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PROMOTING ENERGY SAVINGS AND GHG MITIGATION THROUGH INDUSTRIAL SUPPLY CHAIN INITIATIVES

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ABSTRACT

Supply chain initiatives (SCIs) are structured interventions by companies that are able to exert significant leverage with their suppliers. SCIs targeting energy and GHG performance can result in tangible benefits for buyers and suppliers including cost-savings, higher product quality and reduced exposure to climate policy-related risks. This paper provides an analysis of ten SCI case studies from across a range of industrial sub-sectors and geographical regions. It examines the benefits of the different approaches employed, the effectiveness of these initiatives, and the lessons learned by the organisations leading their implementation. It concludes with success factors for consideration by buyers or organisations seeking to reduce supply chain GHG emissions by implementing SCIs.

INTRODUCTION

As awareness grows of the impact of human activities on the planet, there is an increasing expectation from consumers and investors for companies to be visibly operating in a responsible and sustainable manner. While global surveys of corporate leadership (Blackhurst et al. 2012) show that executives believe sustainability has and will continue to have a material impact on their business, many state that they are still not exploiting opportunities fully. To date, companies have focused largely on actions within the boundaries of their own company. Now extending sustainability across the supply chain, which can be done through supply chain initiatives (SCIs), is becoming increasingly important.

This conference paper provides an analysis of ten SCI case studies, which was carried out in May 2012 by the Institute for Industrial Productivity (IIP) and Ecofys[1]. It explores the range of different SCI approaches employed, examines the effectiveness of these initiatives, and the lessons learned by companies leading their implementation. Finally a number of success factors are extracted to provide guidance on developing SCIs.

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[1] Full report Goldberg, A., J. Reinaud, E. Holdaway and S. O'Keeffe (2012). Promoting Energy Savings and GHG Mitigation through Industrial Supply Chain Initiatives, available through: http://www.iipnetwork.org/sites/iipnetwork.org/files/file_attachments/resources/IIP-EcofysSupplyChain.pdf

WHY ENGAGE IN SUPPLY CHAIN INITIATIVES?

Benefits for buyers - On average, 40% to 60% of a manufacturing company's carbon footprint is from its supply chain (CERES, 2010), rather than its own operations, and this can be much greater for retailers. A company that wants to control risks related to corporate reputation and protect its value will work to ensure it is adequately managing its supply chain (UN GCNS, 2009). Many downstream consumer-facing companies now consider sustainability as a key competitive differentiator. An energy efficient supply chain can result in benefits for buyers by reducing their exposure to climate policy and energy risks passed through from their supply chain. In addition, improved energy or GHG practices by suppliers may also see improved quality and management of other resources by the supplier, resulting in a potentially better product and pass-through of cost savings.

Benefits for suppliers - Suppliers that are driven by buyers to reduce GHG emissions or make energy savings are also likely to find synergies between efficiency and other resource-productivity issues (e.g. process quality and throughput, and reduced downtime and maintenance costs) (BSR, 2010). Suppliers may be able to demonstrate their performance improvements to other potential buyers. Companies partaking in SCIs may be best placed to create long-term contractual relationships with their buyers

CHALLENGES TO ENGAGE IN SUPPLY CHAIN INITIATIVES

Engaging with suppliers to reduce energy or emissions presents a number of challenges. Globalisation has led to increasingly complex, global and decentralised supply chains (UN GCNS, 2009), which can hamper efforts to coordinate supply chain initiatives and monitor their impact. Also, the value chain position of the buyer company that initiates the SCI influences the leverage the company has and thus its direct ability to mitigate overall supply chain impacts. Before setting up a SCI, the buyer must have a general understanding of the overall emissions impact of their supply chain in order to most effectively guide their suppliers' emissions reductions activities. Lastly, SCIs can give rise to competiveness issues for suppliers active in regions with lower sustainability standards (Sherman et al., 2012), as well as confidentiality issues for suppliers unwilling to share their energy and GHG performance outside their company.

