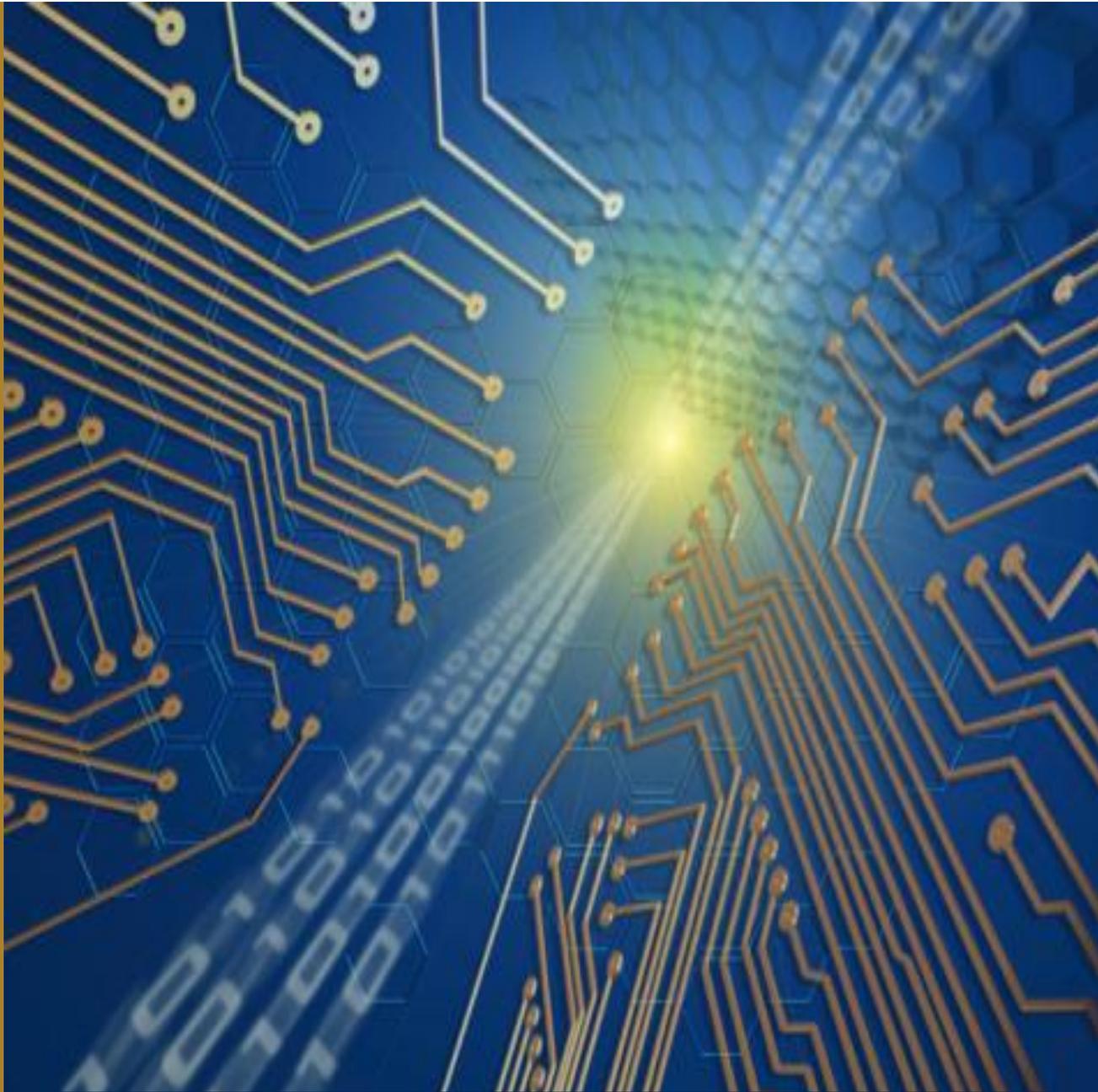# A Practical Approach to Greening the Electronics Supply Chain

Results from the 2011 EICC® Carbon and Water Reporting Initiative

A Practical Approach to Greening the Electronics Supply Chain

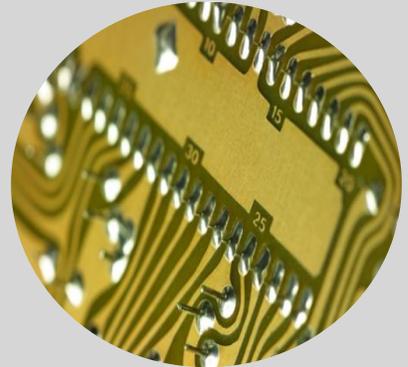## *Results from the 2011 EICC*®
Carbon and Water Reporting Initiative

TABLE OF CONTENTS

About This Report

Based on the ongoing efforts of the Electronic Industry Citizenship Coalition® (EICC®) Environmental Sustainability Work Group, the Carbon and Water Reporting Initiatve began in 2009 as a pilot initiative and was revised and expanded in 2010 and 2011 to include a wider range of participants. The 2011 work on this program included reviewing literature on greenhouse gas emissions (GHG) and water footprinting; developing support resources, trainings, and tools; and collecting information provided by EICC members and their suppliers.

