Skanska UK

Skanska sustainable procurement

Section/version: 4
Issue date: 01/01/2021
Last reviewed: 01/01/2025
Last updated: 01/01/2025
Responsibility: Procurement Manager (Procurement Services)

Contents

Introduction

This document sets out Skanska's approach to sustainable procurement and acts as guidance for both internal buyers, specifiers and for current and prospective suppliers. The document expands on and supports the principles outlined in Section 2 of the Skanska UK Procurement Policy and the Skanska AB Supplier Code of Conduct.

The Supplier Code of Conduct: www.skanska.co.uk/codeofconduct reflects the increasing importance of ethics in the global marketplace, clarifies what Skanska expects to be adopted throughout the supply chain and should be read in conjunction with the detail contained within this document.

Sustainable procurement is defined by Skanska as 'meeting our customer requirements by the value-for-money sourcing of products and services considering environmental, social and ethical aspects over the whole product or service lifecycle'. Skanska see this as essential and efficient business practice, which is integral to the way we work. It helps us to make properly informed and balanced decisions when procuring the products and services needed for our projects.

The term supplier is used in this document (unless otherwise stated) to mean the provider of materials, products, equipment, works or other services. It is used as a collective term for a material or equipment supplier, subcontractor, trade contractor, consultant, or professional service provider.

Skanska will only do business with responsible suppliers who understand the nature of the products, materials, and services they are supplying, and who recognise their responsibility to protect the environment and foster good relations with their employees and local communities. Skanska requires its suppliers to manage the environmental and social impacts of their business operations.

Suppliers should, where appropriate, amend their business practices to ensure that they meet with the requirements of this document, our Code of Conduct including the Supplier Code of Conduct, or an equivalent of its relevant core principles. We will support our supply chain in working towards compliance.

The key responsibility of all Skanska Group companies is to develop and maintain an economically sound and prosperous business. Skanska assumes its responsibilities towards the communities and environments in which we operate, towards our employees, business partners and society in general.

Therefore, we have defined some key foundations for our performance:

- We comply with legal requirements that apply in the countries where we do business.
- We are committed to do business with a high degree of integrity and ethics.
- We are open-minded in dialogue with those who are affected by our operations. We respond to enquiries from external parties and communicate with affected parties in a timely and effective manner.
- We adhere to the principles set out in the Construction Playbook (v1.1 September 2022).

We endeavour to ensure that our projects, agents, joint venture and other partners abide by the principles set out in our Code of Conduct: www.skanska.co.uk/codeofconduct or an equivalent of its relevant core principles.

The application of this document helps us deliver the Skanska values within the supply chain:

- Care for life
- Act ethically & transparently
- Be better together
- Commit to customers

Key principles

To achieve our sustainability objectives Skanska expects our suppliers to adopt, and further develop, practices that are environmentally sound, socially responsible, and ethical, based upon the following four principles:

Care for life — protecting people and the planet
The health, safety and wellbeing of people is our absolute priority. In situations that are physically or psychologically unsafe we refuse to be bystanders. This applies to the environment and climate change too. We advocate for sustainable solutions and operate in this spirit, holding each other accountable for the legacy that we leave future generations. We are changemakers and action takers.

Act ethically and transparently — being a role model
Each of us honours our individual responsibility to lead by example and act with the highest degree of integrity and transparency. We encourage different perspectives, foster a space in which people can speak freely and live by our Code of Conduct. Shortcuts are unacceptable.

Be better together — teaming up
Everything we do, we do better together. We listen and learn with curiosity to strive forward as a team, generously sharing knowledge along the way to successfully replicate best practice. We champion an inclusive culture of openness, fairness, trust and respect, where all people feel a sense of belonging. We innovate and deliver the best solutions by leveraging the diversity within our own teams, together with that of our customers, partners and the local community.

Commit to customers — having a customer-first mindset Our customers' success is our success. We put them at the heart of everything we do, always listening closely to understand both their needs and those of their customers. Together, we look ahead to create smarter and more sustainable solutions, bringing their visions to life and shaping the world in which we live.

We want suppliers who work with us, in mutual trust, to always deliver on time, at the right price and in a safe and responsible way.

We will always provide a safe and healthy working environment and pay promptly within agreed terms. We will reward excellent supplier performance through repeat business opportunities and help develop mutually beneficial long-term relationships. We will also give our supply chain the space and flexibility to develop and deliver innovative solutions.

Behaviour in our marketplace

Corruption, bribery and unfair anti-competitive actions distort markets and hamper economic, social and democratic development. Skanska does not tolerate such activities.

- We shall not act contrary to applicable competition laws.
- We shall not, directly or indirectly, offer or give any undue payment or other consideration to any person or entity for the purpose of inducing such person or entity to act contrary to prescribed duties to obtain, retain or direct business or to secure any other improper advantage in the conduct of Skanska's business.
- We shall not, directly or indirectly, solicit or accept any undue payment or other consideration that is given for the purpose of inducing us to act contrary to prescribed duties.
- We record the correct nature of all financial transactions by recording them in accordance with locally accepted accounting principles and follow International Financial Reporting Standards (IFRS) and applicable Skanska Policies and Rules.
- We have controls in place in our IT procedures to ensure adequate levels of data protection for our customers, employees and supply chain.
- Suppliers shall be able to demonstrate they have procedures in place to deal with the risks of bribery in their organisation in accordance with the Bribery Act 2010.

Skanska requires its suppliers to apply and uphold these key principles within their own business operation and supply chains. We will carry out ethical audits where appropriate.

Skanska operates a code of conduct hotline and would encourage suppliers to report any suspected ethical breaches. Full details of how to report incidents can be found at: www.skanska.co.uk/codeofconduct.

In addition, Skanska is a member of Build UK Group (previously UK Construction) www.builduk.org.

Protection of assets, property and equipment

Skanska safeguards and protects its assets from damage, theft, loss and misuse, as they are essential to our business. Assets are either tangible or intangible. Examples of tangible assets are raw materials, money, products, machines and equipment, computers and real estate. Examples of intangible assets are our brand, patents, trademarks, knowhow, trade secrets, copyrights and data. As a member of Skanska's supply chain, you are required to respect the assets of Skanska and its stakeholders and only use assets belonging to Skanska and others as and when appropriately authorised. Skanska does not tolerate theft of assets.

Collaborative planning
Suppliers shall provide appropriate resource to support collaborative planning in projects to production planning systems like Last Planner. These tools create predictable and reliable workflows that help avoid issues with production time, cost and quality. Suppliers will also support Skanska in working to the principles of the collaborative business relationships standard ISO 44001.

Early engagement will help highlight the interdependencies of specialist supply chain members and allow them to be part of developing the solution to the right quality levels and increase safety collaboratively. A shared focus on outcomes, rather than scope, will unlock innovation and drive continuous improvement.

Media and external communication
When working on behalf of Skanska it is essential that any external communications activity by suppliers and their employees are respectful, protect Skanska's reputation and that of our customers, are not contrary to the Skanska Code of Conduct (or an equivalent of its relevant core principles) and abide by UK law.

Activities including, but not limited to, press releases, website news stories, social media and case studies about Skanska or its projects can only be considered by Skanska UK's Communications team once our supply chain partners' work is complete, and the defects liability period has closed. For more detail on the process, please see our Supply Chain Public Relations policy at the link: https://www.skanska.co.uk/working-with-us/minimumstandards

Health, safety and wellbeing

Culture
Skanska is committed to creating and maintaining a positive health, safety and wellbeing culture which secures the commitment and participation of all its employees and suppliers.

Suppliers are required to work actively to prevent workplace accidents and work-related ill health to create a safer, happier and healthier work environment. Our vision is to create an injury-free environment. Skanska must be informed of any significant potential risks related to the products or services supplied.

The health and safety performance of suppliers will represent a key criterion used in the selection process. Wherever suppliers seek to work for Skanska, they must be willing to adopt Skanska's way of working and Injury Free Environment (IFE) culture.

Competency
Suppliers must ensure that all work is undertaken in accordance with relevant health and safety legislation (www.hse.gov.uk). It is for the supplier to identify and demonstrate compliance with all relevant legislation both at the tendering stage and throughout the lifetime of the contract and to ensure that suitable monitoring, audit and review systems exist to demonstrate that compliance.

