



# Environmental Report «

Fiscal Year 2010



WD's global culture of environmental responsibility, accountability, and action.

## EXECUTIVE SUMMARY

Global climate change caused by increasing concentrations of atmospheric carbon dioxide is one of the most significant concerns facing our world today. As a corporate citizen, Western Digital (WD) is particularly sensitive to the effects of global climate change. The need to understand the science of climate change and to formulate appropriate policy to address scientific findings is intensifying with each passing day.

Scientists have said that, over the course of this century, the planet will experience the direct effects of global climate change, including increased temperatures, rising sea levels, higher risks of severe floods and storms, and a depletion of crucial natural resources. Climate change is a global problem, but its effects will be heavily felt at the local level. While there

are some steps that corporations can take to adapt to warmer temperatures, the greatest urgency is to prevent further climate change by reducing the emission of greenhouse gases (GHG). As an environmentally responsible company, WD is committed to this global effort.

WD is headquartered in Irvine, California; the company employs over 62,000 people worldwide. Manufacturing facilities are in California, Malaysia, Singapore and Thailand; major design facilities are located in California and Thailand; and sales offices are maintained around the world. The company's storage products are marketed to leading systems manufacturers, select resellers and retailers under the Western Digital and WD brand names.

---

## GENERAL METHODOLOGY

This report contains the results of five separate analyses:

- Compressed reactive gasses used in manufacturing semi-conductor wafers
- Electricity usage (by facility)
- Fossil fuel usage
- Business travel
- Employee commuting

The purpose of this inventory is to provide baseline information that allows WD to make informed and effective policy decisions. These decisions include how we design and build our products, operate our facilities, recycle materials, and handle our wastes.

It consists of two modules:



**Green House Gas Protocol »  
Corporate Standard:**  
methodologies for business and other organizations to inventory and report all of the GHG emissions they produce. ("Corporate" in this context, refers to both private and public sector organizations.)



**Green House Gas Protocol »  
Project Protocol:**  
geared toward calculating reductions in GHG emissions from specific GHG-reduction projects. The Project Protocol is the most comprehensive, policy-neutral accounting tool for quantifying the greenhouse gas benefits of climate change mitigation projects.

The GHG Protocol provides the accounting framework for nearly every GHG standard and program in the world, from the International Standards Organization to the EU Emissions Trading Scheme to the California Climate Registry, as well as hundreds of GHG inventories prepared by individual companies.

The GHG Protocol also offers developing countries an internationally accepted management tool to help their businesses to compete in the global marketplace and their governments to make informed decisions about climate change.

**TABLE 1 - Summary of Greenhouse Gas Emissions for Western Digital**

| Facilities  | Total Emissions* | Reactive Gasses | Electricity | Fossil Fuels | Business Travel | Employee Commute |
|---|------------------|-----------------|-------------|--------------|-----------------|------------------|
| Manufacturing   | 517,523          | 882             | 489,471     | 6,927        | 207             | 20,036           |
| Administrative  | 13,223           | -               | 6,413       | 683          | 1,938           | 4,189            |
| Research & Development  | 19,915           | -               | 12,543      | 2,225        | 3,006           | 2,141            |
| <b>Grand Total</b>  | <b>550,661</b>   |                 |             |              |                 |                  |
| * = Tons CO <sub>2</sub> Equivalents<br>All values in metric tons equivalents |                  |                 |             |              |                 |                  |

The operation of Western Digital's Manufacturing, Research & Development and Administrative activities resulted in the net emission of approximately 550,000 metric tons metric tons of greenhouse gases in our fiscal year 2010. Emissions were generated primarily from our Manufacturing operations with other emissions being generated by our Research and Development, and Administrative activities. Emissions generated by each of these activities as a percentage of total emissions is 94 percent, 4 percent, and 2 percent respectively.

## MANUFACTURING ACTIVITIES

Manufacturing activities are the largest contributors to GHG emissions attributable to WD operations. During fiscal year 2010, WD's manufacturing output increased almost 33% while greenhouse gasses increased 38%. This increase was the result of several conditions including the addition of manufacturing sites in Malaysia, Singapore and California which counteracted the benefits received by our efforts to reduce electrical consumption through continuous improvements in our manufacturing techniques, the deployment of more efficient production tools, and implementation of energy conservation measures throughout our facilities.