The EICC recognizes the EICC Environmental Sustainability Work Group for their guidance and support in 2011. The EICC also thanks Marsha Ali—a former co-lead of the EICC Environmental Sustainability Work Group—who played an instrumental role in developing the Carbon and Water Reporting Initiative and provided key leadership throughout this initiative. Finally, the EICC acknowledges participating companies for contributing feedback, submitting data, and supporting this Initiative. Any errors or inaccuracies that remain are those of the author alone. Please direct comments or questions to Jesse Nishinaga at jnishinaga@bsr.org, Sasha Radovich at sradovich@bsr.org, or Wendy Dittmer at wdittmer@eicc.info.

DISCLAIMER
The EICC publishes occasional papers as a contribution to understanding the role of business in society and the trends related to corporate responsibility and responsible business practices. The views expressed in this publication are those of the author and do not reflect those of individual EICC members.

ABOUT THE EICC
The EICC was established in 2004 to improve social, economic, and environmental conditions in the global electronics supply chain through the use of a standardized code of conduct. The EICC was incorporated in 2007 as an association to ensure greater awareness of the EICC Code of Conduct and to expand its adoption across the industry. Through the application of shared standards, the EICC believes in better social, economic, and environmental outcomes for all involved in the electronics supply chain. The EICC includes more than 65 global electronics companies. For more information or to view the EICC Code of Conduct, visit www.eicc.info.

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Executive Summary

The role of industry and supply chain networks—the web of business relationships and interdependencies—in addressing carbon emissions and water-related risks has never been more critical.
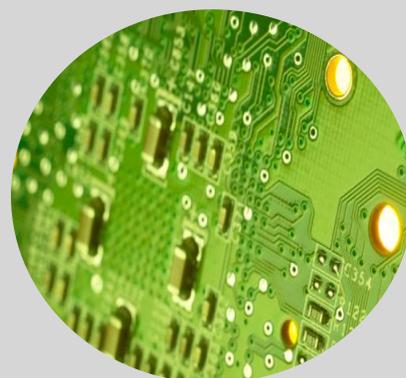
The information and communication technology (ICT) industry has a powerful role to play in mitigating carbon and water-related risks, from introducing products that emit less carbon, create less waste, and use less water and resources mitigating carbon emissions and water-related risks through optimizing industrial processes. Regardless of the solution, a key component to achieving reductions is to have a clearer understanding of where emissions are originating and how water is being sourced, used, and discharged. The EICC® recognized this need for action and made the case that supply chain networks—the heart of the electronics industry—can play a more direct role in responding to carbon and water-related risks and also provide critical information and insights that enable other industries and sectors to make similar advances.

With investors, governments, nongovernmental organizations, and consumers asking companies to measure and publically disclose their greenhouse gas emissions, the EICC devised the Carbon and Water Reporting Initiative to meet these expectations, help companies increase their transparency, and ultimately strengthen business-to-business collaborations. Specifically, the Carbon and Water Re-

porting Initiative is a straightforward, low-cost, standardized process for directly engaging with suppliers to aggregate their greenhouse gas emissions and water-related data into a central repository that their enterprise customers can access.

In 2011, the EICC built on the successes and lessons learned from the 2009 and 2010 initiatives by expanding its focus on water reporting and providing aggregated analysis of the carbon data received from suppliers. The EICC also increased the maximum number of suppliers that enterprise customers could invite to the Carbon and Water Reporting Initiative to 250 (up from 100 suppliers in 2010).

The EICC continues to serve both users of the Carbon and Water Reporting Initiative by providing optional trainings; translating many of the tools and documents into Chinese and Spanish to accommodate non-English-speaking suppliers; and providing the option for suppliers to submit a copy of their Carbon Disclosure Project (CDP) questionnaire in lieu of completing the EICC questionnaire.[1]

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[1] The CDP is an independent nonprofit organization that operates a global carbon disclosure reporting system.

In 2011, 32 companies participated as "customers" in the Carbon and Water Reporting Initiative, inviting 2,631 suppliers (resulting in 1,032 unique suppliers) to complete the questionnaire. Of those 1,032 unique suppliers invited, 289 suppliers responded, up from 251 suppliers in 2010. An analysis of the responses produced several key takeaways:

- Suppliers continued to share their data with multiple customers. In 2011, suppliers on average shared their data with 6.0 customers, compared to 4.3 customers in 2010.
- Although the total supplier response rate declined to 28 percent in 2011 (from 37 percent in 2010), one customer achieved a supplier response rate of 88 percent, demonstrating that proactive engagement with suppliers can have a positive effect on supplier participation.
- Twenty-six percent of suppliers provided a copy of their CDP questionnaire as their response to the 2011 Carbon and Water Reporting Initiative, up from 20 percent in 2010.

