

A Platform for Accelerating the Deployment of Profitable Efficiency Solutions in Supply Chains

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ABSTRACT

Supply chain emissions often account for around 80 percent of the total carbon footprint of large, typically consumer-facing, corporations. Therefore any action taken to reduce emissions has great impact. As awareness of this grows, corporate reputational, sustainability and competitive drivers are increasing attention towards supply chain energy efficiency and GHG emissions reduction action. CDP's Supply Chain Program is a testament to this trend: in 2014, 66 members with \$1.3 trillion in procurement spending requested their collective 6,500 suppliers to disclose GHG emissions. More than half (3,396) did so.

But while a number of supply chain initiatives are emerging across the globe, clear pathways that allow for robust and measurable supply chain actions (beyond disclosure) are lacking. Structured interventions initiated by large purchasing companies with their suppliers can achieve energy and GHG emissions reduction goals among a number of disparate businesses and across national borders, whilst also enabling more efficient, productive and resilient value chains benefiting both purchaser and supplier. This paper explores the results of and lessons learned from a pilot initiative, in which members of CDP's Supply Chain program use their leverage as global purchasers to encourage greater uptake of efficiency amongst their key suppliers and help them overcome common barriers to investing in emissions reduction projects. The initiative helps embed energy efficiency into suppliers' decision-making processes, and gives suppliers access to technical assistance and a proven portfolio of resources, as well as encourages implementation of profitable energy efficiency measures and recognize supplier achievements.

Introduction

A substantial share of a company's carbon footprint may come from its supply chain rather than its internal emissions. On average, 40-60 percent of a manufacturing company's carbon footprint is from its supply chain (CERES, 2010), and this percentage can be much greater, as much as 80 percent, for a retailer (Brickman and Ungerman, 2008). For example, based on data disclosed by almost 400 Walmart suppliers through CDP in 2013, Walmart estimated that total scope 3 emissions in their supply chain are up to ten times greater than their own Scope 1 and 2 emissions (Walmart & CDP, 2014). Corporate sustainability pressure is therefore increasing attention towards supply chain energy and GHG impacts.

When companies undertake structured interventions that exert significant leverage with their suppliers, the interventions can be an effective way to achieve energy and climate change goals among a number of disparate businesses and across national borders. These GHG and energy efficiency supply chain initiatives (SCIs) can result in tangible benefits. In addition to reduced energy and carbon footprints, these benefits come in various forms: improvements in productivity, product quality, resource efficiency (e.g. water efficiency), reduced energy costs and energy supply vulnerability, reduced financial risk due to carbon-related policies, and

improved stakeholder relations and public opinion due to enhanced sustainability (Goldberg et al., 2012).

Improving supply chain energy efficiency can also provide suppliers and purchasers with a better understanding of their relative impact within a product's lifecycle or value chain, allowing them to identify ways in which processes could be streamlined and made more effective, leading to stronger, healthier suppliers and more stable prices for key inputs over time.

While there is convincing evidence that corporate purchasers should engage with supply chains to identify and capture energy efficiency opportunities, many do not. Although 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 fully exploiting opportunities. Companies focus first on actions within their own company, but extending sustainability across the supply chain is becoming increasingly important with growing demand for supplier performance by the public and investors. In 2014, companies in the S&P 500 index that received top-tier performance scores (Performance score of A¹) were 35% more likely to engage with their suppliers on environmental issues than the average company in the S&P 500 index (CDP 2014a).

CDP's Supply Chain Program, established in 2009, is designed to help major global purchasing companies address supplier performance. Through the program, participating companies issue an annual information request to their suppliers to disclose details on their GHG emissions, energy use and the risks and opportunities from climate change. Suppliers are assessed and scored on both the quality of information provided and their relative level of environmental performance.

