# Environmental Stewardship and Sustainability Summary of 2010 Initiatives

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Goldman Sachs

## www.goldmansachs.com/environment

In 2005, Goldman Sachs established our *Environmental Policy Framework* (*Framework*) in the belief that a healthy environment is a prerequisite for progress, contributing to the well-being of society, our people and our business, and serving as the foundation for a sustainable and strong economy. Under the *Framework* we have committed to deploy our people, capital and ideas to help find effective market-based solutions to environmental issues. To read the *Framework* in full, visit *www.gs.com/environment.* 

Our Environmental Markets Group (EMG) coordinates and oversees the *Framework*, while respective business units are responsible for its implementation. The Board of Directors reviews the *Framework* and its implementation. EMG is comprised of experienced investment bankers and sits in the Executive Office, reporting to the Office of the Chairman, giving it both expertise and access to senior leadership.

We put our environmental policies into practice and continue to deliver on our commitments across three areas: our core business, our operations and our thought leadership in global markets. This report documents our progress in each of these areas during 2010 and highlights our progress over the past five years since we established the *Framework*. Among the highlights are:

## **Business Initiatives**

- In 2010, we managed initial public offerings and other financing transactions that helped raise \$8.9 billion for clients engaged in clean technology and renewable energy. We also co-invested \$388 million in expanding clean energy and green affordable housing initiatives. To support and enhance our commitment to covering clean energy clients and to align existing resources more strategically, we established the Clean Technology and Renewables Group in our Investment Banking Division.
- We continue to provide liquidity and risk management for our clients as a market maker in environmental commodities. In 2010, we placed \$1.2 billion in catastrophe-linked securities, which offer our clients a means to mitigate

financial risk from natural catastrophes, including those arising from weather risks such as hurricanes, winter storms, severe thunderstorms and wildfires.

- Our GS SUSTAIN research team analyzed more than 750 large global companies in 22 industries and developed a Focus List of 68 companies with the potential for sustainable corporate out-performance. Since its inception in June 2007 through 2010 year-end, the GS SUSTAIN Focus List has outperformed the MSCI All Country World Index by 38.5% on an equally weighted basis.
- Goldman Sachs Asset Management (GSAM) has established a team of people with representatives across all asset classes to further its focus on Environmental, Social and Governance (ESG) research and sustainability analysis implementation.
- We take into consideration ESG factors in our business selection decisions. This practice is in-line with our commitment to environmental and social stewardship, prudent risk management, and serving the best interests of our clients. In 2010, 327 transactions were reviewed by EMG.
- In September 2010, we established the Physical Commodity Review Committee (PCRC), a cross-divisional firmwide governance committee, to ensure that we have a consistent approach to evaluating and managing environmental, human health and safety risks in our physical commodities activities.

## Operations

- We continue to make progress toward our goal of reducing carbon emissions to zero by 2020.<sup>1</sup> Due to enhanced operational efficiency, gross Greenhouse Gas (GHG) emissions were reduced by 3% in 2010, equivalent to 9,752 metric tons of CO<sub>2</sub>e.
- We increased focus on accounting and disclosure of our GHG data by (1) commissioning a third-party assessment of our key operational processes and controls; (2) obtaining limited assurance of Scope 1 and Scope 2 GHG data and corresponding intensity measures; (3) closing the one-year reporting lag; and (4) reporting our Scope 3 emissions from business travel.<sup>2</sup>
- Our LEED-certified real estate now totals 3.8 million square feet, making us one of the world's largest owners of green buildings under the new construction and commercial interiors rating systems.

## Thought Leadership

- In 2010, we expanded partnerships with corporate, academic and non-governmental organization (NGO) leaders in areas including energy efficiency, water and clean energy policy. We also have partnerships focused on environmental opportunities pertaining to China and forest carbon.
- During 2010, we hosted, sponsored and participated in several major conferences, attended by policy makers, NGOs and educators, as well as Goldman Sachs clients, investors and employees. These events focused on topics such as the role of markets in addressing environmental challenges, how to further capital to scale up low-carbon solutions, the role of public-private part nerships, the importance of growth markets and the environment, and forest carbon.

<sup>1</sup> The terms "carbon emissions" and "Greenhouse Gas (GHG) emissions" are used interchangeably throughout this report.

For further information on Goldman Sachs' environmental policy and performance, please see www.gs.com/environment.

<sup>&</sup>lt;sup>2</sup> As defined by the Greenhouse Gas Protocol, Scope 1 emissions are the direct GHG emissions from sources that are owned or controlled by Goldman Sachs; Scope 2 emissions are the indirect GHG emissions from consumption of purchased electricity, heat or steam; and Scope 3 emissions are other indirect emissions that are a consequence of Goldman Sachs activities but occur at sources owned or controlled by another entity.

## Our Progress Since 2005

The following highlights our progress since we established the *Framework* in November 2005.

We helped raise more than \$19 billion in financing for clean technology and renewable-energy clients

We invested more than \$3 billion toward LEED-certified office space. LEED-certified real estate now totals 3.8 million square feet, making us one of the world's largest owners of green buildings under the new construction and commercial interiors rating systems We developed and placed approximately \$10 billion in catastrophe-linked securities for our clients to help mitigate financial risk from natural catastrophes including those arising from weather risks

We achieved a 42% reduction in average power consumption per server host in our North American data centers while increasing computing capacity by more than 60% during that period



We invested more than \$3 billion in clean energy and environmentally beneficial projects

We invested more than \$49 million in virtual desktop infrastructure (VDI) to improve the energy efficiency of our workplace computing platform



We invested the intellectual capital of our people and more than \$7 million through the Center for Environmental Markets in partnerships with corporations, NGOs, and academic institutions to further market-based solutions to environmental issues



## **Business Initiatives**

# Providing Market Solutions



Across our core business activities, we bring together people, capital and ideas in the belief that global markets can foster progress – delivering effective solutions to environmental challenges.

Each of our major business areas has an important role to play in contributing to environmental progress. For example, our Investment Banking and Investment and Lending businesses help provide capital and advice to advance environmentally responsible projects and transactions. In Institutional Client Services, we seek opportunities to create more efficient and liquid markets for environmental products and services through our market making activities. Investment Management incorporates an understanding of environmental impacts and capabilities into our efforts to manage and preserve the assets of our clients. We take the same disciplined approach to these business activities as we do with all our financings, investments, markets and advisory services: all must meet the interests of our clients and generate long-term value for our shareholders.

## Clean Technology and Renewables Group

As the demand for clean technology and renewable energy has expanded and a greater number of clients have become increasingly focused on this opportunity, we enhanced our commitment and more closely aligned our resources through a separate dedicated group to better serve the needs of our clients and enable us to play a more meaningful role in the development of the sector. We established the Clean Technology and Renewables Group within the Investment Banking Division. This group advises, helps finance and invests in alternative energy, renewables, energy infrastructure and clean technology companies.

## Investing in a Low-Carbon Future

One of the roles we play as a financial institution in the transition toward a low-carbon future is to invest alongside our clients in helping scale up clean technology and other environmentally beneficial projects. Since 2005, we have invested over \$3 billion in clean energy and environmentally beneficial projects. These investments have provided the necessary funding that emerging industries need to achieve the economies of scale that will help them become more cost-competitive. Our portfolio consists of companies

and projects in the areas of wind, solar, cellulosic ethanol and geothermal energy. We also have investments in energy efficiency technologies, sustainable real estate development and companies that focus on market infrastructure development.

## CLEAN ENERGY AND ENVIRONMENTALLY BENEFICIAL INVESTMENT TOTALS



#### BUSINESS INITIATIVES

2010 continued to be a challenging year for the markets driven by an uncertain global economic outlook and questions about the future of regulation both for the financial industry and in relation to the clean energy sector. As such, we have made a limited number of new investments in clean energy and have focused on expanding our clean energy efforts in areas such as solar and hydroelectricity through our subsidiary Cogentrix Energy.