In addition, an analysis of the suppliers' aggregated carbon data produced several key takeaways:

- Scope 1 emissions accounted for 23 percent of total Scope 1 and 2 global GHG emissions; Scope 2 emissions accounted for 77 percent.
- Using estimated annual revenues to normalize data, the global carbon intensity average was 311.8 $MtCO_2e$ (per million US dollars). For Scope 1 alone, the global average was 71.94 MtCO2e For Scope 2, it was 239.83 $MtCO_2e$.

Participating Companies

- **Acer**
- **Advanced Micro Devices**
- **Analog Devices**
- **Applied Materials***
- **Celestica**
- **Dell**
- **EMC Corporation***
- **Fabrinet**
- **Foxconn**
- **Hewlett Packard***
- **Hitachi GST***
- **HTC Corporation**
- **IBM**
- **Intel**
- **Jabil***
- **Lenovo***
- **LG Electronics**
- **Logitech**
- **LSI Corporation***
- **Microsoft**
- **ModusLink**
- **NVIDIA***
- **ON Semiconductor**
- **Oracle America**
- **Pegatron**
- **Sanmina-SCI**
- **Seagate Technology**
- **Skyworks**
- **Sony Corporation**
- **Western Digital**
- **Xerox***
- **XP Power**

*These companies have participated in all three years of the Carbon Reporting System (2009, 2010) / Carbon and Water Reporting Initiative (2011).

Increasing the overall value of the Carbon and Water Reporting Initiative for customers and suppliers remains a priority for the EICC. As the EICC strives for continuous improvement of the Carbon and Water Reporting Initiative in 2012 and beyond, new ideas will be explored and enhancements will be made to improve the overall value of this tool and reporting process.

Context: Turning Risks into Opportunities

As climate change continues to shift ecosystems, marketplaces, and stakeholder needs, companies are becoming more aware of the business implications of climate change and water-related risks, and are taking steps to turn these risks into opportunities.
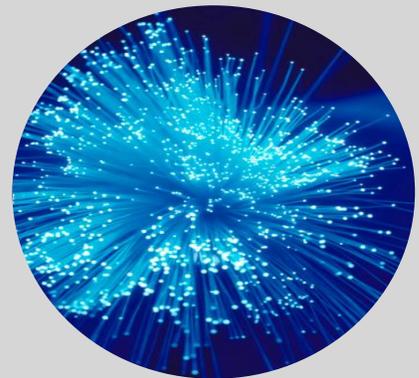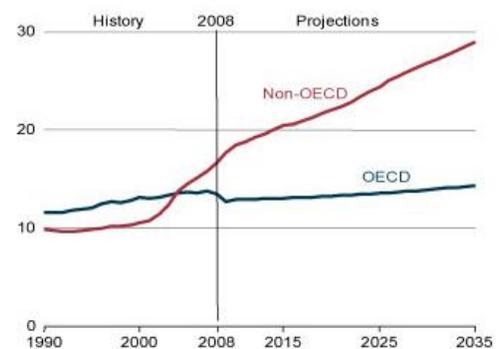
In the 2011 International Energy Outlook, the U.S. Energy Information Administration projected that by 2035, world energy-related carbon dioxide emissions will rise to 43.2 billion metric tons from 30.2 billion metric tons in 2008 (Figure 1). Additionally much of the increase in emissions will be driven by developing nations outside the Organisation for Economic Cooperation and Development (OECD) due to their expected strong economic growth and continued heavy dependence on fossil fuels.[2] With industry playing a central role in driving economic growth in many of these locations, companies have the opportunity to alleviate climate change and create shareholder and stakeholder value simultaneously.

While having an effective GHG-reducing energy strategy can help companies reduce risks and create opportunities in order to gain competitive advantage, companies must recognize the importance of looking beyond their own operations. In October 2011, the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* was introduced by the Greenhouse Gas Protocol to help companies understand their value chain emissions using an internationally accepted method.[3] As the adoption of this standard improves over time, investors and stakeholders will have a way to compare companies' depth of understanding of value chain GHG management.[4]

Figure 1. World energy-related carbon dioxide emissions, 1990-2035 (billion metric tons)

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[2] U.S. Energy Information Administration, "International Energy Outlook 2011," September 2011, http://www.eia.gov/forecasts/ieo/emissions.cfm

[3] The Greenhouse Gas Protocol, "Corporate Value Chain (Scope 3) Accounting and Reporting Standard," October 2011, http://pdf.wri.org/ghgp_corporate_value_chain_scope_3_standard.pdf

