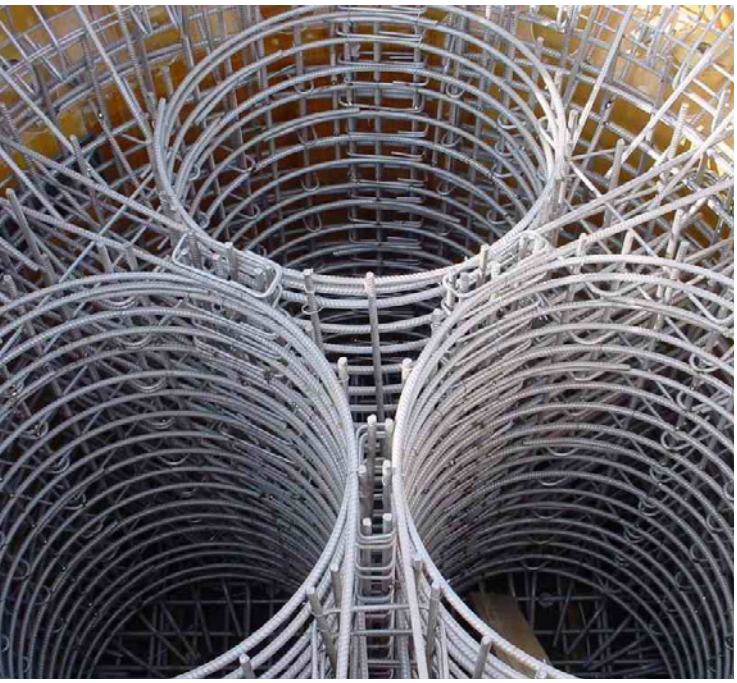
Building a brighter future

The CARES Sustainable Reinforcing Steel Scheme
Sector Report 2011/2012

Contents



About this report

Welcome to the CARES Sustainable Reinforcing Steels Scheme Sector Report 2011/12. We believe that this is the first ever sustainability report relating to a sector certification scheme.

Covering the calendar year 2011, this report is designed to provide information to demonstrate CARES' commitment to understanding and managing the role that reinforcing steels can play to reduce risks and to develop opportunities for sustainable development within the construction sector. It highlights the unique and rigorous nature of our certification scheme, with a particular focus on those issues that are deemed to be of greatest importance to our customers such as construction companies, designers and specifiers as well as other key stakeholders.

Uniquely, the report looks at how the CARES Sustainable Reinforcing Steel (SRS) Scheme is set up to provide minimum requirements and continuous improvement in sustainability management for companies seeking approval to the scheme. It does not look directly at the operations of CARES the organisation nor at other certification schemes that CARES run. For a list of firms currently approved under the CARES SRS Scheme please see inside back cover.

As the CARES SRS Scheme is a new scheme, we outline why sustainable construction is important, how the CARES SRS Scheme operates, the requirements placed on companies seeking approval, the controls and checks put in place by CARES as well as presenting progress and data on a number of key indicators used as part of the approval process. As this is the first year of scheme operation, trend data are not yet available.

This year's (2011) figures will form a baseline from which targets for a number of key environmental, social and economic metrics will be set. Where available these targets are shown alongside the performance data throughout this report. As trend data develop, we will reassess these targets to ensure they are set appropriately – providing a suitable challenge in the context of the scheme objectives, whilst recognising the technical limitations of steel production technology.

We intend to update this report on an annual basis. We have used the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines v3.1, in particular the content and quality of information principles, to inform the development of this report. As this is a unique report covering a sector certification scheme there is not total alignment to the requirements of GRI.

To make the transition to a more sustainable economy, working within the boundaries of our single planet requires collaboration. We therefore welcome comments and feedback on both this report and your expectations of how the reinforcing steels sector can contribute to an improved built environment for the future. You can find our contact details on the back of the report.

CARES SUSTAINABILITY

UKAS PRODUCT CERTIFICATION

Executive statement

CARES is committed to the principles of sustainable development and actively promote those through the activities of the CARES SRS Scheme which has been established to comply with BS 8902. We are delighted to be the first construction sector scheme to be accredited to this standard by UKAS and the first sector scheme to produce a sustainability report.

CARES fully applies the stringent requirements necessary for organisations carrying out third party certification. This first sector report continues the journey to communicate sustainability management practices and performance of the CARES-approved reinforcing steel supply chain.

To deliver increased sustainability and resilience in the construction sector, all parts of the construction value chain have a role to play. Our vision is that over time the sustainable approach to doing business becomes the norm. We recognise that there is a considerable way to go before we get to this point.

I am pleased to report that the reinforcing steel sector is taking significant steps towards this vision through increasing involvement in this scheme. As of March 2012, 20 reinforcing steel and stainless steel producers and processors firms are approved under the scheme. We are also seeing increasing specification of SRS steels in tender requirements. As more companies join the scheme we can build a stronger baseline of performance data and improve our ability to set targets and drive performance improvements.

Our industry challenge is to accelerate a transition to a green economy at scale. This means; developing the knowledge, skills and processes throughout the construction value chain that protects our environmental resources and ensure ethical labour practices whilst improving the built environment.

Professor Les Clark OBE
Chairman of the Board of Management of CARES

"When we worked on the sustainability clauses for the National Structural Concrete Specification we were impressed by the enthusiasm of the construction industry to take on responsible sourcing. Sector schemes were needed to make this desire a reality and the CARES scheme meets this need. It is impressive in its breadth and detail and shows that responsible sourcing can be objectively practiced and demonstrated internationally. We are pleased the scheme will also fills gaps in data by the inclusion of carbon foot-printing. This will help us as designers."

Sarah Kaethner, Structural Associate Director, Advanced Technology + Research, Arup

Who are CARES?

CARES is an independent, not-for-profit certification body, established in 1983 to provide confidence to the users, purchasers and specifiers of constructional steels through a regime of regulation, testing and inspection. It operates for the benefit of the construction industry offering certification schemes for companies that produce materials, components or offer services, primarily to the reinforced concrete industry. Clients can specify CARES approved companies and products with confidence that they will comply with the relevant product or system standards and without the need for verification testing by the purchaser or contractor.

For locations of CARES approved organisations, please refer to our website: http://ukcares.com/pages/approved_map.html

What is the CARES SRS Scheme?

Accredited by the UK Accreditation Service (UKAS), the CARES SRS Scheme quantifies the environmental and social impact of the reinforcing steel supply chain. The scheme complies with BS 8902: 2009[1] *'Responsible sourcing sector certification schemes for construction products'*. This standard provides a framework for the management, development, content and operation of sector certification schemes for responsible sourcing and supply of construction products. Procuring reinforcing steel via the CARES approved supply chain provides a holistic approach to managing a product from the point at which a material is sourced through manufacture and processing, use, recovery and recycling. Using products from CARES SRS approved firms will enable the industry to demonstrate the responsible sourcing of construction products and its commitment to sustainable development.

Uniquely identifiable, reinforcing steel products produced by CARES approved firms are fully traceable (chain of custody) throughout the whole supply chain, from the molten steel through to delivery to the construction site. CARES requires an unbroken chain between the global producer and the construction site, thus enabling the local end user to know the production source and manufacturing processes used.

This provides customers and others with an assurance of quality and that sustainability is being actively pursued within their construction supply chain.

The scheme has been specifically developed for the reinforcing steel supply chain using the most relevant performance indicators. It provides a means by which approved firms in the reinforcing steel supply chain are able to declare product and organisational level sustainability performance.

1. This standard is available from: http://shop.bsigroup.com/ProductDetail/?pid=000000000030191223

Governance – ensuring independence, impartiality and trust

CARES was set up in 1983 as a not-for-profit company limited by guarantee under the UK Companies Act. Its formation was supported by the UK Government and a cross-industry group of organisations which became its Members. This group comprises professional bodies and trade associations representing users, specifiers, contractors and manufacturers, and includes owners of concrete structures such as the Highways Agency, British Airports Authority and Southern Water.

CARES is controlled by its Members through its Board of Management which monitors all activities to ensure that high levels of competence, independence and integrity are maintained. The CARES Board of Management is chaired by Professor Les Clark, and is made up of appropriately qualified individuals nominated by its Members. Membership of the Board is accepted on the basis that no one sector predominates to ensure impartiality. The Board fulfils the purpose of the Sector Scheme Council as defined in BS 8902. The Board is ultimately responsible for stakeholder identification and engagement, as defined in BS 8902.

The Members of the CARES Board are as follows:

Member	Role in value chain
CONSTRUCT	User
BAA plc	User
Southern Water Services Ltd.	User
Association of Consultancy and Engineering	Specifier
Institution of Structural Engineers	Specifier
The Highways Agency	Specifier/User
UK Contractors Group (UKCG)	Contractor
Civil Engineering Contractors Association	Contractor
UK Steel Association Hot Rolled Long Products Group	Manufacturer (production)
British Association for Reinforcement	Manufacturer (processing)
Post Tensioning Association	Manufacturer
Independent Chairman	
Executive Officers of UK CARES	

In order to enable use in major specifications, including those of public purchasers, the management structure of CARES is designed to satisfy the international standard for independent third party product certification bodies, BS EN45011. For acceptance of a certification body, this standard requires the following conditions to be met:

- access to the service of the Body is available to all
- there shall be no undue financial conditions to restrict participation
- certification procedures must be administered in a non-discriminatory manner
- there shall be no single interest predominating in the governing board
- permanent staff shall be free from control by those who have a direct commercial interest

The Sustainability Technical Committee is the permanent technical committee which acts on behalf of the Board and reports back as appropriate. The Sustainability Committee is delegated by the Board to undertake the process of stakeholder engagement, as defined in BS 8902, and to establish and review, at least biennially, the Scheme requirements. The review shall include the Scheme's sustainability principles, responsible sourcing issues, objectives, targets and the CARES operational assessment requirements.

