



WORLD
RESOURCES
INSTITUTE

Walking the Talk

2013–14 Operational Sustainability Report

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WRI.ORG

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FOREWORD | FIVE YEARS IN

Steve Barker

Chief Financial and Operating Officer, WRI

The World Resources Institute (WRI), has a long history of “walking the talk” on sustainability in our own operations. As WRI and its partners worked on a global standard for greenhouse gas emissions accounting in 1999, we also accounted for WRI’s emissions from our own activities. By road testing the standard, our staff was able to provide insightful feedback while determining the actions and investments we would need to achieve our carbon neutral goal.

Fast-forward to 2010. WRI’s leadership, including myself, determined that aiming for carbon neutrality through offset purchases alone was no longer meeting our vision of a lower-carbon future because our offset purchases did not impact our actual emissions. To more systematically address sustainability in WRI’s operations, we created the Sustainability Initiative.

Integrating sustainability into how we operate as a nonprofit not only supports our mission to protect the planet and provide for the future but helps us learn and evolve WRI into a business of the future. To guide our efforts, we set three targets for 2020 around greenhouse gas emissions: a 50 percent reduction in electricity emissions, a 20 percent reduction in travel emissions, and a 20 percent reduction in all other emissions from travel, partners, and suppliers (scope 3 emissions).

We are now at the halfway point (the fifth year) with respect to our 2020 Sustainability Initiative targets. We have learned that integrating sustainability is not easy—we have just as many pitfalls as we do successes and we know we need to expand our targets beyond emissions. However, we are proud to be actively participating and learning alongside corporations and governments as we collectively tackle these important issues. Some of the lessons we learned are listed here.

Sustaining carbon reductions for business travel is challenging.

Maintaining reductions to business travel while meeting commitments to our mission has proven challenging, especially while facing near double budget growth driven by international expansion. We have not been as successful in replacing travel with virtual communications as we anticipated and are now in the early stages of investigating other avenues to reduce our travel-related carbon impact.

Supplier engagement does not always result in changes to calculated emissions.

Over the past few years, WRI has engaged in a number of changes with suppliers—including moving our web content to a server that purchases 100 percent renewable energy through credits and switching to plant-based food for all our events. However, those changes are not always captured within the boundaries or calculations of our greenhouse gas emissions inventory because we use sector-based

modeling to calculate most of our supplier emissions. Acknowledging this as an issue, we are working to collect primary data directly from our core suppliers so that their actions will be counted in our GHG emissions.

Our work is never truly finished. We have learned that we must constantly revisit our initiatives to ensure that sustainability is being integrated in our culture and operations as anticipated, particularly as WRI grows and changes. This is most noticeable in our struggles with recycling in our U.S. office.

We could do more to maximize the value of this work for our staff. Staff surveys have shown a strong appetite among WRI staff to integrate sustainability into our operations, as well as to engage them in the process. However, we have not always capitalized on staff demand to drive value for WRI as an organization.

Our biggest lesson learned is that there is no such thing as a cookie-cutter sustainability program. Our sustainability strategy needs to incorporate what we do well, in addition to identifying opportunities that create the most significant operational impacts. Over the course of the next year, we will refresh WRI's sustainability approach and strategy to take a broader look at sustainability including its environmental, social, and governance components. "Learning by doing" improves our perspective. Changing sustainability practices and behavior throughout our operations, while guiding other organizations, our supply chain, our staff, donors, and partners, marches us toward accomplishing our mission.



Steve Barker
Chief Financial and Operating Officer
World Resources Institute

PROGRESS SUMMARY

The World Resources Institute (WRI) set three greenhouse gas (GHG) emissions reduction targets to achieve by 2020 from a 2010 base year:

- **50 PERCENT REDUCTION** in emissions from purchased electricity
- **20 PERCENT REDUCTION** in emissions from scope 3, business travel
- **20 PERCENT REDUCTION** in emissions from all other scope 3 sources, excluding business travel

Progress toward these targets is mixed (see [Figure A](#)). WRI has progressed about 25 percent of the way toward its target of 20 percent reduction in emissions from purchased electricity. Reductions were made in 2013 and 2014 by working with building management at the U.S. office to update equipment and by transitioning China operations to a more energy-efficient

office. However, WRI continues to struggle to control the emissions growth for its other two targets, primarily because WRI's revenue grew from \$34 million in 2010 to \$68 million in 2014 and the number of staff doubled. Emissions from WRI's business travel are up 16 percent from 2010 and its strategy for voluntary changes in behavior around travel booking has not produced meaningful reductions.

Emissions associated with WRI's partners and suppliers, which account for 99 percent of its total scope 3 emissions, are up 130 percent from 2010. Many efforts to manage the environmental impacts of WRI's supply chain have not resulted in real, sustained changes to its emissions inventory because of the type of estimated metrics used to account for emissions. To address this, WRI is working to incorporate actual data on suppliers' carbon emissions and climate change mitigation efforts.

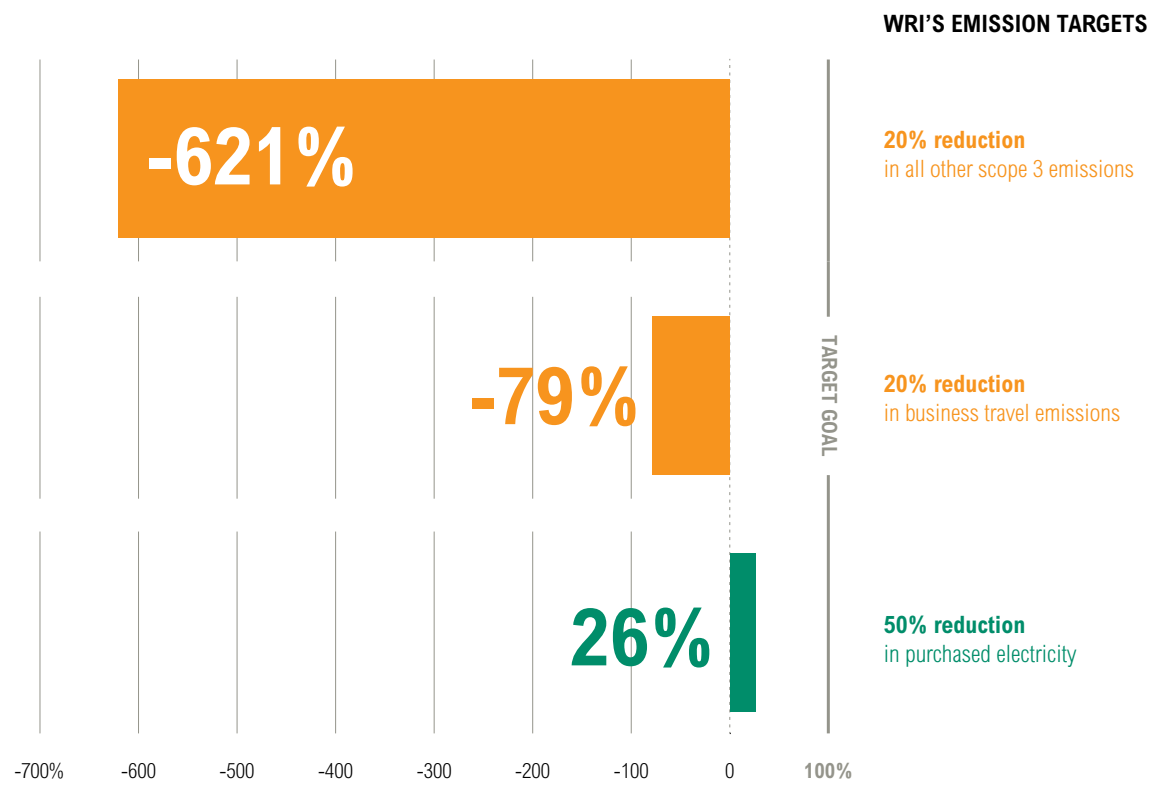
The challenges in meeting targets are real and significant, and other organizations might find them relatable to their own management of emissions during periods of operational growth. Because many organizations face these issues, it is critically important to find, understand, and share solutions. Unfortunately, there is no easy or immediate fix and WRI will continue to strive toward sustainability in its operations.

WRI's sustainability efforts extend beyond its three targets to mitigate climate change. Although it has no official targets, WRI tries to align its operations with the research

and recommendations its experts provide to companies and governments around the world. Some recent operational sustainability successes include:

- Updated purchasing standards for paper products used in U.S. operations to align with WRI's work on forest products
- Sustainability behavior and goals integrated into WRI's annual employee performance reviews
- Green lease provisions for U.S. operations and Gold-level certification from the Leadership in Energy and Environmental Design (LEED®) for the China office in Beijing
- A new sustainability report to better communicate the breadth of WRI's efforts and incorporate best reporting practices

Figure A | WRI's 2014 Progress Toward 2020 Targets



As WRI continues to grow globally, it includes its new offices in the data collection and management processes. This is not an easy task—many newer offices are small (5–30 staff members), but present significant opportunities in terms of advancing sustainability solutions in the countries where WRI's work focuses.

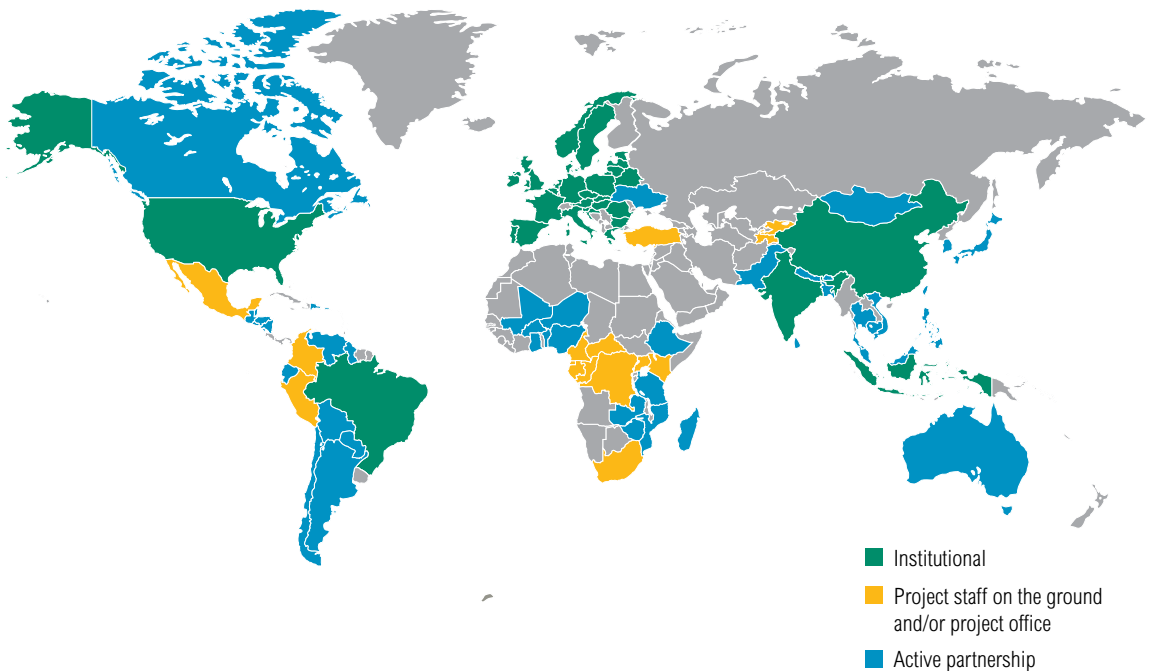
As WRI moves into the second half of its initial target period (2015–2020), it will review lessons learned and reengage with stakeholders to improve its sustainability strategy and remain relevant to its mission. WRI remains committed to integrating sustainability into its operations and reporting on progress in a transparent manner—“walking the talk.”

1 | ABOUT WRI

World Resources Institute (WRI) is a global research organization that spans more than 50 countries, with staff across Africa and Europe, and in Brazil, China, India, Indonesia, Mexico and the United States. More than 450 experts and staff work closely with leaders to turn big ideas into action at the nexus of environment, economic opportunity, and human well-being.

WRI focuses on six urgent global challenges: climate, energy, food, forests, water, and sustainable cities. With partners, it develops strong evidence; creates innovative, practical solutions; and engages with a wide range of communities, decision makers, and world leaders to achieve change at scale. WRI counts it, changes it, and scales it. As an institute, its mission is to move human society to live in ways that protect Earth's environment and its capacity to provide for the needs and aspirations of current and future generations. Efforts to achieve this work are located all around the globe (See Figure 1.1). WRI measures success through outcomes, or actual changes seen in the world. For information on WRI's governance and outcomes, see the [Annual Report](#) and [2015 Outcomes](#).

Figure 1.1 | WRI's Global Network



Sustainability is at the core of WRI’s mission. Its research leads to many positive changes in the world, but not without costs. Each day, the electricity used, the business travel taken, and the decisions made on how WRI staff members perform their jobs have an impact on society and the environment. Figure 1.2 shows the intersection between WRI’s six core areas of focus for programmatic work and the efforts underway to improve the sustainability of its operations.