Purchasers and suppliers face market and non-market barriers to capturing supply chain energy efficiency opportunities (AMO, 2014; DOE, 2011):

- **Lack of awareness.** There is a growing gap between the environmental performance of some of the world's largest purchasing companies and that of their suppliers. In 2014, 82 percent of Members of CDP's Supply Chain Program reported monetary savings as a result of investments in emissions reduction activities, compared to 33 percent of their suppliers (CDP 2015).
- **Lack of expertise.** Purchasers may want to help suppliers but do not know how or may want to provide technical assistance but lack the capacity to do so.
- **Perceived capital constraints, low budget or management priority, unsupportive organizational structure.** Suppliers often consider energy efficiency activities to be unnecessarily costly and capital-intensive and must compete with core business investments in production. Decision-makers do not consider energy efficiency to be effective or important relative to other business opportunities.

Corporate Levers to Stimulate Supplier Energy Efficiency

In order to leverage corporate purchasing power to encourage supply chain GHG and energy savings and overcome barriers to capturing these opportunities, a wide range of

¹ The Performance Score is a measure of the positive actions that the company has demonstrated through its response to CDP, and represented by a letter from A to E (including A- band).

corporate-initiated supply chain initiatives (SCIs) have emerged over the last decade. To date, most have focused on sustainability and labor conditions but increasingly, climate and energy performance are becoming more widespread. The approaches are summarized in Table 1 below.

Table 1: Corporate supply chain initiatives in use today

| Type of SCI | Description |
|--|--|
| Mandatory performance requirements | The buyer requires the supplier to comply with set criteria. These criteria can include undertaking audits (that the supplier funds), meeting certification standards such as ISO14001, and meeting targets for improved energy performance. |
| Purchasing approaches | Buyer develops procurement policies whereby suppliers score higher or lower and are advantaged or disadvantaged in the procurement process due to their existing performance and profile. This approach differs from “mandatory performance requirements”, which provide criteria for inclusion or exclusion from the procurement process. |
| Reporting and monitoring | Suppliers must report their emissions or energy use to their buyers. This reporting can be done via surveys, questionnaires or online portals that the supplier completes. Buyers may undertake appraisal or risk assessments of supplier performance based on the reporting provided. |
| Subsidized audits | On-site audits (full or partially funded by the buyer) to determine a supplier's GHG/energy performance. This type of audit is distinct from “mandatory performance requirements”, where the supplier funds the audit. |
| Capacity building and implementation support | Training, workshops and other measures to improve suppliers’ ability to improve their performance. Measures could be financial assistance, workshops, tools, or buyers may fund or organize assessments to identify energy saving opportunities, which suppliers then implement at their own cost. This excludes supplier forums, which are separately described |
| Supplier forums or coalitions | Conferences, meetings, webinars or online forums where buyers can communicate priorities and suppliers can ask questions, receive feedback and share best practices among themselves. |
| Labelling | Labelling of energy performance to demonstrate as an informational tool for buyers. The labelling can refer to the energy or carbon performance of a supplier’s processes, or of the overall life cycle energy or carbon performance of a product. |
| External facilitation tools | Platforms that help connect or match GHG/energy performance of suppliers with buyers' interests or criteria. |

Different types of supply chain initiatives. *Source:* Goldberg et al. (2012).

One or more of these SCIs described above aim to reduce or overcome barriers and incentivize supplier energy efficiency activities in the following ways:

Increasing awareness and reducing information barriers. Engagement in corporate SCIs reach suppliers that have either not been prompted to reduce emissions by their purchaser or

have not initiated collaborative emissions reduction projects with their purchasers; not necessarily because these are unwelcome but rather from lack of awareness or initiative in energy efficiency and because companies have not traditionally influenced other companies in their value chain (other than on pricing). By initiating participation in a SCI, the purchaser is reaching this class of supplier that may not have otherwise received information or encouragement to take energy efficiency action.

Leveraging competition. Energy-efficient operation provides cost savings and productivity improvements, therefore offering a competitive advantage to suppliers that take advantage of it. However, it is also important to note with cost-savings projects, purchasers often expect that these savings will be passed downstream. This can create tension between supplier and purchaser, especially in market segments experiencing intense competition or tight profit margins.