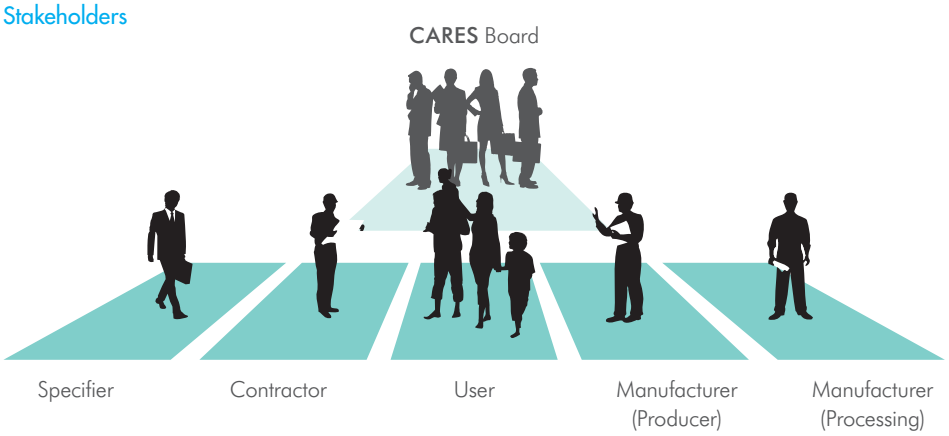
Stakeholder engagement

Being able to understand, prioritise and respond adequately to the needs of the steel and construction industry stakeholders is critical to the long term future and sustainability of these sectors. The network of organisations and individuals which are impacted on or impact these sectors is very complex. The diagram (in the box below) shows a number of key stakeholders and demonstrates the complexity of these relationships.

CARES is involved in a broad range of stakeholder processes which include gaining insight from industry association engagements, for example through worldsteel, the Construction Products Association Sustainable Construction Group and other industry bodies as well as through its members and its auditing activities.

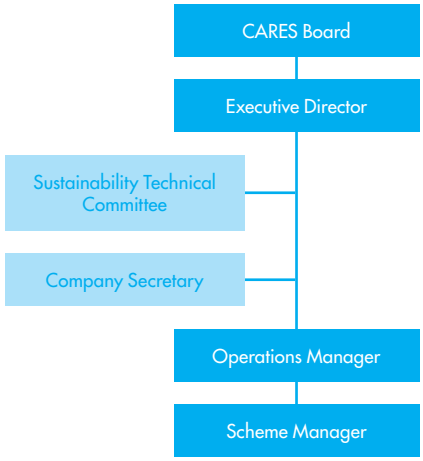
In line with BS 8902, CARES also requires companies seeking certification to demonstrate how they are using effective engagement processes in order to understand the expectations on them and to demonstrate how this understanding informs their decision making.

Construction Industry Stakeholders



CARES governance, organisational structure and relationship with the construction market and reinforcing steel supply chain

Construction market: clients and owners, producers and processors, designers, contractors, procurers and specifiers



CARES: product certification body complying with and accredited to BS EN 45011 and BS 8902

Organisation supplying construction products: reinforcing steel producers and processors

The Board is composed of appropriately qualified individuals appointed to represent the Members of the Authority. The Members are organizations representing the interests of clients and owners, producers and processors, designers, contractors and specifiers. The Board fulfills the purpose of the Sector Scheme Council as defined in BS 8902. The Board is ultimately responsible for stakeholder identification and engagement, as defined in BS 8902.

Material sustainability issues for steel sector and scheme inclusion

Materiality Process: What are our stakeholders telling us?

In order to determine what issues the CARES SRS Scheme should focus on in both the schedule content and in performance reporting, CARES conducted an issues review and materiality process which brought out the range of issues that are deemed important to our stakeholders. These issues have been prioritised based on a number of factors including significance to key stakeholders, maturity of formal management systems, capability of existing systems and training programmes to manage issues and relevance to the reinforcing steel supply chain.

CARES has modelled the structure of the scheme schedule as well as this report to be aligned to the outcomes of this materiality process. The table to the right summarises the key aspects and issues, the stakeholder source, their alignment to the scheme schedule and rationale for inclusion and exclusion. The basis of the table is the requirements of BS 8902 and the Ethical Trading Initiative (ETI) Base Code.

Aspect	Issues identified from BS8902, ETI and stakeholder feedback	Certification schedule requirement and clause number		Context and inclusion and exclusion rationale
		Appendix 1 – Reinforcing Steel Production	Appendix 2 – Reinforcing Steel Processing	
Environmental	Recyclability and recycled content	Annex 1.2.3.3	Annex 1.2.3.3	Steel is 100% recyclable indefinitely. Recycling infrastructure is mature meaning most end of life steel enters recycling process.
	Renewability	Not covered	Not covered	Steel products are initially made from iron deposits in the earth's crust and therefore non-renewable. Iron ore is an abundant material and comprises about 5% of the earth's crust but is not unlimited. The vast majority of steel used in the SRS scheme is recycled. Inclusion of renewability will be reviewed in due course.
	Harvesting or extraction impacts	Not covered	Not covered	No harvesting for steel making or processing. Mining and extraction is currently excluded from the scope of the scheme. This will be kept under review in the light of applications made. CARES currently approves steelmakers using the Electric arc furnace (EAF) route. The EAF uses primarily recycled steels and/or direct reduced iron (DRI) and electricity.
	Greenhouse gas emissions	2.3.viii	2.3.viii	Product carbon footprint lifecycle assessment tool Methodology developed by CARES, industry stakeholders and a leading international lifecycle assessment company.
	Energy usage	2.3.viii	2.3.viii	Steel production and processing requires high amounts of energy.
	Water usage	2.3.viii	2.3.viii	Water is required in large quantities for various applications in the steel production process, particularly as a coolant.
	Transport impacts	2.3.viii	2.3.viii	Energy use and emissions due to transporting raw materials and finished product contributes to the overall impact of the industry.
	Biodiversity	2.3.viii	2.3.viii	Biodiversity is relevant on and around sites as well as in the steel supply chain.
	Ecotoxicity	2.3.viii	2.3.viii	Steel production can be responsible for eco-toxicity stresses on the natural environment through the release of pollutants such as water and air emissions.
	Land remediation	Not covered	Not covered	Steel producers must be responsible stewards of sites and remediate any adversely affected land after the end of life of each site.
	Waste management	2.3.viii	2.3.viii	Steel production creates multiple waste streams which must be efficiently and effectively managed.
Social	Workers' conditions	2.3 / 2.3.viii & xiii	2.3 / 2.3.viii & xiii	As a global industry that operates in many different markets with conditions that often vary widely depending on the maturity of those markets, manufacturers should work to provide fair working conditions for all employees.
	Safe and healthy working conditions	2.3 / 2.3.viii & xiii	2.3 / 2.3.viii & xiii	Health and safety concerns are of paramount importance to the steel industry as many roles include activities with serious risks if not managed effectively.
	Slave labour	2.3 xix	2.3 xix	No company in the steel industry or any other sector should engage in the use of slave labour.
	Child labour	2.3 xix	2.3 xix	To protect the rights of children no manufacturer should use labour where a worker is under 16 years old.
	Fair wages	2.3 xviii	2.3 xviii	Manufacturers should follow industry best practice, comply with all national legislation and pay employees a reasonable living wage based on local living costs.
	Working hours and holidays	2.3 xviii	2.3 xviii	Companies should comply with applicable laws and industry standards on working hours and public holidays to ensure that employees are allowed reasonable time to rest, relax and spend time with family and friends.
	Freedom to join trade unions (freedom of association)	2.3 xvii	2.3 xvii	To allow employees to have a fair and strong voice in their conditions, wages and other important issues, all personnel should have the right to form, join and organise trade unions of their choice and to bargain collectively with the company.
	Equality in respect of gender, ethnicity, religion, political persuasion	2.3 xvii	2.3 xvii	All personnel have the basic human right to be treated equally no matter their race, national or social origin, caste, birth, religion, disability, gender, sexual orientation, family responsibilities, marital status, political opinion or age. No company should engage in or support discrimination in hiring, remuneration, access to training, promotion, termination or retirement based on any of these issues.
	Complaints and prosecutions	2.3 xvi	2.3 xvi	Complaints and legal prosecutions and the reasons behind them are taken very seriously.
	Skills and training	2.4	2.4	Improving skills helps employees advance and attain job satisfaction as well as being beneficial for companies who can find operational advantages with a more highly-skilled workforce.
	Community relations	2.4 xv	2.4 xv	Stakeholder relations with local communities are important to address any local concerns while providing companies with a stable environment to operate in politically and socially.
Economic	Contribution to the built environment	2.3	2.3	As a fundamental base material/product in the construction industry, the reinforcing steel supply chain makes a key contribution to the built environment, its impacts and future advances in the field of sustainable construction.
	Ethical business practice	2.3 xx	2.3 xx	Ethical practices are essential to the company and its stakeholders including employees, customers and local host communities.
	Contribution to diversity and stability of the local economy	2.3 xx	2.3 xx	Companies in the steel manufacturing sector can make a highly significant contribution to local host communities, particularly in terms of employment and also demand generated directly or indirectly for local goods and services.
	Long-term financial viability	Annex 1 5.4.1	Annex 1 5.4.1	Financial transparency is a cornerstone to building trust and confidence in a company and its long term financial viability. Threats to this viability present a serious risk to many stakeholders including investors, employees and local communities.
Other issues considered relevant to the sector	ISO 14001 Environmental Management System (EMS) (including commitment to legal compliance)	2.3	2.3	The ISO 14001 Environmental Management System (EMS) is an important tool in increasing the efficiency and reducing the environmental footprint of the reinforcing steel supply chain.
	Materials Efficiency	Annex 1 2.2	Annex 1 2.2	As an industry that handles hundreds of millions of tonnes of raw and recycled materials, even small improvements in materials efficiencies can have highly significant impacts on resource depletion.
	Quality and Performance	Annex 1 2.3	Annex 1 2.3	As reinforcing steel is a key component in construction of a great number of buildings, the quality of this material is extremely important to ensure the integrity and safety of these structures.
	Full product traceability (Chain of custody)	Annex 1 2.3.5	Annex 1 2.3.5	The significant constituent of steel is iron. Reinforcing steel is approximately 98.5% iron with the remaining 1.5% being comprised of residual elements and alloying elements. The SRS Scheme focuses on the iron units deriving from steel scrap or direct reduced iron (DRI) pellets as the main constituent of the final product. Raw materials are steel scrap or DRI and source traceability is maintained up to the point the raw material is received at the steel mill. Throughout all production processes and when the product leaves the steel mill it is subject to CARES product traceability requirements.