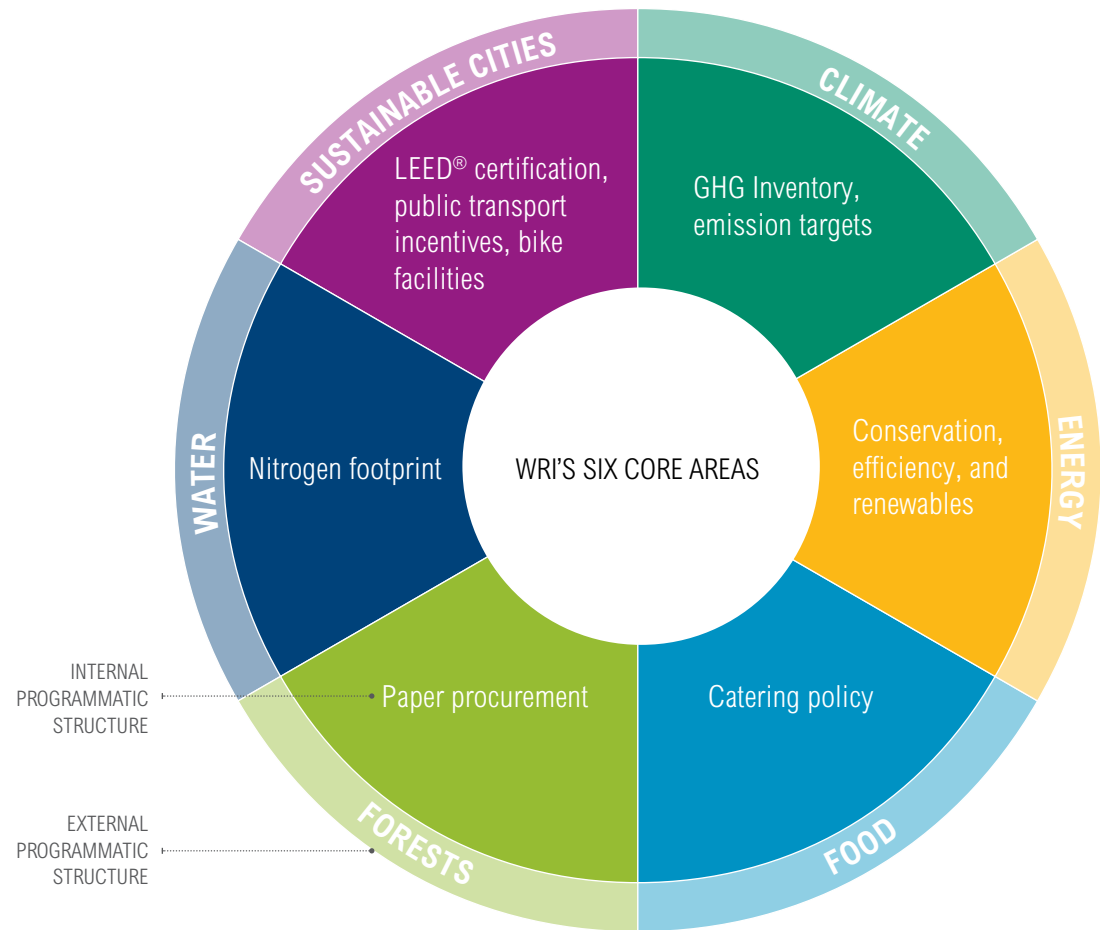
WRI’s **Sustainability Initiative** works to integrate many of the recommendations the institute makes to companies and governments around the world, into its own operations. Striving to “walk the talk,” the Sustainability Team collaborates across the Institute to implement the Sustainability Initiative and support efforts of other staff.

Key to WRI’s sustainability strategy are:

- Reducing emissions from electricity and scope 3 activities, such as travel and procurement
- Increasing recycling and reducing waste from operations
- Improving purchasing decisions and working with vendors and partners to foster a more sustainable supply chain

This report covers WRI’s efforts to improve its operational sustainability during fiscal years 2013 and 2014 (October 1, 2012–September 30, 2014) and all cost figures are in U.S. dollars.

Figure 1.2 | Intersection Between WRI’s Six Core Areas of Focus and Its Operations

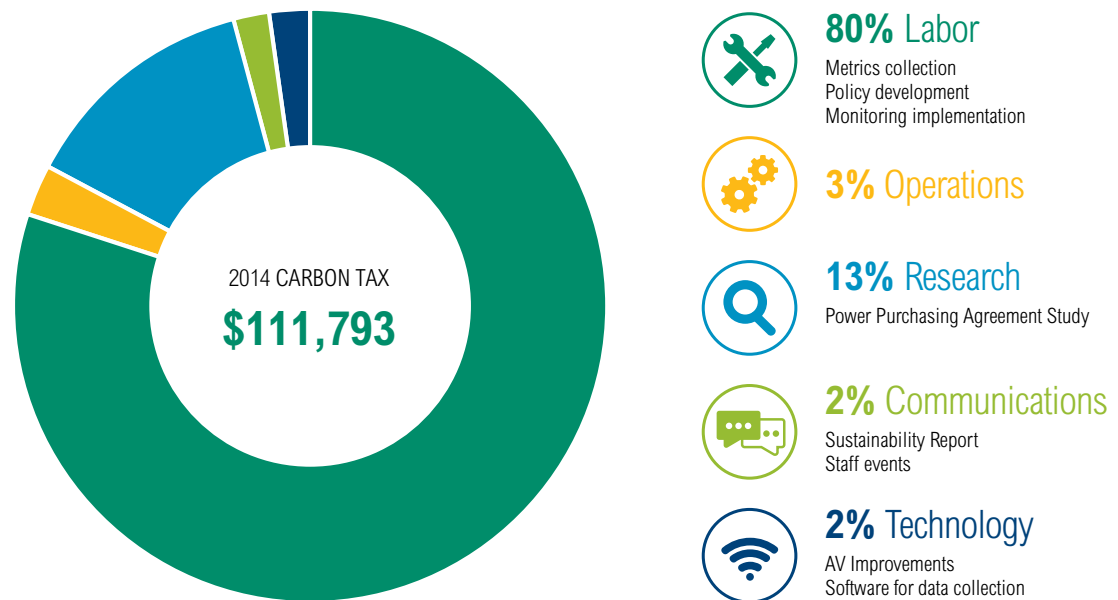


2 | SUSTAINABILITY INITIATIVE GOVERNANCE

The Sustainability Initiative's scope is to collect environmental data and manage operational sustainability efforts. Given the overlap between sustainability and all facets of WRI's operations, Steve Barker, WRI's Chief Financial and Operations Officer, oversees WRI's Sustainability Initiative in addition to the Accounting, Facilities, Grants & Contracts, Human Resources, and IT departments. He reports progress and solicits major decisions from WRI's Executive Team.

WRI's Sustainability Manager is responsible for leading the Sustainability Initiative. In 2013, Laura Draucker served as Sustainability Manager and in 2014, Amanda Stevens served as Interim Sustainability Manager. Moving forward, there will be a transition to a new manager, Shengyin Xu, who will lead a five-year review of the strategy. The 2013–14 team also included: Catherine Easton, consultant (2014–15); Lee Hager, intern (2014–15); Jeanette Frascello, intern (2013); and Jordan Nichols, intern (2013).

Figure 2.1 | WRI's Carbon Tax 2014 Use of Funds



In addition to the Sustainability Manager, consultants, and interns, the Sustainability Team also includes the Sustainability Champions, a voluntary group of staff from various WRI programs that meet routinely and engage on sustainability issues. Their role is to help brainstorm or provide feedback on Sustainability Initiative projects and proposals, pass along feedback from coworkers, and champion the initiative within their own programs.

WRI's Sustainability Information

To ensure accountability and high-quality transparency in line with best practices, WRI publicly discloses its environmental information through:

- [Sustainability At WRI](#) webpage and [Annual Sustainability Report](#)
- [CDP](#) (formerly the Carbon Disclosure Project)

WRI's Carbon Tax

WRI projects are charged \$50 for every metric ton of carbon dioxide equivalent (CO₂e) emitted for their staff's air travel, electricity consumption, and employee commuting. This charge, initially developed to complete WRI's greenhouse gas inventory, was approved by WRI's major funders and incorporated into new contracts as overhead (electricity and employee commuting) and specific charges to programs (business travel). This charge is used for the operating costs of the Sustainability Initiative, including staffing, research, and other activities (see [Figure 2.1](#)). The overall cost of the Initiative represents less than 0.2 percent of WRI's 2014 operating budget of \$66 million.

Reducing anthropogenic greenhouse gas (GHG) emissions, a primary cause of climate change, is crucial to reducing the risk of significant and extreme climate impacts.

3 | WRI'S ENVIRONMENTAL FOOTPRINT

WRI's environmental impacts and its associated operational efforts in accordance with the requirements of the Global Reporting Index (GRI) G.4 reporting standards and disclosures (see [Key Terms](#))

are discussed in this section. WRI tracks energy use, water use, and waste generation in its operational activities. These data are used, along with financial and other activity data, to calculate WRI's annual greenhouse

gas (GHG) emissions profile. However, not every WRI office is included in each reported environmental data category because of a lack of data or data limitations (see Table 3.1). Details about data collection and limitations are included in each subsection.

Table 3.1 | **Status of WRI's Environmental Data Collection by Operational Region**

WRI OPERATIONS	RESOURCE CONSUMPTION			GREENHOUSE GAS EMISSIONS		
	ENERGY	WATER	WASTE	SCOPE 1	SCOPE 2	SCOPE 3
United States (Washington, DC)	Included	Included	Included	Included	Included	Included
China (Beijing)	Included	No Data	No Data	Insignificant	Included	Limited: purchased goods and services; business travel; employee commuting
India (Mumbai, New Delhi, and Bangalore)	Included	No Data	No Data	Insignificant	Included	Limited: purchased goods and services; employee commuting
Brazil (São Paulo)	No Formal Lease	No Formal Lease	No Formal Lease	Insignificant	No Formal Lease	Limited: purchased goods and services; business travel; employee commuting
Indonesia (Jakarta)	No Formal Lease	No Formal Lease	No Formal Lease	Insignificant	No Formal Lease	Limited: purchased goods and services; business travel; employee commuting
Mexico (Mexico City)	<i>Outside the reporting boundary of this report (established FY2015/2016)</i>					
Europe	<i>Outside the scope of this report - no formal lease agreement for office space</i>					
Africa	<i>Outside the scope of this report - no formal lease agreement for office space</i>					

3.1 | Energy

WRI's energy use consists primarily of purchased electricity. Data is collected through a mix of submeters that measure actual electricity use (China and India operations) and estimates using a ratio of occupied space (U.S. operations). Diesel fuel is used to run backup generators; however, fuel use is minimal (5 gallons a year) and considered insignificant.

WRI occupies leased space in commercial office buildings, where electricity is either rolled into lease payments or paid directly. Although data are collected for China, India, and U.S. operations, WRI's energy strategy focuses on U.S. and China operations because these two offices are the largest (and accounted for 76 percent of WRI staff in 2014) and because WRI has the most access and interaction with building management in these locations. As opportunities arise in WRI's smaller offices (less than 25 staff) or as these offices grow, they will be incorporated into the energy strategy. The energy strategy is two-pronged: reducing total energy consumption and improving the sources of energy used through purchasing agreements.

2013-14

Reducing Total Energy Consumption

During amendment of the lease for WRI's U.S. office in Washington, DC, the landlord agreed to install submeters to provide actual electricity usage; all past data for WRI's largest office was calculated using a ratio of WRI's space in the building and likely did not represent actual usage. However, WRI was unable to negotiate a change in the utility payment structure and will continue to pay a percentage of total building consumption. While the new submeters will improve data accuracy, potentially changing annual energy consumption significantly from the prior year, this approach does limit return on investment opportunities for efficiency projects.

Partway through 2014, WRI's staff in Beijing moved to a LEED ID+C: Commercial Interiors V3 Gold certified office space (see [Box 1](#) and [Key Terms](#)), which reduces average daily energy consumption by 75 percent. Shifting partway through the year reduced the energy consumption of the China office by 25 percent and WRI's total energy consumption by 1 percent.

Improving Energy Sources through Purchasing Agreements

WRI receives renewable energy certificates (RECs) (see [Key Terms](#)), purchased on behalf of its U.S. office in Washington, DC from the national REC market. These certificates allow WRI to support renewable energy when onsite renewable energy, such as rooftop solar panels, is not available. A disadvantage of RECs is that they are not associated with the actual energy used by the U.S. office (see [Appendix A: scope 2](#)).

New opportunities for supporting renewable energy have recently become available through technology advances and deregulation of the energy market in Washington, DC. One such opportunity is the direct purchase of offsite renewable energy through power purchase agreements with energy developers and suppliers. These contracts fix long-term renewable energy prices that are below traditional power prices, but they often require a minimum scale to be attractive to energy developers. WRI recently partnered with the NoMa Business Improvement District (BID) to investigate options for joining with other landlords in the neighborhood to make an aggregated renewable energy purchase agreement. If WRI is successful, the joint purchase agreement would help spur new renewable energy development in the Washington, DC region. Added benefits of direct renewable energy purchasing are that it helps drive new renewable projects and aligns with the commitments of the [Corporate Buyers' Principles](#).