[4] Schuchard, Ryan, "The Best Features of the New Scope 3 Emissions Standard," GreenBiz.com, October 2011, http://www.greenbiz.com/blog/2011/10/28/best-features-new-scope-3-emissions-standard?page=0%2C1

Water-Related Business Risks

While much awareness has been raised on the impacts of climate change and greenhouse gas emissions, less attention has been focused on the impacts of water scarcity and water quality risks, and the connection between water and energy.[5] According to the 2008 report *Climate Change and Water* published by the Intergovernmental Panel on Climate Change, "observational records and climate projections provide abundant evidence that freshwater resources are vulnerable and have the potential to be strongly impacted by climate change, with wide-ranging consequences for human societies and ecosystems."[6]

Water is an important resource in the daily operations of companies. Identifying the impacts of water-related business risks is therefore vital. *Water Scarcity & Climate Change: Growing Risks for Businesses and Investors,* a Ceres Report authored by the Pacific Institute, describes the physical, reputational, and regulatory risks on businesses across many industries including the electronics industry. Water-related risks, for example, pose a significant threat to IT manufacturing particularly in places where water resources are already under stress.[7]

Both climate change and water-related business risks can have negative impacts to the entire business value chain. Companies can begin to turn these risks into opportunities by

"Observational records and climate projections provide abundant evidence that freshwater resources are vulnerable and have the potential to be strongly impacted by climate change, with wide-ranging consequences for human societies and ecosystems."

Source: Intergovernmental Panel on Climate Change, 2008

addressing their own carbon and water footprints and by engaging with suppliers to address theirs.

The Role of Supply Chains[8]

The complexity and scale of the global climate change challenge demands a collaborative response. Supply chains are a key focus area for reducing carbon emissions and rising energy demand and water-resource challenges. A supply chain-based approach to energy and water management is critical for several reasons.

First, at the individual company level, a company's total energy and water usage is more likely to come from its supply chain than from its owned operations.

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[5] Morrison, Jason, et al., "Water Scarcity & Climate Change: Growing Risks for Businesses & Investors," Ceres and the Pacific Institute, February 2009, http://www.pacinst.org/reports/business_water_climate/full_report.pdf

[6] Intergovernmental Panel on Climate Change, "Climate Change and Water," June 2008, http://www.ipcc.ch/pdf/technical-papers/climate-change-water-en.pdf

[7] Morrison, Jason, et al., "Water Scarcity & Climate Change: Growing Risks for Businesses & Investors," Ceres and the Pacific Institute, February 2009

[8] Portions of our 2010 report, "A Practical Approach to Greening the Electronics Supply Chain: Results from the 2010 EICC Carbon Reporting System Initiative" have been updated, abbreviated, and inserted into the next three subsections.

Second, at the industry level, climate change and water-related risks could change market dynamics. In the ICT industry, there is a strong interdependency among companies, and minimizing these risks for any one company requires working across a network of relationships.

Third, at the global level, supply chains play a critical role in achieving national and supranational reduction targets.

Finally, supply chains provide an opportunity to make a practical and tangible impact immediately. Unlike a regulatory approach, which can take years to put into effect, a supply chain approach can be implemented immediately.

The Role of the ICT Industry

The ICT industry has a role to play in helping other industries and sectors reduce their carbon emissions and water usage. This is not only a prime sustainability opportunity for the ICT industry, but it is also a key business opportunity for ICT companies to build innovative products that have lower carbon footprints and require less water to use.

But while the ICT industry is often viewed as a solutions provider, it must also consider its own carbon emissions and water footprint to talk credibly about making reductions. In 2007, the "embodied" carbon (the resulting carbon emissions associated with manufacturing, distribution, and disposal), combined with the footprint from use of ICT products, accounted for about 0.83 $GtCO_2e$, or 2 percent of the estimated total emissions from human activity released that year. This figure is expected to grow at 6 percent each year until 2020, when

it is estimated to reach 1.43 $GtCO_2e$.[9] While similar projections could not be found for water, companies can assume that the industry's need for water will increase as both the industry and the demand for ICT grows in size and breadth, particularly in emerging and developing economies.

The EICC Carbon and Water Reporting Initiative

The EICC envisions a world in which standardized data is passed between companies and suppliers up and down the supply chain easily, efficiently, and accurately. This will increase the transparency of manufacturing electronic products and encourage business-to-business collaboration on emissions and energy efficiency and water use improvement efforts.