Reducing financial barriers and connecting technical recommendations with energy efficiency project financing. Clearly presenting the value proposition and connecting suppliers with third party capital providers or energy efficiency experts will encourage suppliers and their management to reduce high, artificial hurdle rates.

Suppliers engaged in SCIs tend to be SMEs and lack the technical expertise or management capacity to run their own enterprise-wide emissions reduction or energy management program. Or, they may not be consumer-facing organizations and therefore, not driven by public image reasons to manage energy and GHG emissions assiduously. Because SCIs often seek to initiate good energy management practices at the operational level, this can drive demand for plant-specific technical assistance offered by government and utility energy efficiency programs as well as by the energy efficiency service market. For example, suppliers may seek assistance for performing energy audits or preparing to receive certification.

Action Exchange, described in further detail below, aims to be a comprehensive multi-corporate and privately-delivered SCI, designed to overcome barriers and transform markets towards climate efficient and resilient supply chains for the world's largest multinational corporations.

Action Exchange Design and Implementation

CDP's Supply Chain program delivers a data-driven platform that enables global purchasing organizations to implement successful supplier engagement strategies and manage the climate change-related risks and opportunities in their supply chains. Through the program, suppliers are already measuring and disclosing their GHG emissions and climate change-related risks and opportunities at the request of some of their largest corporate customers. In 2014, 66 companies collectively issued CDP's annual information request to more than 6,500 of their key suppliers, globally, to which nearly 3,400 responded.

Building on this successful supplier engagement system and the data that it collects annually, CDP and the Institute for Industrial Productivity (IIP) launched the Action Exchange initiative to accelerate the movement of suppliers from disclosure to action to reduce their emissions. In partnership with purchasing organizations, their suppliers, and energy efficiency service providers, Action Exchange creates a platform to facilitate the implementation of cost-efficient emissions reduction projects to the benefit of all stakeholders.

In 2013, suppliers that received requests from multiple customers to respond to the CDP Supply Chain questionnaire were more likely to report activity in several key areas such as investment in emissions reduction initiatives, monetary savings and integrating climate change into business strategies (Figure 1). At scale, Action Exchange will reach a class of suppliers whose corporate management did not previously see energy efficiency as a strategic priority. With Action Exchange they are more receptive due to purchaser (CDP Supply Chain member) involvement. Receiving energy efficiency recommendations at the request of their purchaser changes the nature of management’s decision to forego energy efficiency implementation.

| Number of invites | % reporting emissions reductions | % reporting monetary savings | % reporting investments | % reporting board level responsibility for climate change | % reporting integrating climate change into business strategy | N Value |
|-------------------|----------------------------------|------------------------------|-------------------------|---|---|---------|
| >3 | 55% | 64% | 62% | 73% | 94% | 265 |
| 3 | 52% | 54% | 51% | 67% | 87% | 162 |
| 2 | 40% | 37% | 37% | 59% | 77% | 397 |
| 1 | 26% | 26% | 24% | 41% | 64% | 2044 |

Figure 1. Suppliers who receive more customer requests are more likely to report climate action.
 Source: CDP 2014b

Stable long-term business relationships with suppliers are considered important and in many instances fragile due to competition. Opportunities to strengthen the relationship are commonly sought by both purchaser and supplier (Goldberg et al., 2012). This effect is pronounced for members of CDP’s Supply Chain Program, consisting of large-scale purchasers, which likely make up a large share of their suppliers’ business and therefore, a larger influence on the supplier.

From Disclosure to Action

In 2014, 65% of the suppliers that disclosed to the CDP Supply Chain questionnaire calculated and reported their Scope 1 emissions and similarly, 64% reported Scope 2 emissions. This includes Jaya Apparel Group LLC, a company that disclosed to CDP for the first time in 2014. The company stated that their customer’s request had caused them to take a more strategic approach to managing their environmental impact:

“Through our participation in the CDP Climate Change questionnaire initiated by the request of our customer, it has prompted us to formalize our goals of reducing our carbon footprint and improving our efficiency. Our main focus is learning what our carbon footprint is, and discovering our risks and opportunities in Scope 1, 2, and 3.”