- We furthered our capital investment in Sunray Energy, which operates Solar Energy Generation Systems I and II (SEGS I & II), the first two utility scale solar trough plants in the world and the longest running solar trough plants in the US. Through capital investments to retrofit and upgrade the delivery capability, SEGS I & II have increased solar output by 19% in 2010.
- In August 2010, Cogentrix entered into a contract with Public Service Company of Colorado for a solar generating project in southern Colorado. The 30-megawatt concentrating photovoltaic solar generating project, which recently broke ground, will be the largest facility of its type in the world and is expected to be completed in the second quarter of 2012.
- We have continued to develop run-of-river hydroelectricity projects in Turkey. In mid 2010, the first hydroelectricity generating plant in our development portfolio came on

line and our second project is scheduled to begin commercial operation in early 2012. By mid 2014, we expect a total of four run-of-river hydroelectricity projects totaling 190 megawatts to be completed.

 We increased our investment in GridPoint, Inc., a provider of software and hardware solutions focused on energy efficiency and smart grid development.

## Green Affordable Housing

In addition to our clean energy investments, the Urban Investment Group (UIG) is responsible for deploying the firm's capital to underserved domestic communities; UIG has committed more than \$1.3 billion to revitalize emerging urban areas in the past 10 years. As part of that mission, UIG has increasingly focused on green initiatives to facilitate lower energy costs and more sustainable and vibrant neighborhoods. Green initiatives have included a variety of investments funding the new construction of mixed use and mixed income developments, proprietary investment vehicles targeted at the acquisition and greening of affordable housing, and investment in funds targeting energy conservation and resource efficiency. In addition, UIG committed capital to facilitate the availability of healthier food choices by financing grocery stores and green market operators in low-income communities. In 2010, UIG committed a total of \$737 million of which \$171 million includes green initiatives. The following are two examples:

- Rose New Jersey Green Affordable Housing Preservation Fund We committed \$23 million to a proprietary fund established by the Jonathan Rose Companies to acquire and renovate occupied affordable multi-family rental, housing in New Jersey. The fund will purchase affordable housing in mass-transit accessible locations throughout the state, with a focus on Hudson and Essex Counties. Part of the fund's capital will be used to upgrade or replace heating, cooling and water systems, as well as other measures to minimize energy usage and preserve affordability for the low and moderate income occupants.
- The Bradford We committed over \$51 million to a mixed-use, mixed-income development in the Bedford-Stuyvesant neighborhood of Brooklyn, New York. The project is seeking a LEED Silver rating and will include a cogeneration plant which produces power through natural gas, providing more efficient central heating and cooling. The property is located near public transportation and includes bicycle racks, high-reflective roofing to reduce heat gain, the use of local, recycled, and green materials, and high-efficiency window glazing. Low-flow water fixtures will reduce water use by more than 30% compared to typical buildings.

## Financing and Advisory

CLEAN TECHNOLOGY AND RENEWABLE ENERGY



As a global financial institution, a key role we play is to assist our clients who seek to raise capital that will enable them to pursue innovative technologies and solutions to environmental issues. Despite the broader challenges facing the market and economy worldwide, in 2010, we helped raise \$8.9 billion for our clients globally who are focused on clean technology and renewable energy, including:

- Tesla Motors IPO We served as joint bookrunner for the June 2010 initial public offering (IPO) of Tesla Motors, which raised \$260 million to fund Tesla's plans to design, manufacture and sell electric vehicles. The company has delivered more than 1,650 high-performance Tesla Roadsters to customers in 22 countries and plans to release its next vehicle, the premium luxury Model S sedan, in mid-2012. This historic offering created the world's only publicly traded manufacturer of 100% electric vehicles. It also represented the first US automotive manufacturer to go public since 1956, when Goldman Sachs managed the IPO of Ford Motor Company common stock.
- *Amyris, Inc. IPO* In September 2010, we served as joint bookrunner for the IPO of Amyris, which raised \$98 million. Amyris is an integrated renewable products company that is applying synthetic biology technology to develop alternatives to petroleum-based chemicals and fuels. The company is currently focused on a number of projects, including the creation of molecules for commercial products used in detergents, cosmetics, lubricants and diesel fuel.
- Orient Green Power Company Limited IPO Orient Green raised \$200 million in September 2010 in what is considered to be India's first green IPO, for which we served as joint bookrunning lead manager.

The company is the largest independent operator and developer of renewable energy power plants in India, with a portfolio including biomass, biogas, wind energy and small hydroelectric projects at various stages of development.

- *Elster Group SE IPO* We served as joint bookrunner for the September 2010 IPO of Elster, a Germany-based company that is one of the world's largest providers of electricity, gas and water measurement and control products and systems. The IPO raised \$242 million. Elster's solutions, which include advanced metering products, are sold in over 130 countries and are widely used by utilities in both the traditional and smart grid markets. With over 200 million metering devices deployed in the last 10 years, Elster has one of the largest installed bases in its field.
- *Enel S.p.A.* Italy's largest power utility, listed a minority stake in Enel Green Power S.p.A. (EGP), one of the world's leading renewable energy companies, through a €2.5 billion IPO in October 2010. We acted as joint global coordinator and joint bookrunner for this landmark public offering. EGP produces electricity from hydroelectric, wind, geothermal, solar and other sources, and operates over 600 renewable power plants in 16 countries in Europe, North America and Latin America. The offering was the largest IPO in Italy since that of Enel in 1999 and the largest in Europe since

## **FINANCING GREEN TRANSACTIONS**



2008. Following the IPO, Enel S.p.A. and EGP will further consolidate their leading position in driving the operational and technological advancements in both energy efficiency and power generation from renewable sources worldwide.

 China High Speed Transmission Equipment Group Co., Ltd China High Speed Transmission is the leading wind power equipment company in China by market share. In September 2010, we were the sole bookrunner on China High Speed Transmission's \$418 million block trade, the largest ever industrialmachinery follow-on offering in Asia Ex-Japan region at the time. The primary capital raised will fund China High Speed Transmission's capital investments.

In addition to helping our clients raise capital, we advise our clients on strategic transactions that help their businesses become better positioned to advance clean energy growth opportunities. Examples include:

 John Deere Renewables In August 2010, we advised Deere & Company on its strategic review and sales of John Deere Renewables, its wind energy business. The business was sold to Exelon Generation Corporation for \$900 million, including earn-out provisions. The transaction helps Deere & Co. sharpen its strategic focus on growing its core equipment businesses around the world while enabling the wind portfolio to benefit from Exelon's demonstrated leadership in the energy industry.

• *Clipper Windpower* We were the exclusive financial advisor to Clipper Windpower, the only independent US wind turbine manufacturer, in the remaining stake sale to United Technologies Corporation in October 2010. This follows the 49.9% stake sales, which we advised on, in the prior year. With the sale, Clipper will benefit from long-term financial stability, United Technologies' management and operational expertise, as well as its world class technology in blades, turbines, and gearbox design.

## Trading and Capital Markets

Making Markets in Environmental Commodities We continue to act as a market maker in emissions and other climate-related commodities, and look for ways to play a constructive role in promoting the development of these markets. By making markets in these products we enable greater liquidity and market access, which in turn helps our clients to more effectively manage their risks. In Europe, we have been market makers in the European Union Emissions Trading Scheme since its inception in 2005.

We develop and place catastrophe-linked securities that offer our clients a means to mitigate financial risk from natural catastrophes including those arising from weather risks such as hurricanes, winter storms, severe thunderstorms and wildfires. In 2010, we raised \$1.2 billion for clients via catastrophe-linked securities.