The EICC designed the Carbon and Water Reporting Initiative to spur global action from ICT companies on energy and water management within supply chains and increase transparency via a standardized method of sharing data among companies.[10]

In 2011, the Carbon and Water Reporting Initiatve continued to focus on carbon reporting but also increased the number of water-related questions. In 2010, suppliers were asked broadly to confirm whether they currently tracked their water use, what their estimated total water use was for the year, and whether they maintained any water use reduction targets or efficiency goals. The 2011 Carbon and Water Reporting Initiative ex-

[9] The Climate Group, "Smart 2020: Enabling the Low Carbon Economy in the Information Age," 2008
[10] Details about the program objectives, assumptions, and system design can be found at:
http://www.eicc.info/documents/APracticalApproachto GreeningtheElectronicsSupplyChain_000.pdf

panded the water section to include questions on:

- Having a company-wide water strategy, plan, or policy
- Having a company policy on its discharges
- The amount of water withdrawn for use in the company by source
- The annual volume of water recycled or re-used in the company
- The annual volume of water used by location or purpose

- Policy on wastewater treatment prior to discharge
- The annual volume of water discharged from the company to destination
- Use of national or regional water discharge standards
- Seasonal droughts or periods of dry wells, scarcity (lack of) clean water in the local area, and/or flooding due to rising surface waters during the last five years

2011 Findings and Results
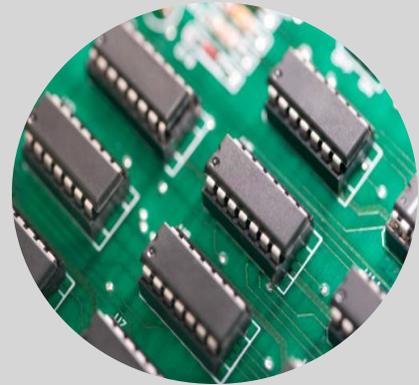
The 2011 Carbon and Water Reporting Initiative built on the successes and lessons learned from the 2010 Carbon Reporting System and the 2009 pilot. The analysis of the data is divided into three areas: overall participation response, participation by geography, and aggregated results of the carbon emissions data.

Overall Participation Response

Thirty-two of 60 EICC member companies participated as "customers" in the 2011 Carbon and Water Reporting Initiative.[11] Customers were asked to submit a list of suppliers (up to 250) to query for carbon emissions- and water-related data. To maintain confidentiality of business relationship, BSR, our third-party tool administrator, gathered and consolidated the supplier lists.

In total, 2,631 suppliers were nominated for inclusion, of which there were 1,032 unique suppliers after removing duplicate suppliers. Of the 1,032 suppliers queried, 289 returned questionnaires, resulting in a 28 percent response rate. A distribution of the customer response rates shows a range of response rates, from 0 percent to 88 percent (Figure 2).

Carbon Reporting

Responses in the area of carbon reporting reflected the following key statistics:

- Responding suppliers have been measuring annual GHG emissions for an average of 3.3 years
- 43 percent of suppliers measured and reported their emissions for the first time and 23% of suppliers have measured and reported their emissions for five or more years.[12]
- 88 percent of suppliers provided Scope 1 emissions data.[13]
- 94 percent of suppliers provided Scope 2 emissions data; of these, 9 percent either purchased electricity from renewable sources (e.g., solar) or generated electricity on-site from renewable sources.

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[11] There were 60 EICC members at the time the invitations were sent.

[12] Out of 161 responses.

[13] For detailed definitions of Scope 1, 2, and 3, view Chapter 4 of "A Corporate Accounting and Reporting Standard," The Greenhouse Gas Protocol, Revised Edition, http://www.ghgprotocol.org/files/ghgp/public/ghg-protocol-revised.pdf

Figure 2. Distribution of Supplier Participation Rates
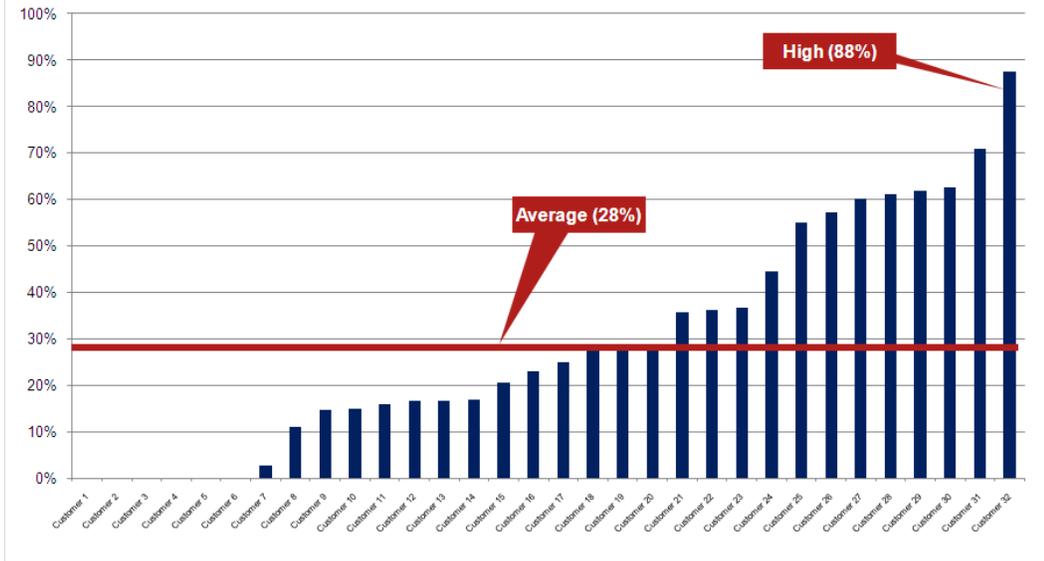
- 31 percent of suppliers provided Scope 3 emissions data.
- 28 percent of suppliers provided all three scope emissions data.
- 61 percent of suppliers reported having emissions reduction targets. The targets reflected a mixture of absolute reduction in emissions and reduction of emissions per product unit.[14]
- 81 percent of suppliers disclosed operational information (i.e., estimate of global revenue). This information can be used to normalize their emissions data.[15]
- 13 percent of suppliers reported obtaining third-party verification of their data.[16]