Drivers of sustainability in the construction and steel industries

The global construction sector, the built environment and its supply chain are responsible for significant negative impacts[2] which include:

- The sector with most **labour practice issues**
- **Low diversity** – very few women employed
- **30-50%** of waste to landfill
- **30-50%** of mineral resource extraction
- **40-50%** of all energy use
- **50-70%** of electricity use
- **40%** of man-made CO2
- **40%** of all workplace fatalities

The steel sector and the reinforcing bar industry within it are only a subset of the construction industry supply chain, contributing a fraction of these impacts. Clients, however, are now increasingly expecting, and contractually obliging, all parts of the construction value chain to take action to improve performance. It is not just that there are significant costs associated with these issues, there is also an acceptance that main contractors and building owners alone cannot deliver the improvement required.

For most of these issues, industry and legislative requirements are in place and growing. Whilst this varies from one part of the world to the next, examples from the UK include the Climate Change Act 2008 and the Strategy for Sustainable Construction. The Strategy for Sustainable Construction is a joint industry and Government initiative intended to promote leadership and behavioural change, as well as delivering benefits to both the construction industry and the wider economy[3]. The key provisions of the Climate Change Act 2008 are legally binding targets, a carbon budgeting system and company level reporting of greenhouse gas emissions.

Resource constraints and concerns around security of supply are growing, increasing the importance of resource efficiency which is being promoted through the use of new technologies, smart design and more effective management techniques.

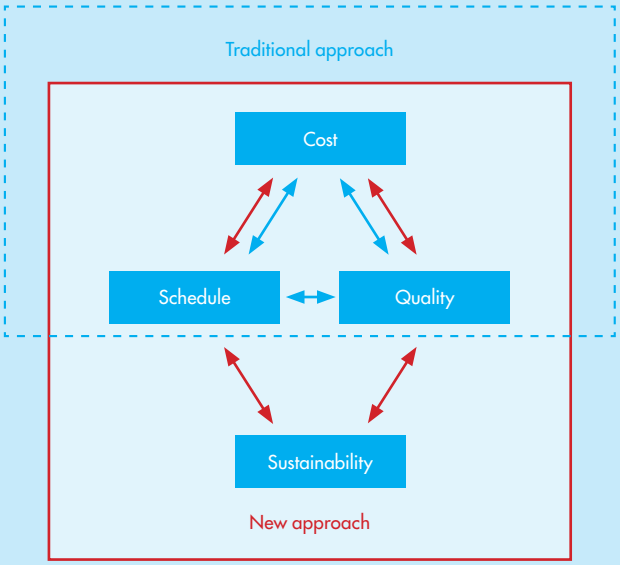
With the growth in available knowledge and new technologies linking people and communities like never before, there is also an increase in demand to reduce negative community and societal impacts, like unfair labour conditions, corruption, inequalities, disrespect for human rights, noise, dust and other nuisance issues.

CARES is not only driven by a need to reduce negatives. It also recognises the considerable opportunities and benefits from creating an active way of encouraging product differentiation, competitive advantage, safer and more content workforces and a structured approach to sustainable construction. In short, we believe introducing the SRS scheme is the right thing to do.

A number of environmental assessment methods of buildings are used throughout the world, which have provisions within them that favour the demonstrable use of sustainable construction materials and practices. The following are a selection of the most widely used in the UK and Middle East:

- **BREEAM** (Buildings) and **CEEQUAL** (Civil Engineering projects) (originating in the UK)
- **LEED** (originating in the USA)
- **ESTIDAMA** (originating in Abu Dhabi)
- **Greenstar** (originating in Australia)

Construction team decision making model, traditional vs. new approach



2. http://www.skanska.com/Global/About%20Skanska/Sustainability/Skanska_Sustainability_Agenda_Overview_Master_Copy_Release_1_2008_05_15.pdf
3. http://www.bis.gov.uk/policies/business-sectors/construction/low-carbon-construction-igt/sustainable-construction-strategy

The CARES SRS Scheme

The implications of this changing approach to decision making in construction procurement are that the supply chain must be able to clearly demonstrate it is managing these issues to improve sustainability performance. The CARES SRS scheme is formally set up to do this through its scope, objectives, principles and the way it operates.

Scope

The scheme is open to producers and processors (often referred to as fabricators), of steel bars and coils for the reinforcement of concrete who meet the requirements laid out in the scheme schedule. Applicants must already possess a valid CARES product certification certificate or product certification acceptable to CARES and an ISO 14001 Environmental Management System certificate from CARES or an accredited certification body acceptable to CARES. The scheme and its key requirements are summarised below.

Sector scheme policy

The sector scheme policy, as required by BS 8902, comprises the CARES sustainable reinforcing steel scheme policy, objectives and principles.

CARES sustainable reinforcing steel scheme policy

CARES is committed to the principles of sustainable development, including inclusivity, integrity and transparency, and shall actively promote those principles through the effective implementation of the CARES sustainable reinforcing steel scheme which is operated in accordance with BS 8902. Through proactive and frequent stakeholder engagement the Scheme has been specifically developed for the reinforcing steel supply chain using the most relevant performance indicators which shall be publicly reported at least annually. There shall be a full re-appraisal at least every two years in consultation with stakeholders to assess the level of performance by the Scheme against the sustainable development principles. CARES shall ensure that the Scheme steadily improves this level of performance through periodic review of the sustainability principles, responsible sourcing issues, objectives, targets and operational assessment schedules. The overall intent of this is that accredited certification of the reinforcing steel supply chain will deliver an improvement in sustainable development. CARES will endeavour to promote the fulfilment of this intent nationally and internationally.

"Crossrail has engaged with CARES over the past 12 months as a way of ensuring that our tier 1 contractors have more options with regards to obtaining certified sustainable steel reinforcement. We are therefore delighted to hear that CARES Sustainable Reinforcing Steel (SRS) has achieved accreditation from UKAS against BS 8902: 2009 'Responsible sourcing sector certification schemes for construction products'. This is good for Crossrail and good for the industry."

Mike de Silva, Crossrail Sustainability Manager.

CARES sustainable reinforcing steel scheme objectives

i) To provide a means by which construction clients can be assured that approved firms have produced and processed the product in line with the sustainability principles.

ii) To provide a means by which approved firms in the reinforcing steel supply chain are able to declare product and organisational level sustainability performance.

iii) To undertake a review, at least biennially, to ensure continuous improvement of the reinforcing steel supply chain against the relevant issues and continuous improvement against the sustainability principles.

iv) To undertake regular and relevant public reporting in order to encourage continuous improvement of the reinforcing steel supply chain against the relevant issues and sustainability principles.