Goldman Sachs is also an equity investor in companies that add efficiency and scale to global environmental commodity markets such as APX Inc (APX) and the Green Exchange LLC (GreenX). In November 2010, APX signed a merger agreement with NYSE Bluenext. The deal allows the combined company to provide a more comprehensive offering to market participants. The GreenX, a joint venture between CME Group, Goldman Sachs and other market participants, was granted designated contract market status in late 2010 and continues to see significant increases in the volume of environmental commodities traded and cleared on the platform.

## Global Investment Research

Our Global Investment Research team incorporates environmental, social value and other relevant factors into our fundamental analysis of individual companies and industry sectors. We believe that understanding environmental risks and business opportunities leads to a more complete investment decision process.

### GS SUSTAIN

Our GS SUSTAIN research aims to identify long-term investment opportunities by utilizing a framework which integrates analysis of company environmental, social and governance (ESG) performance with traditional fundamental analysis. The GS SUSTAIN team has 15 members on the ground in New York, London, Bangalore and Hong Kong and works closely with over 400 sector analysts globally.

In February 2010, our GS SUSTAIN team expanded its coverage universe in a major research report, *Crossing the Rubicon: Our investment framework for the next decade*, bringing together updated and comprehensive analysis of global industries. To read *Crossing the Rubicon* and other GS SUSTAIN research reports, visit: *www.gs.com/gssustain*.

At the end of 2010, the GS SUSTAIN framework had been applied to over 750 large global companies in 22 industries. The resulting GS SUSTAIN Focus List brings together 68 leaders that have been identified in each sector. From its inception in June 2007 through 2010 year-end, the GS SUSTAIN Focus List has outperformed the MSCI All Country World Index by 38.5% on an equally weighted basis.

In 2010, we initiated coverage of additional industries, including transportation, construction and building materials, and aerospace and defense. The team has expanded its research to analysis of specific regions, including analysis of close to 800 European companies in "GS SUSTAIN: Eurovision: European winners for a global stage" in November 2010, reflecting the increasing integration of the analysis into the firm's broader research. In June of 2010, the team published "GS SUSTAIN Disclosing Asia's Potential" and launched the GS SUSTAIN Asia Watch List to help investors identify potential future leaders in Asia should companies increase future disclosure the Asia Watch List outperformed the MSCI All Country Asia Index by 6.3% through 2010 year-end on an equally weighted basis. This framework was expanded further with the publication of GS SUSTAIN Disclosing China's Potential and the launch of the GS SUSTAIN China List for both A-shares and offshore listed companies in November 2010.

The GS SUSTAIN team's Emerging Industries work is designed to identify companies well positioned to benefit from rapid growth in their markets, including alternative energy, energy efficiency, water, waste and recycling. Our GS SUSTAIN professionals present their analysis and conclusions to many of the largest fund managers worldwide and have developed strong relationships with both traditional asset managers and those with a socially responsible or environmental focus. In 2010, GS SUSTAIN team members spoke at a number of high-profile events, including:

#### JANUARY 2010, NEW YORK

O UN Investor Summit on Climate Risk

MARCH 2010, NEW YORK *Financial Times* Investing in a Sustainable Future

#### APRIL 2010, SEOUL, KOREA

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Business for Environment Global Summit

#### JUNE 2010, LONDON, UK

O Principles for Responsible Investing Conference

#### JUNE 2010, NEW YORK

O UN Global Compact Leaders Summit 2010

SEPTEMBER 2010, XIAMEN, CHINA

O UNCTAD: World Investment Forum

OCTOBER 2010, NEW YORK

O Russell 20-20 Annual Meeting

NOVEMBER 2010, SAN ANTONIO, TEXAS SRI in the Rockies Annual Conference

#### DECEMBER 2010, SHANGHAI, CHINA

• Shanghai Stock Exchange 9th Annual China Corporate Governance Forum

#### DECEMBER 2010, LONDON, UK

• The Princes Trust Accounting for Sustainability Forum

## Global Clean Energy Research

The Global Clean Energy Research team covers clean energy companies around the world, including producers of wind, solar, biofuels, geothermal and energy storage/smart-grid technologies. Leveraging one of the broadest geographic and technological platforms in equity research across a global team allows for in-depth supply chain knowledge and greater awareness of catalysts likely to affect renewable energy broadly. Stock coverage spans large-cap to start-up companies with a clear focus on deepening market awareness so as to introduce broader pools of capital to the sector. In November 2010, we hosted our fifth annual Clean Energy Conference, and intend to co-host the 2011 conference with our Power and Utilities team in early December.

### Global Markets Institute

The Global Markets Institute (GMI) continues to conduct global macroeconomic research on environmental themes, such as the impact of climate change, energy efficiency, energy policy and the challenges of reconciling environmental protection with economic growth. This research also encompasses demographic themes, such as aging populations, urbanization and the role of women in global economies. To read GMI's most recent update on global climate and energy policy, visit: <u>www.gs.com/ideas/global-markets-institute/featured-research/cancun.html.</u>

## Investment Management

With environmental issues (climate change in particular) at the forefront of investors' minds, Goldman Sachs Asset Management (GSAM) has established a team of people to focus on ESG research and sustainability analysis implementation. The team includes representatives from all GSAM asset classes, Alternative Investment and Manager Selection (AIMS), Fixed Income, Fundamental Equity, Goldman Sachs Investment Partners (GSIP), and Quantitative Investment Strategies (QIS), as well as members from the legal, compliance and sales teams.

#### Fundamental Equity

During 2010, GSAM's Fundamental Equity group continued to expand its ESG research globally and currently has a global team of ESG specialists integrated into the investment teams. Fundamental Equity has long incorporated ESG issues (particularly governance) into the investment process. In addition to applying these factors to its US and global sustainable investment products, the team is now beginning to use a more formal process for ESG research and its inclusion in its broader investment process.

## US Responsible Equity Strategy

GSAM's US Responsible Equity strategy aims to outperform the S&P 500 while investing in companies engaged in

responsible activities across the ESG spectrum. Blending these factors with fundamental research focused on outperforming the S&P 500, the strategy benefits from an investment team that includes ESG-focused specialists. The team seeks to identify ESG leaders based on an in-house, proprietary scoring system that is comprehensive, forwardlooking and quantifiable – not solely based on excluding certain sectors or stocks. The team leverages its access to company management teams to influence high ESG standards. As of December 31, 2010, the US Responsible Equity strategy had \$49.6 million in managed assets.

#### Goldman Sachs Sustain Strategy

An important element of GSAM's approach is the Goldman Sachs Sustain strategy, an innovative global equity fund based on the GS SUSTAIN Focus List. This strategy, which has been managed by the Quantitative Investment Strategies group, provides investors with access to fundamental investment opportunities arising from the structural changes reshaping the world economy. The Goldman Sachs Sustain strategy had \$339.7 million in assets under management as of December 31, 2010.

As of April 2011, the Goldman Sachs Sustain strategy assets are being managed by the Fundamental Equity group and has been renamed GSAM Global Sustain Equity strategy. The strategy incorporates the same proprietary ESG evaluation model as the US Responsible Equity product.

## Business Selection and Environmental Advisory

How We Manage Environmental and Social Risk

We assess and manage environmental and social risk with the same disciplined approach that we use when managing all business risks. We seek diverse opinions, escalate relevant issues and hold our people accountable for their judgment and decisions. Our *Framework* and due diligence guidelines provide the basis for evaluating the many considerations that enter into a deal or transaction. We are not an active project financier but are committed to adhering to the Equator Principles (*www.equator-principles.com* ) where they apply. Please refer to the Business Selection and Risk Management section of the *Framework www.gs.com/environment* ] for further information.