**TABLE 2 - Reactive Gases Emissions for Western Digital**

| Facilities  | Total Emissions* | Sulfur Hexafluoride | Carbon Tetrafluoride | Nitrogen Trifluoride | Fluoroform |
|---|------------------|---------------------|----------------------|----------------------|------------|
| Manufacturing   | 882              | 800                 | 75                   | 7                    | -          |
| * = Tons CO <sub>2</sub> Equivalents<br>All values in metric tons equivalents |                  |                     |                      |                      |            |

| TABLE 3 - Purchased Electricity Emissions for Western Digital                 |                  |                |                 |
|---|------------------|----------------|-----------------|
| Facilities  | Total Emissions* | Kilowatt Hours | Emission Factor |
| <b>Manufacturing</b>  |                  |                |                 |
| Thailand - Nanakorn   | 49,585           | 93,204,844     | 532             |
| Thailand - BangPa-In  | 176,566          | 331,890,111    | 532             |
| Malaysia - Kuala Lumpur   | 85,897           | 154,213,022    | 557             |
| Malaysia - Johor  | 27,248           | 48,918,454     | 557             |
| Malaysia - Penang   | 128,370          | 230,466,345    | 557             |
| USA - Fremont   | 21,806           | 66,380,998     | 329             |
| <b>Research &amp; Development</b>   |                  |                |                 |
| USA - San Jose 2  | 9,001            | 27,357,795     | 329             |
| USA - San Jose 1  | 2,830            | 8,602,381      | 329             |
| USA - Other   | 618              | 1,878,240      | 329             |
| <b>Administrative</b>   |                  |                |                 |
| USA - Lake Forest/Irvine  | 6,413            | 19,492,334     | 329             |
| <b>Grand Total</b>  | <b>508,332</b>   |                |                 |
| * = Tons CO <sub>2</sub> Equivalents<br>All values in metric tons equivalents |                  |                |                 |

| TABLE 4 - Fossil Fuels Emissions for Western Digital                          |                  |             |        |         |          |       |
|---|------------------|-------------|--------|---------|----------|-------|
| Facilities  | Total Emissions* | Natural Gas | Diesel | Propane | Gasoline | LPG   |
| <b>Manufacturing</b>  | 6,927            | 5,033       | 199    | -       | 2        | 1,693 |
| <b>Research &amp; Development</b>   | 2,224            | 2,221       | -      | -       | 3        | -     |
| <b>Administrative</b>   | 683              | 647         | 1      | -       | 35       | -     |
| <b>Grand Total</b>  | <b>9,834</b>     |             |        |         |          |       |
| * = Tons CO <sub>2</sub> Equivalents<br>All values in metric tons equivalents |                  |             |        |         |          |       |

| TABLE 5 - Business Travel Emissions for Western Digital                       |                  |            |               |
|---|------------------|------------|---------------|
| Facilities  | Total Emissions* | Air Travel | Ground Travel |
| <b>Manufacturing</b>  | 207              | 207        | -             |
| <b>Research &amp; Development</b>   | 3,006            | 2,688      | 318           |
| <b>Administrative</b>   | 1,938            | 1,726      | 212           |
| <b>Grand Total</b>  | <b>5,151</b>     |            |               |
| * = Tons CO <sub>2</sub> Equivalents<br>All values in metric tons equivalents |                  |            |               |

| TABLE 6 - Employee Commute Emissions for Western Digital                      |                  |                |                  |
|---|------------------|----------------|------------------|
| Facilities  | Total Emissions* | Distance Based | Fuel Usage Based |
| <b>Manufacturing</b>  | 20,036           | 3,503          | 16,533           |
| <b>Research &amp; Development</b>   | 2,141            | 2,141          | -                |
| <b>Administrative</b>   | 4,189            | 4,189          | -                |
| <b>Grand Total</b>  | <b>26,366</b>    |                |                  |
| * = Tons CO <sub>2</sub> Equivalents<br>All values in metric tons equivalents |                  |                |                  |



## Research & Development Activities

Although Research and Development (R & D) activities account for approximately 3.5% of WD's total GHG emissions, these activities provide the greatest opportunities for emission reduction at WD's manufacturing facilities. WD is continually working internally as well as externally with suppliers and other partners to develop and evaluate product improvements, manufacturing techniques, manufacturing tools, and our supply base in determining more efficient practices in an effort to reduce GHG emissions.