Our supply chain partners are an integral part of the Skanska team. They fully understand the minimum Health, Safety and Wellbeing standards expected of them as being a member of the Skanska team. These minimum standards go beyond legal compliance and can be found at the link: https://www.skanska.co.uk/working-with-us/minimumstandards

Our supply chain is empowered and committed to continually develop these standards with us to ensure they remain leading standards. Suppliers must also ensure they maintain a trained and competent workforce appropriate to the duties they are undertaking.

Communication
Skanska considers that the need to co-operate and co-ordinate health, safety and wellbeing issues is central to successful health and safety management, therefore:

- Suppliers must provide Skanska with all relevant safety documents relating to the work that they are tendering for, risk assessment and method statements. Important messages must be communicated through pre-task briefings and provide the opportunity for effective two-way dialogue between workers, supervisors and management.
- When requested by Skanska, suppliers must attend pre-start and other site meetings at which health, safety, wellbeing and welfare matters pertinent to the work shall be discussed, agreed and formally recorded, ahead of being implemented on site.
- Suppliers are encouraged to share best practice and innovation with Skanska and others on our projects. Health and safety goals, messages and vision should be shared, embraced and acted on by all.
- Suppliers shall pro-actively report events, issues or concerns to identify opportunities for improvement and, through discussion, help to change behaviour.

Controls
Suppliers must have in place effective health and safety management systems, appropriate for the nature and scale of their business and services provided, ensure compliance with health and safety law generally, as well as standards and codes specific to their area of work, including meeting relevant road safety standards such as becoming FORS members for

applicable vehicles. Suppliers shall ensure that all occupational health and safety risks are mitigated by using appropriate risk management strategies and establishing a suitable assurance regime.

Suppliers should seek to drive performance beyond management system requirements and demonstrate innovation and continual improvement.

Contractors

Suppliers must ensure that any subcontractors or other third-party organisations engaged by them on Skanska projects are fully aware of and compliant with the aforementioned provisions by employing an appropriate prequalification and capability assessment and approved by the contract director and safety manager. Further requirements are detailed in the Skanska UK Health, safety, wellbeing and environment (HSWE) minimum standards document and useful guidance can be obtained from the Health and Safety Executive (HSE) leadership and worker involvement toolkit (www.hse.gov.uk).

Occupational health and wellbeing

Skanska's health and wellbeing strategy has three areas of focus: Workplace, Worker and Wellbeing. It is recognised that there are significant health risks within the construction industry and therefore we place significant importance on managing health risks and we expect suppliers to show the same attention to the workplace and worker. Skanska has a responsibility and accountability to ensure our supply chain partners can meet the terms of the contract and this includes health and wellbeing. All suppliers will be subject to periodic inspection and audit of their health and wellbeing programme.

Skanska is passionate about raising awareness and understanding around the importance of good mental health across the construction industry. Skanska was one of the first construction companies to commit to removing the stigma and ending discrimination around mental health by signing the 'Time to Change' pledge. It was also the first construction company to join the National Suicide Prevention Alliance and has a network of over 200 mental health ambassadors.

Fatigue has been recognised as a factor which can lead to accidents or incidents through reduced vigilance and alertness, increased errors, impaired decision making and deterioration in mood and motivation. Skanska recognise that there are human performance risks from fatigue which may cause injuries and that fatigue cannot be overcome by an individual making more effort.

Skanska will meet our legal and regulatory obligations aimed at mitigating the risk of fatigue including where relevant, those pertaining to working time and rest breaks.

Our senior management recognise that fatigue management is not a unique activity or process but is a continuous improvement system requiring the following commitments:

- Development of a fatigue management procedure and risk control strategy for implementing it.
- Exploration of what working hours and shift patterns best support individuals at work in line with business requirements.
- Identification of ways to monitor and track working hours and travel time.
- Provision of adequate resources to support effective, ongoing control of fatigue risk.
- Identification of exceptional circumstances and management within these to ensure fatigue risk is controlled.

- Raising awareness of fatigue and appropriate interventions with employees and the supply chain.
- Engaging employees and the supply chain in implementing and monitoring fatigue risk controls.

All management, employees and the supply chain are expected to co-operate with the implementation of Skanska's strategy for managing fatigue through their personal behaviours.

Use of subcontractors and third parties
Suppliers are not permitted to use subcontractors or other third-party organisations to supply products or services to Skanska (other than those specified in their tender submission) without first gaining prior written approval from Skanska.

Responsible sourcing

Suppliers must undertake to act in accordance with the Skanska Code of Conduct including the Supplier Code of Conduct, or an equivalent of its relevant core principles, in the performance of any agreement and may be audited. This undertaking shall also include their own subsidiaries or subcontractors. This means that all products and services supplied must have been produced in compliance with all applicable laws and regulations throughout the entire supply chain.

Suppliers shall ensure that products and services are sourced and produced under a set of internationally acceptable environmental, social and ethical guidelines and standards. Suppliers are required to provide information to show full transparency on the origin of products and materials, including all stages of extraction, manufacturing and distribution and the identity of all parties in the supply chain. Where required, these must be disclosed at the tender stage when requested.

The tendering process
Application of the policies within this document will be managed through our pre- qualification and tendering process. As a tenderer, Skanska expects suppliers to comply with the policies, reporting requirements and principles set out in this document. The evaluation criteria used by Skanska at the Invitation to Tender (ITT) stage will include a range of criteria. Additional

sustainability criteria may also be included, alongside other specific requirements appropriate to the nature of the product or service being tendered. These will be communicated to all prospective bidders at an appropriate time. However, although for the most part our sustainability objectives will be clearly stated, we will often encourage suppliers to be innovative in their response to how they would meet them.

Supply of information
All suppliers must be willing to provide information to Skanska about a product's or service's social, environmental and ethical trade credentials. The supplier should be prepared to disclose the locations of all production warehouse facilities fully to Skanska. If Skanska considers that any information provided warrants further investigation, the preferred course of action would be to commission an independent auditor to examine the information provided, which could be at the expense of the supplier.

Labour practices
All suppliers shall note that not only must they undertake work in accordance with the Skanska Code of Conduct including the Supplier Code, or an equivalent of its relevant core principles, suppliers shall also work in accordance with the international agreement made between Skanska AB and the international union of Builders and Woodworkers International (www.bwint.org). Suppliers shall ensure that all factories and premises used in the manufacture and supply of products and services are working towards meeting the provisions of the Ethical Trading Initiative (ETI) Base Code, (www.ethicaltrade.org) or hold SA8000® certification.

False self-employment
Skanska require their suppliers to be compliant with HM Revenue and Customs regulations including IR35 legislation. We expect all UK tax filings due to have been submitted to HMRC and that all taxes arising, have been paid in accordance with the Criminal Finance Act 2017. Skanska also requires its suppliers to comply with the Onshore Intermediaries Legislation and/or the Offshore Intermediaries Legislation.

Modern slavery
Skanska works in partnership with all suppliers to tackle and combat the threat of human trafficking and modern-day slavery in the construction industry.

Suppliers shall comply not only with all domestic employment legislation but also with all applicable International Labour Organization (ILO) conventions and protocols and the United Nations' Universal Declaration of Human Rights.

To meet this commitment suppliers and their supply chains shall:
- Provide training and education opportunities for employees that support their work plans.
- Not employ any person below the age of 15 or applicable higher legal minimum age.
- Not use forced labour, slave labour or other forms of involuntary labour at their work sites.
- Not allow any practice that would restrict free movement of employees.
- Have a current Modern Slavery Policy in place where applicable.

Construction Products and Materials

Building Safety Act — Passive Fire Protection
The Building Safety Act introduces new requirements through secondary legislation and reforms to existing legislation with the intention of providing clarity on how buildings should be constructed, maintained, and made safe. The act applies to **all** buildings and includes additional requirements for Higher Risk Buildings (HRBs = buildings of at least 18m in height or with at least seven storeys, which have two or more residential units).

The following is a list of specific Passive Fire Protection tasks covered by accreditations. The list is not exhaustive, and it must be kept in mind that any fire related element of works must be covered by independent certification and accreditation.