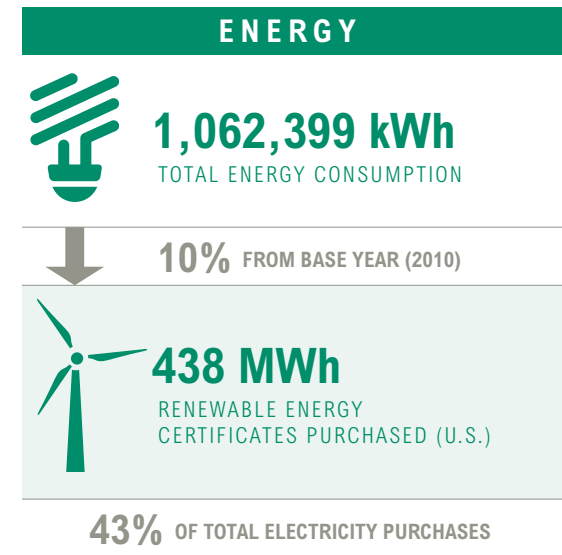
MOVING FORWARD

WRI's U.S. office is located in a commercial office building that was certified LEED O+M: Existing Buildings V3 Gold in 2011 (see [Box 1](#) and [Key Terms](#)). As part of the rating program, the entire building will undergo re-certification in 2016. Further, in 2015, the WRI office spaces began a commercial interior renovation project that will pursue LEED ID+C: Commercial Interiors certification (see [Box 1](#) and [Key Terms](#)) when it is complete in April 2016. Combined, these two certifications indicate that both the building and the interior fit-out of the WRI office space are resource efficient. Specifically, the WRI office space renovation includes updated lighting, occupancy sensors, and energy efficient appliances that will reduce total electricity consumption. In addition, new submeters allow WRI's Facilities Director and Sustainability Manager to better track the impact and process of future efficiency and conservation efforts.

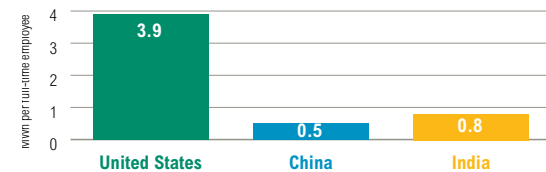
Pursuing renewable energy purchasing will continue to be a priority for WRI, as it works with the NoMa Business Improvement District and other partners. WRI has commissioned a study of small-scale power purchase agreements (see [Key Terms](#)) and is moving forward with educational sessions with building management and other neighborhood companies.

WRI operations in Indonesia and Brazil have recently moved into permanent offices and staff in those locations is coordinating with the Sustainability Initiative. Energy use data for both offices should be available for 2016 reporting.

AT A GLANCE | 2014



MWh of Electricity Consumed per full-time employee, 2014



3.2 | Water

WRI is currently not able to collect water and wastewater information (see 3.3 | Waste) for most of its offices. Current data (see At a Glance) includes only the U.S. office and is derived from a ratio of occupied space to total building usage. Currently, there are no goals for water use because in-office water use is confined to landscaping, kitchen, and other domestic uses controlled by building management decisions; however, WRI continues to monitor water use as a potential target opportunity.

2013-14

WRI's U.S. office is located in the Chesapeake Bay watershed, which is prone to dead zones—areas of low oxygen content—caused by algae blooms. These blooms are the result of excess nutrients flowing into the watershed through direct discharges from wastewater treatment plants and runoff from farms and pavement. These nutrients—primarily nitrogen and phosphorous—have placed the bay on the [U.S. Environmental Protection Agency's List of Impaired Waters](#).¹

From 2010 to 2014, WRI's nitrogen footprint (the amount of nitrogen released by WRI activities into local waterways leading to the bay) decreased by 11 percent. Reductions in water outflow and energy use have driven down WRI's total nitrogen impact on the Chesapeake.² Although WRI's contribution

to the Chesapeake nitrogen load is minimal (less than 1 percent of the total nitrogen reportedly released in the watershed in 2014 according to [the Chesapeake Bay Program](#)), its reduction efforts as well as its work on nitrogen loads will help improve the quality of this important watershed. (See WRI's work on [the Chesapeake Bay and nutrient trading](#) for more information).

MOVING FORWARD

As part of its effort to improve its water metrics, WRI is trying to expand data collection on water consumption, either as a ratio of occupied space (as in the U.S. office) or as more accurate submetered data, from WRI's international offices over the next two years.

As WRI's staff continues to grow, overall water consumption will increase without conservation efforts. This is a particular concern for operations in Brazil, China, and India, which are in water-stressed regions or areas where water quality is an issue. As WRI expands its international offices, it will continue to monitor each office and determine policies and projects as needed. Future renovation projects following LEED standards will also lead to greater efficiencies in water use. WRI's nitrogen footprint is heavily influenced by electricity consumption and local travel. As efforts are made to meet the 2020 targets in these areas, the total nitrogen footprint will also decrease (see 3.4 | [GHG Emissions](#)).

AT A GLANCE | 2014

U.S. OFFICE ONLY



1.14 M GALLONS

WATER CONSUMPTION (MUNICIPAL)



28.4% FROM BASELINE



21.4 GALLONS

PER SQ. FT.

WATER CONSUMPTION INTENSITY

0%

RECAPTURED THROUGH GREY WATER SYSTEMS



1,334.6 POUNDS

NITROGEN RELEASED TO
THE CHESAPEAKE BAY



11% FROM BASELINE

3.3 | Waste

Waste generation at WRI's U.S. office is monitored with the help of building management. Waste and recycling bins are collected at a central point for the building and transported offsite to be weighed and sorted by material. Building data are made available monthly to help building management respond to unexpected changes in total recycled and total landfill volumes. WRI determines its waste volumes using a ratio based on occupied space in the building.

2013-14

The average recycling rate for the entire building dropped from 89 percent to 63 percent between 2012 and 2013 while total waste volume increased. Although not a perfect measure of the recycling habits of the WRI U.S. staff because it doesn't measure how much of the total material is actually recyclable, the data did flag waste and recycling management as a potential issue. To understand and address this, WRI's Facilities Director and Sustainability Manager requested meetings with building management and updated signs and other communications to staff and visitors.

Despite communication efforts, recycling rates fell further to 55 percent of total waste generated in 2014. This issue was reviewed with building management, in the lease amendment process. With building operations, WRI launched a recycling review process for the building to monitor waste outflow from WRI events—its largest source of waste generation. During large events, guests unfamiliar with building policies might use the wrong waste bins or overfill some bins. After tracking the waste generated at several events and identifying the most common materials placed in the incorrect bins, WRI set up meetings with the building janitorial and waste hauling services to discuss how we could reduce contamination by purchasing different event materials and improving communication. This approach improved recycling performance for individual events but did not impact the building recycling data, indicating that there is a larger communication issue. Our waste management communication did not keep pace with the influx of new staff to WRI's operations, resulting in a lack of awareness of building recycling policies.

Because of WRI's new U.S. office lease, it has more opportunity to engage with building management and associated vendors to update building policies and promote education.

The recycling policies were further challenged by a change in waste management vendors that went unnoticed during a transition between building management companies. The new vendor uses different standards for recyclable material—items previously considered recyclable are no longer accepted and vice versa, causing confusion and impacting the building’s recycling data.

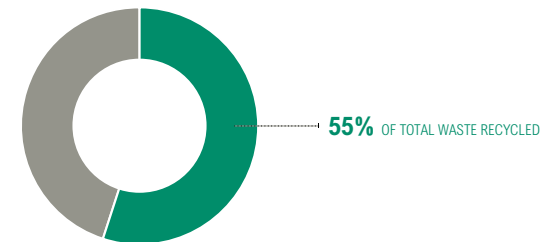
MOVING FORWARD

WRI will communicate more closely with building vendors to ensure it is acting on the most recent information. In addition, WRI is educating the U.S. staff on new recycling policies and tracking implementation and engagement, which will take significant efforts before results are visible. Because of WRI’s new U.S. office lease, it has more opportunity to engage with building management and associated vendors to update building policies and promote education.

The WRI China office is now able to collect information on paper recycling and general waste generation in its newly renovated space and will include these data in subsequent reports as well as implement reduction strategies. WRI will review options for data collection from additional leased space for the Brazil and Indonesia offices, as well as continue efforts to capture waste generation information for its India operations.

AT A GLANCE | 2014

U.S. OFFICE ONLY



98 lbs. OF WASTE GENERATED ANNUALLY
PER FULL-TIME STAFF

3.4 | Greenhouse Gas Emissions

In 2010, WRI leadership approved three absolute reduction targets around greenhouse gas (GHG) emissions:

- **50 PERCENT REDUCTION** in emissions from purchased electricity
- **20 PERCENT REDUCTION** in emissions from business travel
- **20 PERCENT REDUCTION** in emissions from all other scope 3 sources

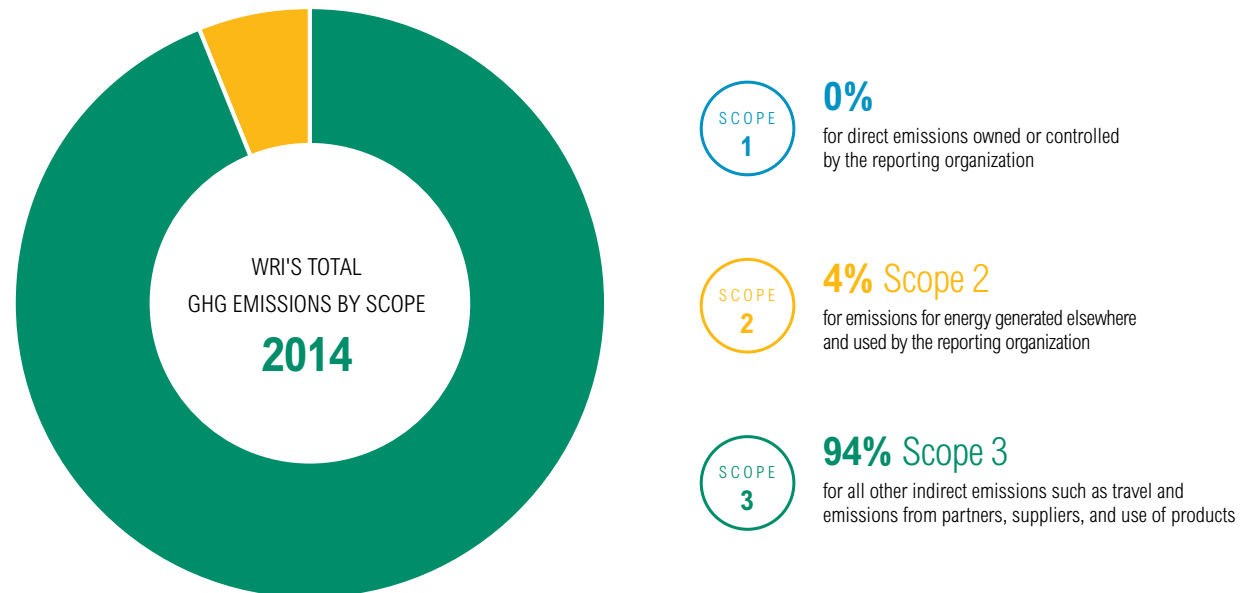
For details on how WRI set these targets, see [WRI's 2010 Organizational Greenhouse Gas Inventory](#). The following sections present an overview of WRI's complete emissions inventory as well as details on progress toward GHG targets.

WRI follows the Greenhouse Gas Protocol's reporting standards for emissions calculations and disclosures (see [Key Terms](#)). Emissions are reported under three scopes: scope 1 for direct emissions owned or controlled by the reporting organization, scope 2 for emissions for energy generated elsewhere and used by the reporting organization, and scope 3 for all other indirect emissions such as travel and emissions from partners, suppliers, and use of products. WRI's energy use under the three scopes is shown in Figure 3.1. Note that 94 percent of total emissions is in scope 3, while there are minimal emissions in scope 1 and 2. See [Appendix A](#) for the

detailed scope and boundary of WRI's GHG inventory and [Appendix B](#) for the inventory methodology, assumptions, and data limitations. WRI's [full activity data and associated calculations](#) are available online. WRI's 2013 and 2014 GHG inventories generally include all WRI offices; however, data from

individual offices may be excluded from certain calculations because of limitations in collection, which is noted. All emissions are reported in metric tons of carbon dioxide equivalents (metric tons CO₂e).