METHODOLOGY AND APPROACH

The case studies selected comprise the following ten organisations: BASF (chemical company), British Gypsum (plaster and plasterboard manufacturer), Ford (automobile manufacturer), General Electric (providing a wide range of energy, industrial and technology solutions), IKEA (furnishings and home ware), Home Depot (hardware store), Prorail (construction and maintenance of the Netherlands rail network), SKF (manufacturer of bearings, seals and engineering solutions), Walmart (grocery and general store) and China's city government-led Suzhou Energy Efficiency Star Scheme.

Desktop research and interviews were undertaken to collect the required data. The desktop research served to collect the main components of each SCI, such as region, SCI activity types, length and overview of the initiative, partnership or programme linkages. For a more in-depth analysis and to gain insights into the implementation experiences of each buyer

company, interviews were conducted. The interviews also sought to obtain information on the specific sectors the suppliers comprised, impacts of the SCIs within individual suppliers, the bottlenecks that were encountered, and what were the key design features of the SCI that made the initiative successful or not.

RESULTS AND CONCLUSIONS

SCI categorization

A SCI categorization was made to show the diversity of approaches that were found to be used. Assessed ten SCIs could be categorized according to the following types or combination of types:

- Mandatory performance requirements - The buyer requires the supplier to comply with set performance criteria;
- Purchasing approaches - Supplier performance leads to advantages or disadvantages in procurement process;
- Reporting and monitoring - Suppliers must report their emissions or energy use to their buyers;
- Subsidised audits - On-site audits to determine a supplier's GHG/energy performance and identify improvement options;
- Capacity building and implementation support – Training/workshops and other measures to improve suppliers' ability to improve their energy and GHG performance;
- Supplier forums or coalitions - Conferences, meetings, webinars and online forums where buyers and suppliers can communicate;
- Labelling - Labelling of energy performance as an informational tool for buyers;
- External facilitation tools - Platforms that help connect or match GHG/energy performance of suppliers with buyers' interests or criteria.

SCI impacts

There was a general lack of supplier data on costs savings and GHG reductions. This may be partially explained by the newness of the SCIs and the reluctance of suppliers to share data on cost savings associated with implemented SCI measures (in case the buyer then expects to see that saving reflected in a lower product/service price). In spite of this, multiple benefits to both suppliers and buyers were found among the ten case studies. These benefits include cost savings through increased energy efficiency, marketing and reputation benefits, improved business relationships and reduced risks related to climate policy, energy costs and reliability. Examples include CO_2 reductions of 19% (GE supplier), 35% (IKEA supplier) over approximately two years; and on average 2-3% annual energy efficiency improvements (Prorail suppliers). The cost of identifying energy saving measures is generally met by the supplier. Costs typically range from $5,000 - $10,000 per audit. However, there are instances where personnel directly from buyer companies conducted audits and paid for the verification or the audits themselves (GE, Walmart). It is notable that the examples reported demonstrated reasonably attractive payback periods for suppliers.

SCI success factors

Based on the findings from the case studies seven success factors for strong and effective strong SCI can be identified. The success factors are summarized in Table 1.

Supplier selection	Focusing on a select group of suppliers rather than the buyer company's entire supplier base.
Partnership and Fostering Trust	Working in partnership with suppliers on specific programs to foster trust and build capacity so that suppliers are comfortable working on sensitive topics such as energy or GHG management and achieve GHG reductions, rather than imposing mandatory requirements without support to suppliers to reach those goals.
Multi-pronged elements	Combining several complementary elements within an initiative, such as external platforms, auditing, capacity building and direct financial support and expertise to reduce supplier GHG emissions.
Cumulative approaches	Cumulative, stepwise approaches with increasing ambition.
Third party involvement and internationally-recognised tools	Third-party involvement, i.e. partnering with external organisations such as non-governmental organisations to provide additional expertise and credibility, using external tools such as energy management systems (EnMS) or environmental management systems (EMS) standards (ISO 14001 and ISO 50001), or Scope 3 Value Chain Standard.
Leadership commitment	Executive or board-level support and engagement within the supplier to participate with the supply chain initiative.
Tailored to local and sectoral conditions	Understanding of local conditions and points of leverage.

Table 1: Success factors for SCIs

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