Fire Rated Ceilings	Fire Rated Glass and Glazing
Fire Rated Partitions	Fire Protective Paints & Sprays
Fire Rated Cladding Panels & Cavity Barriers	Intumescent Coatings
Timber Fire Doors	Fire Detection and Alarm Systems
Steel Fire Doors	Fire Suppression Systems
Fire and Smoke Extract Duct Systems	Fire and Smoke Dampers
Fire Sealing & Fire Stopping (Service & Structure Penetrations)	

Skanska requires all its supply chain to comply with the Building Safety Act 2022. To demonstrate compliance with the Building Safety Act, and its regulatory framework, all contractors engaged in Fire Engineering works on our projects must be competent to undertake the work. This must be demonstrated by third party UKAS accreditation by one of the following bodies:

- UK Accreditation Services UKAS
- Loss Prevention Certification Board (LPCB)
- FIRAS / BM TRADA and Warrington Certification
- IFC Certification
- Building Research Establishment (BRE)
- BAFE

Other specialist trade bodies do provide accreditation services. However, these should be reviewed by Skanska UK's Fire Engineering team prior to use.

Consistency in supplier fire detail:
All products and materials used as part of a fire system must have been independently tested and certified as suitable for use on Skanska projects. This certification must be provided in the form of test data measured against relevant British Standards. The outcome of the testing must reflect the installation method to be employed on site.

The materials used for single protection detail shall be supplied from a single supplier. The following companies are accepted as providing accredited materials, installation detailing and advice, and where applicable onsite training and site inspections.

- FSI
- Firetherm
- PFC Corofil
- Rockwool
- Hilti
- Knauf / British Gypsum
- Promat

Other independently certified products are available. However, these should be reviewed by Skanska UK's Fire Engineering team prior to use.

Provision of information:
Electronic records of passive fire stopping shall be provided to Skanska in a format agreed at pre-start and according to Skanska Common Data Environment requirements. For inclusion in the O&M Manuals, this information will include method of bespoke detail, site inspection records, photographic evidence, supporting rationale, final certification, and handover documentation.

Project appointments:
The regulations made in connection to fire engineering are regularly updated and amended. Project teams should in all cases review the proposed use of supply chain partners with the procurement team or fire engineering team prior to appointment.

Timber
All timber products supplied for either temporary or permanent inclusion in the works on Skanska sites must be certified as legally and sustainably sourced through the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC). Suppliers must provide Chain of Custody (CoC) evidence, including certificates, delivery notes and invoices to confirm compliance with this requirement. FSC is the preferred scheme, particularly for tropical timber and timber originating from high-risk areas. Reused, recovered, or reclaimed timber shall be considered compliant if appropriately documented.

For more information, please refer to:
www.supplychainschool.co.uk/uk/infrastructure/issues/materials/how-can-we-help.aspx

Where viable, Skanska will give preference to the use of timber and timber products which are assured as 'Grown in Britain'.

For all other construction products and materials, Skanska UK supports and gives preference to procuring from suppliers who can demonstrate compliance with a recognised responsible sourcing scheme.

Where a project is seeking Environmental Certification such as BREEAM, LEED or CEQUAL, specific product information or certification may be required, and suppliers should refer to the

relevant contract documentation. The two methods currently available for demonstrating responsible sourcing in the UK are:

- Certification to the BRE BES 6001 Framework standard for Responsible Sourcing of Construction Products, including compliant schemes like Eco-Reinforcement (suppliers are encouraged to achieve at least a Very Good rating)
- Membership of a sector specific scheme that complies to BS 8902, verified by a third party

Minimum standards of ethical performance can be identified through:

- Membership of, and active participation in the Ethical trading Initiative (ETI).
- Sectoral schemes such as TFT Responsible Stone Programme or the Aluminium Stewardship Initiative (ASI).
- SA8000 certification.
- Undertaking a site-specific ethical audit, by a qualified auditor, covering as a minimum SMETA items or the ETI base code. Where an audit identifies Corrective Actions required to meet these minimum standards, a plan must also be produced, implemented and monitored.

Renewable fuels

Skanska encourages the use of electric vehicles, biogas and sustainably produced biodiesel. Suppliers using biodiesel must verify if the product contains palm oil. Where it does, evidence must be provided to demonstrate that the palm oil is sustainably produced and distributed, for example by reference to the certifications scheme developed by the Roundtable on Sustainable Palm Oil (RSPO) (www.rspo.org). Biodiesel should not be used from vegetable oils, but the use of 'green' diesel is acceptable from other sources e.g. HVO.

Animal welfare and testing

Where products are likely to have been tested on animals, suppliers should seek advice from Skanska before supplying them. Suppliers should also ensure high standards of animal welfare both for animals that are raised for meat and dairy products, and for animals used for work and transport.

Social value
Social value is about making positive social, economic and environmental impacts on communities and wider society.

We believe social value is a core aspect of sustainable development and our goal is to deliver benefits across both the communities in which we work and the wider construction industry.

Alongside our supply chain and local stakeholders, we look for opportunities that will help communities thrive, making decisions based on social and environmental impacts as well as financial outcomes.

We help ensure local and regional economies thrive by supporting and working with our supply chain, making it more resilient and enabling even the smallest suppliers to grow.

We actively seek to build a diverse supply chain including new businesses and entrepreneurs, start-ups, SMEs, VCSEs and mutuals, supporting both resilience and capacity.

By working together with our supply chain, we can better support local recruitment, focused skills development and community outreach to directly support local communities.

We encourage suppliers to open employment, apprenticeship, trainee and work experience opportunities to local residents, students, under-represented groups and people experiencing long-term unemployment. Providing opportunities for local organisations (including SMEs, charities and social enterprises) and where appropriate, provide training and support to these organisations will also drive social benefits.

In line with the Public Services (Social Value) Act 2012, suppliers shall identify at tender stage, and deliver defined added social value on our projects.

As an Associate member of the Considerate Constructors Scheme (CCS), all suppliers are expected to abide by the Code of Considerate Practice on, and around the near vicinity of our projects. Suppliers are also encouraged to consider joining the CCS Company Registration or Supplier Registration programmes.

Carbon reduction and environmental management

Suppliers and subcontractors are expected to actively help Skanska lower the environmental impact of our operations and the projects we build, including the reduction of our overall carbon footprint. All suppliers and subcontractors are expected to work in accordance with the requirements of Skanska ISO 14001 Environmental Management System and Carbon Management System, while bringing best practice and innovation.

Carbon reduction KPIs

Suppliers will be required to integrate with the Skanska Carbon Management System process and contribute to project carbon reductions.

Where the project has identified high carbon packages, reduction targets based on package specific carbon baselines may be agreed with subcontractors or suppliers. These targets will be proportional to the carbon targets set at a project level and performance will be measured

in percentage reduction against the agreed baseline. Where appropriate we will introduce contractual mechanisms to encourage carbon reduction through a pain/gain mechanism.

Supply chain KPIs specific to decarbonisation and Skanska's net-zero commitment will be introduced over the course of 2023.

Concrete and steel data requirements
As one of the founding signatories to the ConcreteZero and SteelZero initiatives, Skanska has committed to only procure net-zero carbon and steel by 2045. Our interim commitments are:

- By 2025, 30 per cent of total concrete consumption we specify and procure will be aligned with the ConcreteZero Low Embodied Carbon Concrete Threshold.
- By 2030, 50 percent of our steel will be specified, procured or stocked from manufacturers who are Responsible Steel certified or from site with science based targets" and "50 percent of total concrete consumption we specify and procure will be aligned with the ConcreteZero Low Embodied Carbon Concrete Threshold.

To track our progress, we must annually report to the market the amount of low carbon steel and concrete procured as percentage of the total.

Suppliers and subcontractors must provide the monthly quantities and specification of all concrete and steel procured and used on our projects. Where available, subcontractors and supplier should supply Environmental Product Declarations (EPDs) giving a detailed breakdown of the associated emissions. Suppliers should proactively engage Skanska on low carbon alternatives to traditional specifications. Opportunities to reduce the volume or the carbon intensity of materials should be investigated and proposed to the project team.

Skanska fleet targets
As part of our commitment to achieving net-zero carbon emissions by 2045, Skanska has committed to sub-targets across our fleet and plant, including:

- By 2027, all our light road-going commercial fleet will be net-zero.
- By the end of 2030, all our 4x4s will be zero emissions.
- By 2040, all our HGVs and plant (including mobile plant) will be zero emissions.