While the improvement in quality and quantity of disclosure has been significant, longer-term members of CDP’s Supply Chain program are not seeing the uptake of emissions reductions initiatives in their supply chain as quickly as the economic opportunities suggest. In 2014, 82% of members of CDP’s Supply Chain program reported monetary savings from emissions reduction activities through the CDP climate change questionnaire, compared to just 33% of their suppliers. Significant untapped potential for emissions and cost savings remains in their supply chains.

Because CDP's Supply Chain program has proven to be an effective driver in compelling suppliers to respond to purchaser requests, Action Exchange is an extension of their existing involvement and leverages the same customer-backed request for corporate environmental disclosure. Rooted in CDP's database of corporate environmental data, Action Exchange leverages multiple resources to create a platform designed to enable suppliers that already disclose to CDP to get started on the path toward improved performance. CDP and IIP are able to help suppliers define the internal business case for investing in GHG-reducing projects by citing research and best practices that demonstrate financial savings and positive returns on investments.

After facilitating the pilot initiative in partnership with 5 members of CDP's Supply Chain program and a subset of their key suppliers (65 in total), Action Exchange expanded in its first full-scale year to include 13 members and 187 of their suppliers. These suppliers responded to a direct customer request to demonstrate action to reduce their emissions by making a non-binding commitment to consider recommendations for energy efficiency projects presented through Action Exchange.

German mail and logistics group Deutsche Post AG was one of the largest suppliers that participated in Action Exchange during the pilot cycle. While speaking of their experiences in the pilot, Deutsche Post AG stated that "building on the established tools and processes of the CDP Reporting framework, Action Exchange has the potential to drive action beyond reporting and accelerate the shift to a low carbon economy".

Measurability is one of the most important aspects of Action Exchange as success is monitored in both total emissions reductions and related cost savings. Suppliers participating in the Action Exchange initiative are required to disclose data back to their requesting customer on emissions reduced as a result of their participation through the CDP Supply chain information request in the next relevant year.

At the close of the one-year pilot cycle, ten suppliers accurately reported activities that resulted in reduced emissions through the CDP 2014 Supply Chain Information Request, that were driven by Action Exchange. Four of these ten suppliers reported quantifiable emissions savings. Preliminary 2014 data showed that emissions reductions of 1,465 tCO₂e were reported by participating suppliers, collectively. However, it is important to note that this is a minimum estimate. Because of the reporting timeframes in the pilot, not all emissions reductions had yet been quantified and were not ready for reporting.

Private Sector Partnerships

Under the Action Exchange initiative, multinational corporations, their suppliers, energy efficiency experts and trade allies (Solutions Providers) are brought together into one platform in order to facilitate dialogue and collaboration that ultimately lead to more efficient and climate-resilient supply chains.

Jaguar Land Rover, a company that first worked with CDP to request environmental disclosure from their suppliers in 2011, joined the Action Exchange initiative in 2014 to help make progress towards their supplier sustainability goals. Jaguar Land Rover "is aiming to have the vast majority of its strategic supplier partners taking action to reduce emissions and reporting them through CDP Supply Chain [...] We will also be joining the CDP Action Exchange program to help Jaguar Land Rover suppliers look for further opportunities or innovative solutions in the marketplace to reduce their carbon emissions."

Purchasing organizations that participate in Action Exchange provide the leverage that is integral to the success of the initiative. Companies are encouraged to lead by example and integrate their sustainability goals, like those of Jaguar Land Rover, not only into supplier communications specifically related to Action Exchange, but beyond this program into their procurement policies. Benefits for the purchaser, if a supplier is successful, include increased resiliency in their supply chain, the opportunity to claim accountability for the resulting emissions reductions and the ability to communicate their outcomes to investors, customers and the public.

From the supplier perspective, accepting an invitation from a large customer offers several business opportunities. Action Exchange equips the suppliers with free resources that can help them meet the expectations of their customers and also provides a platform through which to highlight their efforts. In addition to the benefits of increased resiliency in a changing climate, showing results through Action Exchange also presents an opportunity for suppliers to distinguish themselves from their competitors.