#### Selecting Business and Engaging with Clients

When we make business selection decisions, we consider the environmental impacts and practices of our clients and potential clients. Our advice to our clients helps them further business strategies that take advantage of emerging opportunities and reduce the adverse environmental and social impacts of their businesses.

We ask our advisory, financing and principal investing teams to conduct an ESG review for opportunities in the normal course of their due diligence before committing to business on behalf of the firm. As appropriate, trading and asset management teams also conduct ESG reviews. Environmental Markets Group (EMG) and our Business Intelligence Group (a research and due diligence group within the Legal and Internal Audit Division that supports businesses and the firm's committees in making informed regulatory, commercial and reputational risk management decisions) assist each deal team in evaluating a transaction that has ESG-related sensitivity. Their findings are passed on to key committees for review and input.

Transactions that have a particularly high level of ESG sensitivity are escalated for discussion and a final decision involving key business leaders, appropriate committee members and the Chairman's Office. When we identify a potentially significant issue – including governance, environment, labor or human rights – we prefer to address the issue by working with the client to help them adopt more sustainable practices. Where this is not feasible and involves potentially significant environmental damage, social issues, unacceptable risks or directly conflicts with the firm's Business Selection and Risk Management guidelines under the *Framework*, we will forgo the engagement. We believe this approach effectively manages risk and yields greater benefits both for the environment and broader society.

## Our Due Diligence Guidelines

In addition to the firmwide review process, we equip teams in sensitive sectors with due diligence guidelines and training to evaluate new business opportunities effectively. This includes background on current ESG issues and sensitivities in the sector, and potential questions to discuss with a company. Our due diligence guidelines span eight industry sectors. We also have several subsector guidelines which include coal, gas, hydroelectricity, nuclear, and thermal power.



#### BUSINESS INITIATIVES

We continue to evaluate emerging environmental issues, regulatory trends and the position of environmental NGOs, and periodically review our guidelines to ensure they reflect evolving environmental concerns. We train our people in relevant business areas on our ESG due diligence process and the *Framework* as new hires. In addition, they participate in ongoing training, including dialogues with EMG and external stakeholders, and also receive updates on policy developments and the firm's activities related to the environment.

## Physical Commodities

The firm regularly monitors events impacting the broader industry and, based on these, conducts stress testing and validation of our internal processes and controls, including those related to environmental and social risk management. In September 2010, we formed the Physical Commodity

## **TRANSACTIONS REVIEWED BY EMG BY SECTOR (2010)**

BIOFUELS<br/>15CHEMICALS<br/>14FORESTRY<br/>LOSMETALS & MINING<br/>16201 & GAS<br/>52POWER GENERATION<br/>50TRANSPORTATION<br/>QWATER<br/>10

**327** Total number of transactions reviewed by EMG in 2010. Review Committee (PCRC), a cross-divisional firmwide governance committee authorized by the Firmwide New Products Committee (now the New Activity Committee) to ensure that we have a consistent approach to evaluating environmental, human health and safety (EHS) risks. The PCRC reviews and provides recommendations to assist business units in more effectively evaluating and managing EHS risks that may arise in the course of engaging and investing in physical commodity activities. In this capacity, PCRC also determines whether the firm has sufficiently addressed and mitigated such risks through the approval process. Activities reviewed by the PCRC may involve exploration, mining, refining, production, extraction, storage, transportation or distribution of physical commodities.

# Balancing Economic Growth and the Environment

We recognize that business selection decisions are often complex and sensitive, and even more so in emerging economies. For example, judgments regarding projects in the power sector must balance the access to electricity required for poverty alleviation and economic growth with the available electricity generation sources, which often include fossil fuels. As part of our analysis, we work with our clients to better understand the factors driving the particular investment decision, including the energy needs in the region, the company's current generation portfolio and the feasibility of low-carbon alternatives. In instances where a company is expanding in an area or region with a significant energy deficit and the company has demonstrated a commitment toward low-carbon generation as part of its portfolio, we have provided financing to help the company gain reliable access to power and support the underlying economic growth in the region.

## Operations

# Reducing Environmental Impacts

Minimizing operational impacts is a prerequisite of sound environmental policy and a necessary complement to our core business activities. Since the release of the *Framework* in 2005, we have spent the past five years focused on three operational priorities:

- Promoting energy efficiency and reducing our carbon footprint;
- Maximizing the use of universal green building standards in the construction of new and existing offices; and
- Responsibly managing waste and maximizing the procurement of sustainable goods and services.

In all that we do, we strive to find sustainable solutions that make business sense and minimize our impact on the environment – whether we are retrofitting an existing building in Beijing, buying servers for a data center in London or executing a contract for waste disposal services in New York.

## Carbon Reduction

We continue to reduce operational carbon emissions from all leased and owned facilities by implementing our global Carbon Reduction Framework. The original commitment was to reduce absolute GHG emissions by 7% by 2012 from a 2005 baseline, and we went further in 2009 by pledging to reduce GHG emissions from all facilities to zero by 2020.

## Carbon Reduction Framework

In meeting our carbon reduction goal, we prioritize internal reduction measures both in data centers and offices. Data center carbon emissions growth continues to be primarily driven by the need to meet increasing data processing requirements and regulatory obligations. To address this reality, we work to maximize the efficiency and operation of the infrastructure and technology systems in data centers by consolidating facilities, driving efficiency in how we power and cool them and optimizing the efficiency and utilization of technology equipment to the maximum extent feasible. We continue to explore the feasibility of onsite and near-site energy generation technologies including solar, wind and fuel cells. In offices, we seek opportunities to consolidate into energy efficient real estate and manage the use of space and technology hardware responsibly. Recognizing that additional measures will be required, we supplement reductions in emissions from internal operations with the purchase of high-quality, credible renewable energy and external carbon offsets.

In 2010, we commissioned a third party to conduct a review of our key operational environmental indicators to ensure that data collection and reporting processes and controls are consistent with environmental industry best practices and international accounting standards. Ernst & Young conducted a review in accordance with AICPA standards in relation to our Scope 1 and Scope 2 GHG emissions and intensity measures for the years ending December 31, 2009 and December 31, 2010. Details of the scope and conclusions of the assurance engagement can be found in the Independent Assurance Statement found in Appendix A. In 2010, we also closed a one-year reporting lag for Scope 1 and 2 carbon emissions and, thus, this report includes both 2009 and 2010 GHG emissions.



### Carbon Footprint

*Scope 1 and Scope 2 Emissions* As shown in Figure 1, 2010 operational carbon emissions were 351,487 metric tons CO<sub>2</sub>e, a 3% reduction from 2009. This is the first year since the 2005 baseline was established that our gross carbon emissions have declined year-over-year and is the result of the efforts described below.

Figure 2 illustrates the challenges that data center and office space growth have presented in reducing emissions, as well as the success of our efforts to stabilize and achieve actual emissions reduction. Data center carbon emissions have increased 246% since 2005, which has driven the gross emissions increase over this period. While business requirements drive the increased need for data center growth, we have focused on enhancing efficiency efforts in these facilities. The results of these efforts were evident in 2010 - the first year data center carbon emissions did not increase over the previous year's emissions. Carbon emissions in offices have been stabilized from 2006 through 2010, despite a 31% increase in total operational building area during this period. This outcome is attributable to investments in carbon reduction projects, including green building practices.

We evaluate carbon emissions intensity metrics to measure relative improvement in the performance of our office spaces.







Figure 3 highlights the positive impact our reduction efforts have had on net GHG emissions performance in offices due to improvements in operational efficiency. Notably, since 2005, emissions per rentable square foot have been reduced by 15% and have decreased every year since 2006. Over this same time period, we have also reduced net GHG emissions per full-time occupant by 6% and per net revenue by 28%.

