Spotlight on...
carbon reduction

CONSIDERATE CONSTRUCTORS SCHEME

Case Study: John Sisk & Son
Reducing our Carbon Footprint

John Sisk & Son is an international engineering and construction company. We are a progressive family owned business with long term vision, operating since 1859. Sisk is Ireland's No.1 provider of construction services with extensive operations across Ireland, the United Kingdom and mainland Europe.

At Sisk we invest heavily in business, people, technology and innovation in order to drive the future growth and success of Sisk and safeguard our long term sustainability.

Central to demonstrating the Sisk approach to environment and sustainability is our core value of:

'Care: we take care of ourselves, the people we work with, the environment and the communities in which we work.'

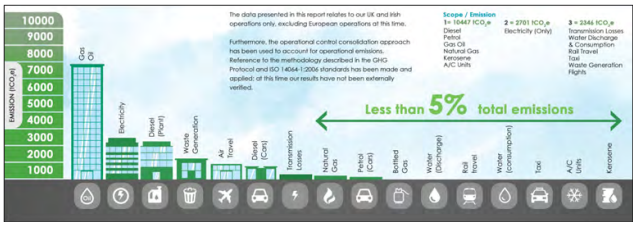
Built into our Environment and Sustainability strategy, this underpins our culture and is key to our objectives, which work to:

- **Efficiently use energy and resources and promote carbon efficiency.**
- **Sustainably source materials.**
- **Preserve heritage assets.**
- **Protect the environment and enhance biodiversity.**
- **Prevent pollution.**
- **Improve waste management through innovation and re-use/recycling.**

MONITORING AND ASSESSMENT

At Sisk we have an energy programme as part of our ISO 50001 certification, with carbon management a key feature in this. Through this energy programme, and the measuring and monitoring of our energy usage over the years, we have established our Significant Energy Uses.

These are detailed below: our main direct use is from gas oil and diesel used in energy generation and plant on site, and within our company fleet. This information has allowed us to focus our programme and initiatives on tackling and reducing our biggest energy uses and thus carbon emitters.



ONSITE ENERGY GENERATION

The powering of construction sites is essential for the supply and use of site accommodation/ welfare, enabling crane activity and other internal or external trades utilising power equipment. At Sisk we have an objective for all projects: where feasible, to connect to mains electricity as soon as possible.

However, we do have instances where a site for a number of reasons such as a remote location, will be unable to acquire mains supply for the duration of the contract. In these instances alternative energy generation sources are investigated.

During 2019, on our Northstowe project, we trialled a solar-powered hybrid generator as the sole power source for site accommodation and welfare. Over the project's lifetime, the generator had a forecast saving of approximately 60,000 litres of fuel, saving 160 tons of carbon dioxide equivalent (tCO2e).

Ultimately the project reverted back to a standard diesel generator after 12 months due to practical and technical issues. Lessons learnt from this exercise included:

- **Early engagement and setup of site cabins and generators to allow for reliable forecasting of energy loadings.**
- **Sourcing later models of hybrid-generators with adequate sound proofing.**
- **Ensuring adequate service support.**

ONSITE PLANT MOVEMENTS

Diesel is the single biggest contributor to Sisk's carbon footprint. On our Northstowe project, which involved heavy civil infrastructure works, monthly consumption was peaking to over 160,000 litres. To combat this, the project implemented a number of initiatives:

Hybrid Technology – Hybrid excavators were utilised during the works, with detailed planning to maximise the benefits from the hybrid slewing motion, optimising fuel savings.

Biodiesel – In conjunction with our plant provider, Lynch Plant Hire, all plant on the project converted to using Biodiesel as an alternative to red diesel with a realised 98% reduction in carbon emissions for onsite plant movements.

Telematics – In conjunction with Lynch, we trialled the use of telematics on three Bell 30T dump trucks allowing the project team to monitor the efficiency of the trucks against a month's baseline data. One was highlighted as inefficient, with these inefficiencies attributed to: poor driver behaviour (e.g. wrong gear, excessive revving and wrong driving mode chosen); variance in terrain; and maintenance (e.g. tyre pressure). Further analysis of the data also pointed where further fuel savings could be obtained, for example the maximum payload moved was 25.9 tonnes/cycle but the average was 18.4 tonnes/cycle, meaning on average the dumpers were operating at 75% capacity. From this, a tailored efficient plant operation training course was developed which has led to savings in excess of 200L per month per machine.

STAFF FLEET

Our employees travel great distances when working on and visiting our construction sites, with fleet vehicles accounting for 30% of all energy used across the business. In 2019 Sisk embarked on a journey to transition from diesel to electric vehicles. We have installed electric charge points at our Dublin and Warrington offices and are making progress at further locations. Electric vehicles are now included in our fleet choice with models available for employees to trial. We have also rolled out an Eco-driver Training Programme companywide.