Supplier Action Plans

At the core of the Action Exchange platform is CDP’s database of voluntarily-disclosed corporate environmental data. Utilizing this database, desk-based research is conducted and tailored for the suppliers in Action Exchange to kick start their activities. Customized information is presented to each supplier in a 2-page “Action Plan”, which outlines the business case for energy efficiency investments, benchmarks actions against peers, and recommends relevant projects to reduce emissions. Action Plans are also shared with the requesting customer and potential Solutions Providers as an optional discussion piece. Action Plans include:

- Assessments of potential energy and monetary savings (Figure 2);
- Analysis of company responses to the CDP Supply Chain questionnaire (Figure 2);
- Identification of areas of actionable improvement opportunities to inform the decisions of policy makers, manufacturers, and other stakeholders
- Recommendations for specific energy efficiency activities and corresponding savings estimates (Table 2).

Table 2: Example activity recommendations for energy efficiency upgrades presented in an Action Plan to an automobile component manufacturer

| Opportunity Area | Description of Activity | Estimated Energy Savings |
|-------------------------|--|---------------------------------|
| Energy Management | Implement the internationally recognized standard for energy management systems ISO 50001 to assist your organization in establishing a transparent energy efficiency policy and the systems and processes necessary to achieve operational control and continual improvement of energy performance. | 5-30% |
| Boiler Systems | Tune Boiler (minimize excess air, clean boiler heat transfer surfaces, improve fuel/air ratio control) | 1% to 10% |
| Combined Heat and Power | Consider combined heat and power at facilities with large steam and power demands | 15% to 25% |

| | | |
|--------------------------------|--|--|
| Compressed Air Systems | Upgrade compressed air system controls (installing part-load controls, microprocessors, or system master controls) | 2% to 15% of compressed air energy costs |
| Process Cooling/ Refrigeration | Consider using waste heat recovery with absorption or adsorption chillers | Up to 50% of chilled water energy costs |
| Process Heating Systems | Install waste heat recovery systems to: <ul style="list-style-type: none"> • Install furnace pressure controllers (prevent ambient air from leaking into furnace) – savings range from 5% to 10% • Use oxygen-enriched combustion air – savings range from 5% to 25% • Check and maintain proper burner air to fuel ratios – savings range from 5% to 25% | 5% to 25% |
| Steam Systems | Insulate steam lines | 1% to 2% |

The Energy Efficiency Services Market

Once a supplier decides to further investigate investment opportunities, the next step is to identify a cost-efficient course of action. For a company looking to implement energy efficiency measures for the first time, the volume of options in the marketplace can easily become overwhelming. Therefore, Action Exchange seeks to connect suppliers with third-party technology or service providers as a means of horizon-scanning for proposals. These solutions providers include a variety of energy efficiency experts and trade allies that operate on a regional, national or global scale and may boast a diverse portfolio, specific technologies, or other services that can directly save the supplier money through energy efficiency improvement.

Even if a supplier does not choose one of the pathways suggested to them through Action Exchange, the network is designed for the company to test the waters and gain the experience necessary to identify its own solution.

Of their experience in Action Exchange during the pilot year, one consumer staples supplier stated that while they were unable to identify a project at that time, they found long-term value in meeting with three different Solutions Providers. The company said, “The CDP Action Exchange gave us the opportunity to focus on new technical solutions, especially in the field of heat recovery. Beyond what CDP had recommended and what is already common practice at [our company], we were interested in learning more about new solutions to store heat energy on site and use it later on [...] We thank CDP and [our customer] for the opportunity to benchmark ourselves and discuss new solutions with experts in this field.”

During the Action Exchange pilot year, Solutions Provider Schneider Electric began a contract with a L’Oréal supplier to improve energy efficiency at their factory in Italy. Due to the long-term nature of the development stage of this emissions reduction project, it is expected that full details will be realized by the supplier and reported to L’Oreal through CDP in 2016.