CARES sustainable reinforcing steel scheme principles

a) Inclusivity, integrity, stewardship and transparency. These shall be reflected in practice by characteristics/criteria appropriate to the reinforcing steel supply chain. These will be measured at the product and organization level and will develop in line with different stages of the CARES SRS Scheme's maturity with regard to sustainable development

b) The CARES SRS Scheme is concerned with ensuring that approved firms operate to the highest quality and environmental standards necessary to satisfy end users by attaining and maintaining quality and environmental management systems to ISO 9001 and 14001 respectively

c) The responsibility for compliance with legal requirements and standards rests absolutely with the Firm

d) The means of ensuring consistent compliance with the policies are the formal management systems which the firm must operate and implement to the satisfaction of CARES and which are subject to assessment by CARES at periodic intervals

e) Development of products that improve the quality and sustainability of the built environment

f) Effective management of all waste streams and minimization of waste disposed to landfill

g) Measurement, reporting and improvement of performance on sustainability issues

h) Minimization of pollution and emissions associated with production and transportation

i) Protection and enhancement of the natural environment adjacent to or affected by reinforcing steel production

j) More efficient use of energy and reduction in 'carbon footprint'

k) More efficient use of primary materials and promotion of the recyclability of reinforcing steel products

l) More efficient water use and minimization of demand on mains water supplies

m) Respect internationally recognised norms concerning workers conditions and rights

The CARES SRS Scheme operation and key features

Key Features of Scheme

Carbon footprint tool for reinforcing steel

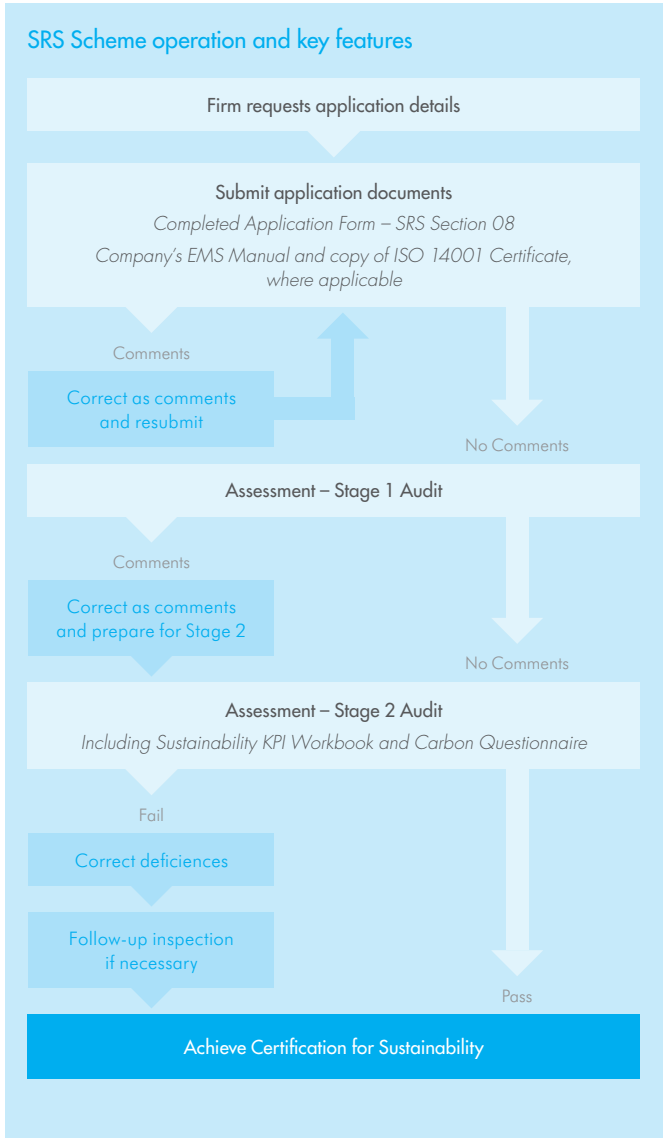
The Scheme incorporates a footprinting tool which is described in more detail in the Environment Section.

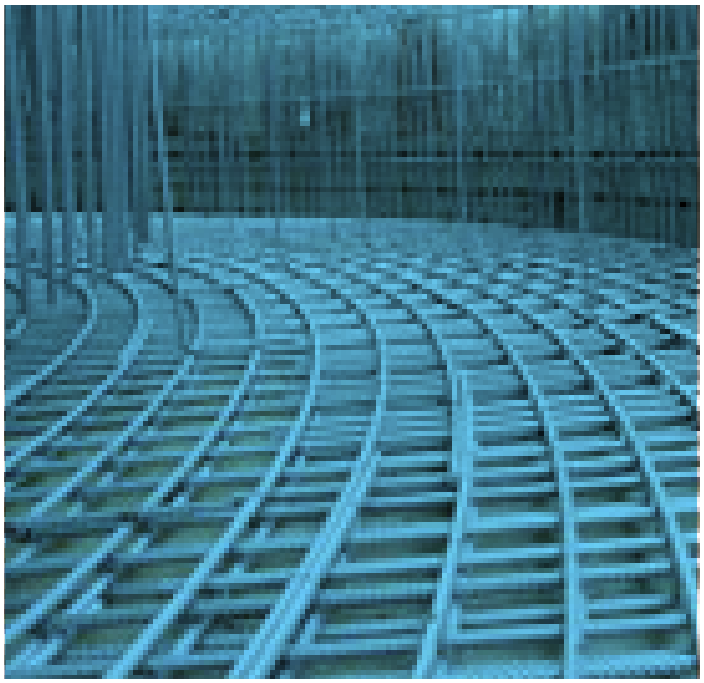
Management Systems to ISO 9001 and 14001

The CARES Sustainable Reinforcing Steel scheme requires compliance with the core product conformity scheme. This scheme uses ISO 9001 as a cornerstone and is aligned with requirements of the environmental management systems standard ISO 14001, the occupational health and safety management system OHSAS 18001 and also includes consideration of impacts on the local community, the local economy and wider society.

A suitably documented management system enables an organisation to have robust data collection and reporting systems that are independently audited. It ensures the firm has:

i) Identified the applicable legal requirements and understood how they apply
ii) Has reviewed and prioritised its key quality, environmental, social and economic impacts
iii) A management system for the purchasing process and approval of suppliers
iv) Effective product traceability systems so that they can trace the mill that produced the steel and the specific batch reference (cast number) throughout the whole supply chain
v) Cut/bent steel delivered to site is traceable to production source and manufacturing process with the necessary supporting documents
vi) Recorded and verified performance data for greenhouse gas emissions and energy usage, transport impacts, water usage, waste management, recyclability and recycled content, biodiversity and eco-toxicity, health and safety, significant community impacts, fair employment information, skills and training, complaints and prosecutions, understanding of contribution to local economies





Evaluation and reporting of performance against the principles

Once a year performance against the sustainable reinforcing steel criteria, and all the indicators that have been established to measure them, is submitted to CARES in a prescribed format: 'Annex 1 – Sustainable reinforcing steel workbook'. The workbooks are analysed at CARES and form part of subsequent surveillance audits.

The indicators that enable performance against the sustainable reinforcing steel criteria to be tracked have been developed for internal management use and external communication to CARES. In total CARES tracks over 60 indicators of performance of which selected key performance indicators are reported on in this report.

To ensure consistency, clear descriptions of how each indicator is calculated and the requirements of any other information to be provided are included in the workbook. Procedures and systems are in place to provide an audit trail and allow data collected to be verified.

At least once per year the approved producer is also required to assess its level of performance against the sustainability principles using a matrix which evaluates the maturity of the company's approach in line with the requirements of BS 8902. Over time CARES expects to see evidence of a transition to a more mature and effective approach at the approved producer.

As the scheme becomes more established CARES will be able to improve the way we track approved companies performance. Initial targets are stated in this report and will be reviewed annually, building on the learning gained from the scheme implementation.

Declarations and product labelling

Companies that have gained approval for products produced at defined sites can produce declarations of product conformity with the Scheme to a required format. This can be used for product labelling and marketing.

Product traceability (chain of custody) and responsible sourcing

Key metrics	2011	2015
Percentage of reinforcing products supplied where each batch is traceable (chain of custody)	100	Maintain 100

The supply chain for reinforcing steel is complex as it involves production, distribution, processing and delivery to a construction site. The steel used in construction projects in the UK and internationally may come from manufacturers based all over the world. It is vitally important that the suppliers of these steels are independently verified as being proficient and trustworthy, so that the use of material of dubious or unknown origin and hence unknown properties and performance is avoided.

Reinforcing steel products made by CARES approved companies are fully traceable throughout the whole supply chain, from scrap traceable to the source/supplier. It flows within an unbroken chain between the manufacturer and the local end-user thus enabling the end user to know the production source and the manufacturing processes used. All reinforcing steels manufactured by CARES approved firms are uniquely identified. When steel arrives on-site no further testing is required, thereby avoiding undue and costly delays at the construction site.

Full product traceability (Chain of custody)

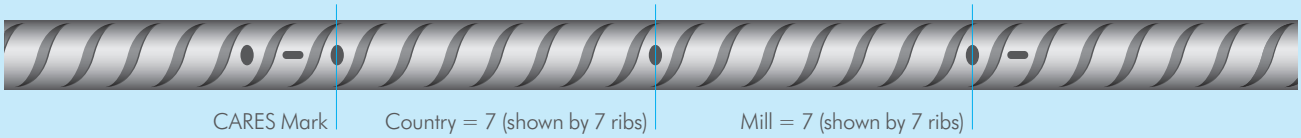
Full product traceability starts at the time of manufacturing, melting the steel scrap in the steelmaking furnace, when the steel is assigned a unique number, referred to as the 'cast number,' representing approximately 100 tonnes of steel. This cast number follows the steel bar from the molten steel to the solid steel after casting through the rolling operation and then delivery to the fabricator. At the cutting/bending stage the cast number is related to a bar schedule reference and bar mark prior to delivery to site and fixing into position. Full product traceability is maintained from the moment the steel is produced to the time it is used in the finished structure.

