New Technology resulting in carbon emissions reduction

April 2020

Background

The United Nations has a series of Sustainable Development Goals. These are ‘global goals’ and targets, that are part of an internationally agreed performance framework. All countries who have adopted the Sustainable Development Goals (including Scotland) are aiming to achieve these goals by 2030.

The Scottish Government National Performance Framework and the goals share the same aims. The National Performance Framework is Scotland’s tool to localise and implement the Sustainable Development Goals. Through the ‘Golden Thread’ Procurement is a key player.

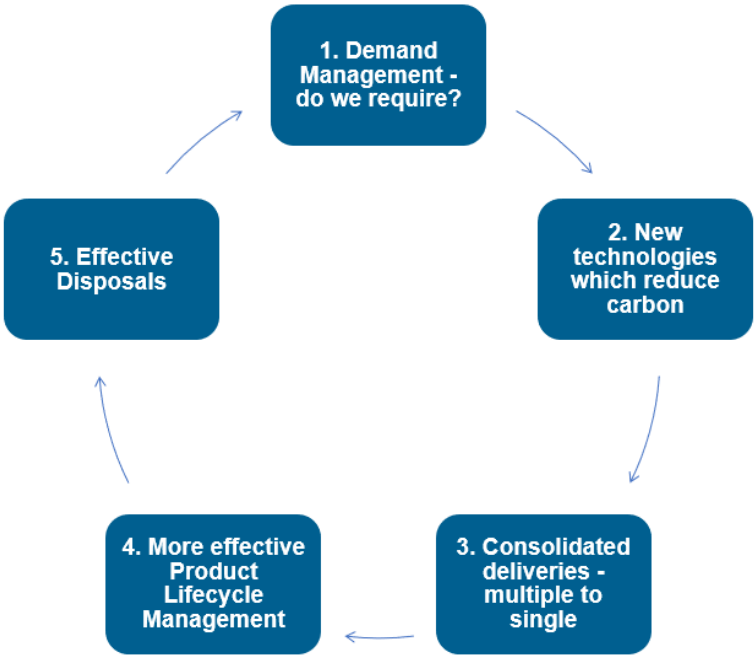
SDS have transitioned to new technology which has resulted in a reduction in carbon emissions. Through the ‘Golden Thread’ SDS has aligned an element of the SDS Sustainable Procurement Lifecycle to UN Sustainable Development Goal 9.

“Industry, Innovation and Infrastructure – build resilient infrastructure”. The infrastructure based upon the Gartner Service Towers has a Service Tower specific to Hosting and Enterprise.

The Hosting and Enterprise tower is a service provided by EnterpriseIS (EIS) to the shared service partner organisations of Skills Development Scotland (SDS), Scottish Enterprise (SE), Highlands & Islands Enterprise (HIE) and South of Scotland Enterprise (SOSE).

The previous contract involved utilising a supplier's data centre in South Wales and included using over 450 servers. The server centre required to be kept at a certain temperature for operation of the servers. The transition to the new infrastructure which is cloud based served to facilitate a significant reduction in carbon emissions.

SDS Sustainable Procurement Lifecycle



Procurement Strategy and Pre-Contract Stage

The business case for the transition / change management programme included:

- Projects to remove existing legacy applications through major investments
- Reducing the hosting and processing required
- Move to Microsoft Azure which is a hyperscale cloud hosting solution

The Azure project involved moving our supported systems to a new cloud-based environment capable of supporting future systems we may use and allowing us to control costs better, by using a 'pay as you go' format. Azure services are capable of being throttled during quiet periods or completely switched off at certain times. Additionally, the service is very adaptable and can be scaled up or down to suit demand.

Contract Stage: Procurement Requirements & Tender Award Criteria

Once the business case had established the move to Azure. The tender itself looked for a Microsoft Gold Level partner with a proven track-record in planning and delivering Cloud assessments and service migrations for many diverse organisations.

The tender looked to appoint a supplier based on the following outcomes:

- Knowledge of the benefits, issues and risks of operating in the Cloud
- A clear set of business services suitable for Client's Cloud presence

- A fully-developed migration plan to the Cloud
- Increased standardisation as part of a future-proofed plan
- An understanding of the costs and any potential savings from a move to the Cloud

This included award criteria on:

- Real time access to consumption reports
- Continuous Service improvement (particularly cost avoidance)

Effectively, although there are inherent sustainability benefits in switching to Azure, the supplier's role is to work with EIS to ensure that usage (and therefore carbon usage) is kept to a minimum whilst not having an impact on operational performance.

Sustainability Outcomes

As a result of moving to a cloud-based hosting solution, a total of 97 servers were migrated to Microsoft Azure, allowing the legacy project to remove over 350 servers which were no longer required. In utilising Azure, we are moving from storing our data in individually contracted data centres, to storing it with the far faster Microsoft data centres.

Microsoft sums up the sustainability benefits of Azure data storage with an easy-to-understand metaphor:

> "Just as multiple tenants in an apartment building use less power overall than the same number of people owning their own homes, so do the multiple tenants of a cloud-provided infrastructure reduce their overall energy use and associated carbon emissions".

Microsoft has committed to ensuring that its data centres will be powered entirely by renewable sources of energy by 2025. Therefore, their already more efficient large data centres will be powered by sustainable means.

When renewable energy is considered:

- carbon emissions from Azure Compute are **92–98 percent lower** than traditional enterprise datacentre deployments of compute equivalents;
- carbon emissions from Azure Storage are **79–83 percent lower** than traditional enterprise datacentre deployments of storage equivalents;
- carbon emissions from SharePoint Online are **72–97 percent lower** than traditional enterprise datacentre deployments of SharePoint.

Further Information

UN Sustainable Development Goals

Scottish Government National Performance Framework

Carbon Trust

BT Scope 3 Emissions Protocol

Microsoft

Contact

If you have any questions concerning this exemplar, please contact procurement@sds.co.uk.