As a result of these targets, Skanska has a number of initiatives to reduce carbon across our fleet and plant, including our supply chain.

4x4 policy
To reduce the carbon intensity of our fleet, Skanska is minimising the use of 4x4s within our business until commercially viable zero emissions alternatives are available. Therefore, 4x4 vehicles can only be considered on a project if they meet one of the following criteria:

- The project is in its early stages when haul roads are not in place.
- The vehicle is required to drive on unmade surfaces (i.e. through fields).
- The vehicle is required to carry equipment for the project pre-haul road construction. For post haul road construction, an electric van should be considered first.

Fuel use, telematics and 3D machine control
Where fleet and plant make significant contributions to the carbon intensity of a package, all plant and equipment must have telematics. Telematics will be used to monitor and manage fuel usage, ensuring site set up and plant fuel use are optimised to reduce carbon and costs.

Suppliers are to provide live data on selected equipment in a format that aids the project operational and enabling teams. The data should not require alteration or reformatting.

Suppliers are expected to actively monitor fuel usage, report monthly and calculate fuel savings as a result of best practice and innovation.

3D machine control (3DMC) will be employed on applicable plant that make significant contributions to the carbon intensity of a package. Employing the technological capabilities of 3DMC has been proven to increase efficiency while reducing programme, costs and carbon.

Sourcing renewable fuels
Skanska encourages the use of electric vehicles, hydrogen, biogas and biofuels. Suppliers will be required to demonstrate the sustainably of alternative fuels including hydrogen, biogas and biofuels. Any biofuels should be produced from waste or secondary feedstock and verified through ISCC and ZEMO certification. The use of unsustainable HVO is prohibited i.e., that which is not from 100% waste feedstocks.

When procuring hydrogen, the carbon implications of the production must be considered and reported, with preference given to green and blue hydrogen over brown hydrogen. The carbon intensity of the selected hydrogen must be reported in $kgCO_2e$ per kg of hydrogen.

Zero emissions site set up (ZESSU)
Skanska has implemented a minimum standard for five key elements of site set up (see Appendix I):

- Generators
- Electricity supply and control
- Cabins
- Tower lights
- Hoarding

The hierarchy approach must be followed for each of these five elements on all new projects. Compliance will be tracked and reported at a project level as part of a Skanska business-wide initiative.

Product carbon information and Environmental Product Declarations (EPDs)
We expect our suppliers to be aware of and promote materials with reduced environmental impacts and be able to provide declarations on the embodied impacts of their products.

Skanska expects all manufacturers and suppliers to be working towards adoption of BS EN 15804 compliant EPD for their full range of products and materials. Where EPDs are not available and until the market matures, we will also accept CIBSE TM65 product returns. These should be shared in a neutral format that allows integration with BIM software.

To reduce the carbon impact of transport and deliveries, we require information on the miles travelled and type of fleet used. Skanska encourages suppliers to use low emission transport modes such as rail or barge. In addition, suppliers shall aim to optimise transport efficiency and minimise transport distances through effective planning, use of telematics and driver training.

Carbon training and certification
Dependent on project requirements and package size, Skanska may require subcontractors to complete carbon training or certification to qualify for delivery of the product of service. Training requirements can include but are not limited to:

- Where fleet and plant make significant contributions to the carbon intensity of a package, operators will be expected to have completed driver efficiency training (Eco operator

training) within six months of project start date. Operating plant efficiently has the potential to save project cost and carbon through avoided fuel usage.
- Projects with a requirement for PAS 2080 certification require subcontractors key personnel to be trained and contribute to the project certification process.
- Project requirements for key personnel to complete identified training materials e.g., supply chain sustainability schools' modules.
- Mandatory carbon training for all personnel e.g., carbon induction, project carbon training etc.

Monthly carbon reporting criteria
All subcontractors are expected to supply the following data in a monthly report:
- Where required, progress against the agreed carbon baseline.
- Concrete and steel quantities and specification to support our ConcreteZero and SteelZero ambitions.
- Fuel usage and telematic data.
- Percentage of fuel from low or zero emissions sources, including biofuel usage.
- Product carbon information through EPDs or declarations of the embodied impacts of their products.
- Case studies or best practice where carbon has been reduced.
- Compliance with the ZESSU and 4x4 criteria.
- Employee % completion of agreed carbon training

Environmental management

All members of our supply chain must agree to comply with Skanska UK's Environmental policy which can be found on the following page:
https://www.skanska.co.uk/environmental-sustainability/

Suppliers shall have in place effective environmental management systems that are appropriate for the nature and scale of their business and services they provide, that identify and mitigate environmental risks. Where appropriate this may be achieved by working under the direction of Skanska.

Construction Products and Materials
Please refer to the 'Timber' section above.

Material compliance
Where specifying materials, the supplier is expected to present options that achieve an area weighted average EPC rating of A+ or A. Suppliers shall provide relevant information on the environmental and carbon details of the substances and materials associated with products and services supplied.

Project specific requirements may be identified for Environmental Certifications such as BREEAM, BREEAM for Infrastructure, WELL or LEED. Skanska is committed to using Healthy Materials. Low volatile organic compounds (VOC) products should be used, and substances on Skanska's Restricted Substances List must be avoided. Hydrofluorocarbons (HFCs), perfluorocarbon (PFCs), and Sulphur Hexafluoride (SF_6) should be avoided where other safe, technically feasible, cost effective, energy efficient and more environmentally acceptable alternatives exist.

As a guide, suppliers should target refrigerants with a GWP of less than 10, or lower than 150 as a minimum. For insulation materials, a global warming potential (GWP) of less than five should be targeted. Both should have zero ozone depleting potential (ODP). Suppliers shall, as far as is reasonably practicable, minimise the concentrations of heavy metals and brominated fire retardants in products and packaging being supplied. The total content of the heavy metals Cadmium, Hexavalent Chromium Lead and Mercury in packaging or in any packaging components must not exceed 100ppm.

Environmental principles
Skanska and its subcontractors are expected to act in accordance with the following environmental principles:

- **Water usage —** suppliers shall support Skanska in its commitment to reduce our project's water consumption. Suppliers should note (providing supporting evidence) significant, cost-effective opportunities to reduce water consumption to add value to their tender.
- **Use of recycled and secondary materials —** where viable, suppliers shall reuse materials and maximise recycled or secondary content in products and packaging. Where applicable, they shall provide evidence of recycled content alternatives in their submitted tender.
- **Reducing waste —** suppliers shall support Skanska in its commitment to delivering zero waste to landfill. They shall provide evidence on waste reducing actions and other opportunities to reduce waste in their submitted tender.
- **Packaging —** use of primary, secondary and tertiary packaging should be minimised to that required to fit for purpose. As a preference, tertiary packaging should be made from materials that can be reused (e.g., plastic returnable transit packaging).
- **Transport —** Skanska encourages suppliers to use low emission transport modes including the use of rail or barge. In addition, suppliers shall aim to optimise transport efficiency and minimise transport distances through effective planning, use of telematics and driver training.

Best value

Skanska develops strong open and transparent partnering relationships with our supply chain, which empowers all parties to have an equal voice and breaks down barriers to ensure the right approach for each project is embedded within the team.

Skanska is fully committed to improving the economy, efficiency and effectiveness of all its activities. The aim shall be to create value for our stakeholders while building for a better society on all our projects for all parties involved, supply chain included. All procurement of goods and services will be based on best value principles, having due regard to propriety, regularity and legal obligations.

Skanska recognises the importance of working closely with certain parties to bring added value to our company, customers and partner's needs. When appropriate choosing the optimum combination of whole life costs and benefits. This is not necessarily always the lowest initial price option and may require an assessment of the ongoing revenue/resource costs as well as any initial investment.

Skanska requirements will include social, environmental and other strategic objectives and will be specified at the earliest stages of the procurement cycle. The criterion of best value for money is used at the award stage to select the bid that best meets the requirement.