Figure 3.1 | WRI's Total GHG Emissions, by Scope, 2014



DATA COLLECTION

In 2013 and 2014, WRI added the following items to its data collection efforts:

- Business travel and employee commuting data from the Brazil and Indonesia offices
- Purchases made on corporate credit cards
- Scope 2 market-based calculations in line with [new guidance from the GHG Protocol](#) for all offices included in scope 2, however WRI will continue to include final scope 2 numbers using the location-method for the 2013-2014 period, which does not take into account renewable energy purchases.³

MOVING FORWARD

The primary goals for WRI's 2015 inventory are to:

- Improve data collection, specifically for electricity consumption by operations in Brazil and Indonesia
- Improve scope 3 calculations by including business travel by India staff
- Complete a strategic five-year review of GHG targets and progress toward them

AT A GLANCE | 2014

515.8 METRIC TONS CO₂e

TOTAL SCOPE 1 & 2 (LOCATION-BASED) EMISSIONS



15.2% FROM BASELINE

8,144.8 METRIC TONS CO₂e

TOTAL SCOPE 3 EMISSIONS



92.1% FROM BASELINE

23.0 METRIC TONS CO₂e

EMISSIONS PER FULL-TIME EMPLOYEE



10.2% FROM BASELINE

234.1 METRIC TONS CO₂e

EMISSIONS PER WRI OUTCOME⁴

3.4.1 | Purchased Electricity (scope 2)

WRI's emissions from purchased electricity are calculated using the energy data collected from its operations. Operations in the United States, China, and India are included in the current inventory. Operations in Brazil and Indonesia are included in the total inventory profile; however, no electricity data are available for fiscal years 2013 and 2014 because neither office had a formal lease agreement. Green e-certified RECs are purchased from WGL Energy by WRI's U.S. landlord as part of its lease agreement (see [Appendix B: Scope 2](#) for details on WRI's renewable energy certificates).

2013–14

WRI's emissions from purchased electricity decreased by nearly 14 percent since 2010, despite the addition of three India offices to its footprint. The decrease in electricity-related emissions is primarily due to energy conservation efforts by both WRI and building management for U.S. and China operations.

The energy strategy is two-pronged: reducing total energy consumption and improving the sources of energy used through purchasing agreements.

Emissions from purchased electricity for WRI's China operations dropped nearly 36 percent from 2013 to 2014 because the China staff moved to a LEED ID+C: Commercial Interiors Gold certified office space. WRI's U.S. office, its largest, also decreased total consumption per square foot through updated heating and ventilation systems installed by the building management in preparation for its LEED O+M: Existing Buildings re-certification (see [Box 1](#) and [Key Terms](#)).

WRI has included both location- and market-based calculations for purchased electricity, in accordance with the Greenhouse Gas Protocol's [scope 2 guidance](#). The location-based method accounts for actual emissions related to electricity received through the grid while the market-based method accounts for contractual agreements for renewable energy. WRI's market-based calculations use the location-based method for the China and India operations because no market-based instruments were purchased for those offices. Calculations for U.S. operations include RECs purchased on behalf of WRI by the landlord. See [Appendix B](#) for more information on these offsets.

MOVING FORWARD

While gains have been made to meet the 2020 purchased electricity target with conservation and efficiency improvements, projections show that because total office space will continue to increase between now and 2020 and with limited remaining energy efficiency improvement options, the targeted 50 percent absolute reduction will not be reached through conservation means.

Thus, options are being pursued for energy purchasing that will directly impact the grid and reduce WRI's market-based emissions—going beyond the current purchase of RECs for U.S. operations. See [Section 3.1 | Energy](#). WRI is also investigating ways to support renewable energy options for staff at home. While this falls outside the boundary of WRI's own emissions and would not count toward its purchased electricity target, such a project is aligned with the values of the Sustainability Initiative. Look for the next sustainability report for updates on these efforts.

AT A GLANCE | 2014

Target: 50% reduction from 2010 emissions levels by 2020

515.7 METRIC TONS CO₂e

TOTAL EMISSIONS (LOCATION-BASED)

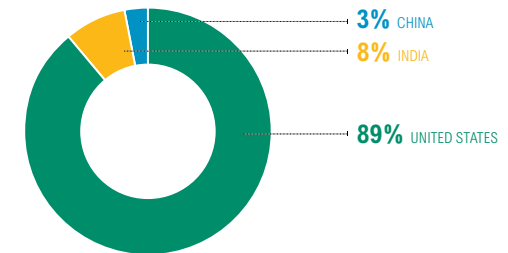


12.9% FROM BASELINE

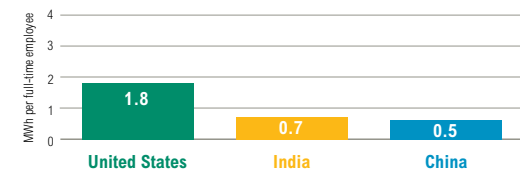
405.1 METRIC TONS CO₂e

TOTAL EMISSIONS (MARKET-BASED)

Distribution of emissions by operations (location-based), 2014



Emissions per full-time employee by operations (location-based), 2014



3.4.3 | Partners and suppliers (scope 3, category 1)

WRI includes in its emissions inventory the emissions associated with the goods and services purchased from vendors. In addition, it considers the activities and emissions of partner organizations and nonprofits to which it has given subgrants, as part of its operational control.

WRI calculates its value-chain emissions using financial data (amount spent with each supplier or subgrantee) to estimate its GHG emissions from partners and suppliers (for scope 3) using an environmental input-output model. This approach is consistent with the GHG Protocol if emissions data from specific suppliers are unavailable. No primary data are included in the 2013 or 2014 inventories. For more information see [Appendix B: Methodology](#).

2013–14

Emissions have grown 150 percent since 2010, as WRI's overall budget has grown. This growth makes partners and suppliers WRI's most challenging targets, because it has no direct control over their activities, nor any primary data reflecting those activities. To better understand the challenges and opportunities of collecting primary supplier data, WRI ran two pilots in 2012 and 2013 (see [2012 Greenhouse Gas Inventory and Sustainability Report](#)). Neither pilot was scalable to the level needed. One approach that involved coaching partners on GHG accounting was time intensive and the other on surveying suppliers did not yield high response rates. Thus new approaches for both relationships were rolled out during 2014 as described below.

FOR PARTNERS: WRI's Sustainability Team and Grants & Contracts Department added a new section to a document on financial information and governance structure that new partners must complete before subgrants are released. This new section, the sustainability questionnaire, asks potential partners whether they complete a GHG inventory and whether they are willing to share their data

or learn more about GHG accounting. The goal is to develop partners' GHG awareness and encourage them to take action on GHG emissions in their own operations and to share their primary data with WRI. At this time, the questionnaire responses do not impact partnering decisions. The sustainability questionnaire is sent only to new partners or partners renewing contracts. Using an existing avenue of communication rather than developing a separate approach should produce results over time.

FOR SUPPLIERS: To avoid asking suppliers to fill out yet another sustainability survey, a study was launched to review options to request data jointly with other customers, both fellow nonprofits and companies. Established standard supplier disclosure requests typically yield the highest response rate from vendors. However, to participate in a group disclosure request and maximize impact, mobilizing both WRI procurement staff and supplier account managers was necessary. The first steps toward group disclosure requests were meetings between the Sustainability Team and primary procurement staff to understand their perspective on their relationships with WRI's core suppliers.

MOVING FORWARD

PARTNERS: Thirty-two organizational assessment documents with sustainability questionnaires have been collected and the Sustainability Team is reviewing responses to develop a two-pronged engagement approach:

- For partners already completing GHG inventories, the team hopes to identify the best means of sharing and storing GHG data that minimizes the time requirements for WRI and partner staff
- For partners interested in GHG accounting, the team hopes to develop a webinar or informational packet geared toward nonprofits that builds on WRI's experiences with the Greenhouse Gas Protocol trainings and its own inventory process

SUPPLIERS: In 2015 WRI became the first nonprofit to join [CDP's Supply Chain Program](#). CDP's program coordinates the supplier disclosure needs for climate and other critical environmental data of more than 72 companies, plus 1 government, 1 industry group, and now a nonprofit. This approach provides suppliers with a consolidated request that minimizes response time because one response is shared with all requesting companies. In addition, CDP's program gives WRI strength in numbers, telling suppliers that climate and water issues are important to their customers. Through the program, WRI sent out data requests to 50 suppliers. See [GreenBiz blog co-written with CDP](#).

EMISSIONS ATTRIBUTED TO WRI'S KEY SUPPLIER AND PARTNER SECTORS (METRIC TONS CO ₂ E), 2014	
Social advocacy organizations	2,153.9
Environmental and other technical consulting services	1,077.7
Higher education	1,067.2
Civic, social, professional, and other similar organizations	500.5
Hotels and motels	232.8
Specialized design services	178.3
Management consulting services	139.5
Other computer related services	88.6
General federal nondefense government industry	80.6
Photographic services	77.8

AT A GLANCE | 2014

Target: 20% reduction from 2010 emissions levels by 2020

6,464.3 METRIC TONS CO₂e

TOTAL EMISSIONS



150% FROM BASELINE

167.9 METRIC TONS CO₂e

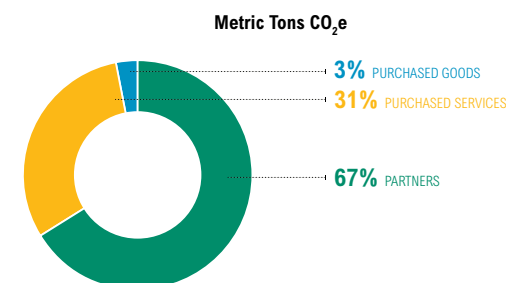
(PURCHASED GOODS)

1,972.0 METRIC TONS CO₂e

(PURCHASED SERVICES)

4,324.4 METRIC TONS CO₂e

(PARTNERS)



3.4.2 | Business travel (scope 3, category 6)

WRI's business travel emissions include air and rail trips made by WRI staff or paid for with WRI funds. This scope was chosen because WRI has operational control over these trips, which include trips taken by WRI's partners and other experts on WRI's behalf or for WRI events (see [Appendixes A and B](#) for more details). Data are collected from all offices except India through a centralized travel agency, with which WRI is working to set up a centralized database.

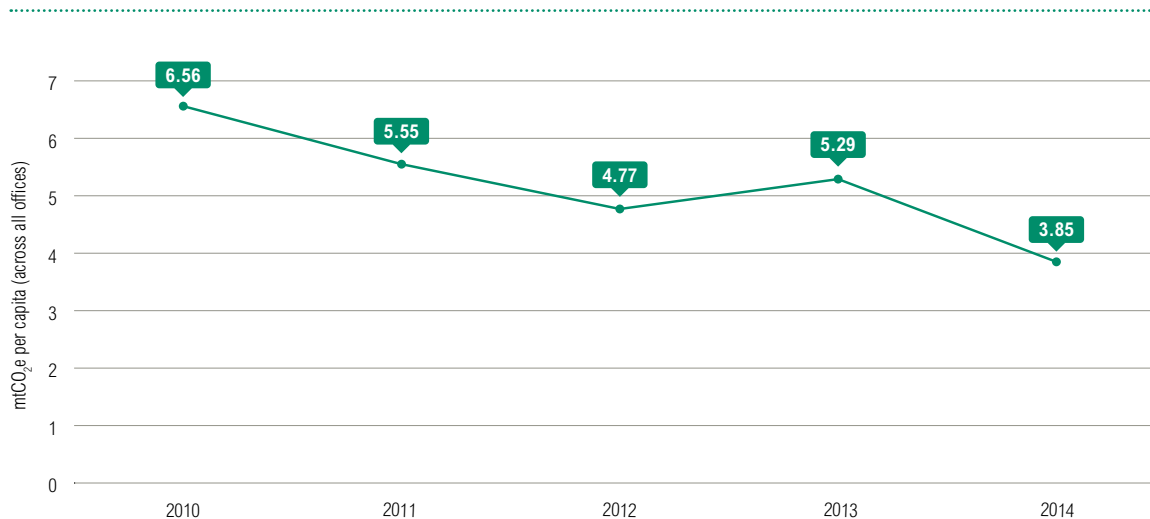
2013–14

WRI is not on track to meet its business travel target, with 2014 emissions 16 percent **higher** than in 2010. During the same time period, WRI's staff has almost doubled, with most of the growth in new international offices. However, emissions per capita have declined, indicating that while emissions are growing, business travel is not outpacing operational growth (see [Figure 3.1](#)).

WRI assumed that adding international offices would help limit long-haul trips and offset some impacts of WRI's growth because staff would be available for regional fundraisers and events. However, regardless of location, staff members still travel long distances for work-related activities. The average flight distance for staff in WRI's newer offices (Brazil, China, India, and Indonesia) is not significantly shorter (less than 8 percent) than the flight distances for U.S.-based staff. In addition, flights from the United States to regions with WRI offices have not significantly declined.

Travel is one of the most challenging emission sources to reduce. Capping travel expenses did not impact emissions because of a low correlation between efficient itineraries and cost. The attempt also produced staff concern about policies that could restrict last-minute travel and reduce WRI's ability to be flexible in responding to unexpected environmental crises (See the [2012 Annual Sustainability Report](#)). The next approach was to build awareness and improve business travel efficiency through voluntary efficiency measures made before or during booking. These voluntary measures would increase the efficiency of WRI's travel when not economically prohibitive (e.g., combining trips, diverting speaking engagements to colleagues already at the location, and prioritizing direct travel) and could decrease travel emissions by about 10 percent, making changes in travel booking practices a viable means of meeting WRI's 2020 target.

