



Mineral Products Association

Summary Sustainable Development Report 2015

Progress and momentum . . . a continuing commitment

HIGHLIGHTS

MPA members' **Lost Time Incident Frequency Rate (LTIFR)** improved from 5.13 to 3.25, indicating a general improvement in operational Health and Safety, although further improvement is required, notably to reduce the five fatalities of two employees and three contractors recorded in 2014. There was also a continuing focus on public safety including cyclists and other vulnerable road users

Industry volumes increased significantly as rising construction activity, notably in housebuilding, increased demand for mineral products, although aggregates and cementitious sales volumes remained 22% below pre-recession levels

Recycled and secondary aggregates

accounted for 29% of the GB aggregates market, nearly three times higher than the average market share in Europe. Other cementitious materials comprised 15% of total cementitious market sales

GB per capita production of cement and aggregates were 55% and 35% respectively below the European averages

There has been a sustained and significant reduction in **airborne emissions** from cement plants since 1998, confirmed again in 2014

There was a general improvement in operational **carbon dioxide emissions**, notably in cement manufacture, although asphalt emissions increased

The importance of local supply chains was demonstrated by delivery distances. **Average road delivery distance** for aggregates increased to 32 miles, asphalt reduced to 20

miles and ready-mixed concrete remained at 7 miles

Rail freight is highly significant for the sector, accounting for 12% of aggregates and 20% of cement delivered and representing over 20 million tonnes of materials.

Marine dredged aggregates landings increased to 12 million tonnes in 2014, dredged from 86 square kilometres of the UK seabed, less than 0.01% of the total UK seabed

100% of cement sites, 96% of aggregates quarries, 95% of asphalt plants and 89% of ready-mixed concrete plants recorded operated with **certified environmental management systems**

Further progress on **quarry restoration and biodiversity** as MPA records over 11,000 hectares of land restored to priority habitat or planned for future priority habitat creation

FOREWORD

Overall I believe that the sector is moving in the right direction. We are one of relatively few UK industries with a legacy of evidence based data on sustainability performance. We are generally progressing and are developing plans for further improvement.

This summary report is designed to supplement more detailed information we produce and collaborate on relating to cement, concrete, lime and marine aggregates. This reflects the continuing commitment of the industry to measuring and reporting data and to transparency on performance. As acknowledged last year, we were concerned that our Health and Safety indicator had worsened but we saw an improvement in 2014 based on data from all products represented

by the MPA. This reversion to an improving trend was very welcome but we are under no illusions that it will be a further challenge for the sector to continue to improve. MPA has implemented a range of initiatives to help progress on safety and increase focus on health issues. We are also committed to improving public safety, including cyclists and other vulnerable road users who share the roads with our delivery lorries.

Improvements in environmental and sustainability performance remain a key objective for MPA and we will be reviewing longer term objectives during 2016. We will continue to improve our reporting on biodiversity because, although our industry is in a unique position to deliver habitats and has done a great deal of positive work – as demonstrated at our October 2015 Quarries and Nature event and awards – I suspect we

do not know still the full industry contribution.

Our future national needs for housing and infrastructure suggest that demand for mineral products will continue into the long term, subject of course to unpredictable economic cycles. So we are a long term industry and as such we take a long term view of our activities and our legacy. While national priorities relating to sustainability may change and evolve over time, for example the new Circular Economy Package from the EU will influence thinking on issues, we will remain very aware of the key importance of operating as good neighbours in our many local communities.

As always we welcome any comments or contributions on any issues from our internal and external audiences and please do not hesitate to contact me.

Nigel Jackson – Chief Executive

PRIORITIES

Health and Safety

In last year's report we identified an increase in incidents measured by the LTIFR following very significant improvements in performance by many parts of the industry since 2000. To some extent the 2013 LTIFR increase reflected the expansion of the MPA to include a wider range of products



and in 2014 there was a significant improvement across the MPA membership, which now includes Precast Concrete and Dimension Stone. Our objective remains zero harm and to move further in that direction we have set a target of reducing Lost Time incidents by a further 65% between 2014 and 2019.

While the LTIFR improvement is positive and many members experienced incident free years in 2014, there remain too many injuries and five fatalities were recorded in 2014, two incidents involving direct employees; one struck by a reversing vehicle on a contract surfacing project and the second was a result of becoming trapped in a moving conveyor. There were also three indirect employee fatalities; two drivers killed in road traffic accidents and another fell from height during a site refurbishment project.

Improving industry Health and Safety therefore remains the top priority for MPA and members. Initiatives and activities are being progressed to support direct employees and contractors and additional attention is being focussed on industry drivers. Such initiatives include the greater use of Contractor Passports and the expansion of the MPA National Contractor Database.