Energy Efficiency Project Financing

Suppliers often cite lack of access to finance as a primary barrier to investing in energy efficiency upgrades and technology. Action Exchange is initiating work to connect suppliers with government and utility programs, which often offer financial support through public benefit

CDP estimates that your company could profitably reduce absolute emissions by 41% – 43% by 2020, based on the average 2010 base year Scope 1 and Scope 2 emissions of companies the Materials Sector.¹



JT International asked CDP to help your company take action to reduce greenhouse gas emissions.

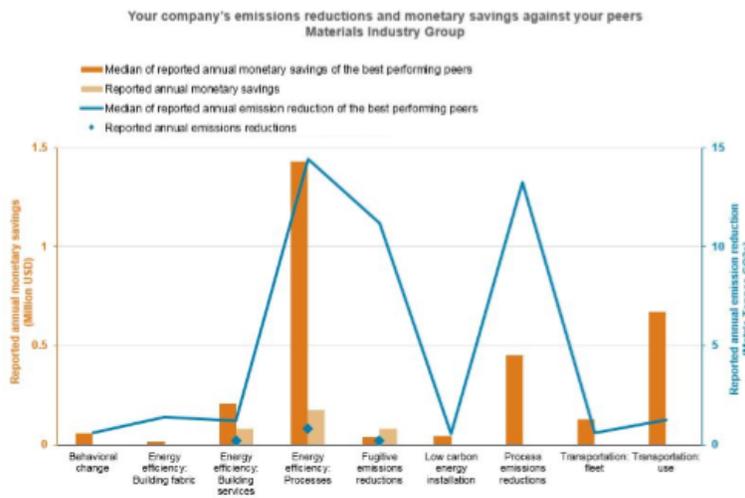
Action Exchange, an initiative of CDP's supply chain program, is designed to equip companies with access to the intelligence, technology and solutions that will help them take action to reduce greenhouse gas emissions and realize monetary savings.

This document outlines opportunities and potential solutions for your company to improve energy efficiency. Based on your response to the CDP supply chain information request(s), it provides benchmarking and best practices with respect to your best performing peers and recommends specific energy efficiency projects. It also identifies Solutions Providers that CDP believes are the best suited to help your company achieve its energy efficiency goals and save money.

| Company Overview | |
|--|---|
| GICS Sector | Materials |
| GICS Industry Group | Materials |
| Country | United Kingdom |
| 2014 CDP Score | Disclosure Score ² : 67 Performance Band ³ : D |
| Questionnaire size | Full |
| Emissions Profile (in metric tonnes CO ₂ e) | |
| Scope 1 emissions | 75,221 |
| Scope 2 emissions | 39,384 |

Materials Industry Group

Companies in your Industry Group saved a total of \$2.47 billion by reducing emissions in 2014



| How does your CDP supply chain response compare to other companies in the Materials Industry group? | | |
|---|----------------|-----------|
| Key performance indicator | Industry Group | Company B |
| Reports Scope 1 and/or Scope 2 emissions | 75% | Yes |
| Reports active emissions reduction target(s) | 44% | No |
| Reports emissions reductions | 45% | Yes |

| Emission reduction activities reported in previous years | | | |
|--|------|------|------|
| | 2014 | 2013 | 2012 |
| Behavioral Change | N | Y | Y |
| Energy Efficiency: Building Fabric | N | N | N |
| Energy Efficiency: Building Services | Y | N | N |
| Energy Efficiency: Processes | Y | N | N |
| Fugitive Emissions Reductions | Y | N | N |
| Low Carbon Energy Installation | N | N | N |
| Low Carbon Energy Purchase | N | N | N |
| Process Emissions Reductions | N | Y | N |
| Product Design | N | N | N |
| Transport Fleet | N | N | N |
| Transportation Use | N | N | N |
| Other | N | N | Y |

Figure 2: Sample analysis for a Materials Sector company in Action Exchange, including energy and monetary savings estimates and peer benchmarking based on CDP data.

funds. Action Exchange is also exploring partnerships with financial institutions to leverage their supply chain financing programs to provide loan guarantees or concessional loans to suppliers interested in pursuing energy efficiency investments.