FIGURE 3.1 | BUSINESS TRAVEL EMISSIONS PER CAPITA (ALL OFFICES), 2010–14



While the guidelines may not be responsible for the reductions, in the quarter following the release and promotion of WRI's internal guide to better business travel, growth in travel emissions stalled for the first time in two years and total travel emissions fell by 1 percent between 2013 and 2014.

MOVING FORWARD

Despite the emissions stall in 2014, the growth in business travel emissions will be difficult to overcome.

To determine whether increased awareness of other staff members' travel would help limit unnecessary overlap, staff has been encouraged to join TripIt for Teams, a travel management program. This tool designs customized calendars that display the travel plans of team members, allowing staff to check coworker travel plans before making travel commitments. The Sustainability Team is tracking whether coworker travel awareness is effective in reducing total number of trips by helping coordinate and minimize the number of staff that may need to commit to a specific business trip.

The efforts of WRI and its partner companies show that while voluntary behavior change can make some improvements, it will not be sufficient to make deeper emissions cuts in emissions. WRI is undergoing an internal debate on how best to proceed. The coming five-year review of WRI's sustainability efforts will examine the concerns about business travel and discuss with peer organizations and companies the best ways to manage business travel without losing the flexibility to respond to unexpected environmental crises.

AT A GLANCE | 2014

Target: 20% reduction from 2010 emissions levels by 2020

1,448.7 METRIC TONS CO₂e
TOTAL EMISSIONS

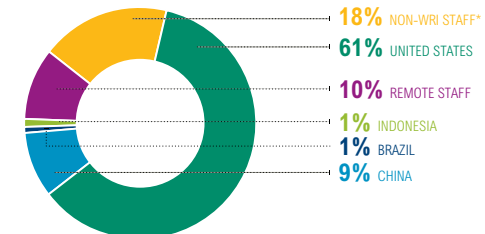
↑ 15.7% FROM BASELINE

8,132,440
DISTANCE TRAVELED (MILES)

 **8,119,106 MILES BY AIR**

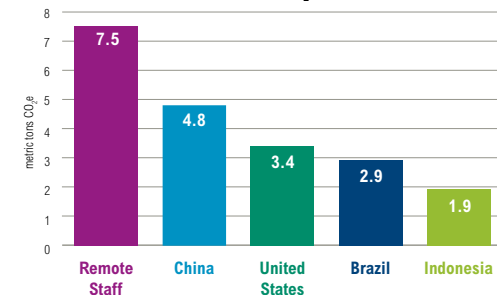
 **13,334 MILES BY RAIL**

WRI Business Travel Emissions



*Includes WRI board members, experts and partners, and relocation of WRI staff family members

WRI Travel Emissions per Full-Time Employee (metric tons CO₂e)



4 | CROSS-INSTITUTIONAL EFFORTS

During the 2013-2014 period, three primary cross-institutional sustainability projects were implemented—a paper product purchasing guideline, plant-based catering policy, and the continuation of greening WRI office spaces.

4.1 | Purchasing

Paper Products

In 2012, when WRI tested fiber samples of paper products purchased, it found controversial material (i.e., fibers from illegal or unsustainable sources) in its supply chain (see [2012 Annual Report](#) and [Blog](#)). To limit such material, WRI referred to [Sustainable Procurement of Wood and Paper-based Products](#), by its Food, Forest, and Water team, to develop a list of best practices for sourcing and manufacturing of paper products. With this list, WRI developed and piloted purchasing principles for WRI's U.S. operations. These standards—related to source materials and the production of the final product—are available at the [WRI website](#).

After a successful pilot with office suppliers and printers, WRI is working to achieve 100 percent compliance with the new criteria. Additionally, it plans to implement the criteria at international offices over the coming years (See [WRI website](#)).

In 2014 (U.S. office only)

- 8,389 lbs of paper purchased, of which 6,583 lbs (68 percent) had post-consumer recycled content.
- 54 percent of publication printing and 99 percent of copy paper purchased met the criteria set for U.S. operations.

Catering

WRI's U.S. office follows the [Sustainable Event Policy](#), which provides a guideline for selecting plant-based foods for WRI hosted events and meetings. To increase the ease of following the policy, a pre-screened list of caterers were vetted against three categories of criteria:

- **Operations:** policies and performance around water, energy, and waste
- **Ingredient sourcing:** local, organic, and seasonal
- **Other:** third-party sustainability certification or social programs such as food donations

WRI hopes to increase the stringency of the criteria as sustainable operations, ingredient selection, and green certifications among catering vendors grow (See [WRI website](#)).

Green Office

The U.S. Energy Information Administration estimates that in 2014, commercial and residential **buildings contributed to 41% of the total energy consumed** across sectors.⁵ As such, the design and operation of buildings can have a large impact on energy use. WRI has leveraged the U.S. Green Building Council's LEED rating program to create green office spaces. The U.S. office is located in a commercial building that was LEED O+M: Existing Buildings Gold certified in 2011 and is currently in the process of being re-certified. Further, in 2015, the U.S. office began a commercial interior renovation project that will be certified when it is complete in April 2016. The two certification processes ensure that both the commercial building and the WRI office spaces are efficient in the use of energy, water, and material resources. In addition, the lease extension for the U.S. office includes sustainability provisions such as increasing bike storage, installing electricity submeters, and collaborating to improve recycling rates and share sustainability best practices among all tenants.

Furthering WRI's use of the LEED rating program, the WRI China office completed a LEED ID+C: Commercial Interiors Gold certified office space in 2014 (See [Box 1](#)).

Box 1 | WRI China's LEED Renovation Project

WRI's office in Beijing, China is a LEED ID+C: Commercial Interiors Gold certified project. The LEED rating system, developed by the U.S. Green Building Council, is one of the foremost programs for buildings, homes, and communities that are designed, constructed, maintained, and operated for improved environmental and human health performance. The office renovation, completed in 2014, is certified for incorporating environmental features into the design, including:

- Initial siting for the office space to ensure access to public transportation
- Highly efficient lighting fixtures that reduced power consumption by 46 percent
- 100 percent Green Guard Certified furniture while reusing 70 percent of the furniture from the old office to limit toxic emissions

The project team also prioritized staff health by including an extensive office air-purification system to combat Beijing's air pollution.

“ I [had] no idea what LEED was, but now I [have] come to realize it is a high recognition of WRI's concern for environmental protection and care for its employees' [health] ”

- **Zhufang Shi**, *Project Coordinator*

Many thanks to WRI China's Office Renovation team led by Victoria (Qinghong) Wang.

4.2 Engagement And Awareness Building

Staff Engagement

Measuring Individual Success. Every action, from small to large, rolls up into WRI's total GHG emissions footprint. To better connect staff members to WRI's sustainability goals, each individual staff member should be engaged in reducing their environmental impact at work. Starting in 2015, staff performance reviews will include evaluations on sustainable behaviors in the office as part of an employee's performance review. At this time, WRI has not specified what behaviors staff members are expected to perform and is collecting data on common actions and staff perspectives. However, sustainable behaviors and goals will relate to the areas of recycling, paper and printing use, business travel booking, and purchasing.

The Sustainability Managers Round Table

The Sustainability Managers Round Table (SMRT) is a network of sustainability managers and related staff from nonprofits and development banks primarily in the United States and Europe. Started in 2012, SMRT holds webinars to share knowledge on issues related to sustainable operations and management. Past topics have included GHG accounting, energy purchasing approaches, sustainable workplace designs, and staff and stakeholder engagement. Staff members who work or volunteer on efforts related to nonprofit sustainability efforts can request membership by emailing sustainability@wri.org.

Student Projects

London School of Economics. WRI staff participated in a survey designed by London School of Economics Masters' degree candidate and WRI consultant, Catherine Easton, for her dissertation, "Walking the Talk: A Case Study of Corporate Social Responsibility, Employee Engagement, and NGOs." The survey identified gaps between WRI's sustainability efforts and staff engagement and awareness, particularly around staff motivation on the three GHG emissions reduction targets of the Sustainability Initiative. Based on the results, the student project provided WRI with targeted recommendations for improved internal and external communications. These recommendations were used during the revision of WRI's sustainability webpages and staff education, and they justified the inclusion of the sustainable behavior competency question in WRI's annual staff performance reviews.

5 | CONCLUSION

The past five years have taught WRI staff about the challenges to integrating sustainability into operations. While the challenges are many, so are the opportunities for impact. Continually pushing for progress is integral to creating a more efficient and effective organization.

The Sustainability Initiative has expanded significantly since its goals were revised in 2010. Beyond climate change targets, WRI is now working to collect and better understand its environmental data (such as waste generation and water use), address the sustainability of its events, help staff members behave more sustainably, and improve the sustainability of its procurement. Additionally, new international WRI offices are being included in sustainability efforts. All this falls within WRI's vision of "walking the talk" of WRI's research and has been brought forward by WRI's operations and research teams.

To reassess the expansion of WRI's sustainability work and fully engage WRI's key stakeholders—staff, partners, and funders—the Sustainability Team will conduct a strategy refresh that draws on lessons learned over the past five years as well as lessons learned from others engaged in operational sustainability. The following sustainability refresh strategy is proposed for WRI:

- Stakeholder reviews—staff, partners, and funders—to update WRI's vision of a sustainable nonprofit
- Materiality assessment (See [Key Terms](#)) for the institute and its network
- Update existing targets and set new targets as needed based on stakeholder review and materiality assessment

- Develop short-term and long-term strategies to achieve WRI's sustainability goals
- Develop metrics to track success and integrate it with other measures of WRI success

The Sustainability Team intends to document WRI's strategy refresh process and share the final approach and updated vision and goals in WRI's next Sustainability Report.

Acknowledgments

This annual report has benefited from the peer review and helpful feedback of numerous WRI colleagues: Mary Sotos, Eliot Metzger, Kevin Moss, Thomas Damassa, Samantha Putt del Pino, Yasmine Williams, and Shengyin Xu.

APPENDIX A: WRI GREENHOUSE GAS INVENTORY SCOPE, BOUNDARY AND RESULTS, 2013 AND 2014

1. WRI Emissions Inventory Scope

The following disclosures are consistent with the reporting requirements of the Greenhouse Gas Protocol's [Corporate Value Chain \(Scope 3\) Accounting and Reporting Standard](#).

Table A1 | **WRI Greenhouse Gas Inventory Scope**

DESCRIPTIVE INFORMATION	ORGANIZATION RESPONSE
The reporting period covered	Fiscal Years 2013 (October 1, 2012 to September 30, 2013) and 2014 (October 1, 2013 to September 30, 2014)
Chosen consolidation approach ^a	Operational control
Description of the businesses and operations included in the organizational boundary	<ul style="list-style-type: none"> World Resources Institute (WRI) is a global organization with staff around the world in a variety of working environments. Operational control is defined to include all offices with five or more WRI staff in a shared location. All offices under WRI's operational control report scopes 1 and 2 emissions. The 2013 and 2014 inventories included the global office in Washington DC, the China office in Beijing, and India offices in Bangalore, Mumbai, and New Delhi. All offices (or individual staff) considered outside WRI's operational control are included as part of scope 3 emissions. Data limitations for offices under WRI's operational control are listed in Appendix B for each calculation method. For the 2013 and 2014 inventories, this includes the Brazil office in São Paulo; the Indonesian office in Jakarta; and all remote staff.
The year chosen as base year and rationale for choosing the base year	WRI has selected a single year (2010) as the base year for its GHG inventory. While WRI had reduction targets that predate 2010, the Sustainability Initiative and WRI's management decided to establish new reduction targets based on the results of the first full value chain inventory, completed in 2010. See Appendix B for base year emissions.
The chosen base year emissions recalculation policy	<ul style="list-style-type: none"> WRI will recalculate its base year emissions if there are significant changes to its GHG inventory following the guidance given in the GHG Protocol Corporate Standard and Scope 3 Standard. Significant is defined as a change or series of changes that impact the base year inventory by more than 5 percent. In the base year (2010), only WRI's global office and China office met the requirement for significant WRI locations and were included in the inventory. WRI considers new data from WRI offices created after 2010 as natural growth and did not recalculate the base year. While there were changes in methodology and data quality in the 2013 and 2014 GHG inventories, these did not result in a base year recalculation because the cumulative changes each year did not meet the requirements for recalculation

Note:
 a. "Consolidation approach" refers to the method chosen to determine which sources of emissions are included in the GHG inventory, as defined by the GHG Protocol Corporate Standard and Corporate Value Chain (Scope 3) Accounting and Reporting Standards. More information can be found in Chapter 3 of the Corporate Standard and Chapter 5.2 of the Scope 3 Standards.