## FIGURE 3: GHG EMISSIONS INTENSITY-OFFICES EXCLUDING DATA CENTERS

(kgCO<sub>2</sub> per RSF)

\*CO2e



See Appendix B for a description of the carbon accounting methodology and Appendix C for the full GHG data set.

## **CARBON REDUCTION FRAMEWORK**



WORKPLACE COMPUTING POWER CONSUMPTION



Minimum "per user" wattage consumed by new equipment purchased each year for new employees or as replacement of existing equipment.



#### OPERATIONS

Scope 3 Emissions Though it is not part of our carbon zero commitment, we do monitor Scope 3 emissions. In 2010, gross GHG emissions from business travel were 168,250 metric tons  $CO_{2e}$ . Firmwide policies encouraging the use of hybrid and fuel-efficient vehicles in connection with corporate travel resulted in a 20% increase in the use of such vehicles in 2010. In addition, we continue to encourage our employees to consider video teleconferencing as a preferred alternative to travel.

## Data Center Carbon Reduction Efforts

Several recent and ongoing initiatives have reduced our data center GHG emissions, such as:

*Consolidation* In 2010, we completed the consolidation of four data centers from our legacy New York campus into a single new, purpose-built, high-efficiency data center in New Jersey, migrating approximately 2.9 MW of computing technology load. We not only centralized the network, computing and resilience infrastructure, but decommissioned approximately 1.7 MW of legacy devices, thereby increasing operational efficiency by approximately 12%, while significantly reducing our overall technology footprint. *Power and Cooling* We continue to improve power and cooling efficiency by:

- Maximizing the efficiency of existing chilled-water air conditioning systems by upgrading their fan motors to variable speed drives;
- · Implementing hot/cold aisle containment;
- Expanding our temperature and humidity envelope to accept higher server-inlet temperatures; and
- Evaluating modular data center offerings that can better match power capacity to technology demand, thereby increasing efficiency while maintaining current resiliency standards.

**Technology Equipment** Our strategy for driving down energy use and reducing our technology footprint is to optimize the efficiency of the technology based on best available hardware from our vendors, and to increase utilization of this equipment to minimize the rate of growth of our server and storage footprint. Through these efforts, we have achieved a 42% reduction in average power consumption per server host in our North American data centers since 2006, while our computing capacity increased by over 60% during that period. We continue to drive similar improvements globally. We achieved these gains by implementing industry best practices such as virtualization and dynamic cloud computing, as well as hardware and storage optimization.

## Office Space Carbon Reduction Efforts

In addition to implementing the green building standards discussed in the following section, we are also undertaking the following initiatives to reduce GHG emissions from office spaces:

*Infrastructure Optimization* We continue to achieve efficiencies through modifications in operating behavior with a focus on lighting and HVAC equipment optimization. For example, in Asia offices, we retrofitted conventional exit signs and spotlights with LED technology, which reduced energy costs and our carbon footprint by 258 metric tons CO<sub>2</sub>e.

*Technology Hardware Power Optimization* We continually seek ways to employ technology in a more energy-efficient manner to reduce environmental impact across our global offices. For example, we have adopted a virtualized desktop infrastructure (VDI) that allows us to take advantage of shared multi-user servers as well as low-wattage thin client desktop PCs. Our VDI strategy and continued adoption of high-efficiency hardware platforms have reduced the minimum workplace technology energy footprint by over 60% since 2006 for hardware purchased for new employees or as replacement of existing equipment. We anticipate further reductions in "per user VDI server power" and overall workplace computing power

#### **OPERATIONS**

consumption through increased CPU core counts becoming available on new server hardware, enabling the consolidation of more users onto one server.

To further maximize the energy efficiency of our workplace hardware platforms, in 2010, we began implementing an in-house PC power management solution to put PCs into a low power "sleep mode" when not in use. With 50% of our desktops currently running power management software, the result has been an average daily energy savings of 5.5 MWh or roughly three metric tons of carbon; this is more than the typical UK household consumes each year. When the PC power management solution is fully implemented (projected for Q3 2011), we expect to see daily savings of approximately six metric tons of carbon.

#### External Carbon Reduction Portfolio

Although we prioritize internal reduction efforts, our aggressive reduction goals, projected carbon growth and diminishing opportunities for further internal reductions require that we expand and diversify our external portfolio of carbon reduction opportunities each year. In doing so, we continue to explore the evolving marketplace of direct and indirect green power purchases and carbon offsets. We are taking a measured approach to build a portfolio of diverse assets at practical cost with:

- Maximum verification and accounting integrity;
- Minimal delivery risk; and
- Social, environmental and health co-benefits and/or the benefit of furthering environmental market solutions.

Leveraging the firm's multiyear alliance with E+Co, a nonprofit organization that invests in clean energy businesses in developing countries, we have an agreement to offtake carbon credits that are generated from the energyefficient cooking stove projects in Ghana and Mali, which E+Co supports. The carbon credits are Gold Standard Verified Emissions Reductions, and the capital from the carbon credits enables E+Co to further entrepreneurial support services and facilitates clean energy entrepreneurs' expansion of their local businesses.

## Green Building Standards

In 2005, we committed to LEED Gold or equivalent standards in the design, construction and operation of all new offices, as well as interior improvements to existing buildings. All building projects include measures to enhance energy efficiency, reduce water consumption and the use of raw materials, and promote a healthy indoor environment, where applicable. We take a commercial approach to iden-

#### **LEED PROJECT GROWTH**

(Rentable Square Feet in millions)



tifying sustainable products and technologies, and work to integrate programs that are consistent with sound business practices and minimize environmental impact.

We have now become one of the world's largest owners of LEED-certified commercial real estate, occupying 3.8 million square feet in green buildings under the new construction and commercial interiors rating systems.<sup>3</sup> We are in the planning and development stages of an additional 1.2 million square feet of LEED-certified real estate. Upon completion, more than 40% of our global square footage will be

<sup>&</sup>lt;sup>3</sup> This figure is based on public information available in the United States Green Building Council's project directory.

#### OPERATIONS

LEED-certified, amounting to a \$3.3 billion investment in LEED-certified office space.

## Responsible Waste Management and Sustainable Procurement

We actively manage consumption in partnership with our vendors, with a particular focus on (1) reducing business and construction waste with the goal of diverting waste from landfills; and (2) procuring sustainable products and services across all business services. The following are just a few examples of what we accomplished in 2010:

*Business Waste* We diverted 50% of the firm's global waste from landfills around the world through recycling, composting and waste-to-energy initiatives. Our accomplishments included:

- Generating 160 megawatt hours of clean renewable electricity from 322 tons of wet trash;
- Increasing food waste composting from 15.7 tons to 247 tons; and
- Partnering with our vendors in New York and New Jersey to convert 51% of food service items to compostable alternatives.





Construction Waste In construction projects, we reduced waste diverted to landfills by over 2,700 tons; 88% of construction waste, including 100% of construction-related paper and cardboard was recycled.

*Paper Use* We continue to reduce paper use and maximize use of sustainable paper. This year, paper use was further reduced by 20% and 79% of our paper was certified as sustainable by independent third-party agencies, such as the Forest Stewardship Council and the Environmental Protection Agency (EPA).

#### **2010 CONSTRUCTION WASTE**



#### 2010 PAPER CONSUMPTION



## Thought Leadership

# Putting Ideas to Work

As a leading global financial institution, it is our responsibility to help foster progress by using our resources to convene thought leaders and decisionmakers from the corporate, academic, government and NGO sectors to raise awareness of critical issues and further solutions where capital markets can play a meaningful role in addressing important environmental issues.