Product labeling

CARES SUSTAINABILITY

UKAS PRODUCT CERTIFICATION

Product marking



CARES Mark | Country = 7 (shown by 7 ribs) | Mill = 7 (shown by 7 ribs)

Environment

Greenhouse Gas Emissions and Energy

Key metrics	2011	2015
Greenhouse gas emissions, inclusive of direct, indirect and avoided scrap burden[5] CO_2e emissions - Tonnes CO_2e per tonne of carbon steel bar produced, based on Electric Arc Furnace (EAF) route which uses recycled steel	1.1	Reduce by 2.5%

According to the Intergovernmental Panel on Climate Change (IPCC), the steel industry accounts for between 3-4% of total world greenhouse gas emissions. On average, 1.8 tonnes of carbon dioxide are emitted for every tonne of steel produced[4].

Improving energy efficiency and lowering Greenhouse Gas (GHG) Emissions is a key objective for the reinforcing steel sector. Sourcing of raw materials, converting those materials into finished product and transporting them to their final destination entails the use of large amounts of energy. Due to the majority of this energy typically being sourced from traditional fossil fuels, this results in a significant carbon footprint for the industry as a whole.

How the CARES SRS Scheme manages energy and emissions

The CARES SRS Scheme aims to provide a means by which producers can improve their energy and GHG emissions performance as well as informing users of the embodied energy and GHG emissions in any CARES SRS Scheme approved steel they purchase.

Product carbon footprint data can vary significantly depending on who prepares the data, what assumptions have been made, which allocation methods are used and where organizational boundaries are drawn. To understand an individual supplier's product carbon footprint the end user is required to critically examine each methodology before the data can be used with confidence.

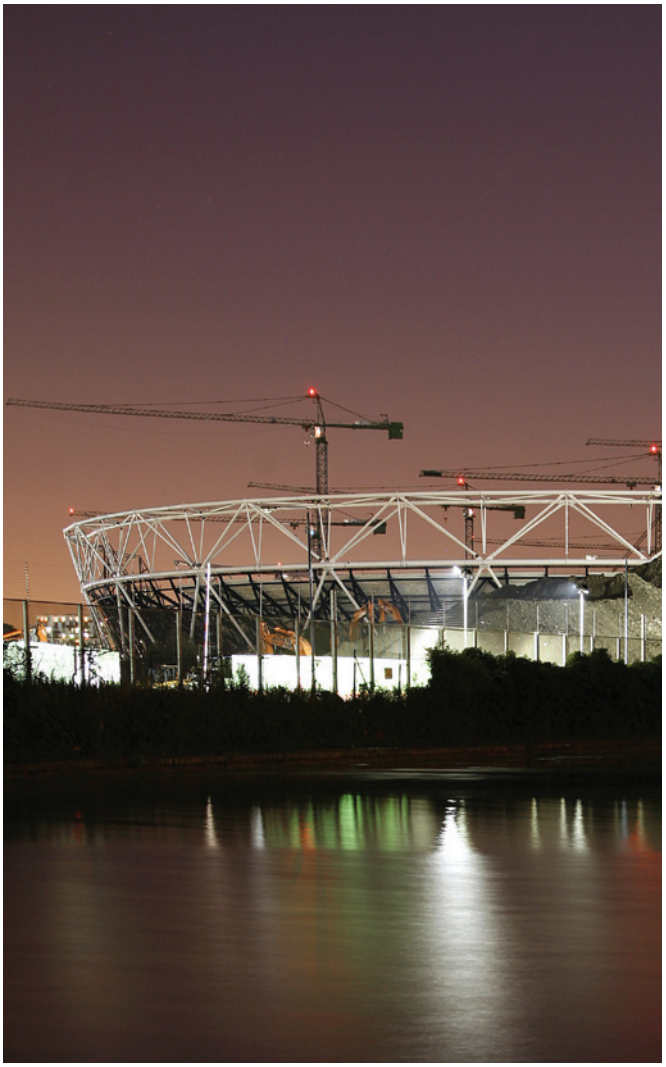
Life cycle thinking to measure product carbon footprints

In the absence of a specific national or international Standard, CARES and the reinforcing steel sector have developed a methodology, based on a lifecycle assessment approach, to determine the product carbon footprint of the reinforcing steel.

This is aligned to ISO Lifecycle assessment (LCA) and carbon dioxide, CO_2e, emissions assessment Standards which enables firms in the reinforcing steel supply chain to establish their carbon footprint data in a consistent, transparent and comparable way. The CARES Carbon Footprint Tool is a life cycle assessment tool to assess the carbon footprint of reinforcing steel products.

The CARES carbon footprint tool addresses the above issues by providing a consistent basis to assess the product carbon footprint associated with the production of either carbon or stainless reinforcing steel products from "cradle-to-gate". That is, from the point at which raw materials are extracted from the environment to the point at which the finished product is ready to leave the factory. It is considered that this approach will facilitate comparison of different supplier's product carbon footprint data and enable the development of a consistent set of data for use as default values in structural design software to allow meaningful comparison between structural designs.

While optional at the present time, CARES strongly encourages companies to publically disclose the product carbon footprint of their reinforcing steel on an annual basis.

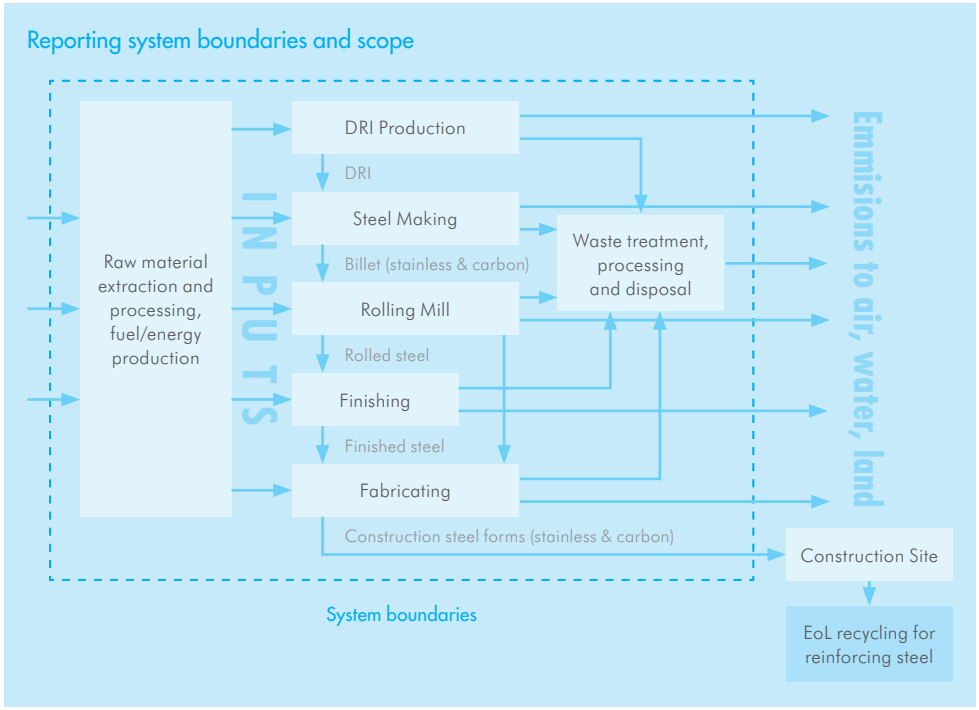


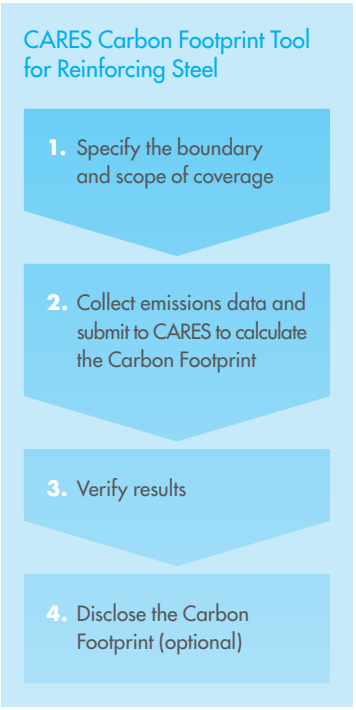
The significance of embodied carbon in construction projects

"Carbon is becoming a central design question. This will involve fundamental changes to the way we procure materials for projects. It will mean rewriting the rulebook so that carbon is integral. The question we will ask first is "is it carbon critical?" not "is it cost efficient?" If that requirement is not factored in, then the assets or the infrastructure we are creating will not be sustainable."

Keith Clarke, CEO of Atkins
New Civil Engineer, August 2008

4. http://www.worldsteel.org/steel-by-topic/sustainable-steel/sustainability-indicators.html
5. **Scrap Burdens** - the world steel industry follows the substitution/avoided burdens approach to recycling at end of life and assigns environmental impacts to ferrous scrap. Consuming scrap (e.g. as input to an EAF) results in an increase in GHG emissions, while producing scrap (e.g. through collection for recycling at end of life) gives a credit, reducing the overall carbon footprint. In this assessment it is assumed that the recycling rate at end of life is 90%. Other methodologies, such as the "cut-off" approach, do not assign burdens to scrap inputs but equally do not give any credits to recycling at end of life. The burdens associated with scrap are clearly reported in each summary, available upon request from the approved firm, enabling the results to be interpreted according to either methodology.