2. Boundary of WRI's Reported Emissions

Table A2 | **Status of Emission Sources in WRI's Greenhouse Gas Inventory**

● = Calculated ● = Accounted for in category 1 ● = Accounted for in scope 1&2 ● = Not applicable

EMISSION SOURCE	STATUS	EXCLUSIONS ^A
SCOPE 1		
Direct emissions from owned/controlled operations	●	Scope 1 emissions from WRI's U.S. office (largest office) account for <1 percent of WRI's total inventory; therefore, it is assumed that scope 1 emissions from other (smaller) WRI operations would be insignificant.
SCOPE 2		
Indirect emissions from the use of purchased electricity, steam, heating, and cooling	●	Emissions from purchased electricity consumed by WRI offices without a formal lease or ownership agreement for their space. These spaces are considered outside of WRI's established operational scope.
SCOPE 3		
Category 1: Purchased goods & services	●	<ul style="list-style-type: none"> ■ Emissions associated with individual vendor payments totaling less than \$6,000 (500+ payments), represent less than 4 percent of total spend, would be time consuming to account for and deemed insignificant. ■ Emissions associated with purchases made on the corporate credit card account for our 2013 inventory (not 2014), as individual purchases could not be disaggregated.
Category 2: Capital goods	●	Limited capital good purchases aggregated with Category 1.
Category 3: Fuel- and energy-related activities	●	Upstream emissions for diesel fuel: the combustion of diesel accounted for in scope 1 is minimal so we can assume that the upstream emissions (~20 percent of total diesel lifecycle emissions) are insignificant.
Category 4: Upstream transportation & distribution	●	Limited sources of upstream transportation and distribution; difficult to aggregate from category 1 data.
Category 5: Waste generated in operations ^b	●	We estimate emissions from waste generated by WRI Brazil, WRI Indonesia, WRI India, and WRI China as less than 1 percent of the total inventory, thus they were excluded given the challenges and costs associated with data collection.
Category 6: Business travel	●	
Category 7: Employee commuting	●	

Table A2 | **Status of Emission Sources in WRI's Greenhouse Gas Inventory (continued)**

● = Calculated ● = Accounted for in category 1 ● = Accounted for in scope 1&2 ● = Not applicable

EMISSION SOURCE	STATUS	EXCLUSIONS ^A
SCOPE 3		
Category 8: Upstream leased assets	●	All WRI office space is leased but we consider the emissions to be within our operational control based on lease type.
Category 9: Downstream transportation & distribution	●	Limited sources of downstream transportation; difficult to aggregate from vendor data used for category 1.
Category 10: Processing of sold products	●	Processing of WRI's sold products (publications) through activities such as printing were accounted for in Category 1. It is not possible to aggregate the data between services.
Category 11: Use of sold products	●	Sold products (publications) do not use energy or emit GHGs during use.
Category 12: End-of-life treatment of sold products	●	
Category 13: Downstream leased assets	●	WRI does not lease assets to other entities.
Category 14: Franchises	●	WRI does not own any franchises.
Category 15: Investments	●	WRI does not have any investments required by the standard (e.g., equity, debt, or project finance). We are working to integrate sustainability considerations into WRI's endowment management and will consider how this impacts WRI's emissions profile as the project proceeds.

Note:

- a. Exclusions are purposefully omitted from GHG emission sources because of their insignificance and are distinct from data or sources that are not included for reasons of data quality concerns or availability. Please review our methodology and approach for each emission source to learn about WRI's inventory data limitations.
- b. WRI does not use biogenic fuels in operations and biogenic emissions are applicable to scope 1. Scope 3, cat. 5 (waste generated in operations) does include food and paper waste that is subsequently treated, resulting in biogenic CO₂ emissions in local landfills. However, the data used to estimate category 5 does not disaggregate between biogenic and nonbiogenic waste. Therefore, biogenic emissions associated with waste treatment is included as part of the scope 3 emissions listed in part 2.

3. WRI Greenhouse Gas Emissions Results, 2013 and 2014

The following information is also reported publicly to CDP.

Table A3 | **Greenhouse Gas Inventory Results, 2013**

GHG EMISSIONS	CARBON DIOXIDE (CO ₂)		METHANE (CH ₄)		NITROUS OXIDE (N ₂ O)		HYDROFLUORO-CARBONS (HFCs)		PERFLUOROCARBONS (PFCs)		SULFUR HEXAFLUORIDE (SF ₆)		TOTAL EMISSIONS
	mt CO ₂	mt CO ₂ e	mt CH ₄	mt CO ₂ e	mt N ₂ O	mt CO ₂ e	mt HFCs	mt CO ₂ e	mt PFC	mt CO ₂ e	mt SF ₆	mt CO ₂ e	mt CO ₂ e
Scope 1	0.24	0.24	3.6e-07	10.0e-06	7.5e-09	2.0e-06	4.6e-6	0.007	N/A	N/A	N/A	N/A	0.3
Scope 2 (location)	522.5	522.5	0.01	.35	0.01	1.9	N/A	N/A	N/A	N/A	N/A	N/A	524.8
UPSTREAM (PURCHASED) SCOPE 3 EMISSIONS													
Category 1^b	3880.5	3880.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3880.5
Category 2	Accounted for in category 1 (purchased goods and services)												
Category 3	95.2	95.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	95.2
Category 4	Accounted for in category 1 (purchased goods and services)												
Category 5	4.5	4.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.5
Category 6	1441.5	1441.5	0.01	0.1	0.5	14.2	N/A	N/A	N/A	N/A	N/A	N/A	1455.8
Category 7	99.9	99.9	0.0049	0.1	0.0038	1.0	N/A	N/A	N/A	N/A	N/A	N/A	101.1
Category 8	N/A												
Category 9	N/A												
DOWNSTREAM (SOLD) SCOPE 3 EMISSIONS													
Category 10	N/A												
Category 11	N/A												
Category 12	15.2	15.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	15.2
Category 13	N/A												
Category 14	N/A												
Category 15	N/A												

Notes:

a. WRI's refrigerators use HFC – 134a and R-410 A, types of refrigerants that are not associated with ozone depletion.

b. WRI's category 1 emissions include purchases from vendors providing goods and services as well as emissions associated with WRI-provided subgrants. Subgrants are contractual agreements with other nongovernmental organizations, referred to as partners, to produce work that contributes to the design and achievement of WRI's mission.

Table A4 | Greenhouse Gas Inventory Results, 2014

GHG EMISSIONS	CARBON DIOXIDE (CO ₂)		METHANE (CH ₄)		NITROUS OXIDE (N ₂ O)		HYDROFLUORO-CARBONS (HFCs)		PERFLUORO-CARBONS (PFCs)		SULFUR HEXAFLUORIDE (SF ₆)		TOTAL EMISSIONS
	mt CO ₂	mt CO ₂ e	mt CH ₄	mt CO ₂ e	mt N ₂ O	mt CO ₂ e	mt HFCs	mt CO ₂ e	mt PFC	mt CO ₂ e	mt SF ₆	mt CO ₂ e	mt CO ₂ e
Scope 1	0.1	0.1	7.7e-08	2.2e-06	1.6e-09	4.3e-07	5.1e-6	6.6e-03	N/A	N/A	N/A	N/A	0.3
Scope 2 (location)	513.4	513.4	1.2E-02	3.5E-01	7.2E-03	1.9E+00	N/A	N/A	N/A	N/A	N/A	N/A	515.7
UPSTREAM (PURCHASED) SCOPE 3 EMISSIONS													
Category 1^b	6464.3	6464.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6464.3
Category 2	Accounted for in category 1 (purchased goods and services)												
Category 3	94.8	94.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	94.8
Category 4	Accounted for in category 1 (purchased goods and services)												
Category 5	16.4	16.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16.4
Category 6	1434.5	1434.5	5.2E-03	0.1	5.3E-02	14.1	N/A	N/A	N/A	N/A	N/A	N/A	1448.7
Category 7	117.7	117.7	3.5E-03	0.4	2.0E-03	1.5	N/A	N/A	N/A	N/A	N/A	N/A	119.7
Category 8	N/A												
Category 9	N/A												
DOWNSTREAM (SOLD) SCOPE 3 EMISSIONS													
Category 10	N/A												
Category 11	N/A												
Category 12	0.9	0.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.9
Category 13	N/A												
Category 14	N/A												
Category 15	N/A												

APPENDIX B: METHODOLOGY FOR WRI'S GHG INVENTORIES

This appendix describes the methodology used in WRI's 2013 and 2014 greenhouse gas (GHG) inventories. It covers WRI's global operations (Brazil, China, India, Indonesia, and United States) unless otherwise noted. WRI's full activity data and calculations are made available here.

1. UNDERSTANDING WRI'S INVENTORY

WRI's GHG calculations follow the formula below unless otherwise indicated:

WHEREAS:

- **ACTIVITY DATA** is a quantitative measure of a level of activity that results in GHG emissions.
- **EMISSIONS FACTOR** is a factor that converts activity data into GHG emissions data (e.g., kg CO₂ emitted per liter of fuel consumed, kg CH₄ emitted per kilometer traveled, etc.).
- **GLOBAL WARMING POTENTIAL (GWP)** is a factor describing the radiative forcing impact (degree of harm to the atmosphere) of one unit of a given GHG relative to one unit of CO₂. See Table B1 for the GWP values used in this report

Table B1 | **Global Warming Potentials Used**

GREENHOUSE GAS	GWP (100-YEAR)	SOURCE
CO ₂	1	IPCC AR5
CH ₄	28	IPCC AR5
N ₂ O	265	IPCC AR5
HFC—134a	1450	IPCC AR5

Note:
Update from IPCC AR4 (see [Key Terms](#)) resulted in no changes to base year calculations due to insignificance

2. SCOPE 1 METHODOLOGY

Direct GHG emissions occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc.;

emissions from chemical production in owned or controlled process equipment (GHG Protocol). WRI's GHG inventory includes only emissions generated by WRI's U.S. operations.

2.1 EMISSIONS FROM DIESEL GENERATORS

Table B2.1a | **Emission Factors**

GREENHOUSE GAS	EMISSIONS FACTOR (MT CO ₂ E/GAL)	SOURCE
CO ₂	0.01	GHG Protocol's stationary combustion tool
CH ₄	0.0000004	
N ₂ O	0.0000001	

Table B2.1b | **Approach**

METHODOLOGY	DESCRIPTION
Activity Data	WRI's U.S. office has a diesel generator on the roof that is used during electricity outages. The building manager provided activity data (annual gallons of diesel fuel used)
Methodology	<ol style="list-style-type: none"> 1. The activity data (gallons of diesel fuel used) is allocated to WRI using a ratio of WRI's square-feet occupation to the total leasable square-feet of the office building. 2. Calculation follows the general formula, using the above activity data and emission factors.
Methodology Changes	No changes from 2012 inventory methodology.
Limitations	The use of an allocation factor based on square footage is not as accurate as submetering WRI's own operations.

2.2 EMISSIONS FROM OFFICE REFRIGERATORS

Table B2.2a | **Emissions Factors**

GREENHOUSE GAS	EMISSIONS FACTOR (% OF CAPACITY / YEAR)	SOURCE
Domestic Refrigeration (operation)	0.5%	The Climate Registry (Table 16)
Domestic Refrigeration (installation)	1%	The Climate Registry (Table 16)

Table B2.2b | **Approach**

METHODOLOGY	DESCRIPTION
Activity Data	Total refrigerant volumes (unit) per cooling unit used in WRI's office space.
Methodology	<p>Calculation uses estimation equations from The Climate Registry's General Reporting Protocol (GRP) v 1.1 (2008) – Total Annual Refrigerant Emissions (metric tons) = $[(CN * k) + (C * x * T) + (CD * y * (1 - z))] \div 1,000$, whereas:</p> <p>CN = quantity of refrigerant charged into the new equipment C = total full charge (capacity) of the equipment T = fraction of the year the equipment was in use CD = total full charge (capacity) of equipment being disposed of k = installation emission factor x = operating emission factor y = refrigerant remaining at disposal z = recovery efficiency</p> <p>The GWP is then applied to the total emissions to determine WRI's refrigerant emissions.</p>
Methodology Changes	No changes from 2012 inventory methodology.
Limitations:	N/A

2.3 EMISSIONS FROM REFRIGERANTS USED IN U.S. BUILDING HVAC

No refrigerants (HFC) were used at WRI's U.S. office building during 2013 or 2014, so this calculation was excluded.

3. SCOPE 2 METHODOLOGY

GHG emissions from the generation of purchased electricity consumed by the company. Purchased electricity is defined as electricity that is purchased or otherwise brought into the organizational boundary of the company and consumed. Scope 2 emissions physically occur at the facility where electricity is generated (GHG Protocol).

3.1 LOCATION-BASED METHOD

The location-based method calculates emissions based on energy consumption at the location where the energy is used, taking into account the actual units generating power regionally. WRI uses local or country-level grid average emissions factors to report location-based emissions for all offices included in the inventory scope. The Scope 2 Guidance requires dual reporting following emission factor hierarchies.