Whole life costs
To determine the appropriateness of using whole life costs to evaluate the benefits of a solution the following items should be considered:

- The project type, particularly with which party the operation and maintenance costs sit, as agreement may be necessary between the parties as the investment cost may sit with one party but the benefits with another.
- Assistance and guidance with the development of a lifecycle model or evaluation internally should be sought with members of the expert users group any assessment should follow the principles of ISO 15686 part 4.

Lifecycle cost optioneering should be used where variants are compared to a base solution. The results should be evaluated in conjunction with the other elements contained within this document.

Lifecycle costs

Skanska's objective is ensuring that the best value solutions are delivered. To achieve this requires its suppliers to support lifecycle cost analysis. Skanska expects suppliers to demonstrate the costs associated with the use and selection of their products, maintenance costs, energy/utility usage, durability and the support period for service and like for like replacement of products and components.

Skanska will request this information in tender documentation and the lifecycle costs may be used as a measure that influences decisions made during the procurement process. Suppliers should note the most significant opportunities to reduce lifecycle cost carbon emissions associated with a project to add value to their tender, providing supporting evidence as appropriate. Upon selection suppliers will be required to provide Skanska with all relevant documents detailing the Capex costs, maintenance costs, energy/utility usage, durability and the support period for service and like for like replacements.

Partnering and collaboration

Partnering may be identified through a best value or strategic review to provide opportunities for providing improved delivery. This would necessitate the creation of a sustainable relationship with suppliers to deliver services, carry out major projects or acquire supplies and equipment. The Skanska process for collaborative working reflects the requirement for BS 11000 Collaborative Business Relationships, which sets out a strategic framework specification to allow establishment and improvement of collaborative business relationships and collaborative methodology to underpin sustainable and successful business relationships.

Benefits include:

- Better designed solutions, efficient programmes and lower cost.
- Economies of scale and scope with access to new and scarce skills.
- Improved brand and community impact.
- Sharing of best practice in achievement of environmental objectives and information for carbon foot printing.

- Sharing of risk, reward and investment.
- Improved processes ensuring joint objectives are taken into consideration.
- Developing sustainable beneficial partnerships which will enhance our competitive edge and performance.
- Owners/Escalation routes.

Relationship management
Relationship management is about embedding the rights behaviours within an integrated team. Customers are looking to demonstrate collaborative behaviours with partners and suppliers.

The key to maintaining a strong sustainable relationship is to ensure that it remains current and drives innovation to bring additional value. Skanska has examples of using various arrangements to incentivise cost-effective solutions with our customers, partners and supply chain. These have also benefited collaboration by establishing mutual trust through recognition that we are working towards the same goals.

Joint management is crucial if relationships are to mature and support people and the business environment. Effective performance and behaviours should be monitored along with issues and disputes which can strengthen relationships if handled effectively.

Skanska draws on the engagement and collaboration expertise it builds on project delivery. The benefits gained through working openly with our customers, partners and supply chain are utilised through sharing knowledge and promoting economies of scale.

Contracting terms and conditions
Skanska has committed to pay its supply chain promptly by signing up to both the Construction Supply Chain Payment Charter and the Prompt Payment Code. Skanska is also embedding digital, automated payment practices and encourages its supply chain to adopt these practices where possible. Skanska UK payment performance can be found on the Gov.UK portal: www.gov.uk/check-when-businesses-pay-invoices.

Benefits to the supply chain include:
- Paying in accordance with agreed standard payment terms
- Honouring contractual obligations
- An effective dispute resolution process
- Respecting the commercial confidentiality of information received
- Electronic payment (wherever possible)

Transparency and fairness
Skanska seeks to make the procurement process as transparent as possible, within commercial and legal constraints. This is to enable suppliers to understand the elements of the process, including the procedures, timescales, expectations and criteria for selection.

Incentivisation
We want to reward our best performing supply chain and will introduce incentivisation on key projects to drive collaborative behaviours.

Supply Chain Sustainability School
The Supply Chain Sustainability School is a free, virtual learning environment that helps construction suppliers and subcontractors to develop their sustainability knowledge and competence.

The School has several sector leadership groups/modules developing specific sustainability competence in facilities management, infrastructure and offsite management. Find out more here www.supplychainschool.co.uk.

Quality management

Suppliers shall have in place:

- Effective quality management systems appropriate for the nature and scale of their business and services provided.
- Systems to identify customer requirements and a measure of customer satisfaction.
- Efficient and effective delivery processes that minimise waste.

Suppliers shall work actively towards Skanska's values. The supplier shall inform Skanska of any potential quality risks related to the products or services supplied.

Supplier assessment
Skanska operates its own management systems in order to continually improve areas including security, quality, environmental, health, safety and to manage risk. Knowing about supplier risks and opportunities plays a key part in Skanska achieving continuous supply chain improvement.

Skanska's ability to realise these improvements is reliant on supplier co-operation and participation in assessment activity. Skanska has developed a range of supplier assessment tools and techniques ranging from a simple questionnaire to a full partnership evaluation activity. Skanska will inform suppliers of what assessment activity is required.

Key requirements
Suppliers shall at Skanska's request:

- Provide Skanska or its authorised representatives with reasonable access and facilities upon reasonable notice at reasonable times in order to perform compliance audits or

similar. This may also include the premises of the supplier's supplier chain, including subcontractors' premises.
- Provide information for the purposes of examining and checking the supplier's (and relevant subcontractors') compliance with the contract and our management systems.
- Provide Skanska with samples of products for evaluation.
- Participate in continuous improvement activities (lean construction in relation to supplies or services).
- Promptly inform Skanska from time to time of changes to its business management system status.
- Supply Skanska with a quality plan (updated as appropriate) in relation to supplies or services.
- Enrol and actively participate as members of the Supply Chain Sustainability School and/or the Offsite Management School.
- Participate in supplier development programme if proposed and driven by Skanska as part of collaborative work and strategic supplier relationship management programme.

Where defects in the product or service are identified, the supplier shall investigate the issue and report to Skanska its findings and shall implement appropriate correction(s) and corrective action(s) in order to prevent recurrence.

Skanska embraces and promotes the use of Lean Construction Methodology across its businesses therefore utilisation of Lean Construction tools should be clearly demonstrated in suppliers' problem-solving approach.

Integrating the policy into management processes
All suppliers must manage the environmental and social impacts of their business operations and supply chains. They must integrate the requirements of this document into their business management processes as appropriate. Steps to achieve this may include:
- Production of written procedures, work instructions or improvement plans to facilitate implementation of all applicable elements specified in this document.
- Identification of person(s) responsible for ensuring implementation of each procedure and/or work instruction.

- Gathering and analysis of performance data in relation to each procedure and/or work instruction.
- Maintenance of accurate, complete, up-to-date and accessible information records for each procedure and/or work instruction, as appropriate.

Further support and training resources can be found through the construction industry Supply Chain Sustainability School www.supplychainschool.co.uk and the Offsite Management School https://www.supplychainschool.co.uk/offsite-group/.

Digitalisation

Building information modelling (BIM)
BIM is a collaborative approach to ensure the right information reaches the right people at the right time. It seeks to remove inefficiencies in a paperless environment throughout the entire design to build process.

BIM fully supports Skanska's vision of improving safety, efficiency and enabling zero defects during the construction phase. Working with Skanska requires you to comply with all relevant elements of a projects BIM execution plan. Embedding digital technologies including the UK BIM Framework https://www.ukbimframework.org/ and digital twins will improve the performance and sustainability of projects.

Key suppliers and subcontractors (including designers and other professional service providers) will be assessed to determine their ability to meet Skanska BIM and the UK BIM Framework requirements using available assessment tools and defined criteria. A proportional government soft landings approach should be applied for all design and construction projects supported by the UK BIM Framework.

The BIM delivery performance of key suppliers and subcontractors (including designers and other professional service providers) shall be regularly assessed using appropriate measurement tools. Management systems shall be in place to drive continual improvement of supply chain performance and to inform future selection.

Industrialisation
Skanska requires its suppliers to support its continued industrialisation of the construction process through innovative product development (including standardisation, prefabrication and modularisation) and leaner on-site assembly techniques.