## Center for Environmental Markets

A key channel for developing and disseminating thought leadership is our Center for Environmental Markets (CEM). CEM conducts independent research with partners to explore and develop public policy options and tools for furthering market-based solutions to environmental challenges. CEM partners include corporate clients, academic institutions and NGOs who bring together diverse perspectives and complementary skills. Together with its partners, CEM shares its findings through publications, research papers, conferences, tools and targeted outreach. Since 2006, we have invested more than \$7 million through CEM in our partnerships.

CEM's 2010 initiatives are described below.

## Water



CEM is addressing the growing impact of water scarcity and water quality on business decisions. Its initiative to create a Water Index named Aqueduct, in partner-

ship with the World Resources Institute (WRI) and General Electric, gained additional support in 2010, as the Coca-Cola Company agreed to join the effort. The Index has been piloted in the Yellow River basin in China for the power thermal sector and is currently being expanded to additional water basins and industry sectors to enable global coverage. The tool is expected to enable companies and investors to capture the various components of water-related risk to make betterinformed investment decisions. For more information on Aqueduct, visit: http://projects.wri.org/aqueduct.



## Clean Energy



*Clean Energy Policy* In mid-2009, CEM partnered with Duke University's Nicholas Institute for Environmental Policy Solutions (Nicholas Institute) to explore the interrelationship of policy design options underlying

federal climate and energy legislative efforts. During 2010, this partnership produced several papers and convened sessions that informed policy dialogues. Despite the lack of a comprehensive climate and energy bill materializing, the underlying work continues to inform ongoing regional legislative efforts.

In late 2010, we embarked on a new partnership with the Nicholas Institute to analyze existing energy policy efforts that are proceeding in the absence of comprehensive federal climate and energy legislation. Key policy initiatives to be reviewed include the US Environmental Protection Agency's regulation of greenhouse gas emissions under the Clean Air Act; state and regional efforts including capand-trade mechanisms; state-level utility regulation; and ongoing federa I efforts such as potential clean energy standards, energy efficiency and tax incentives. The project's principal objectives include fostering a system-wide view

#### that can

help provide greater long-term certainty to businesses and encouraging investment in low-carbon infrastructure and technological innovation. The project's advisory group includes senior representatives from renewable energy, utility, industrial and venture capital sectors, as well as experts from academic institutions and think tanks.

*Cleantech to Market Program* We are a partner in the University of California Berkeley's Cleantech to Market Program, which brings together a network of students, industry players and scientists to reduce the time it takes for clean energy technologies to transition from lab to prototype to full commercialization. Universities play an important role as a source for clean energy ideas and innovation by bringing cross-disciplinary programs, research and commercial players together. Educating the next generation of leaders to help further creativity and innovation in the clean technology and renewable energy sectors is crucial.

## Energy Efficiency



*Energy Efficiency Retrofit Demonstration Project* Building on efforts to further energy efficiency at scale, CEM partnered with Johnson Controls, Inc., Jones Lang LaSalle, Vornado Realty Trust,

Tishman Speyer, the Natural Resources Defense Council (NRDC) and Greenprint Foundation to launch an initiative aimed at expanding the energy efficiency retrofit market for commercial office buildings. A key objective of this initiative is to demonstrate the value proposition of incorporating energy efficiency through the tenant space build out process, highlighting tenant demand as a key driver. Through demonstration projects, it will address ways to overcome the obstacles that frequently prevent commercial building owners and tenants from making energy efficiency improvements, analyze and substantiate the commercial viability of energy efficiency measures, and develop a replicable model including potential financing alternatives that can act as an enabler for scaling up energy efficiency retrofits.

Advancing Policies and Mechanisms to Achieve Energy Efficiency We entered into a new partnership with Resources for the Future's (RFF) Center for Climate and Electricity Policy (CCEP) to catalyze development and implementation of effective energy efficiency policies and to increase the cost effectiveness of energy efficiency programs nationwide. CCEP was established in 2009 through a merger of RFF's Climate Policy Program and Electricity and Environment Program and with leadership contributions from Alcoa Foundation and Goldman Sachs together with support from other foundations, corporates and individual contributors. Energy efficiency is one of the key priorities for CCEP, with a focus on assessing the costs and effectiveness of energy efficiency policies, some of which have been in place since the oil shocks of the 1970s. Another issue CCEP will review is the lag in business and residential uptake for cost-effective energy efficiency initiatives and the policy reforms that can help encourage investment.

## Conservation in Tierra del Fuego



Based on Goldman Sachs' initial donation of land and a financial endowment, the Wildlife Conservation Society (WCS) continues to promote the conservation of

Karukinka, a 735,000-acre protected area on the Chilean island of Tierra del Fuego, for the benefit of the people of Chile. This effort, launched in 2004, seeks to transform Karukinka into a model for conservation, incorporating innovative ecological and sustainable development programs.

#### THOUGHT LEADERSHIP

WCS has begun to use Karukinka as a template for new marine conservation programs with the goal of enhancing marine conservation in the Southern Cone. In September 2010, WCS signed an agreement with the University of California, Santa Barbara (UCSB) and Universidad Católica de Chile (UC Chile) to help establish marine-protected areas in Chile, such as the Admiralty Sound in Karukinka.

In a related activity, CEM sponsored a partnership between UCSB's Bren School of Environmental Science & Management and WCS to engage the school's students and faculty to help assess the bio-economics of marineprotected areas in the region, particularly related to salmon farming in southern Chile. The work is expected to help guide the coastal planning policies of the government of Chile's Magallanes region, while enabling UCSB master's degree candidates to further their training in "on-theground" solutions-oriented environmental science.

#### Events and Conferences

During 2010, CEM hosted, co-sponsored and presented at a number of conferences attended by policy makers, NGOs and educators, as well as Goldman Sachs clients, investors and employees. Topics have included the role of markets in addressing environmental challenges, how to further capital to scale up low-carbon solutions, the role of public-private partnerships, the importance of growth markets including China and the environment, and forest carbon. The following are examples of events we have held and co-sponsored:

- 5th Annual Goldman Sachs Clean Energy Conference
- CEO Conversations on Sustainability
- Roundtable on Natural Capitalism
- **o** 6th Annual China Institute Executive Summit
- Forest Carbon Finance Summit

## Engaging Our People

We continue to further our employee engagement efforts, recognizing that individually and together we can make a more meaningful impact. One of the ways we raise awareness on environment and sustainability issues is through internal speaker series. In addition, we publish a quarterly environmental newsletter updating employees on notable transactions related to the environment, the firm's progress on mitigating our environmental footprint, policy updates and other newsworthy developments. There are also employee-led environmental networks in cities worldwide that raise awareness and engage local employees on initiatives ranging from recycling, composting, and reduction of disposable cups and bottles. During the year, Goldman Sachs people participated in 56 Community TeamWorks volunteer projects in their local communities that had direct environmental impact, such as restoring or maintaining local parks and green spaces. Furthering our commitment to the community and environment, Goldman Sachs contributed \$3.5 million among the public and private support that made possible the construction of the first LEED-certified New York Public Library in Battery Park City.

## Report of Independent Accountant

## Board of Directors and Management Goldman Sachs

We have reviewed gross scope 1 and 2 Greenhouse Gas (GHG) emissions and emissions intensity measures in the Global Carbon Emissions Summary as presented in Appendix C of the 2010 Environmental Progress Report ("Report") for the years ending December 31, 2009 and 2010. We did not perform a review of data for years prior to 2009. The metrics within the scope of our review included:

#### **GHG Emissions**

- Gross Scope 1 Emissions (mtCO<sub>2</sub>)
- Gross Scope 2 Emissions (mtCO<sub>2</sub>)

#### **Emissions Intensity**

- Full-Time Occupants (mtCO<sub>2</sub>/FTO)
- Full-Time Occupants excluding data centers (mtCO<sub>2</sub>/FTO)
- Rentable Square Feet (kgCO<sub>2</sub>e/RSF)
- Rentable Square Feet excluding data centers (kgCO<sub>2</sub>e/RSF)
- Net Revenue (mtCO<sub>2</sub>/\$mm)
- Net Revenue excluding data centers (mtCO<sub>2</sub>/\$mm)

Goldman Sachs' management is responsible for the Global Carbon Emissions Summary presented in Appendix C.