## Administrative Activities

WD's GHG emissions from Administrative activities (Table 1) account for approximately 2.4 % of the companies total GHG emissions. These emissions are the result of the use of electricity and other utilities in the workplace, business travel and employee commutes to and from WD facilities. WD advocates energy efficiency programs within its facilities, advocates and facilitates alternative commuting programs and has specific policies and guidelines relative to minimizing business travel.

## SUMMARY

Western Digital is concerned about the environment and we continue to challenge our employees by empowering them and emphasizing our core values.

In an effort to reduce our GHG emissions profile, we actively manage our operations and personnel relative to this initiative. We have implemented programs which address the manufacturing process and materials, energy efficiency and consumption, business travel and employee commutes. We continue to identify areas where we can reduce emissions either in our operations or in the products we manufacture.

As part of WD's commitment to overall resource conservation, we have also developed products that use less power, such as our WD GreenPower Technology line.

The WD GreenPower Technology platform is designed with power savings as the primary attribute. WD drives with WD GreenPower Technology deliver exceptional power conservation, ultra-cool, quiet operation and solid performance.

The following technologies enable WD's GP platform:

- **IntelliPower™**: A fine-tuned balance of spin speed, transfer rate and cache size designed to deliver both significant power savings and solid performance.
- **IntelliPark™**: Delivers lower power consumption by automatically unloading the heads during idle to reduce aerodynamic drag.
- **IntelliSeek™**: Calculates optimum seek speeds to lower power consumption, noise and vibration.



## The Role of WD's Core Values

We let our employees know the values and behaviors we expect them to demonstrate. We believe those values and behaviors combine to create a culture in which employees can thrive. A culture that allows our employees to focus on doing their best work leads to high quality and innovative products, exceptional customer service and operational excellence.

Our core values are Passion, Action, Productivity, Perseverance, Integrity, and Innovation (PAPPII), and they mean the following to us:

**Passion** - We have a passion for:

- the people we work with.
- the products we produce.
- the customers we serve.
- the suppliers who serve us.

**Action** - We have a bias towards action.

- We seize opportunities.
- We aggressively push for solutions.
- We are problem solvers.
- We enjoy working hard.

**Productivity** - We expect the best from our people, and they deliver.

- We are productive, efficient and effective in planning and executing our work.
- We consistently raise the bar to increasingly higher levels of productivity and performance.
- We seek to outperform other companies with our ability to execute.

**Perseverance** - We pursue our work with energy, drive and a need to win.

- We never give up, especially in the face of resistance or overwhelming odds.
- We take charge.
- We push hard.
- We stand strong.

**Integrity** - We respect ourselves and others.

- We are open and direct.
- We present the unvarnished truth in an appropriate and helpful manner.
- We can be counted on to keep confidences and admit our mistakes.
- We do not misrepresent ourselves for personal gain.

**Innovation** - We constantly look for new ways to improve technology, products, processes, systems and people.

- We have good judgment about which creative ideas and suggestions will work, and are good at bringing these ideas to market.
- We show intellectual curiosity and the continuing desire to learn, seeking improvements, even in the face of success.
- We take diverse priorities and multiple opportunities and find new ways of creating long-term success.
- We work hard to support an environment where people look for creative ways to benefit the business.
- We take constructive risks and remove barriers getting in the way of achieving excellence.



[www.westerndigital.com](http://www.westerndigital.com)

Western Digital, WD, and the WD logo are registered trademarks in the U.S. and other countries; GreenPower, IntelliPower, IntelliPark, and IntelliSeek are trademarks of Western Digital Technologies, Inc. Other marks may be mentioned herein that belong to other companies. Pictures shown may vary from actual product. Not all products may be available in all regions of the world. All product and packaging specifications subject to change without notice. © 2011 Western Digital Technologies, Inc. All rights reserved.

As used for storage capacity, one megabyte (MB) = one million bytes, one gigabyte (GB) = one billion bytes, and one terabyte (TB) = one trillion bytes. Total accessible capacity varies depending on operating environment. As used for transfer rate or interface, megabyte per second (MB/s) = one million bytes per second, and gigabit per second (Gb/s) = one billion bits per second.