The industry portal for Health and Safety information and resources, Safequarry.com website along with the Safequarry App, remains a critical industry asset with open access to anyone including non-MPA members to receive and contribute health and safety best practice and key learning from incidents. British Precast has also introduced the first dedicated website and App for the precast industry – Safeprecast.com.

PRIORITIES CONT'D.

Improving skills through training is essential and MPA has identified a range of skills and competency targets for industry activities and is developing additional competency metrics to help contribute to improving health and safety.

MPA has continued to focus on improving vulnerable road user safety through the implementation of driver training, fitting additional safety equipment to delivery vehicles and working closely with other interested parties. A key development is the Construction Logistics and Cyclist Safety (CLOCS) initiative, designed to ensure a common standard for all parts of the construction industry. MPA is a strong supporter of CLOCS and we expect CLOCS requirements to become implemented increasingly by construction clients, contractors and suppliers throughout the UK.

MPA has also continued to work to improve public safety at industry and former industry sites through the Stay Safe campaign, working with safety organisations, the emergency services and local communities to prevent trespass on such sites and to increase awareness of the hazards of such behaviour.



Sustainable Products

Aggregates sales increased by 11% in 2014, asphalt by 9%, cement by 8% and ready-mixed concrete by 4% as GB construction output rose by 8%.

The supply of aggregates, cement, concrete, asphalt, lime, mortar, silica sand used in the UK is very largely sourced in the UK. This local supply combined with compliance and quality assurance to rigorous regulatory standards is a key aspect of the sustainability of mineral products. Over 90% of surveyed MPA materials sales were certified as Responsibly Sourced, highlighting the sustainable management of domestic supply chains and a similar level of industry sites operated with certified environmental management systems. It also means that the UK economy benefits from the employment and income generated by these supply chains, which are often in rural areas.

The industry continued to promote the sustainable use of industry products, with British Precast and The Concrete Centre (TCC) both highlighting opportunities for designers and developers to deliver Sustainable Urban Drainage Systems (SUDS). TCC delivered 32 external training courses and published guidance on how buildings designers can meet and exceed thermal performance standards. MPA Asphalt has worked with key customers on highways design and specification issues. In all product areas MPA has been very active in the development of European Standards and Specifications and MPA Cement published an Environmental Product Declaration for UK cement.

The use of recycled and secondary aggregates in domestic markets accounted for 29% of the total aggregates market, which is over three times as high as the European average. 15% of the GB cementitious market comprised fly ash and ground granulated blast furnace slag.

Production from marine licenses was a key source of supply for aggregates used in markets such as London and South Wales, with nearly 12 million tonnes supplied for construction and 2.4 million tonnes for beach replenishment. All marine aggregates were dredged from an area accounting for less than 0.01% of the UK seabed.

Climate Change

Carbon dioxide (CO₂) emissions arising from the production of mineral products vary hugely from the more energy intensive cement and lime industries to the relatively low levels of emissions arising from the production of aggregates. CO₂ emissions from cement production declined in 2014 to 679kg per tonne of cement manufactured, an improvement of just over two per cent. Emissions per tonne of cement production have declined by 26.4% since 1998. In the lime sector CO₂ emissions at quicklime plants showed a marginal increase in 2014 although there was a significant decline in emissions from the production of dolomitic lime.

2014 CO₂ emissions from aggregates and ready-mixed concrete were slightly lower than 2013 although an increase in emissions from asphalt production was recorded.

For products with low production emissions the impact of transport emissions becomes relatively more important. While we do not yet record or estimate transport emissions due to issues of data availability and quality, the average road delivery distance for aggregates again increased to 32 miles, although average loads increased to 22.7 tonnes. Ready-mixed

concrete is on average delivered less than 7 miles to customers.

Rail freight movements of aggregates increased to 18.5 million tonnes in 2014, representing an 11.6% share of the market and 20.4% of cement is delivered by rail. MPA and the Rail Freight Group, including Network Rail and Rail Freight Operating Companies, have agreed a Commitment to the Future to optimise opportunities to use the rail network.

While the figures above set out production emissions the overall climate change impact of materials such as cement and concrete depends on the whole life performance of buildings constructed using these materials. The thermal mass properties of concrete, for example, help to regulate internal room temperatures by absorbing excessive heat and then releasing the heat back as temperatures fall. Building designs taking advantage of this thermal mass effect can significantly reduce energy use and carbon emissions during the life of the building, generating lower whole life emissions than other forms of construction. When concrete buildings are eventually demolished the crushed concrete re-absorbs 20% of the CO₂ originally used to make it – an additional whole life benefit.

UK research and overseas experience has identified opportunities to save carbon by the use of lower temperature asphalts in road maintenance and construction. Although there has been some use of these materials in domestic markets it has yet to reach a significant level.