Our review was conducted in accordance with attestation standards established by the American Institute of Certified Public Accountants. A review is substantially less in scope than an examination, the objective of which is the expression of an opinion on gross scope 1 and 2 GHG emissions and emissions intensity measures. Accordingly, we do not express such an opinion.

Environmental and energy use data are subject to inherent limitations, given the nature and the methods used for determining such data. The selection of different but acceptable measurement techniques can result in materially different measurements. The precision of different measurement techniques may also vary.

Based on our review, nothing came to our attention that caused us to believe that the GHG emissions and emissions intensity measures within the scope of our review as outlined above and as presented in the Global Carbon Emissions Summary in the 2010 Environmental Progress Report is not presented, in all material respects, in conformity with the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (GHG protocol).

Ernst + young LLP

June 6, 2011 New York, New York

## Carbon Accounting Methodology

Methodology Goldman Sachs uses The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (GHG Protocol) as the guiding methodology for calculating carbon emissions. The GHG Protocol was co-developed by the World Resources Institute and the World Business Council for Sustainable Development.

*Organizational Boundary* Goldman Sachs uses the operational control approach to establish the organizational boundary of our carbon reporting. As defined by the GHG Protocol, the firm includes operations where we have the full authority to introduce and implement operating policies. Under this approach, 100% of our GHG emissions from all owned and leased facilities globally over which we have operational control are counted. Additionally, the operational control boundary includes estimated usage for full-service gross-leased offices and co-located data centers where the energy utilities are paid for by the property manager and/or not specifically metered for the firm's operations.

*Operational Boundary* All GHG emissions associated within the organizational boundary operations are included and categorized as Scope 1 (direct) and Scope 2 (required indirect) emissions. Scope 3 (optional indirect) emissions are tracked and reported on a selected basis. Scope 1 emission sources include natural gas, fuel oil and HFC refrigerants. Scope 2 emissions include electricity and purchased steam. The reporting scope tracks CO<sub>2</sub>, CH4, N<sub>2</sub>O and HFC emissions; the remaining two Kyoto gases, PFC and SF6, are not reported, as Goldman Sachs does not currently emit these compounds.

## Quantification Methodology and Data

*Management* The majority of GHG activity data and emissions are tracked through an internally developed online emissions tracking database, which records global facility utility information. Global consumption data based on utility bills is collected monthly in local units and normalized into US units. Emissions factors used are referenced in the Emissions Factors section below. In the case of estimated co-located data centers, the firm estimates electricity consumption and subsequently applies local emissions factors to quantify GHG emissions. Electricity consumption is estimated using measured instantaneous power or by applying an average energy demand per server figure to actual server quantities. At each location, a power usage effectiveness (PUE) and diversity factor are applied to the power demand to establish electricity consumption.

Emissions Factors and Global Warming Potential

The emissions of each GHG (CO<sub>2</sub>, CH4, N<sub>2</sub>O, HFC) are converted to CO<sub>2</sub>-equivalents (CO<sub>2</sub>e) on the basis of their global warming potential (GWP). The source of the GWPs used are the IPCC Second Assessment Report (SAR - 100-year).

Emission Source	Factor	Source Reference
Natural Gas	5.92 kgCO2e/therm	GHG Protocol Tool, Emission Factors from Cross-Sector Tools – Version 1.0 (July 2009)
Diesel Fuel Oil	10.13 kgCO₂e/gallon	GHG Protocol Tool, Emission Factors from Cross-Sector Tools – Version 1.0 (July 2009)
Purchased Steam (Con Edison in NYC)	61.63 kgCO <sub>2</sub> / klb-delivered	INVENTORY OF NEW YORK CITY GREENHOUSE GAS EMISSIONS: SEPTEMBER 2009, Year 2008 Steam factor
2009 Purchased Electricity (non–United States)	Varies by country	Year 2007 factors from "CO <sub>2</sub> Emissions from Fuel Combustion (2009 Edition)," IEA, Paris. CH4/N <sub>2</sub> O: International Electricity Emission Factors by Country, 1999–2002.xls. International Energy Agency, as cited by EIA for 1605b. http://www.eia.doe.gov/oiaf/1605/emission_factors.html
2009 Purchased Electricity (United States)	Varies by eGRID subregion	Year 2005 eGRID Subregion Emission Factors (Source: eGRID2007 Version 1.1, January 2009)
2010 Purchased Electricity (non—United States)	Varies by country	Year 2008 factors from "CO <sub>2</sub> Emissions from Fuel Combustion (2010 Edition)," IEA, Paris. CH4/N <sub>2</sub> O: International Electricity Emission Factors by Country, 1999–2002.xls. International Energy Agency, as cited by EIA for 1605b. http://www.eia.doe.gov/oiaf/1605/emission_factors.html
2010 Purchased Electricity (United States)	Varies by eGRID subregion	Year 2007 eGRID Subregion Emission Factors (Source: eGRID2010 Version 1.0, February 2010)

#### APPENDIX B

*GHG Emissions Intensity* The firm tracks three emissions intensity metrics, based on net Scope 1 and 2 emissions, in order to evaluate and track the performance of our office spaces over time using the following definitions:

- Full-Time Occupants (FTOs) Emissions/FTO (mtCO<sub>2</sub>) includes both full-time employees (FTEs) and full-time contingent workers (FTCs).
- Rentable Square Feet (RSF) Emissions/RSF (kgCO<sub>2</sub>) includes the operational building area for all facilities within the Organizational Boundary of the GHG Inventory for the reporting year.
- Net Revenue (\$mm) Emissions/\$ Net Revenue (in millions) is based on "Net Revenues, including interest income" as stated in the firm's annual Consolidated Statement of Earnings.

*Reporting Period* In past Environmental Progress Reports (EPR), Goldman Sachs reported carbon emissions on a one-year lag from financial statements. The 2010 EPR resolves this lag and therefore includes both 2009 and 2010 calendar year reporting. *Changes to Reporting Methodology* Goldman Sachs continues to enhance and improve our annual carbon reporting, and we are proud of the enhancements made for our 2010 report, which include:

- The emissions of each GHG (CO<sub>2</sub>, CH4, N<sub>2</sub>O, HFC) are now converted to CO<sub>2</sub>-equivalents (CO<sub>2</sub>e) on the basis of their global warming potential (GWP). Past years were limited to CO<sub>2</sub>.
- Emissions from HFC refrigerants used in air-conditioning equipment.
- Use of consistent estimates to fill gaps in activity data from year-to-year.
- Emissions reductions made from green power only accounted for if they satisfy the quality requirements of the Carbon Disclosure Project guidance, US, EPA green power partnership and Green-e Energy standards.

With the exception of removing the emissions reductions from renewable electricity sources for 2007 and 2008, the net change in emissions from these enhancements was deemed to be less than our significant threshold of 5% and therefore did not result in historic-year recalculations.