Water Reporting

Despite the expanded focus on water management in the 2011 Carbon and Water Reporting Initiative, the response rate varied for each question:[17]

- 86 percent of suppliers reported the total amount of water withdrawn for use by source.
- 39 percent of suppliers reported the total amount of water recycled or re-used.
- 77 percent of suppliers reported the total amount of water used by location or purpose.
- 54 percent of suppliers reported the average amount of wastewater treated per day.
- 71 percent of suppliers reported the total amount of water discharged by destination.
- 52 percent of suppliers reported having a company-wide water strategy, plan, or policy.
- 53 percent of suppliers reported having water reduction targets or goals that apply to production/manufacturing.
- 53 percent of suppliers reported having water reduction targets or goals that apply to non-production use (e.g., offices, data centers).
- 39 percent of suppliers reported having water recycling or reuse targets that apply to production.

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[14] Out of 211 EICC questionnaire submissions.
[15] Ibid.
[16] Ibid.
[17] All results in this section are out of 216 EICC questionnaire submissions; for five of these submissions, the CDP questionnaire was used to provide carbon data and the EICC questionnaire was used to provide water-related data.

Results: By the Numbers

32

companies queried their suppliers

2,631

suppliers were nominated for inclusion

1,032

were unique companies (removing duplicate submissions)

289

suppliers submitted a questionnaire (and signed a terms-and-conditions form) to be shared with at least one enterprise customer

On average, a supplier shared its questionnaire with

6.0

companies

- 34 percent of suppliers reported having water recycling or reuse targets that apply to non-production use.
- 59 percent of suppliers reported treating production / manufacturing wastewater prior to discharge.
- 55 percent of suppliers reported treating sanitary wastewater prior to discharge.

- 88 percent of suppliers reported having to meet national or regional water discharge standards.

Comparisons to 2010 Results

In comparing 2011 results to 2010 results, there were three main takeaways:

1. **While total customer and supplier participation increased, their participation rates declined.** The participation rate of "customers" declined to 53 percent in 2011 from 63 percent in 2010, although the total number of customers increased to 32 companies in 2011 from 27 companies in 2010 (Figure 3).

   In terms of supplier participation, 289 suppliers participated in the 2011 Carbon and Water Reporting Initiative compared with 251 suppliers in 2010, a 15 percent increase. However, while the total number of responses increased for suppliers, the response rate declined from 37 to 28 percent. This decline in the supplier response rate may have been a result of expanding the maximum number of suppliers that customers could invite to the program (Figure 4).

2. **Suppliers continued to share data with more companies.** On average, a responding supplier in 2011 shared its data with 6.0 companies, up from 4.3 companies in 2010. This improvement provides additional evidence that customers and suppliers are seeing the benefit of taking a coordinated approach via the Carbon and Water Reporting Initiative.
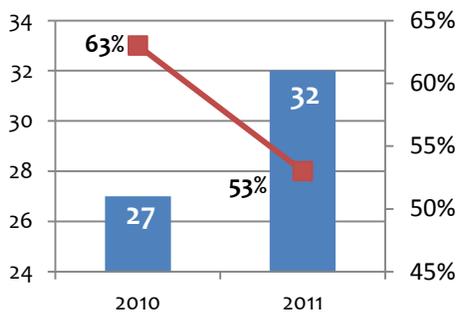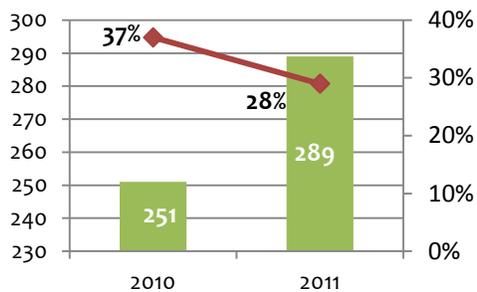
Figure 3. Customer Participation

Figure 4. Supplier Participation

3. **The option to provide a copy of the CDP submission continued to increase participation.** Twenty-six percent of suppliers that submitted a response to the 2011 Carbon & Water Reporting Initiative provided a copy of their CDP questionnaire; the remaining 74 percent of suppliers submitted a completed EICC questionnaire. The total number of CDP questionnaires received increased to 76 in 2011 from 51 in 2010, a 49 percent increase.