Transport

A further important segment of the overall carbon footprint of reinforcing steel are the carbon emissions associated with transporting raw materials and finished product. Whilst there are many other environmental and wider impacts of transport, the SRS scheme focuses on the emissions contribution of transport.

Several variables can have an impact on these emissions including the supplier location; the modes of transportation (road/rail/sea); the fuel types and the efficiency of the vehicles used; and the weight of the materials being transported.

The CARES SRS Scheme requires all approved suppliers to provide complete data on the methods of transport used when shipping approved steel to target destinations and the average distances travelled by those products. In addition to this supplier locations and tonnages transported are also mandatory data fields.

Materials and eco-efficiency

Resource scarcity and degradation of our eco-systems due to human activity are impacting on our ability to deliver sustainable economies. Whilst a high proportion of steel is recycled due to its magnetic properties, the ease of separation from waste streams and well developed recycling infrastructures, there is not enough steel entering recycling streams and so steel made from iron ore is needed.

The efficiency of the process to deliver a given output of product is also very important as steel is an energy and materials intensive industry. By improving materials efficiency the reinforcing steel supply chain can reduce costs, waste and pollution.

The two main steel production routes and their related inputs are:

- The integrated steelmaking route, based on the blast furnace (BF) and basic oxygen furnace (BOF), uses raw materials including iron ore, coal, limestone and recycled steel. On average, this route uses 1,400 kg of iron ore, 770 kg of coal, 150 kg of limestone, and 120 kg of recycled steel to produce a tonne of crude steel.
- The electric arc furnace (EAF) route, based on the EAF, uses primarily recycled steels and/or direct reduced iron (DRI) and electricity. On average, the recycled steel-EAF route uses 880 kg of recycled steel, 150 kg of coal and 43 kg of limestone to produce a tonne of crude steel[5].

Steel Recycling

Steel can be recycled indefinitely without losing its properties. It is by far the most-recycled material in the world[6]. Total steel production in 2008 reached 1.3 billion tonnes, of which over 475 million tonnes were made from scrap metal[7]. The most commonly recycled items are scrap from industrial processes, end-of-life products such as containers, vehicles, appliances, industrial machinery and construction materials.

As well as preventing the need to extract expensive virgin raw materials such as iron ore from the natural environment to create new steel, recycling steel results in significant energy and carbon savings.

5. http://worldsteel.org/dms/internetDocumentList/fact-sheets/Fact-sheet_Raw-materials2011/document/Fact%20sheet_Raw%20materials2011.pdf
6. http://www.worldsteel.org/dms/internetDocumentList/fact-sheets/Fact-sheet_3Rs/document/Fact%20sheet_3Rs.pdf
7. http://www.worldsteel.org/steel-by-topic/sustainable-steel/environmental/efficient-use.html

Case Study – Highways Agency Carbon Budgeting System

The UK Highways Agency (HA), is a key user of SRS and operates a carbon budgeting system that the CARES carbon footprinting tool is aligned with.

The HA has provided its supply chain with the tools necessary to measure greenhouse gas emissions (**http://www.highways.gov.uk/business/31530.aspx**) and provide the incentives to actively manage and reduce these wherever possible.

The HA first established and quantified its current greenhouse gas emission levels by gathering data from across the HA and the supply chain to populate the HA Carbon Calculation Framework. The HA now reports its carbon footprint from six areas of their business. It has improved the data collection process itself, and in the completeness, robustness and quality of the data sets being returned from its supply chain.

HIGHWAYS AGENCY

Management approach (e.g. ISO)[8]

Environmental Management

Key metrics	2011	2015
Percentage employees employed at ISO 14001 certificated or equivalent sites, of total employees of steel producer	96	100
Tonnes of steel billet as percentage of tonnes of raw materials used	82	To be determined
Percentage by mass, of steel scrap (post consumer material) in CARES SRS Scheme approved product	97	Maintain 97

How the SRS Scheme is promoting Materials and Eco-Efficiency

The CARES SRS Scheme is designed to encourage and track the uptake of the ISO 14001 international standard for environmental management systems (EMS) and the ISO 9001 quality management system standard.

Material eco-efficiency relates the production of a given output to the use of raw materials. The scheme encourages the responsible sourcing of materials. This refers to the management of a product from the point at which a material is extracted in its raw state, through manufacture and processing, use, re-use and recycling, until its disposal.

The CARES SRS Scheme requires approved suppliers to provide a breakdown of the sources of their raw materials (e.g. iron ore, steel scrap, etc) and tracks the amount of incoming materials by mass for each of the main process sources, that come from sites being operated under ISO 14001 and 9001 certificated sites. It requires them to monitor how effectively they and their suppliers are managing material, waste and water impacts associated with converting those materials into finished product.

8. http://www.tewconsultants.com/Environmental-Management.php

Environment continued

Waste

Key metrics	2011	2015
Percentage of CARES SRS Scheme approved suppliers with Waste Management Plan in place	100	Maintain 100
Kg of waste sent to landfill per tonne of finished product	95	To be determined
Kg of waste incinerated per tonne of finished product	8	To be determined
Kg of waste recycled per tonne of finished product (kg per tonne of rolled steel billet) [Reinforcing steel producers]	175	Increase by 5%

Like all heavy industries, the steel production process results in the creation of waste which needs to be managed effectively to maximize efficient use of resources and divert as much waste as possible from being sent to landfill.

How the SRS scheme promotes effective waste management

The CARES SRS Scheme encourages effective and efficient management of all waste streams in an attempt to minimise the volume of waste sent to landfill and to increase the volume of waste recycled. It does this by requiring approved suppliers to provide data demonstrating the amounts of waste generated per tonne of finished product and to describe the treatment or disposal method be that recycling, landfill or incineration.

Suppliers are also required to have a Waste Management Plan (WMP) in place and describe the level of sophistication of the WMP such as whether appropriate targets and KPI's are in place and responsibilities for monitoring waste are assigned.

Water

Key metrics	2011	2015
Water consumption (m^3)per tonne of finished product	1.1	Reduce by 5%

Effective water management is incredibly complex. Unlike the global impact of emissions contributing to climate change, water impacts at a catchment level can depend on availability of usable water, seasonality of supply and who else needs the water.

There is no doubt that many areas of the world are either already or soon expected to be suffering from water shortages through a combination of excessive demand, mismanagement and diminishing supplies. Steel producers, as a key users of water resources, are finding it in their own best interest as well as the interests of the natural environment and communities to manage their water effectively to help reduce the stress on this precious, shared resource.

After iron and energy, water could be considered to be the next most valuable resource for the industry. Although used for other reasons such as materials conditioning and the scrubbing of air emissions, water is used predominantly for cooling purposes when manufacturing and processing steel.

How the CARES SRS scheme promotes effective water management

To encourage the reduction of water use by steel suppliers, the scheme necessitates the reporting of water consumption per tonne of finished product as well as total annual water use. The scheme actively encourages more effective water treatment to increase water recirculation and recycling on sites.

Biodiversity and Ecotoxicity

Key metrics	2011	2015
Percentage of CARES SRS Scheme approved manufacturers who monitor and report on their biodiversity impacts	71	80
Number of CARES SRS Scheme approved manufacturer environmental incidents that resulted in penalty (issuance of enforcement and/or prohibition notices and/or prosecution)	1	0

The degree to which we all rely on biodiversity is often underestimated or taken for granted. Biodiversity supports ecosystem services including air quality, essential climate processes, such as taking CO_2 out of the air, water drainage and purification, pollination, and helps reduce the negative impacts of weather including erosion and flooding. Biodiversity is also valued for spiritual and aesthetic reasons. Whilst impossible to accurately quantify, we are currently living in an age of unprecedented species loss.

Responsible stewardship of sites can be achieved by recognising the importance of national heritage, biodiversity and geodiversity during use and after the end of life of each site, appropriate monitoring of impacts and by implementing site specific action plans.

Like many heavy industries, steel production can be responsible for ecotoxicity stresses on the natural environment through the release of pollutants such as water and air emissions. Careful monitoring and management can help to mitigate these impacts.

How the SRS scheme manages biodiversity and ecotoxicity

CARES SRS Scheme approved manufacturers are required to document procedure(s) to collect, record, report and maintain data relevant to biodiversity and ecotoxicity. Documented procedures must be in place to monitor any emissions to air, land and water and control any environmentally significant releases, impacts or nuisances, including noise, from the processes operated. The monitoring must be performed according to the requirements of CEN standards, or ISO, national or other international standards if CEN standards are not available. Manufactures must also identify and list the types of hazardous wastes associated with their site operations and clearly define the traceability system and paths for the disposal of waste.

Social

Being extremely complex, construction materials supply chains involve many people and impacts on numerous communities globally. Engaging with the employees of steel producers, mills and fabricators as well as other stakeholders will deliver more sustainable products as well as ensuring that neighbouring communities are respected and any negative impacts on them minimised.

The SRS scheme was revised in 2011 to reflect leading practice, drawing on the requirements of key standards in this area such as the Ethical Trading Initiative Base Code. Particular emphasis is placed on ensuring a safe and healthy working environment, developing the knowledge and skills of approved company's employees and respecting human rights. How CARES encourages effective engagement with communities is covered in the Communities section.

The CARES SRS Scheme auditors work with companies to ensure that valid and accurate employee information is in place for all sites and that appropriate mechanisms are in place to ensure employees are fairly treated, have a safe and healthy working environment and opportunities to improve.