Skanska will engage with customers and supply chain in a way that actively supports collaborative working and therefore shall:

- Ensure that supply chain and JV partners are made aware of, and can work to, Skanska's Industrialisation construction policy requirements, processes, procedures and guidance.
- Work with all stakeholders in an open, cooperative and coordinated way using the most appropriate contractual relationship and tools to support a collaborative approach.
- Engage the supply chain to set realistic targets for the use of modern methods of construction and ensure they possess capability to report on the required metrics.
- Foster a culture for industrialisation including innovation, continuous improvement, and development, by the training, development and support of employees.
- Where possible, adopt manufacturing-led solutions and drive investment into modern methods of construction and new technologies to deliver efficiencies through higher quality and safer solutions with reduced greenhouse gas emissions (GHG).

The selection, appointment and management of supply chain shall comply with the requirements of UK Policy, and the individual Skanska operating units.

Designers, other professional service providers, subcontractors and suppliers responsible for delivery of any industrialised design and construction activity shall be assessed to determine their ability to meet Skanska supply chain requirements using available assessment tools and defined criteria. The assessment shall determine the provider's capability to:

- Manage contractual technical compliance and verification of design deliverables.
- Manage design deliverables to cost and programme, including the use of pre-manufactured value (PMV) techniques to report progress.
- Comply with other Skanska sustainability and contractual requirements.

The delivery performance of designers and others providing any other service shall be regularly assessed using appropriate measurement tools. Management systems shall be in place to drive continual improvement of supply chain performance and to inform future selection.

Data protection and information security

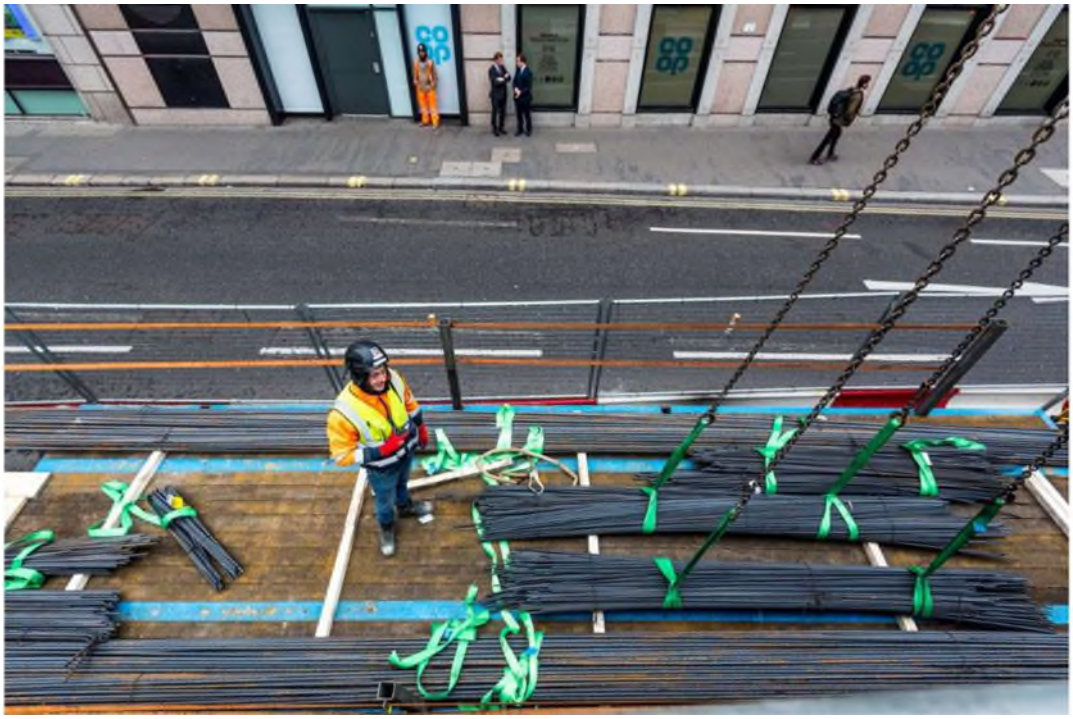
Suppliers shall:

- Recognise and adhere to the requirements of the Data Protection Act 1998 to safeguard the rights of individuals in relation to the handling of personal data. Furthermore, suppliers and any third parties who hold, use or process Skanska Personal Data, shall do so only in accordance with Skanska's instructions.
- Safeguard confidential data or methods of working, not disclosing them to third parties without the express permission of Skanska.
- Follow Skanska's Information Security Policy, Information Technology Policy, Access Control Policy and Baseline Security Policy when accessing or using Skanska's IT systems.
- Comply with Skanska's Secure Application Development Coding Policy when developing or modifying applications.

Suppliers and any third parties are required to operate their own information security standard that meets the requirements of Skanska's information security management system. These third-party systems may be reviewed by Skanska as appropriate.

Offsite Management School
The Offsite Management School was developed to help the industry with the process Skanska has called Construction Industrialisation and meet the many challenges it provides. Digital design and the use of digital data throughout the value chain will lead to increasing use of offsite manufacturing, just in time logistics and multi-skilled onsite assembly will produce assets that are leaner, greener and more efficient. The School provides several e-learning resources on the website aiming to help develop the supply chain. The resources are free of charge and suppliers undergo a confidential online self-assessment to gain access to the school and its resources.

Appropriate logistics networks and strategies must also be adopted that maximise the efficiency of supply enabling Just-In-Time (JIT) delivery. Skanska has preferred logistics providers in place which suppliers should engage with in order to determine the best value logistic solution.



Inclusion and diversity

Skanska's vision is to be recognised as an industry leader in inclusion and diversity. Skanska is committed to developing inclusive supply and value chains to remain sustainable and help drive innovation. To develop and maintain this, we are committed to creating an inclusive workplace culture for all our employees, customers and supply chain partners and aim to ensure our supply chain mirrors the communities we work in.

How we will promote equality, diversity and inclusion with our supply chain
We will take a proactive approach to promoting equality, diversity and inclusion through our supply chain by:

1) **Guidance —** setting out the standards that we would like our supply chain to achieve and promote within their own supply chain.
2) **Support -** to support our supply chain to provide opportunities for the next generation of construction workers by promoting the provision of training, skills development and opportunities for local people, under-represented groups and those experiencing long-term unemployment.
3) **Encourage —** upskilling with the Fairness, Inclusion and Respect training provided by the Supply Chain Sustainability School.
4) All selection decisions will be based on identifying the best supplier using fair, unbiased and objective criteria.
5) **Opportunities —** to support local, small and/or diverse owned suppliers to tender for procurement opportunities and aid in understanding the bidding. process if required. We will actively seek out these diverse suppliers where appropriate.
6) **Monitoring —** be able to clearly specify how suppliers at all levels will provide diversity data and how it will be monitored.
7) **Awareness —** treating everyone equally with respect and dignity and taking a zero-tolerance approach to all forms of discrimination, harassment and bullying. Skanska has expanded on the 2010 Equality Act's defined protected characteristics to include other groups that will support greater social mobility. The characteristics we consider to be diverse and not to be discriminated against are:
    - Age
    - Disability
    - Gender
    - Gender reassignment
    - Marriage and civil partnership
    - Pregnancy and maternity
    - Race
    - Religion and belief
    - Sexual orientation
    - Social background — ex-offenders, ex-military, long-term unemployed and individuals not in employment, education or training (NEETs)