Participation by Geography

Responses reflected the following key statistics:

Carbon Responses

Across all three emission scopes, the majority of supplier responses came from Asia, followed in order by North America, Europe, and the Middle East. Here are the key highlights:

- For Scope 1 and 2 reporting, the top 3 countries that provided supplier responses were the United States , China, and Taiwan, followed by Japan, Thailand, and Malaysia (Figure 5).
- For Scope 3 reporting, the top 2 countries that provided supplier responses were the United States and Japan, followed by Taiwan and Malaysia.
- Scope 3 reporting was noticeably weaker in Asia, driven primarily by China, where only 9 percent of suppliers from China provided Scope 3 data (compared with, for example, the United States, where 40 percent of suppliers provided Scope 3 data).

Figure 5. Percentage of Carbon Responses by Scope (for Top 6 Responding Countries)

Region	Scope 1	Scope 2	Scope 3
United States	29	29	35
China	18	21	5
Taiwan	14	13	11
Japan	9	10	16
Thailand	9	9	5
Malaysia	8	8	11

Figure 6. Percentage of Supplier Water Responses by Question (for Top 6 Responding Countries)

Question	China	United States	Taiwan	Thailand	Malaysia	Japan
Water withdrawn for use	24	18	15	12	10	10
Water recycled or reused	19	13	21	13	6	13
Water used	23	16	17	13	10	8
Wastewater treated per day	23	12	19	12	12	14
Water discharged	23	16	16	13	10	11

Water Responses

The majority of suppliers that provided water-related data came from Asia, followed in order by North America, Europe, and the Middle East. Here are key results:

- **Total amount of water withdrawn:** the top two countries with suppliers that provided this data were China and the United States, followed by Taiwan and Thailand (Figure 6).
- **Total amount of water recycled or reused:** the top two countries with suppliers that provided this data were Taiwan and China, followed by the United States, Thailand, and Japan.
- **Total amount of water used:** the top country with suppliers that provided this data was China, followed by Taiwan and the United States.
- **Average amount of wastewater treated per day:** the top two countries with suppliers that provided this data were China and Taiwan, followed by Japan.
- **Total amount of water discharged:** the top country with suppliers that provided this data was China, followed by the United States and Taiwan.

Overall, Asia did well in terms of providing water-related data, while North America, driven primarily by the United States, was noticeably weaker. For example, only 24 percent of suppliers from the United States provided data for total amount of water recycled or reused. Likewise, only 56 percent of suppliers provided data for total amount of water discharged. These numbers can be compared with, for example, Japan, where 55 percent of suppliers provided data for total amount of water recycled or reused and 85 percent provided data for total amount of water discharged.

One possible explanation for this difference is the mix or type of suppliers that are represented in each of these country groups. In the case of the United States, responding suppliers may be businesses that are inherently different than those represented in other countries, particularly in Asia. Another possible explanation for this difference is the level of water measurement and reporting advancement among responding suppliers from the United States. To confirm any of these possible explanations, future Carbon and Water Reporting Initiatives should collect and analyze responses by business type.

Aggregated Results of Carbon Data

One of the objectives of the 2011 Carbon and Water Reporting Initiative is to analyze the aggregated carbon emissions data received from suppliers and set a baseline for future emissions reduction targets and improvements efforts.[18] It is important to note, however, that all regional and country comparisons are limited to the scope of the data reported, and thus, may not be statistically significant. The key highlights include:

Absolute Emissions

- Scope 1 emissions accounted for 23 percent of total Scope 1 and 2 global GHG emissions; Scope 2 emissions accounted for 77 percent (Figure 7).
- Representing 76 percent of all responding suppliers, Asia as a region collectively produced 71.7 million $MtCO_2e$, or 94 percent of the total reported Scope 1 and 2 global GHG emissions.[19]
- At the country level, suppliers in China collectively produced the most GHG emissions (Scope 1 and 2) at 30.3 million $MtCO_2e$, followed closely by Japan at 29.3 million $MtCO_2e$ (Figure 8).

Carbon Intensity[20]

- Using estimated annual revenues to normalize data, the global carbon intensity average was 311.8 $MtCO_2e$ (per million US dollars). For Scope 1 alone, the global average was 71.94 MtCO2e. For Scope 2, it was 239.83 $MtCO_2e$.