#### APPENDIX C

## Global Carbon Emissions Summary

	2005 Adjusted Baseline	2006	2007	2008	2009	2010 <sup>1</sup>	2010 vs. 2009	2010 vs. 2005 baseline
Global Facilities Reported	102	148	159	172	189	180	(9)	78
Rentable Square Feet (RSF)	10,926,532	11,053,543	11,577,202	12,523,928	14,077,582	14,464,413	386,831	3,537,881
Full-Time Occupants (FTO = FTE+FTC)	29,135	29,505	32,379	34,099	32,607	34,785	2,178	5,650
Revenues (\$mm)	\$25,238	\$37,665	\$45,987	\$22,222	\$45,173	\$39,161	(\$6,013)	\$13,922
UTILITY CONSUMPTION (MWh)								
Gas (MWh)	35,174	60,938	56,742	49,173	45,201	46,872	1,671	11,698
Oil (MWh)	2,188	2,499	8,004	3,268	4,417	5,694	1,277	3,506
Electricity (MWh)	397,592	468,605	559,073	653,766	701,557	695,579	(5,978)	297,987
Grid Average (MWh)	397,592	468,605	457,348	550,588	701,557	695,579	(5,978)	297,987
Renewable Sources (MWh)	0	0	101,725	103,178	0	0	0	0
Steam (MWh)	9,599	18,538	22,280	18,615	17,902	38,768	20,866	29,169
GHG EMISSIONS								
Scope 1 Emissions								
Gas – Metered (mtCO2)	6,361	11,020	10,285	8,893	8,073	9,484	1,411	3,123
Oil – Metered (mtCO <sub>2</sub> )	554	633	2,028	828	1,087	1,426	339	872
HFC Refrigerants – (mtCO <sub>2</sub> )	-	-	-	-	-	3,735	3,735	3,735
Gross Scope 1 Emissions (mtCO <sub>2</sub> )	6,915	11,653	12,313	9,721	9,160	14,645	5,485	7,730
Scope 2 Emissions								
Electricity – Metered (mtCO <sub>2</sub> )	174,932	193,224	231,791	243,151	270,584	273,621	3,037	98,689
Electricity – Estimated (mtCO <sub>2</sub> )	24,269	44,961	46,423	67,799	78,423	56,431	(21,992)	32,162
Steam – Metered (mtCO2)	1,657	3,526	3,845	3,213	3,072	6,790	3,718	5,133
Gross Scope 2 Emissions (mtCO <sub>2</sub> )	200,858	241,711	282,059	314,163	352,079	336,842	(15,237)	135,984
Gross Scope 1 and 2 Emissions (mtCO <sub>2</sub> )	207,773	253,364	294,372	323,884	361,239	351,487	(9,752)	143,714
Emissions Reduction from Renewable Electricity Sources (mtCO <sub>2</sub> )	0	0	0	0	0	0	0	0
Emissions Reduction from VERs (mtCO <sub>2</sub> )	0	0	0	0	0	0	0	0
Net Scope 1 and 2 Emissions (mtCO <sub>2</sub> )	207,773	253,364	294,372	323,884	361,239	351,487	(9,752)	143,714
Emissions from data centers (mtCO <sub>2</sub> )	50,648	79,235	124,120	153,348	184,768	174,995	(9,773)	124,347
Net Scope 1 and 2 Emissions, excluding data centers (mtCO <sub>2</sub> )	157,125	174,129	170,252	170,536	176,471	176,492	21	19,367
EMISSIONS INTENSITY <sup>2</sup>								
Full-Time Occupants (mtCO <sub>2</sub> /FTO)	7.1	8.6	9.1	9.5	11.1	10.1	(1.0)	3.0
Full-Time Occupants excluding data centers (mtCO <sub>2</sub> /FTO)	5.4	5.9	5.3	5.0	5.4	5.1	(0.3)	(0.3)
Rentable Square Feet (kgCO2e/RSF)	19.0	22.9	25.4	25.9	25.7	24.3	(1.4)	5.3
Rentable Square Feet excluding data centers (kgCO2e/RSF)	14.4	15.8	14.7	13.6	12.5	12.2	(0.3)	(2.2)
Net Revenue (mtCO <sub>2</sub> /\$mm)	8.2	6.7	6.4	14.6	8.0	9.0	1.0	0.7
Net Revenue excluding data centers (mtCO <sub>2</sub> /\$mm)	6.2	4.6	3.7	7.7	3.9	4.5	0.6	(1.7)

 $^{\scriptscriptstyle 1}$  2010 emissions include carbon-equivalent (CO\_ze) reporting

<sup>2</sup> Intensity measures based on net Scope 1 and 2 emissions

## Cogentrix

## Cogentrix Energy, LLC

Cogentrix Energy, LLC is a Goldman Sachs subsidiary through which we invest in power projects. The portfolio consists of a balanced mix of power facilities. Of its historic operating portfolio, Cogentrix currently holds full ownership in three co-generation power plants and a minority interest in one waste-coal facility. Cogentrix transferred remaining ownership of other coal and gasfired power plants to Energy Investor Funds in May 2011. Cogentrix's CO<sub>2</sub> emissions data for 2009 and 2010 reflect the current ownership status following this divestiture.

In addition to these facilities, Cogentrix continues to deploy its core strengths in areas of development, acquisition, power marketing, construction, operation and management of power assets in expanding its clean energy portfolio. Cogentrix's efforts are focused on photovoltaic and concentrating solar thermal technologies. It currently owns and operates Sunray Energy, a 43-megawatt solar thermal project in California and is constructing a 30-megawatt concentrating photovoltaic solar generating project in Colorado. It has a solar development pipeline of more than 1,000 megawatts. Cogentrix is also developing run-of-river hydroelectric projects in Turkey. Please refer to page 6 for further information on Cogentrix's progress on renewable energy. Despite this strategic focus on cleaner energy and improved environmental performance, Cogentrix's total CO<sub>2</sub> emissions from power generation increased in 2010 relative to 2009, driven by greater MWh generated during the year. The increase in power generation is reflective of the increased demand. On a per MWh basis, CO<sub>2</sub> emissions declined in 2010 vs. 2009 reflecting the higher environmental performance.

#### TOTAL CARBON DIOXIDE EMISSIONS SUMMARY

CALENDAR YEAR 2010 Site Emissions Estimate – Equity Based	Tota
Total Power Generation CO2	
Emissions (tons)	3,603,879
CO <sub>2</sub> emissions for energy	
production (tons)	2,694,278
Net MWh generated	2,296,125
Total MWh generated (Net + Steam)	4,236,337
Ton CO2 per Net MWh	1.17
Ton CO <sub>2</sub> per (Net + Steam) MWh	0.85

CALENDAR YEAR 2009 Site Emissions Estimate – Equity Based	Total
Total Power Generation CO2	
Emissions (tons)	3,181,812
CO <sub>2</sub> emissions for energy	
production (tons)	2,915,916
Net MWh generated	2,099,139
Total MWh generated (Net + Steam)	2,423,136
Ton CO <sub>2</sub> per Net MWh	1.39
Ton CO2 per (Net + Steam) MWh	1.31

Footnote: Based on California reporting protocols, CO<sub>Z</sub> estimations are made based on Cogentrix Energy, LLC's current ownership status. Due to reporting protocol differences and other factors, values reported herein will differ from values shown in EIA and EPA data sets.

## Methodology

Total CO<sub>2</sub> emissions are expressed as "total power generation" and hence do not include all sources of CO<sub>2</sub>, such as space heating, SO<sub>2</sub> control, etc. Our reporting methodology mirrors the protocol used in California, which takes into account steam generation for other uses and the double work steam does in cogeneration. More specifically:

- Emissions per MWh (tons/net MWh) take into account power generated.
- Emissions per MWh (tons/net + steam MWh) take into account additional steam generation and use.
- The Steam Production Emissions Allocation equation calculates a MWh equivalent for the steam exported, which is then used in the tons per net + steam MWh calculation.

CO<sub>2</sub> emission factors from the California protocol for bituminous coal, oil and natural gas are used except for waste coal (Scrubgrass and Northampton), TDF (Richmond) and fiber rejects (Cedar Bay), where the emission factors are adjusted to the carbon in the fuel.