WRI's location-based calculations apply to WRI's U.S., China, and India operations

Table B3.1a | **Location-Based Emission Factors**

GREENHOUSE GAS	EMISSIONS FACTOR	SOURCE
U.S. OPERATIONS		
	LB/MWH	
CO ₂	1,001.72	U.S. EPA eGRID2010 Version 1.0 (9th edition with 2010 data: eGrRID subregion data)
CH ₄	27.07	
N ₂ O	15.33	
CHINA OPERATIONS		
	MT/MWH	
CO ₂	1.128	Ranping Song et al., (2013) Getting Every Ton of Emissions Right: An Analysis of Emission Factors for Purchased Electricity in China
CH ₄	0.012	
N ₂ O	0.017	
INDIA OPERATIONS		
	KG/KWH	
CO ₂	0.926	International Energy Agency, "CO ₂ Emissions from Fuel Combustion" (2013 edition).

Table B3.1b | Approach

METHODOLOGY	DESCRIPTION
Activity Data	<p>Monthly totals of energy consumption (kWh) compiled from bills provided by the building management of WRI China, WRI India, and WRI U.S. offices. Specific details about each office provided below:</p> <ul style="list-style-type: none"> ■ U.S. Operations: The office space is not metered separately and therefore the electricity purchase data for the entire building was used and allocated using the square foot ratio data as provided for the full building by WRI's building management. ■ China Operations: In FY2013 and the beginning of FY2014, the bills provided by WRI China were for total purchases of prepaid electricity. Starting in April 2014, WRI China's billing system switched to monthly reports for submetered electricity use. ■ India Operations: Total monthly electricity use is provided for each of the three WRI offices in India.
Methodology	<p>Following the general formula, the activity data for each WRI location (kWh) and the above emission factors are used to determine the total emissions resulting from the use of that electricity.</p> <p>All monthly data received is confined to a single month except for WRI's U.S. office, where monthly energy consumption is prorated by average consumption per day for the total number of days covered by the bills within the inventory reporting year.</p>
Methodology Changes	<p>WRI India's three offices were added to WRI's GHG inventory for the first time in 2013. Prior to that year, the India locations did not meet the threshold of significance established for determining WRI's inventory scope, thus WRI's baseline emissions were not adjusted.</p> <p>Emission factors used to calculate emissions for the China operations were changed in the 2013 inventory in order to take advantage of more location-specific emission factors for Beijing.</p>
Limitations	<p>Scope 2 from WRI Brazil, and WRI Indonesia: This is the first year we have included Brazil and Indonesia in our operational boundary. No systems were in place to collect electricity data for the entire year. We will work to fill this data gap for the 2015 inventory.</p> <p>U.S.: The use of an allocation factor based on occupation is not as accurate as submetering electricity.</p> <p>China: In 2013 and part of 2014, WRI China's electricity data was provided through receipts for pre-paid electricity credits, which do not represent actual usage.</p> <p>India: International Energy Agency CO₂ emissions factor for electricity may be skewed higher or lower due to the use of both heat and electricity generation.</p>

3.2 MARKET-BASED METHOD

The market-based method shows emissions WRI is responsible for through its purchasing decisions based on contractual instruments. WRI’s operations in the United States, China, and India are included.

Table B3.2a | **Emission Factors**

CONTRACTUAL INSTRUMENT (U.S. OPERATIONS)	EMISSIONS FACTOR	SOURCE
Emissions from Renewable Energy Certificates	0 (mt CO ₂ e/kWh)	Assumption for renewable energy
Residual Mix (U.S. eGRID RFC)	1373.59 (lbs CO ₂ /MWh)	2015 Green-E eGRID Emission Rates

Table B3.2b | **Approach**

METHODOLOGY	DESCRIPTION
Activity Data	Total electricity consumed (kWh) for WRI China, WRI India, and WRI U.S. (see Location-Based Activity Data, above); Total kWh of renewable energy credits (RECs) purchased by WRI's building management company.
	<p>WRI's U.S. office:</p> <ol style="list-style-type: none"> Renewable energy emissions <ul style="list-style-type: none"> RECs purchased for WRI by its building management were allocated using the ratio of WRI's total space occupancy to total leasable space in the two DC buildings operated by WRI's building management multiplied by the total kWh of RECs purchased for the buildings. The total kWhs of REC claims account for zero emissions.
Methodology	<ol style="list-style-type: none"> Residual energy emissions <ul style="list-style-type: none"> The total kWhs of RECs is subtracted from the total kWh of electricity used by WRI's U.S. office to provide the consumption of electricity not covered by REC claims. Using the general formula, the nonrenewable energy consumption and the residual emission factor (above) are applied to provide the residual grid emission factors. <p>WRI China: Not located in a market with supplier or contract-specific information, so the same calculation as location-based is used (see above)</p> <p>WRI India: As no residual mix is available for electricity grids in India, the calculation for India's market-based scope 2 emissions is the same as the calculation for the location-based emissions (see above).</p>
Methodology Changes	<p>The market-based calculation method was added to incorporate renewable energy certificates purchased on behalf of WRI's U.S. operations, in accordance with the Greenhouse Gas Protocol's new Scope 2 Guidance addressing contractual purchases of electricity. REC purchased on behalf of WRI's U.S. operations previously had been acknowledged but not accounted for in WRI's annual GHG inventory.</p> <p>As other offices or operations shift to market-instruments for renewable energy (example, India's operations purchasing renewable energy certificates), the market-based calculations for those locations will be adjusted.</p> <p>The market-based emission total is introduced for WRI's 2014 GHG inventory, due to the completion of the GHG Protocol's Scope 2 Guidance addressing contractual purchases of electricity.</p>
Limitations	<p>WRI Indonesia and WRI Brazil: See data limitations for location-based calculations.</p> <p>WRI India: No publicly available residual grid emission factor available.</p> <p>WRI's U.S. office: same data concerns as the location-based method for allocating total building consumption of electricity to WRI's operations; allocating kWh of renewable energy claimed by RECs is less accurate than having a specific volume deeded to WRI.</p>

Table B3.2c | **Quality Criteria**

WRI LOCATION	ENERGY RESOURCE TYPE	FACILITY LOCATION	FACILITY AGE	CAP AND TRADE	FUNDING
Washington, DC (U.S. global office)	Green-e Energy certified Wind Power from WGL Energy	all over the United States	within 25 years	N/A	Production tax credit (PTC)

4. SCOPE 3 METHODOLOGY

4.1 CATEGORY 1: PURCHASED GOODS AND SERVICES

This category includes all upstream (i.e., cradle-to-gate) emissions from the production of goods (tangible products), as well as services and subgrants (intangible products) (GHG Protocol).

EMISSION FACTORS: WRI's approach to calculating emissions from purchased goods, purchased services, and suppliers relies on modeling using the Carnegie-Mellon University Environmental Input-Output Life Cycle Assessment (EIO LCA).

The Carnegie-Mellon University EIO LCA tool is available at <http://www.eiolca.net/>

Table B4.1a | **Approach**

METHODOLOGY	DESCRIPTION
Activity Data	Total amount spent (US\$) with each vendor or subgrant agreement, provided by WRI's central accounting system (secondary data). <i>Percent of Supplier-Specific Data used = 0</i>
Methodology	<p>WRI's Category 1 emissions are determined by modeling secondary data - total vendor expenses from FY2013 and FY2014 – using the Carnegie Mellon Environmental Input-Output Lifecycle Assessment Tool (EIO LCA). Input-Output tables traditionally represent the monetary transactions between industry sectors in mathematical form. Environmentally Extended Input-Output (EEIO) models indicate what goods or services (or output of an industry) are consumed by other industries (or used as input). EEIO tables used in life cycle assessment additionally calculate the average emissions of pollutants associated with spending a certain amount of funds on a particular industry.</p> <p>The following information was entered into the EIO LCA tool for each good or service that was purchased by WRI in 2012:</p> <ol style="list-style-type: none"> 1. The detailed sector that each good or service is a part of; 2. The model to be used for the analysis (the U.S. 2002 Benchmark producer price model was used); and 3. The amount of economic activity in the sector, that is, the amount of money spent on purchasing.
Methodology Changes	No changes from 2012 inventory methodology.
Limitations	Using secondary data is an estimation of emissions. Within the EIO tool, partners/suppliers in the same sector (e.g., civil society organizations) are subject to the same emissions factor, making the amount spent or subgranted, rather than supplier performance, the variable factor.

4.2 CATEGORY 3: FUEL- AND ENERGY-RELATED ACTIVITIES

This category includes emissions related to the production of fuels and energy purchased and consumed in the reporting year that are not included in scope 1 or scope 2 (GHG Protocol).

These calculations include WRI's U.S., China, and India operations only.

Table B4.2a | **Emission Factors**

WRI LOCATION	EMISSIONS FACTOR KG CO ₂ E / KWH	SOURCE
UPSTREAM (WELL-TO-TANK)		
U.S. Operations	0.07144	2014 DEFRA Emission Factors—Well-to-Tank factors for U.K. and overseas electricity generation and T&D losses
China Operations	0.10908	
India Operations	0.12158	
TRANSMISSION AND DISTRIBUTION (T&D) LOSSES		
U.S. Operations	0.0134	2014 DEFRA Emission Factors—Well-to-Tank factors for U.K. and overseas electricity generation and T&D losses
China Operations	0.01992	
India Operations	0.05361	

Table B4.2b | **Approach**

METHODOLOGY	DESCRIPTION
Activity Data	Total annual electricity consumption (kWh) used for scope 2 calculations. <i>Percent of Supplier-Specific Data used = 0</i>
Methodology	Calculations for all three included regions follow the general calculation formula, using the above emission factors and activity data.
Methodology Changes	The methodology for calculating upstream emissions in category 3 has been updated from 2012 to use the U.K.'s Department of the Environment and Rural Affairs (DEFRA) emission factors for Well-To-Tank and T&D (see Key Terms) losses for WRI's countries of operations.
Limitations	The emission factors used are developed by U.K. DEFRA and are not regionally specific to WRI's locations of operation.

4.3 CATEGORY 5: WASTE GENERATED IN OPERATIONS

This category includes emissions from third-party disposal and treatment of solid waste and wastewater that is generated in the reporting company's owned or controlled operations in the reporting year (adapted from GHG Protocol's Corporate Value Chain Accounting Standard). WRI's calculation of category 1 only includes solid waste WRI's U.S. office only.

Table B4.3a | **Emission Factors**

MATERIALS	EMISSIONS FACTOR (MTCO ₂ E/SHORT TON)	SOURCE
Mixed municipal solid waste (MSW)	1.290	Landfill no recovery (conservative estimate) - EPA Waste Recovery Model (WARM)
Recycling	0	Modified from EPA WARM so that emissions from recycling are not considered positive

Table B4.3b | **Approach**

METHODOLOGY	DESCRIPTION
Activity Data	The building's management company for WRI's U.S. operations provides monthly recycling data reports for recycled and residual (landfill) volumes (lbs) for the full building. <i>Percent of Supplier-Specific Data used = 100%</i>
Methodology	WRI's occupation ratio is applied to determine WRI's volume. The calculation follows the general formula with the total residual waste volume attributed to WRI's operations and the above emission factors.
Methodology Changes	Now uses U.S.-specific emission factors provided by the EPA's WARM tool to be more accurate.
Limitations	An allocation approach is not as accurate as primary data. Also not currently able to collect wastewater treatment data. The waste generated at WRI's global office is removed to a multitude of landfills in the Mid-Atlantic region of the United States. It is not possible to know how much waste ends up at each facility, thus we assume the average methane recovery rate for the United States when determining emissions from the disposal of this residual waste.

4.4 CATEGORY 6: BUSINESS TRAVEL

This category includes emissions from the transportation of employees for business-related activities in vehicles owned or operated by third parties, such as aircraft, trains, buses, and passenger cars (GHG Protocol Corporate Value Chain Accounting and Reporting Standard).

4.4.1 Air Travel

Table B4.1.1a | **Emission Factors**

EMISSIONS FACTOR KG PER PASSENGER KM					
HAUL TYPE	DISTANCE (KM)	CO ₂	CH ₄	NO ₂	SOURCE
Short	< 785	0.15829	0.00011	0.00156	Emission factors—U.K. DEFRA, Haul-type distances are from the Carbon Neutral Calculator
Medium	785–3700	0.09330	0.00001	0.00092	
Long	>3700	0.10982	0.00001	0.00108	

Table B4.1.1b | **Approach**

METHODOLOGY	DESCRIPTION
Activity Data	Individual flight distances (miles and km) for each leg of travel paid for by WRI or taken on behalf of WRI business. Activity data comes from flight reports generated by WRI's travel agent company and self-reported trips. ^a
Methodology	All flights were grouped into short-, medium-, or long-haul flights based on leg miles/km per quarter. The general formula was followed for each haul type using the appropriate emission factor (above) and total distance (km).
Methodology Changes	The emission factors used were changed to follow DEFRA updates.
Limitations	The activity data for air travel comes from WRI's travel agent. However some trips are arranged outside the centralized booking system. To capture that data, staff are requested to self-report, which is not 100 percent accurate.

Note:

a. This includes any travel booked and paid for by WRI for a partner or outside individual to attend a meeting or conference.

