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CARBON AND COST REDUCTION THROUGH THE SUPPLY CHAIN

Case Study - Food & Drink Supply Chain

The Problem

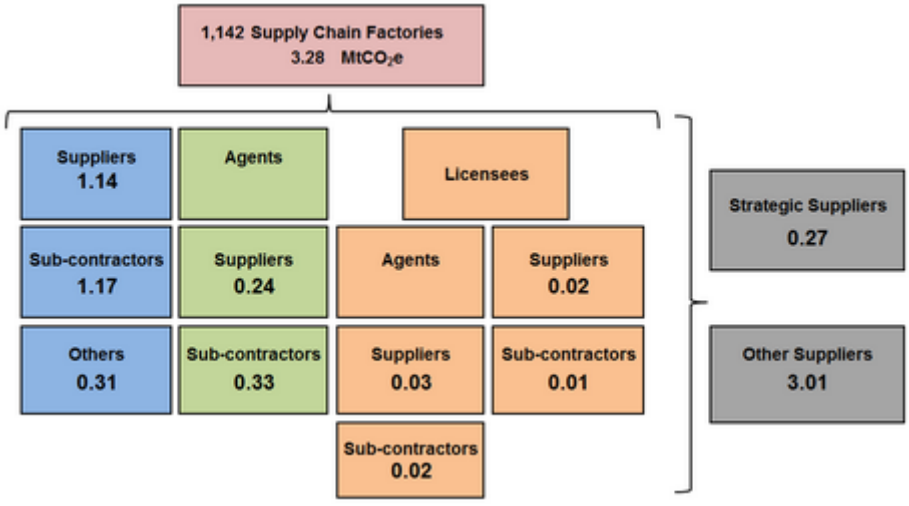
With climate change already making its impact felt, there is an urgent need to act - to keep global warming to about 1.5°C or face impacts over the coming decades. Following the Paris Climate Change Treaty at COP21 there is the expectation on businesses to go beyond an incremental approach to carbon reduction. Investors and other stakeholders are concerned that companies may not be addressing the bulk of their greenhouse gas emissions, which may be with the supply chain.

'Greenclick'

Greenclick is a system that finds energy and other savings. For example, tell Greenclick the location of a factory and what the factory makes and it will return an estimate of the energy used at the factory plus where and how much energy can be saved at the equipment level. The Greenclick approach involves simulation of each site down to the level of equipment. The simulations are based on proprietary methodology and use open source information. Greenclick is not restricted to a single site and can be also used across multiple supply chains. It can be used for other resources, such as water.

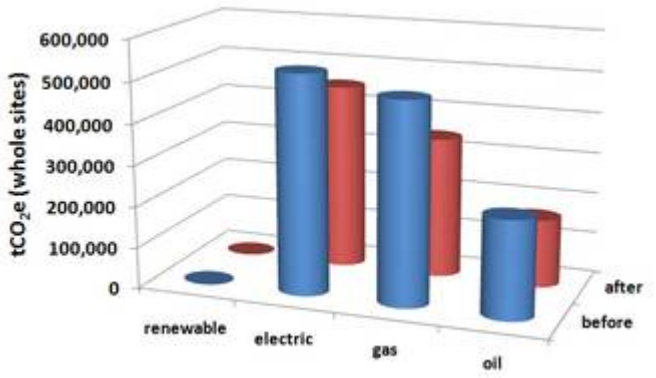
Case Study

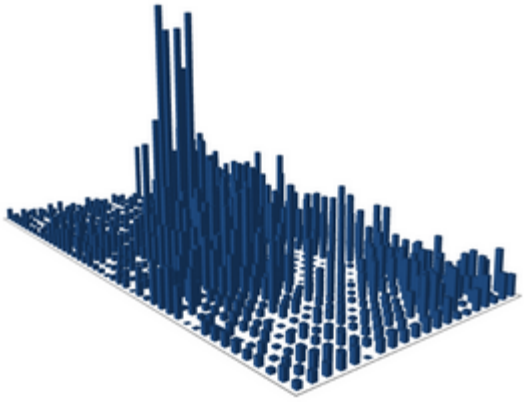
This case study is of a food and drink supply chain comprising 1142 supplier factories. The Head of Supply Chain (HoSC) has identified 114 sites as being strategic suppliers. The other 1028 suppliers comprise tactical, operational and commodity suppliers.



Supply chain CO_2e map

The map of CO_2e emissions associated with energy use through the supply chain is shown above. The supply chain has three channels: (1) direct, (2) by agents, and (3) by licensees. Suppliers in the direct channel (shown blue) are either contracted directly by the HoSC or subsequently sub-contracted through various tiers. Strategic suppliers exist in all of the channels. Each factory is simulated separately.





Energy efficiency & cost savings

The estimated CO_2e from energy use and by energy type for the strategic supplier factories is shown in the bar chart above. Energy efficiency, CO_2e and cost savings through the whole supply chain and the allocations to the HoSC are shown in the table below.

Savings maps

Savings maps can be constructed for energy, CO_2e, and financial savings. The savings (or 'hotspots') map can be constructed for a single site, group of sites (e.g. strategic suppliers) or for the whole supply chain. Savings maps can be used to prioritise action and investment through the supply chain.

ENERGY EFFICIENCY & COST SAVINGS IN THE SUPPLY CHAIN		
Summary of simulation results of all sites		
Total number of factories in supply chain	1,142 sites	
Total number of strategic supplier factories	114 sites	
Total energy used in the host supply chain	42,045 GWh	
Total energy allocated to Head of Supply Chain (HoSC)	8,970 GWh	
Total cost of energy in the host supply chain	£2.67 billion	$4.04 billion
Total cost of energy allocated to HoSC	£0.57 billion	$0.86 billion
Potential cost savings through the host supply chain	£0.44 billion	$0.67 billion
Potential cost savings allocated to HoSC	£0.09 billion	$0.14 billion
CO_2e from energy use in the host supply chain	15.36 $MtCO_2e$	
CO_2e from energy use by the strategic suppliers	1.26 $MtCO_2e$	
CO_2e from energy use by the other suppliers	14.10 $MtCO_2e$	
CO_2e from energy use allocated to HoSC	3.28 $MtCO_2e$	
Potential CO_2e reduction in the host supply chain	4.20 $MtCO_2e$	
Potential CO_2e reduction allocated to HoSC	0.91 $MtCO_2e$	

What If?

'What If?' scenarios can be investigated and used to evaluate cost and carbon strategies before they are implemented. Energy 'hotspots' can be identified allowing for a prioritised approach to audit of sites, installing monitoring equipment, and implementing energy saving measures. Renewable energy scenarios in the supply chain can be combined with energy efficiency scenarios. New suppliers can be evaluated for energy efficiency before they are brought into a supply chain.

Benefits

Greenclick allows you to see energy use at every supplier and know how much energy is being wasted and what can be done about it.

By making energy use, CO_2e and energy savings visible, the Greenclick approach can be used to develop a more collaborative approach through the supply chain. This can lead to the creation of shared resource efficiency gains and better business performance.

Further information on Greenclick

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