Policy and Program Implications

Current industrial policies and incentives are focused largely on direct energy use and efficiency, e.g. audit programs, energy management programs, voluntary agreements, and utility/ratepayer programs. Governments have often struggled to develop policies and programs targeting SMEs or supply chains. From a national perspective, energy efficiency potential in SMEs is usually large in aggregate but dispersed among a large number of individual and diverse businesses, and SMEs often require significant levels of technical and financial assistance to implement energy efficiency opportunities. This makes direct policy interventions costly and onerous for government budgets. For example the U.S. alone counts more than 5.5 million SMEs. In addition, industry’s view of their own operations is deep and nuanced, whereas policymakers’ view is often simplistic and inferred (Masanet, 2014). Finally, from an international perspective, corporations often have complex and often distant supply chains throughout a number of regions, creating further obstacles for individual jurisdictions to intervene through policies and programs.

As a result, few public policies exist for improving supply chain or SME energy efficiency.² Generally, federal programs have been designed to engage large energy consuming companies wishing to enjoy reputational advantages or recognition of good practice.

Corporate SCIs such as Action Exchange can play an important role in helping to fill this gap in public policy, drive demand for existing policies and programs that often suffer from low uptake or participation rates, increase market readiness of smaller companies, and inform more innovative policies.

International reach: From an international climate and development perspective, Action Exchange by design has outcomes that affect industrial energy efficiency and emissions internationally. It is not constrained in the way that governments are – i.e. needing to focus on policy interventions within their own jurisdictions. Action Exchange leverages the global nature of supply chains and is uniquely positioned to interact with government and related supply chain programs in multiple countries. As shown in Figure 3, suppliers are located across all major-emitting regions.

Drive demand for government programs: Action Exchange is helping to drive demand for federal voluntary recognition and technical assistance programs by sharing targeted and tailored information on such programs with CDP-disclosing suppliers. For example the program is hosting webinars for U.S. suppliers on U.S. DOE’s Better Plants program and supply chain pilot.³ Action Exchange is also working to support state-level outcomes and drive manufacturer

Suppliers in Action Exchange 2014-2015

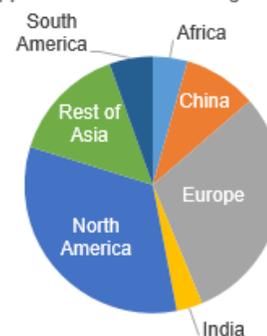


Figure 3 Locations of suppliers participating in Action Exchange 2014-2015.

² One exception is U.S. DOE’s Better Plants program launched a supply chain pilot in 2014 with two Better Plants purchasing companies on board (Legrand and United Technologies).

³ U.S. DOE’s Better Plants program launched a supply chain pilot in 2014 with two Better Plants purchasing companies on board (Legrand and United Technologies).

uptake of state ratepayer/utility programs by acting as an additional driver to introduce and incentivize suppliers to leverage ratepayer program offerings, since they are already being asked by their purchasers to improve their energy efficiency.

Information on federal and state programs providing financial incentives, such as loans or grants, or technical assistance such as energy audits offered through the Industrial Assessment Centers (a U.S. DOE program), is also helping to encourage suppliers to undertake the recommendations and solutions identified through the supplier Action Plans and/or suggested by Solutions Providers.

In the longer-term, Action Exchange can help increase supplier readiness for more ambitious energy/GHG emissions controls, including clean air regulations and influence the ambition of state energy efficiency resource standards and utility energy efficiency targets by boosting participation rates and the pool of companies in which energy efficiency resources can be acquired.