Health & Safety

Key metrics	2011	2015
% of employees employed at OHSAS 18001 certificated sites	89	100
Percentage of Companies operating a system to ensure workers conditions are safe and healthy	100	Maintain 100

The steel sector is a significant employer globally and has a responsibility to ensure its employees work in safe and healthy conditions. Making reinforcing steels exposes these employees to hazards and risks. It is essential that good procedures and systems are in place to reduce these risks and drive performance towards incident free workplaces.

How the CARES SRS scheme promotes healthy and safe workplaces

The current focus for Health and Safety activity within the scheme is to drive up the number of employees that are covered by the requirements of the certifiable Health and Safety management system 'OHSAS 18001'. This system provides a framework for organisations to identify and control health and safety risks, reduce the potential for accidents, support legislative compliance and improve overall performance. It is subject to separate audit which helps provide reassurance to the scheme that continuous improvement in H & S management and performance is being sought by the organisation.

The CARES SRS Scheme recognises that effective Health and Safety management must deliver fewer accidents with less severe outcomes. The steel and construction sectors ambition is zero accidents and incidents. This indicator was selected to drive management practice to support this ambition. CARES auditors also seek information on incidents, frequency and severity using the lost time injury frequency rate.

A lost time injury is an industrial injury causing loss of time from the job on which the injured person is normally employed beyond the day or shift on which the injury occurred. In addition, cases where loss of time does not immediately follow the injury, but where there is a direct relation between absence and injury, are generally regarded as lost time injuries.

Training

Key metrics	2011	2015
Number of training hours per employee (total training hours/total number of employees)	24	Increase by 5%

Developing the right mix of skills and knowing when to apply them is critical to improving the sustainability of the steel value chain. All employees have a right to training to enable them to do the job safely and effectively. Skills that also enable career development are important to enable individuals and teams to progress and programmes that enable this are encouraged by the scheme.

How the SRS scheme promotes employee development

The scheme asks approved companies to provide evidence about training and learning that equips employees with the technical and on the job knowledge and skills required to support continual improvement. This is a mixture of qualitative and quantitative information looking not only at the range of and time given to training activities but also to the outcomes and effectiveness of this training.

In line with effective management practice in this area, training programmes should seek out gaps in skills and put in place plans to address them. Eco-efficient operations and health and safety are key areas for sustainable steels where our auditors would expect to see development in training capabilities and practice.

Social continued

Human Rights

Key metrics	2011	2015
% Compliance with applicable laws and industry standards on fair wages, working hours and public holidays	100	Maintain 100

The construction industry is no different to many other sectors in seeking full traceability and responsibility through the value chain that leads to buildings and infrastructure. This includes trying to ensure fair treatment of people and reducing incidents of human rights abuses. The CARES SRS Scheme supports the initiatives of many of our key clients in asking exactly how suppliers meet a set of criteria around fair labour practices, fundamental rights at work and respect for diversity and equality.

How the CARES SRS Scheme tries to ensure human rights are respected

The scheme has evolved its approach to valuing people and their rights and has updated the audit requirements to ensure they are aligned to the requirements of the Ethical Trading Initiative Base Code.

The code covers:

- Slave, bonded or child labour
- Fair and clear contracted employment that is in-line with employment law and regulations
- The right to collective bargaining and union activity
- Discrimination

CARES auditors check for the existence of policies and their active implementation through documentary evidence as well as through observation and engagement with employees. Anti-discrimination measures for example include asking for evidence that discriminatory criteria are not used when hiring, remunerating, training

Community

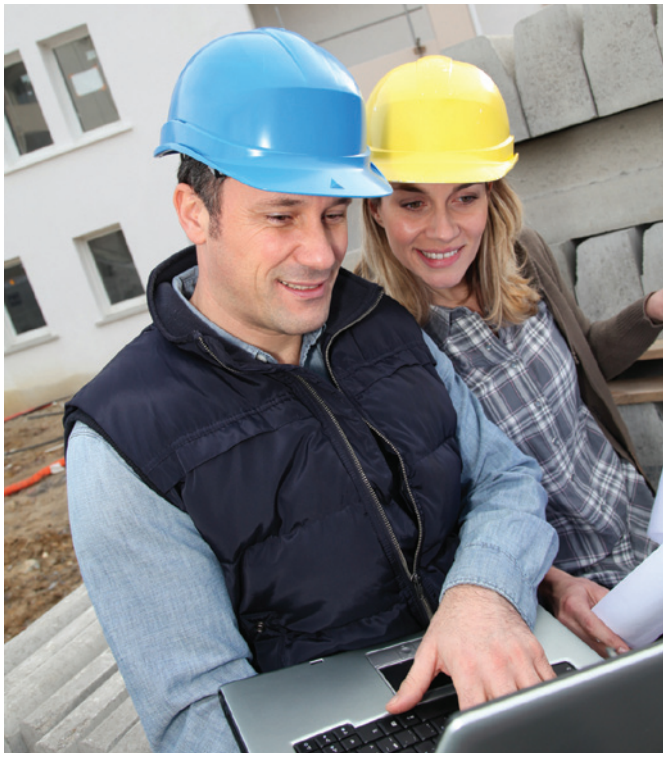
Key metrics	2011	2015
% of CARES SRS Scheme approved producers who have a policy in place to increase engagement with community stakeholders	93	Increase by 5%
% of CARES SRS Scheme approved producers who have specific systems in place to deal with local community complaints	93	100

Community relations are becoming steadily more important to companies as they begin to fully recognise the impacts their operations can have on community stakeholders and the benefits of managing these relationships and impacts successfully.

The operations of a reinforcing steel producer can impact on local communities in several ways including noise, odours, increased heavy transportation and other nuisances. In order to minimise the disruption caused to the local community it is important to understand any issues or concerns they may have and address them accordingly. Therefore stakeholder involvement is key to achieving sustainable management of the site. Generally stakeholders are identified as people who the operations of a steel production site impact upon and other people who may have an interest in the site.

How the CARES SRS scheme supports community cohesion

CARES SRS Scheme approved producers are encouraged to engage with stakeholders in various and, crucially, easily accessible ways so that the widest possible audience can be reached fairly and effectively. Engagement works both ways with companies informing and communicating their activities and policies to stakeholders while also taking on board the opinions and concerns of stakeholder groups.



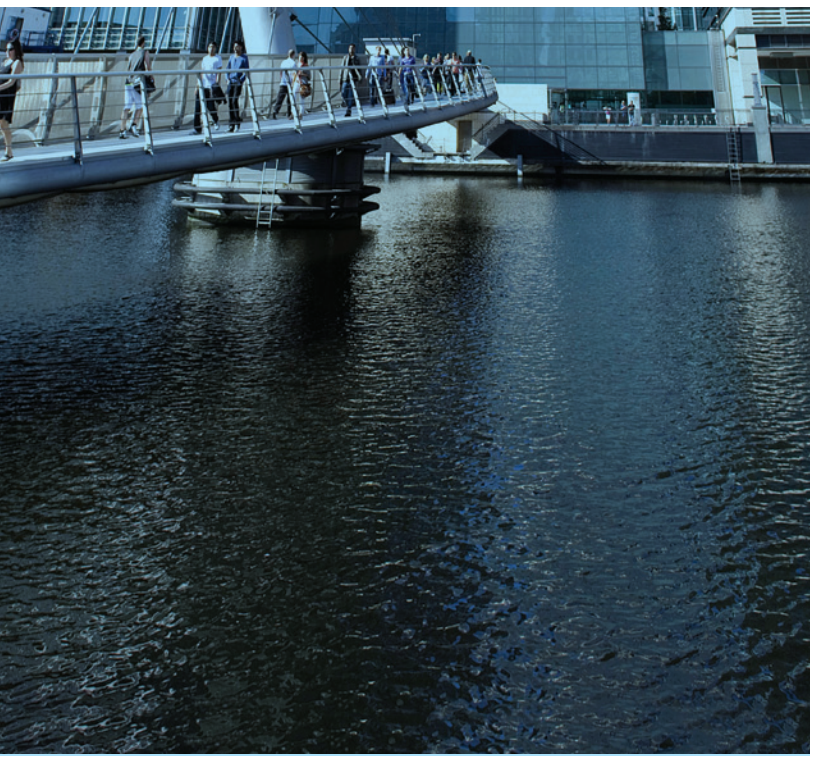
Stakeholder engagement methods

- Opinion surveys, media tracking, helpline, contact point, involvement in non-company based community activity
- Advertisements, newsletters, open days, performance information reported publically by the company
- Corporate Responsibility (CR)/sustainability report or site based report, third party opinion/verification/audit reports
- Focus groups, public meetings, forums, one to one conversations, workshops
- Employee representation, union/company forum, suggestion schemes
- Helpline, provision for emergency access to company

In addition to engaging with stakeholders, the CARES SRS Scheme expects approved producers to have suitable systems in place to competently and fairly deal with any legitimate complaints against the company. To this end, approved producers are expected to have:

- Defined complaint procedure(s)
- Clear ownership of queries, complaints and response(s) to conclusion
- Communication Procedure(s) to communicate outcome of response(s)

Economic



Economic issues

Key metrics	2011	2015
% of CARES SRS Scheme approved manufacturers who have externally audited accounts for the latest financial reporting period?	100	Maintain 100
% of CARES SRS Scheme approved manufacturers who implement a policy to comply with ethical business practices?	79	100

Companies have very significant impacts on the economic circumstances of relevant communities and stakeholders. This is particularly true of companies that may be responsible for a large number of jobs and significant demand for goods and services in a specific community or region. However, all companies, to a greater or lesser extent, add economic value and contribute to the stability of their local host community.