Commitment to diverse supply chain groups

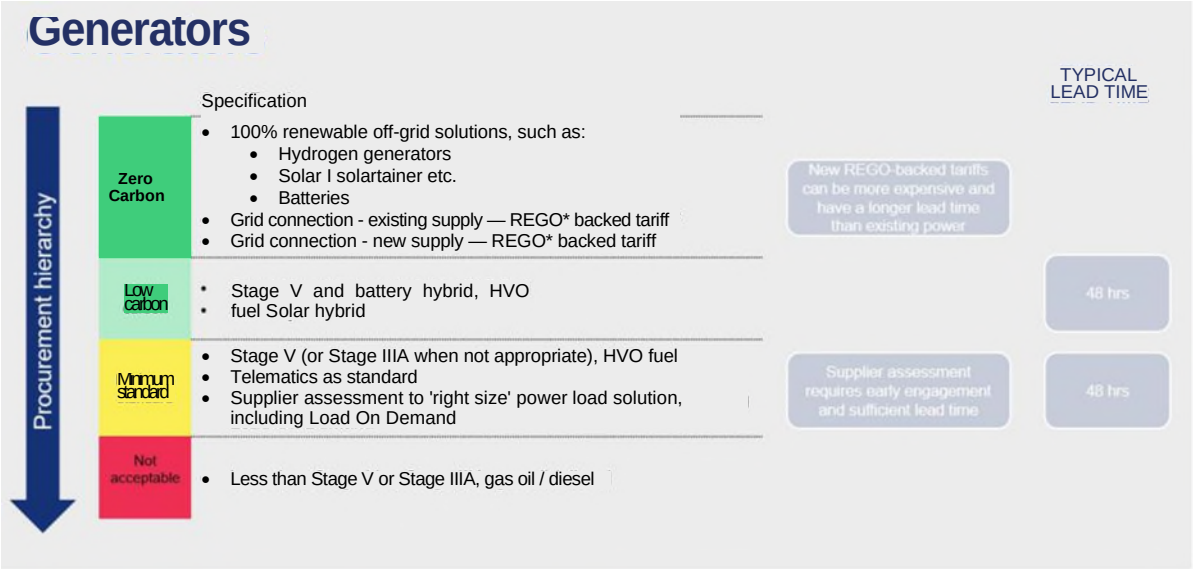
Skanska is committed to helping all our suppliers increase their diversity and supporting suppliers that demonstrate an existing diverse workforce composition or fall into the sub-sets below:

- Small and medium enterprises (SMEs)
- Ethnic minority businesses
- Suppliers from other under-represented or protected groups
- Suppliers demonstrating a diverse workforce composition
- Micro-businesses (i.e. under five employees)
- Charities

Right to work

Skanska expects all suppliers to conduct right to work checks of their workforce in accordance with the `Immigration, Asylum and Nationality Act 2006'. This should not however give way to discrimination of any individual on the grounds of race, nationality, religion or any other protected characteristic outlined above.

Appendix I - carbon utilisation: generators

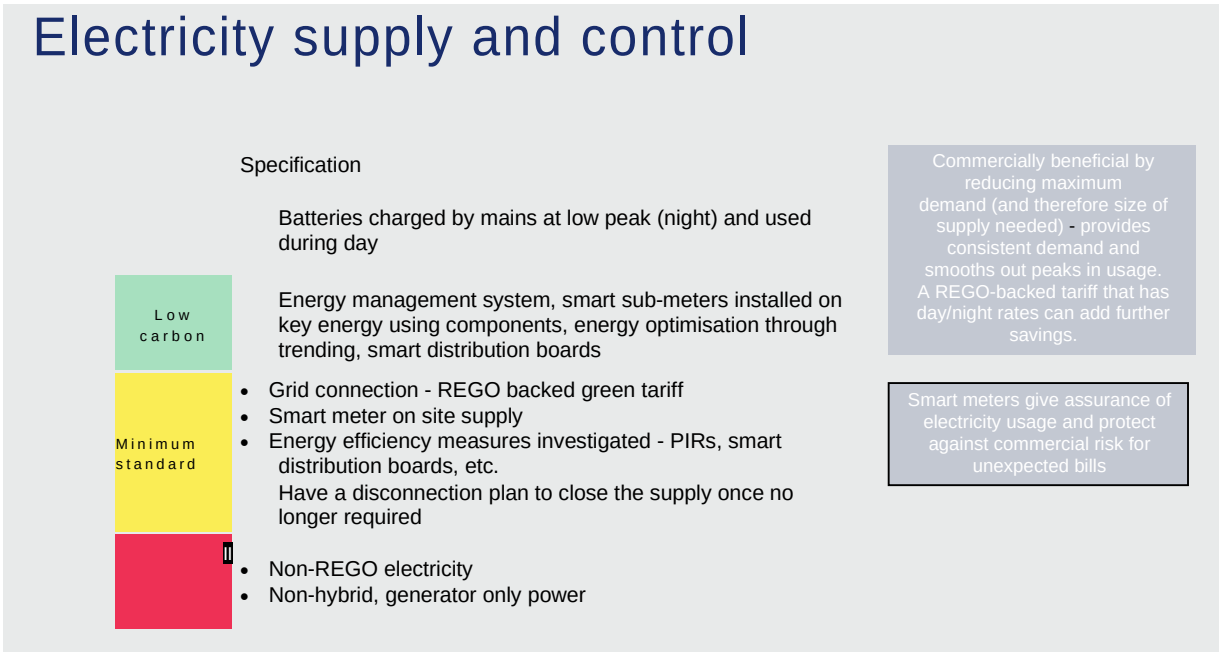


Generators - worked example

	Specification	Carbon (kgCO2e)		Cost (£)		Cost £ (HS2 example)
Zero Carbon	• 100% renewable off-grid solutions, such as: • Hydrogen generators • Solar / solartainer etc. • Batteries					589k (2 x 250kVA 52 weeks)
Low carbon	• Stage V and battery hybrid, HVO fuel	3,377 pw (200kVA)	2,026 pw (125kVA)*	6,633 pw (200kVA)	5,408 (125kVA)*	
Minimum standard	• Stage V, HVO fuel • Telematics as standard • Supplier assessment to 'right size' power load solution, including Load On Demand	9,365 pw (200kVA)		10,336 pw (200kVA)		536k (2 x 250kVA 52 weeks)
Not acceptable	• Less than Stage V, gas oil / diesel	11,706 pw (200kVA)		8,982 pw (200kVA)		

*assuming reduction in generator size resulting from supplier right sizing assessment. In most current cases where supplier is not consulted, generators are oversized resulting in higher costs and lower carbon efficiencies.

Appendix II — carbon utilisation: electricity supply and control



Electricity supply and control - worked example

	Specification	Carbon	Cost
Zero Carbon	• Batteries charged by mains at low peak (night) and used during day	85% reduction against generators	--£,1900 pw per battery (circa 250kVA. but savings against elec usage likely)
Low carbon	• Energy management system, smart sub-meters installed on key energy using components, energy optimisation through trending, smart distribution boards	tbc — investigating potential development / application of Intellekt: Site module	
Minimum standard	Grid connection - REGO backed green tariff Smart meter on site supply • Energy efficiency measures investigated - PIRs, smart distribution boards, etc. • Have a disconnection plan to close the supply once no longer required	0*(100% reduction)	• £259,950* (current rate) (82% difference) • Negligible • No cost to investigate No cost — risk mitigation of unnecessary spend
Not acceptable	• Non-REGO electricity • Non-hybrid, generator only power	83,780' kgCO2e	£142,100* (rate from May 2022 — such tarrffs not usually procured)

• Example data for Featherstone Sluicing total con,implInn I electricity only

Appendix III - carbon utilisation: cabins

Cabins - worked example

Single cabin

	Specification	Carbon (24'x9' over 24hrs HVO)	Cost (hire only)
Zero Carbon	• Solar and hydrogen combination (for example, EasyCabin EcoSmart ZERO) • Fully electric, REGO backed • Full hydrogen *(not yet available)*	100% decrease	£415pw (inc. generator equivalent) (22.9' office)
Low carbon	• Integrated solar and battery storage (with HVO/grid back-up) • Energy management system, smart sub-meters installed on key energy using components, energy optimisation through trending • EPC A rating *(not yet available)*	2.96kg CO_2e (78% decrease)	TBC Investigating potential development / application of Intellekt: Site module
Minimum standard	• HVO / battery Hybrid Eco units • Low energy measures such as high insulation (minimum U value walls) PIRs, LEDs, waterless urinals as a minimum • EPC **B** rating • Supplier assessment to 'right size' solution, including layout configuration and recommended energy saving measures • Completion plan to avoid waste to landfill and encourage circularity/reuse		£48pw (inc. LED lighting, timer controlled heating, waterless urinals, non-concussive taps, dual flush WCs)
	• Cabins sent to landfill • HVO only • Non-REGO electricity	13.4kg CO_2e	£40pw (exc. generator) (32' x 10' office)