Leveraging development bank energy efficiency financing vehicles: In developing countries, international financial institutions, in partnership with local commercial banks, are looking towards supply chain programs as means to increase their clean energy financing portfolios. For example, the International Finance Corporation assists local financial institutions to offer financing packages and supplier capacity building designed to improve supplier business performance and credit risk, while generating attractive portfolio returns from an untapped market. Action Exchange is currently exploring partnerships with financial institutions to leverage their supply chain financing programs to provide loan guarantees or concessional loans to suppliers interested in pursuing energy efficiency investments.

Conclusion

Significant untapped potential for emissions and cost savings still exist in the supply chains of many of the largest corporations, even if those corporations themselves excel in sustainability and environmental performance.

To address this performance gap, in 2013 CDP and IIP launched the Action Exchange pilot initiative with global purchasing organizations as an extension to their existing involvement in CDP's Supply Chain program. The initiative combines multiple drivers, support mechanisms, tools and resources, and it convenes a range of partners around a single platform to create a comprehensive yet simple mechanism for supporting and incentivizing a growing number of businesses around the world to invest in GHG-reducing and energy efficiency projects. Action Exchange's intended outcomes are to:

- Catalyze systemic change by demonstrating the economic value and competitive advantage of emissions reductions activities to both business managers and policymakers
- Catalyze policy changes at the corporate level to scale up climate efficient initiatives in their national, regional and global operations
- Educate policymakers by sharing lessons learned, economic and environmental results achieved, and suggest how complementary policy can reinforce, recognize and incentivize actions taken by businesses in their supply chains.

Early successes of Action Exchange show it has the potential to achieve these outcomes and transform the markets towards lower-carbon economies. Further deployment and concerted effort will be necessary to reach its full potential.

References

- AMO (2014). "Industrial Technical Assistance," Advanced Manufacturing Office, United States Department of Energy Office of Energy Efficiency and Renewable Energy. Available at http://energy.gov/sites/prod/files/2014/06/f17/amo_ita_factsheet.pdf
- Blackhurst, J., Cantor, D., & O'Donnell, M. (2012). "Sustainable Supply Chains: A Guide for Small and Medium-sized Manufacturers," Center for Industrial Research and Service (CIRAS), Iowa State University.
- Brickman, C. & Ungerman, D. (2008). "Climate Change and Supply Chain Management," *McKinsey Quarterly*, July 2008. Available at www.sallan.org/pdf-docs/clch08.pdf
- CDP (2013). "Global 500 Climate Change Report 2013". Available at www.cdp.net/CDPResults/CDP-Global-500-Climate-Change-Report-2013.pdf
- CDP 2014a S&P 500 Climate Change Report 2014 <https://www.cdp.net/CDPResults/CDP-SP500-leaders-report-2014.pdf>
- CDP (2014b). "Supply Chain Report 2013-14: Collaborative Action on Climate Risk". Available at www.cdp.net/CDPResults/CDP-Supply-Chain-Report-2014.pdf
- CDP 2015. "Supply Chain Report 2014-2015: Supply Chain Sustainability Revealed: A Country Comparison". Available at <https://www.cdp.net/CDPResults/CDP-Supply-Chain-Report-2015.pdf>
- CERES (2010). "The 21st Century Corporation: The Ceres Roadmap for Sustainability." Available at www.ceres.org/resources/reports/ceres-roadmap-to-sustainability-2010/view
- DOE (2011). "Guide for Better Buildings, Better Plants Program Partners," United States Department of Energy, Office of Energy Efficiency and Renewable Energy. Available at www1.eere.energy.gov/manufacturing/pdfs/betterplants_guide.pdf
- Goldberg, A. et al. (2012), "Promoting Energy Savings and GHG Mitigation through Industrial Supply Chain Initiatives," Institute for Industrial Productivity, Available at www.iipnetwork.org/IIP-EcofysSupplyChain.pdf
- Masanet, E. (2014). "Industrial Sustainability Through Supply Chain Energy Management," Presentation to the Energy Policy Institute Seminar, University of Chicago, January 23, 2014. Northwestern University.
- Walmart and CDP (2014). Walmart response to CDP 2014 Climate Change questionnaire 2014, Available at <https://www.cdp.net/en-US/Results/Pages/responses.aspx>