- Asia as region was the most carbon intense at 487.8 $MtCO_2e$.
- Europe's carbon intensity was 177.7 $MtCO_2e$, and North American's carbon intensity, driven by the United States, was 30.5 $MtCO_2e$.[21]
- Across countries, China was the most carbon intense at 1,698.4 $MtCO_2e$, followed by Japan at 436.4 MtCO2e and South Korea at 394.4 MtCO2e (Figure 9).

Figure 7. Total Global GHG Emissions by Scope (million MtCO2e) (n=167)
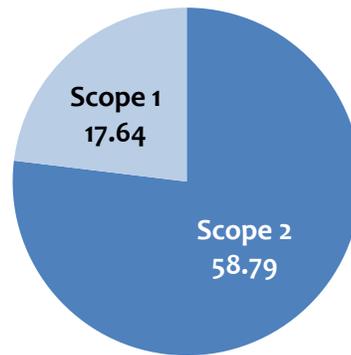

Figure 8. Total GHG Emissions for Top 5 Emitting Countries, and their Carbon Intensities (in $MtCO_2e$ per Million USD)

Country	GHG Emissions*	Carbon Intensity
China	30.3	1,698.4
Japan	29.3	436.4
Taiwan	5.8	190.5
S. Korea	4.1	394.4
United States	2.6	30.5

*Includes Scope 1 and 2 emissions (million $MtCO_2e$)

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[18] We do not aggregate or analyze water volume data for this year's initiative and report as 2011 was considered a pilot year.

[19] Asia region includes China (includes Hong Kong), Taiwan, Japan, South Korea, Thailand, Malaysia, Singapore, Philippines, and India.

[20] Carbon intensity was calculated by dividing Scope 1 and 2 emissions by the total aggregated estimated annual revenues; 167 suppliers provided estimates of their annual revenues.

[21] Europe includes Germany, Netherlands, and Ireland.

Next Steps

The 2011 Carbon and Water Reporting Initiative continued to demonstrate the benefits of a simple, low-cost, and standardized approach that reduces the likelihood of redundant and conflicting requests for supplier data. With nearly 43 percent of supplier respondents reporting for the first time in 2011, the Carbon and Water Reporting Initiative was particularly useful for suppliers new to carbon and water footprinting and reporting.

Opportunities for Companies

In 2011, the EICC aggregated and analyzed supplier data for the first time with the goal of providing learnings that could inform and potentially guide EICC members and suppliers to make future improvement efforts. While more supplier data from multiple years is required to validate the analysis and determine any significant industry trends, some early suggestions can be made based on the data that was collected and aggregated in 2011.

For instance, China, with the highest country-level carbon intensity of 1.698.4 $MtCO_2e$ per million USD, is a prime country for targeting future improvement efforts. Therefore, EICC members should consider reviewing their suppliers from China, as well as suppliers from other regions with high carbon intensities to look for specific risks and opportunities and set the context for future supplier engagements.

Another opportunity for companies is to determine which supplier(s) are the least carbon intense. Once these suppliers have been identified, companies can consider engaging with them to learn about their policies, practices, and methodologies in order to develop best practices that can be shared with other suppliers and members.

Last, but not least, companies also can collaborate with energy and electricity suppliers (e.g., utilities, renewable energy providers, etc.) to reduce Scope 2 emissions. With Scope 2 emissions representing approximately 77 percent of the total reported global GHG emissions, the opportunity for companies to reduce Scope 2 emissions is significant.

Next Steps for the EICC

Learning from the 2011 Carbon and Water Reporting Initiative, opportunities continue to exist, from streamlining the overall reporting process t providing more aggregated, industry-level analysis. Therefore, the EICC will consider the following in 2012 and beyond:

- Transition to a web-based approach to data reporting (starting in 2013).
- Build on the aggregated analysis that was conducted in 2011 and develop more robust insights and recommendations that can inform companies and suppliers in making specific emissions reduction improvements.
- Streamline the data reporting and terms-and-conditions process.
- Evolve the reporting methodology(ies) used to address common challenges like allocation and product- versus supplier-level data.
- Provide additional training and coaching in carbon and water footprinting and reporting; energy efficiency; and emissions management. This might take the form of trainings offered in additional languages, or customized to suppliers' existing knowledge or skill-level in carbon and water footprinting.
- Continue to align the EICC's reporting timelines and questions with other recognized disclosure dates and frameworks.

In conclusion, the EICC continues to encourage companies to develop policies, strategies, targets, and practices that reduce their carbon emissions. The EICC is also committed to encouraging companies to understand and address water-related business risks. The EICC and its members hope that the increased data, transparency, and analysis facilitated through these initiatives will facilitate significant improvements in the environmental operations of companies and their suppliers around the world.

Acronyms and Abbreviations

CDP: Carbon Disclosure Project

EICC: Electronic Industry Citizenship Coalition

GHG: Greenhouse gas

ICT: Information and communication technology

$MtCO_2e$: Metric ton carbon dioxide equivalent

OECD: Organisation for Economic Cooperation and Development

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