Cabins

TYPICAL LEAD TIME

Specification

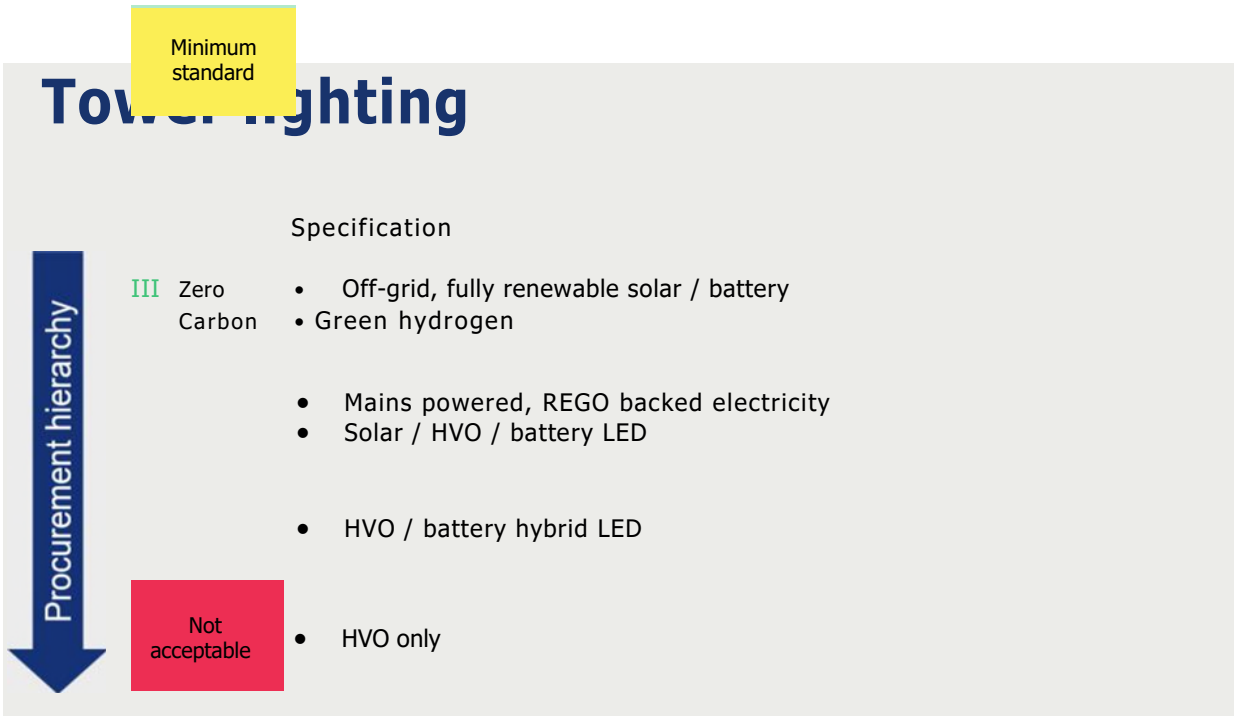
Solar and hydrogen combination (for example, EasyCabin EcoSmart ZERO)
- Fully electric, REGO backed
- Full hydrogen *(not yet available)*

- Integrated solar and battery storage (with HVO/grid back-up)
- Energy management system, smart sub-meters installed on key energy using components, energy optimisation through trending
- EPC A rating *(not yet available)*

- HVO / battery Hybrid Eco units
- Low energy measures such as high Insulation (minimum U value walls) PIRs, LEDs, waterless urinals as a minimum
- EPC **B** rating
- Supplier assessment to 'right size' solution, including layout configuration and recommended energy saving measures
- Completion plan to avoid waste to landfill and encourage circularity/reuse

Cabins sent to landfill
HVO only
Non-REGO electricity

Appendix IV - carbon utilisation: tower lighting



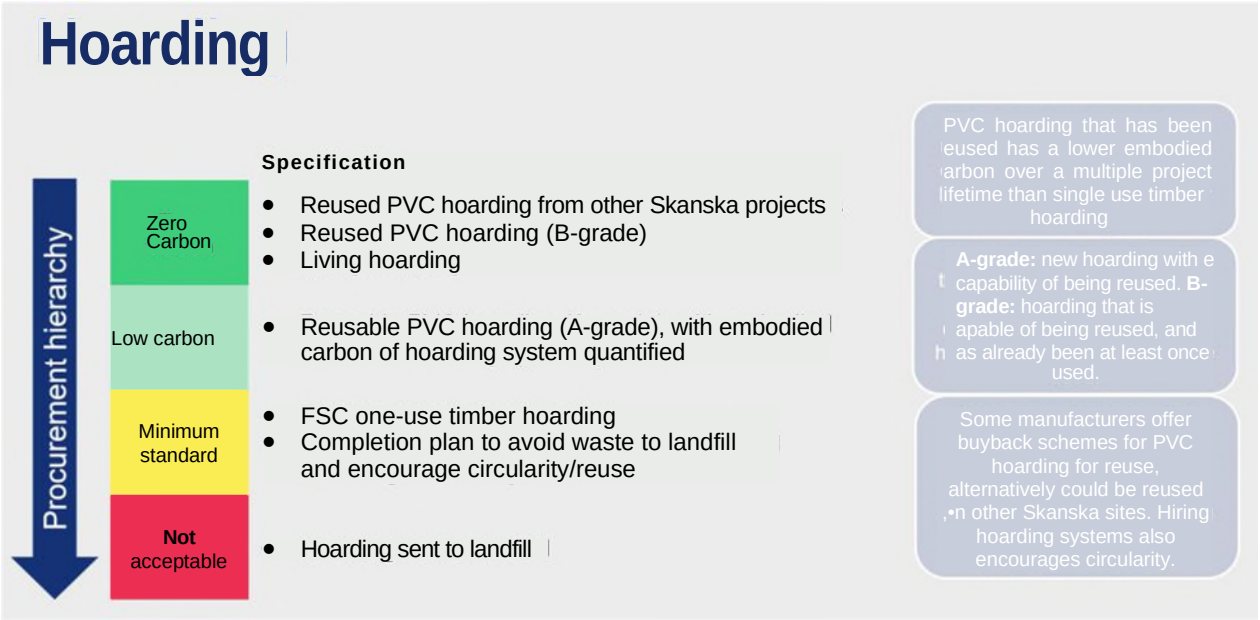
Tower lighting - worked example

10 x Unit Comparison for 51 working days (Skanska hire average)

	MINIMUM STANDARD	LOW CARBON	ZERO CARBON
	L1050 X-HYBRID	**LI052 X-SOLAR HYBRID**	**L1054** X-SOLAR
EMISSIONS PER MONTH (20 WORKING DAYS) (KG)	121	52	
EMISSIONS FOR 10 UNITS (KG)	1210	520	
FUEL USAGE PER HOUR (LTR)	0.23	0.1	
FUEL USAGE - 10 HOUR DAY (LTR)	2.3	1	
FUEL COST PER DAY (WHITE DIESEL)	£5	£2	£0
FUEL COST PER MONTH (20 WORKING DAYS)	£92	E40	
SKANKSA COST PER WEEK	£246	£283	£225
SKANSKA COST PER MONTH	£987	£1,134	f903
TOTAL COST PER MONTH (UNIT + FUEL)	£1.079	£1,174	£903
TOTAL COST FOR 10 UNITS PER MONTH	£10792	£11,740	£9.032

	LI050 X-HYBRID	LI052 X-SOLAR HYBRID	LI054 X-SOLAR
TOTAL **EMISSIONS** FOR 10 UNITS FOR 2.55 MONTHS (KG)	**3085.5**	**1326 (57% reduction)**	
TOTAL **COST** FOR 10 UNITS FOR 2.55 MONTHS	**£27,519**	**£29,937**	WAN 00:00k,S40:6

Appendix V - carbon utilisation: hoarding



Hoarding - worked example

350m on-ground hoarding

	Specification	Carbon	Cost
Zero Carbon	• Reused PVC hoarding from other Skanska projects (if purchased)	Transport carbon only	Transport /storage costs only
Low carbon	• Reused PVC hoarding (mix of A and B-grade), with embodied carbon of hoarding system quantified	12 tonnes CO2e (65% reduction)	£99k (hire) £104k (purchase)
Minimum standard	• FSC one-use timber hoarding	34 tonnes CO2e	£103k (hire) £101k (purchase)
Not acceptable	• Hoarding sent to landfill	34 tonnes CO2e + waste to landfill carbon emissions	£103k (hire) £101k (purchase) + disposal costs