic Coal	tonnes	2506.30000	kWh/tonne	8472.4
	kWh	0.29582		
Wood Pellets (CO ₂ e)	tonnes	183.93000	kWh/tonne	4722.2
	kWh	0.03895		
Coking Coal	tonnes	2955.40000	kWh/tonne	9055.6
	kWh	0.32636		
LPG (Propane & Butane)	kWh	0.21419		
	therms	6.27730		
	litres	1.48840	kWh/litre	6.949
Other Petroleum Gases	tonnes	2621.40000	kWh/tonne	14070
	kWh	0.18630		
Naptha	tonnes	3131.30000	kWh/tonne	13203
	kWh	0.23717	litres/tonne	1450.3
	litres	2.15900	kWh/litre	9.103
Lubricants	tonnes	3171.10000	kWh/tonne	12071
	kWh	0.26270		
Petroleum Coke	tonnes	3089.90000	kWh/tonne	9933
	kWh	0.31106		
Refinery / Misc	kWh	0.24512		
	therms	7.18390		

<http://archive.defra.gov.uk/environment/business/reporting/pdf/110819-guidelines-ghg-conversion-factors.xls>

<http://www.decc.gov.uk/assets/decc/11/stats/publications/dukes/2312-dukes-2011--full-document-excluding-cover-pages.pdf>

The majority of the data is taken from Defra Conversion Factors Version 1.2 (19th August 2011). In the case of electricity the figure is based on the grid rolling average CO₂ emissions for Scope 2,3. In the case of fuel conversion factors the figures are based on CO₂ emissions for Scope 1 and where appropriate the gross calorific value is used.

Appendix B2 (Freight Transport conversion factors for 2011 data)

Transportation			
Type	Table	Units	Total Direct GHG
Road freight - Rigid >5.5-17t /50%	7d	km.basis	0.7756
Road freight - Rigid >17t / 50%	7d	km basis	0.9642
Rail	7f	tonne.km	0.0316
Maritime - Bulk Carrier (100,000-199,999 dwt)	7g	tonne.km	0.0030
Diesel (retail station biofuel blend)	7a	CO ₂ /litre	2.57250
Diesel (100% mineral diesel)	7a	CO ₂ /litre	2.66760