Biodiversity/Natural Environment

Our data collection had so far identified nearly 6,000 hectares of priority habitat created by MPA members and a further 6,000 hectares planned for future delivery. This data is so far incomplete as we have not received full information from members but gives an indication of the industry's contribution to biodiversity improvement.

To highlight the industry's contribution, at the MPA's October Quarries and Nature event a range of companies were recognised with

PRIORITIES CONT'D.

awards for the quality of their quarry restoration, land management and biodiversity contributions. Contributions from the MPA's photography competition were also displayed, reflecting the range of flora and fauna associated with industry sites and operations.

MPA's National Nature Park, a network of restored sites which are now nature reserves with public access, has extended to over 70 locations across the country.

MPA has also worked with Natural England and others on promoting "Temporary Nature" – the encouragement of biodiversity on sites which have yet to be developed without being penalised if protected species colonise, and published guidance on how to minimise birdstrike risk from restored quarries near airports and airfields.

We are also continuing to engage in and monitor the valuation of Natural Capital and implications for the industry.

In the marine environment, BMAPA members have been involved in the development of a network of Marine Protected Areas and BMAPA has co-ordinated a series of regional monitoring surveys which resulted in over 3,500 seabed samples being collected – one of the largest sampling exercises ever undertaken on the UK Continental Shelf.



In this work we recognise the importance of engaging with a wide range of organisations involved in conservation and regulatory work. We have continued to

press Government in England to introduce a new targeted aggregates sustainability fund to use a small proportion of the annual £350 million aggregates levy revenue to support local community and conservation and biodiversity projects – we believe a relatively small fund of around £5 million would leverage very significant benefits to complement the significant work already carried out by industry, conservation organisations and local communities. Wales is the only part of the UK which has maintained the original Aggregates Levy Sustainability Fund, with demonstrably positive results.

Front cover: Misty morning with mute swans at RSPB Langford Lowfields, Langford, Nottinghamshire. Photo by Roger Bennett.

The Mineral Products Association is the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

Summary results 2015 (2014 data)

Sustainable consumption & production	2013	2014
Aggregates production (primary) GB	134mt	149mt
Recycled/secondary materials GB	55mt	61 mt
Asphalt sales GB	18.9mt	20.6mt
Ready-mixed concrete sales GB	15.9m ³	16.4m ³
Cement – domestic sales GB	8.3mt	9.0mt
Cementitious materials GB	11.5mt	12.4mt
Quicklime and Dolomite (GB)	1.22mt	1.27mt
Per capita production aggregates (GB/Europe)	3.2t/4.9t	3.5t/na
Per capita production cement (UK/Europe)	132kg/312kg	143kg/314kg
Aggregate sites with certified EMS (% of survey)	86%	96%
Cement sites with certified EMS	100%	100%
Climate change & energy	2013	2014
CO ₂ emissions directly from cement production (kg/tonne)	694	679
CO ₂ emissions from crushed rock production (kg/tonne)	3.7	3.8
CO ₂ emissions from sand and gravel - land won prod (kg/tonne)	3.9	3.5
CO ₂ emissions from asphalt production (kg/tonne)	27.4	33.9
CO ₂ emissions from ready-mixed concrete prod (kg/tonne)	1.00	0.80
Share of sales moved by rail (aggregates)	9.5%	11.6%
Share of sales moved by rail (cement)	16.9%	20.4%
Average road delivery distance (aggregates)	31 miles	32 miles
Average road load (aggregates)	22.0t	22.7t
Marine dredged aggregates landings for construction use	10.5mt	11.7mt
Natural resources & enhancing the environment	2013	2014
Priority Habitats created to date by MPA members		5,695ha
Priority Habitats planned by MPA members		5,689ha
Waste and by products recovered as raw materials and fuels by cement industry	1.45mt	1.61mt
Archaeology - land investigated pre-planning permission	402ha	331ha
Archaeology - land investigated post-planning permission	321ha	183ha
Proportion of UK land area being quarried (aggregates)	0.10%	0.10%
Ratio of land restored to land prepared for quarrying	1:0.9	1:1.4
Area of seabed dredged	98.7km ²	85.7km ²
Creating sustainable communities	2013	2014
Lost Time Incident Frequency Rate (LTIs per million employees – all MPA activities)	5.13	3.25
Employment - direct by MPA members (excl cement, precast)	19,940	22,021
Employment - direct by MPA members (cement)	2584	2517
Number of recorded complaints (aggregates)	269	419
Number of community liaison groups (aggregates)	148	246
Liaison group meetings (cement)	39	26
Recorded visitors to aggregates sites, cement kiln sites	29,365	30,292

For further MPA information visit www.mineralproducts.org

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