4.4.2 Rail Travel

Table B4.4.2a | **Emission Factors**

GREENHOUSE GAS	EMISSIONS FACTOR	UNIT	SOURCE
CO ₂	0.144	kg/passenger-mile	U.S. EPA (2014), Emission Factors for Greenhouse Gas Inventories
CH ₄	0.0085	g / passenger-mile	
N ₂ O	0.0032	g / passenger-mile	

Table B4.4.2b | **Approach**

METHODOLOGY	DESCRIPTION
Activity Data	Individual rail trips booked through WRI's travel service (secondary data).
Methodology	The activity data provided from WRI's central travel service includes the origin and destination stations but not the distance traveled. To determine the distance traveled, the mile or km marker for the stations are identified and then subtracted from one another to find the distance between. The total distance traveled for the year is applied to the general formula, along with the above emission factors to determine WRI's emissions.
Methodology Changes	No changes from 2012
Limitations	Very few of train trips taken on behalf of WRI outside the United States are captured through WRI's centralized travel system, resulting in less than complete data.

4.5 CATEGORY 7: EMPLOYEE COMMUTING

This category includes emissions from the transportation of employees between their homes and their worksites.

Table B4.5a | **U.S. Operations Emission Factors**

COMMUTING MODE	EMISSIONS FACTOR			SOURCE
	CO ₂ (KG / PASSENGER MILE)	CH ₄ (G / PASSENGER MILE)	NO ₂ (G / PASSENGER MILE)	
Commuter Rail	0.174	0.008	0.004	U.S. EPA (2014), Emission Factors for Greenhouse Gas Inventories
Transit Rail	0.133	0.0026	0.002	
Bus	0.058	0.0007	0.0004	
Car	0.368	0.018	0.013	
Walk/Bike	0	0	0	

Table B4.5b | **Non-U.S. Operations Emission Factors**

COMMUTING MODE	EMISSIONS FACTOR CO ₂ E (KG/PASSENGER KM)	SOURCE
Bus	0.10155	U.S. EPA (2014), Emission Factors for Greenhouse Gas Inventories
Metro	0.06312	
Commuter Rail	0.06168	
Car	0.19388	
Taxi	0.17755	
Car—Diesel	0.18546	
Car—Gasoline	0.19388	
Auto rickshaw ^a	0.0864	EMBARQ Urban Mobility Forecasts
Motorbike ^a	0.0452	

Note:

a. One passenger assumed.

Table B4.5c | Approach

METHODOLOGY	DESCRIPTION
Activity Data	<p>Total distance annually commuted per mode of travel for each WRI region of operation.</p>
Methodology	<p>To determine the activity data, WRI surveys its staff (WRI U.S., WRI China, WRI India, and remote) annually to obtain data on commuting patterns using a freely provided survey site—SurveyMonkey.</p> <p>The survey provides information on the typical number of weeks worked during the year in question and the distances traveled by mode of transportation during an average week.</p> <p>The total number of weeks worked is multiplied by the total distance traveled for each mode of transportation for each staff member. The distances for each mode are totaled to give the total distance traveled by WRI staff for the different modes of transportation.</p> <p>A scaling factor (number of staff responses/total number of staff) is applied to the mode of transportation totals to account for staff members that did not respond to the survey.</p> <p>Those new adjusted totals for each transportation mode are then input into the general formula using the appropriate emission factors (above) to determine WRI's employee commuting emissions for the given year.</p>
Methodology Changes	<p>Emission factors were updated for the following scope 3 categories: category 5 (Waste Generated from Operations) and category 12 (End-of-Life Treatment of Sold Products)</p>
Limitations	<p>Total distances traveled per mode of transportation are an approximation based on assumptions about the total number of days per year that staff commute, as well as accounting for staff who do not respond to the survey.</p> <p>The survey is sent out and the total staff per WRI region is calculated once a year, which means that staff that worked during the year in question but left WRI before the survey was sent out are not included.</p>

4.6 CATEGORY 12: END-OF-LIFE TREATMENT OF SOLD PRODUCTS

This category includes emissions from the waste disposal and treatment of products sold by the reporting company (in the reporting year) at the end of their life (GHG Protocol). WRI does not sell any conventional “products.” However, WRI does produce publications as part of its work, and the end-of-life treatment of these publications was estimated and included in the 2012 inventory

Table B4.6a | **Emission Factors**

MATERIAL	EMISSION FACTOR LANDFILLING, NATIONAL AVERAGE (MTCO ₂ E / SHORT TON)	SOURCE
Mixed Paper	0.69	EPA WARM tool

Table B4.6b | **Approach**

METHODOLOGY	DESCRIPTION
Activity Data	Total pages printed for WRI publications, collected from invoices generated by WRI's approved printing & design vendors
Methodology	Total pages printed for each type of WRI publication is compiled by manually reviewing invoices from WRI's approved printers. Using the total pages per publication type, a total volume of material is determined. This total volume (short tons) is then applied to the general calculation formula along with the above emission factors to determine the emissions from the disposal of WRI's publications.
Methodology Changes	Emission factors were updated from 2012 to be more accurate to the location in which the publications are most commonly distributed (United States). Not all invoices provide total page counts. For those missing page counts, an assumption of average WRI publication length was made. Not all publications are printed by WRI approved printers, particularly for international offices, however the number of potential publications printed this way is minimal and considered insignificant.
Limitations	Not every publication is disposed of in the United States, however there is no way to track where publications end up after being handed out by WRI.

APPENDIX C: WRI BASE YEAR GREENHOUSE GAS INVENTORY, 2010

SCOPES AND CATEGORIES	METRIC TONS OF CARBON DIOXIDE EQUIVALENTS (MT CO ₂ E)
Scope 1: Direct emissions from owned/controlled operations	16
Scope 2: Indirect emissions from the use of purchased electricity, steam, heating, and cooling	592
UPSTREAM (PURCHASED) SCOPE 3 EMISSIONS	
Category 1: Purchased goods and services	2559
Category 2: Capital goods	Accounted for in category 1 (purchased goods and services)
Category 3: Fuel- and energy-related activities (not included in scope 1 or scope 2)	293
Category 4: Upstream transportation and distribution	Accounted for in category 1 (purchased goods and services)
Category 5: Waste generated in operations	<1
Category 6: Business travel	1252
Category 7: Employee commuting	107
Category 8: Upstream leased assets	Accounted for in category 1 (purchased goods and services) ^a
DOWNSTREAM (SOLD) SCOPE 3 EMISSIONS	
Category 9: Downstream transportation and distribution	N/A
Category 10: Processing of sold products	N/A
Category 11: Use of sold products	N/A
Category 12: End-of-life treatment of sold products (publications)	28
Category 13: Downstream leased assets	N/A
Category 14: Franchises	N/A
Category 15: Investments	N/A (Improving the sustainability of our investments is being addressed independent from our GHG inventory)

Note:

a. WRI leases its office space, copiers, and printers. Electricity use is included in scope 2, and any maintenance of the copiers and printers is included in category 1.

KEY TERMS

Economic input-output lifecycle assessment (EIO-LCA)—a life cycle assessment that uses national economic input-output tables to quantify resources use and environmental impacts for activities in the economy, including cross-sector impacts throughout the supply chain. The Greenhouse Gas Protocol standards allow emission factors from activities in the economy to be used in place of accurate activity- or process-based LCA methods.

Environmentally extended input-output lifecycle assessment (EEIO-LCA)—Similar to an economic input-output lifecycle assessment but uses a separate environmental impact input-output table rather than integrating environmental data into economics input-output tables.

Global Reporting Initiative (GRI)—an international independent organization that maintains a sustainability reporting standard for businesses, governments, and other organizations to better communicate sustainability issues across businesses and sectors. See www.globalreporting.org for more information.

Greenhouse Gas (GHG) Protocol—widely used international accounting tool that helps various audiences understand, quantify, and manage greenhouse gas emissions. World Resources Institute and the World Business Council for Sustainable Development created the reporting protocol and support documentation as a means to help businesses, governments, and organizations build effective programs for tackling climate change. See www.ghgprotocol.org for more information.

IPCC AR4—Fourth assessment report of the Intergovernmental Panel on Climate Change; each assessment report produces new emissions factors for use in calculating GHG emissions inventories.

IPCC AR5—Fifth assessment report of the Intergovernmental Panel on Climate Change; each assessment report produces new emissions factors for use in calculating GHG emissions inventories.

Life cycle assessment (LCA)—method that quantifies the consumption of resources and environmental impacts associated with a product or process inclusive of all stages of production, including extraction of raw materials to manufacturing, transportation, use, and disposal.

Leadership in Energy and Environmental Design (LEED)—green building certification program created by the U.S. Green Building Council. Buildings are certified by one of four levels—Certified, Silver, Gold, and Platinum. Since its creation in 1993, the certification program is on its fourth version, called V4, and multiple rating systems have been created for different building types. Rating systems referenced in this report are Interior Design and Construction (ID+C) that focuses on interior fit-outs and retail and hospitality spaces, and Building Operations and Maintenance (O+M) that focuses on existing buildings, schools, data centers, and warehouse or distribution centers. Certifications and credentials are administered by Green Business Certification, Inc. See www.usgbc.org/leed for more information.

Materiality assessment—a tool that uses stakeholder engagement to gather insight on the relative importance of specific environmental, social, and governance issues. The results inform sustainability management strategies, reporting, and communication. There is no consistent standard for a materiality assessment, but materiality in a sustainability context is different than the U.S. Securities & Exchange Commission view of materiality, although some assessment approaches do consider financial and sustainability impacts. See www.sasb.org for more information.

Power purchase agreement (PPA)—contract that defines a predetermined rate for electricity over a time period and includes any other energy delivery and administrative terms. In renewable energy PPAs, the contract is typically between a third-party renewable energy developer (provider) and an energy user or a utility company. Direct offsite renewable energy purchasing agreements referenced in this report would involve all three parties—an energy provider, energy users, and the utility company.

Renewable energy certificate (REC)—a tradable commodity that represents the rights to the environmental, social, and other nonpower qualities of renewable energy generation. RECs and their attributes and benefits can be sold separately from the underlying physical electricity generated by a renewable-based electricity provider. RECs are purchased to support renewable energy when it is not available onsite or through a service provider.

Scope 1 standard—Part of the Greenhouse Gas Protocol that provides guidance on reporting direct emissions from an organization; an example is the emissions from combustion of natural gas in a heating system onsite. See www.ghgprotocol.org for more information.

Scope 2 standard—Part of the Greenhouse Gas Protocol that provides guidance on reporting indirect emissions associated with the generation of electricity, heating/cooling, or steam purchased for consumption. See www.ghgprotocol.org for more information.

Scope 3 standard—Part of the Greenhouse Gas Protocol that provides guidance on reporting all other indirect emissions not covered by Scope 2. Scope 3 is divided into 15 categories, the largest of which is typically category 1 that includes emissions from life cycle assessments of all purchased goods and services. See www.ghgprotocol.org for more information.

Waste Reduction Model (WARM)—a tool created by the U.S. Environmental Protection Agency to help solid waste planners and organizations track and voluntarily report greenhouse gas emissions reductions from different waste management practices.

ACRONYMS

CDP	(formerly) Carbon Disclosure Project
CO ₂ e	Carbon dioxide equivalent
DEFRA	Department for Food, Environment, and Rural Affairs (U.K.)
EEIO	environmentally extended input-output
EIO LCA	economic input-output lifecycle assessment
EPA	Environmental Protection Agency (U.S.)
GHG	greenhouse gas
GWP	global warming potential
HFC	hydrofluorocarbon
IPCC	Intergovernmental Panel on Climate Change
kg	kilogram
kWh	kilowatt-hour
lbs	pounds
LCA	Life-cycle assessment
LEED®	Leadership in Energy and Environmental Design
mt	metric ton
MWh	megawatt-hour
NGO	nongovernmental organization
PFC	perfluorocarbon
PPA	power purchase agreement
REC	renewable energy certificate
SMRT	Sustainability Managers Roundtable
WRI	World Resources Institute

ENDNOTES

1. Jones et al. (2010). *How Nutrient Trading Could Help Restore the Chesapeake Bay*. World Resources Institute.
2. Global air travel was removed from WRI's nitrogen calculations and the 2010 baseline was recalculated. Nitrogen emissions from global air travel do not directly impact the Chesapeake Bay and we are currently unable to calculate similar impacts for other offices. See Appendix B for methodology changes.
3. The scope 2 guidance provided by the GHG Protocol does not require companies to phase in market-based calculations until 2015 inventories.
4. WRI measures success by outcomes—positive actions by governments, companies and civil society, informed by WRI work, that improve people's lives and the environment. In 2014, WRI had 37 outcomes, to learn more about WRI outcomes, see www.wri.org/our-work/outcomes.
5. Accessed 3/14/2016 from <http://www.eia.gov/tools/faqs/faq.cfm?id=86&t=1>; includes residential, commercial, and manufacturing facilities total energy consumption.

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ABOUT WRI

World Resources Institute is a global research organization that turns big ideas into action at the nexus of environment, economic opportunity and human well-being.

Our Challenge

Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our Vision

We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

Our Approach

COUNT IT

We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

CHANGE IT

We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring.

SCALE IT

We don't think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people's lives and sustain a healthy environment.



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