Therefore the financial practices and ethics adhered to by a company doing business in a community is vitally important to a considerable number of stakeholders including the company itself. Intelligent and ethical economic decisions can lead to increasing prosperity in host communities and this in turn can lead to economic growth for the company and more favourable treatment towards it in terms of its licence to operate and other benefits.

How the CARES SRS Scheme supports economic value

Financial transparency is a cornerstone to building trust and confidence in a company and its long term financial viability. Threats to this viability present a serious risk to many stakeholders including investors, employees and local communities. A scheme requirement is for all approved producers to publish externally audited financial accounts. The scheme also operates an ethical business policy.

Ethical Business Policy

The CARES SRS Scheme requires approved producers to adopt and provide evidence for an ethical business policy which covers some or all of the following issues:

1. Employee profile which reflects the diversity of the host community, region, nation
2. [Evidence of] Economic Value Added: the contribution to the stability of the local economy (e.g. employment, supply chain, multiplier effect, physical infrastructure; assessment of other impacts (e.g. price rises due to greater demand on local supply of staple goods and services)
3. Ongoing investment relating to Sustainable Development impacts (e.g. production innovation, skills and changes to employment profile, customer satisfaction, fair trade, supply chain resilience, adaptation to climate change, security of personnel, etc.)
4. Responsible procurement policy, measurement, monitoring and review process
5. Policy to comply with ethical business practices (e.g. Sustainability policy)
6. Impact on local skills and capability
7. Objectives and Targets in all these areas

More information

Specifying reinforcing steel from the CARES approved supply chain

To ensure the correct material is purchased, the purchaser's specification should make an explicit reference to the product standard and CARES certification or third party product certification. The suggested wording for inclusion in a specification is;

UK project specifications – BS 4449 2005 and BS 4483 2005

All hot rolled and cold worked steel bars specified shall conform to BS 4449 (Grade B500B or B500C) and shall be cut and bent in accordance with BS 8666. The bars shall be obtained from firms holding valid CARES (or fully equivalent schemes) product conformity and sustainable reinforcing steel scheme certificates of approval for the production and supply of the steel reinforcement.

Steel fabric reinforcement shall conform to BS 4483 (Grade B500A, B500B or B500C) and shall be cut and bent in accordance with BS 8666. Steel fabric reinforcement shall have a minimum nominal bar size of 6 mm (8 mm for Grade B500A). Steel fabric reinforcement shall be delivered to site in flat mats or pre-bent. The steel fabric shall be obtained from firms holding valid CARES (or fully equivalent schemes) product conformity and sustainable reinforcing steel scheme certificates of approval for the production and supply of the steel fabric reinforcement.

NOTE For diameters ≤ 12mm, Grade B500A, Grade B500B or Grade B500C conforming to BS 4449:2005 may be considered. For diameters ≥ 12mm, Grade B500B or Grade B500C conforming to BS 4449:2005 shall be specified.

Non-UK project specifications – BS 4449 1997 or 2005 and BS 4483 1998 or 2005

All hot rolled and cold worked steel bars specified shall conform to BS 4449 [1997 or 2005] (Grade 460A or 460B or B500A, B500B or B500C) and shall be cut and bent in accordance with BS 8666. The bars shall be obtained from firms holding valid CARES (or fully equivalent schemes) product conformity and sustainable reinforcing steel scheme certificates of approval for the production and supply of the steel reinforcement.

Steel fabric reinforcement shall conform to BS 4483 [1998 or 2005] (BS 4482 1985 Type 1 or Type 2, BS 4449 1997 460A, 460B or B500A, B500B or B500C) and shall be cut and bent in accordance with BS 8666. [Steel fabric reinforcement to BS 4483 2005 shall have a minimum nominal bar size of 6 mm (8 mm for Grade B500A)]. Steel fabric reinforcement shall be delivered to site in flat mats or pre-bent. The steel fabric shall be obtained from firms holding valid CARES (or fully equivalent schemes) product conformity and sustainable reinforcing steel scheme certificates of approval for the production and supply of the steel fabric reinforcement.

CARES Sustainable Reinforcing Steel Scheme – Approved firms (June 2012)

Reinforcing steel producers

ArcelorMittal Rodange and Schifflange (Rodange and Schifflange)
Ekinciler Iron & Steelworks Inc. (Iskenderun, Turkey)
Megasa Siderúrgica SL (Naron)
Izmir Demir Celik Sanayi AS (Izmir)
ArcelorMittal Hamburg GmbH (Hamburg)
Yazici Iron & Steel Co Inc (Iskenderun)
ICDAS Celik Enerji Tersane Ve Ulasim Sanayi A.S. (BIGA)
HABAS A.S. (Izmir)
Diler Iron and Steel Co Inc (Gebze, Turkey)
Emirates Steel Industries (Abu Dhabi)
Kroman Celik Sanayi A.S. (Gebze Turkey)
Qatar Steel Company (QSC) (Mesaieed, Qatar)
Nursan Metalurji Endustrisi A.S. (Payas – Dortyol, Turkey)
Nursan Celik Sanayi Ve Haddecilik AS (Payas – Dortyol, Turkey)
SN Seixal - Siderurgia Nacional, S.A. (Seixal, Portugal)
SN Maia - Siderurgia Nacional, S.A. (San Pedro Fins - Maia, Portugal)

Reinforcing steel processors (Fabricators)

Kierbeck Thames Limited (Barking)
ArcelorMittal Kent Wire Limited (Chatham)
Thames Reinforcements Ltd. (Sheerness)
Midland Steel Reinforcement Supplies, UK (Erith)

Stainless steel reinforcing bar producers and processors:

Outokumpu Stainless Ltd. T/A ASR Rod Mill, Long Products (Sheffield)
Outokumpu Stainless Ltd. T/A Outokumpu Bar Finishing (Sheffield)

Glossary

Biodiversity: the degree of variation of life forms within a given ecosystem, biome, or an entire planet. Biodiversity is a measure of the health of ecosystems.

Carbon dioxide equivalent (CO_2e): a quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO_2 that would have the same global warming potential, when measured over a specified timescale (generally, 100 years).

Ecotoxicity: the potential for biological, chemical or physical stressors such as emissions and pollutants to affect ecosystems.

Embodied energy: the sum of energy inputs (fuels/power, materials, human resources etc) that was used in the work to make any product, from the point of extraction and refining materials, bringing it to market, and disposal/re-purposing of it. Embodied energy is an accounting methodology which aims to find the sum total of the energy necessary for an entire product lifecycle. This lifecycle includes raw material extraction, transport, manufacture, assembly, installation, disassembly, deconstruction and/or decomposition.

Geodiversity: Geodiversity is the variety of earth materials, forms and processes that constitute and shape the Earth, either the whole or a specific part of it. Relevant materials include minerals, rocks, sediments, fossils, soils and water. Geodiversity is etymologically comparable to biodiversity and "Geodiversity" often refers to the basic quality to be conserved. "Geoconservation" represents the endeavor or activity of trying to conserve it and "geoheritage" is applied to specific examples that have been identified as warranting conservation management.

Materiality: the significance and relevance of an issue.

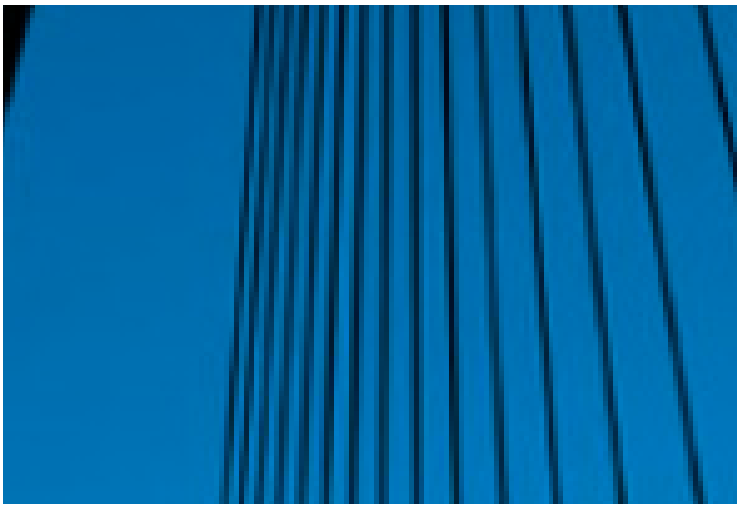
Product traceability: the completeness of the information about a product in every step of its process chain.

Stakeholder: a person, group, organization, or system who affects or can be affected by an organisation's actions.

Stakeholder engagement: the process by which an organisation involves people who may be affected by the decisions it makes or can influence the implementation of its decisions.

Sustainable construction: architecture, engineering, urban planning and construction designed to achieve a sustainable built future by including sustainable responses to the technological, environmental, socioeconomic, and cultural issues affecting building and construction.

Construction specifier: a construction professional who is proficient in the knowledge and art of preparing technical specifications for the building construction process.



Feedback

This is our first report where we seek to capture how the CARES Sustainable Reinforcing Steel supply chain impacts on the environment, society and the economy. We welcome your feedback.

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