

**EUGENE WATER & ELECTRIC BOARD  
2010 GREENHOUSE GAS INVENTORY**

**AUGUST 2011**

PREPARED BY GOOD COMPANY



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Angela Marzano collected and analyzed the data for the *Operations Inventory*. Eric Hiaasen, Patty Brown, Susan Eicher, Catherine Gray and Tom Williams provided the data for the *Energy Portfolio Inventory*.

Numerous additional EWEB and other agency staff also contributed data and provided valuable feedback on various drafts of the report including: Will Bondioli, Heather Carter, Stacy Castleman, Chris Taylor, Robert Virgil, Bret Davis, TiaMarie Harwood, Karen DeChellis, Jeremy Whittlesey, Michelle Bassett, David Donahue, Felicity Fahy, Tony Fuerte, Quentin Furrow, Nicholas Holmes, Diane Krause, Gary Lentsch, and Diana Spence

This inventory and other climate change related information is available online at:  
[www.eweb.org/sustainability/climatechange](http://www.eweb.org/sustainability/climatechange)

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## 2009 GREENHOUSE GAS INVENTORY CORRECTIONS

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EWEB is committed to continuously improving the accuracy of our GHG reporting. In the process of preparing this report we discovered two minor technical errors in our 2009 report related to the calculation of our GHG emissions associated with the operation of our vehicle and equipment fleet and business air travel. These small errors led to the overstatement of total operational emissions by 0.93%. Those issues have been corrected and the reporting of 2010 GHG emissions in this report represents our current best understanding.

## EXECUTIVE SUMMARY

The global and regional climate is changing—primarily due to human caused emissions of greenhouse gases (GHGs). These changes present serious environmental, economic and social risk to the Eugene Water & Electric Board (EWEB) and our customers. In order to better understand and measure our progress in reducing our climate impacts, EWEB annually prepares a greenhouse gas inventory.

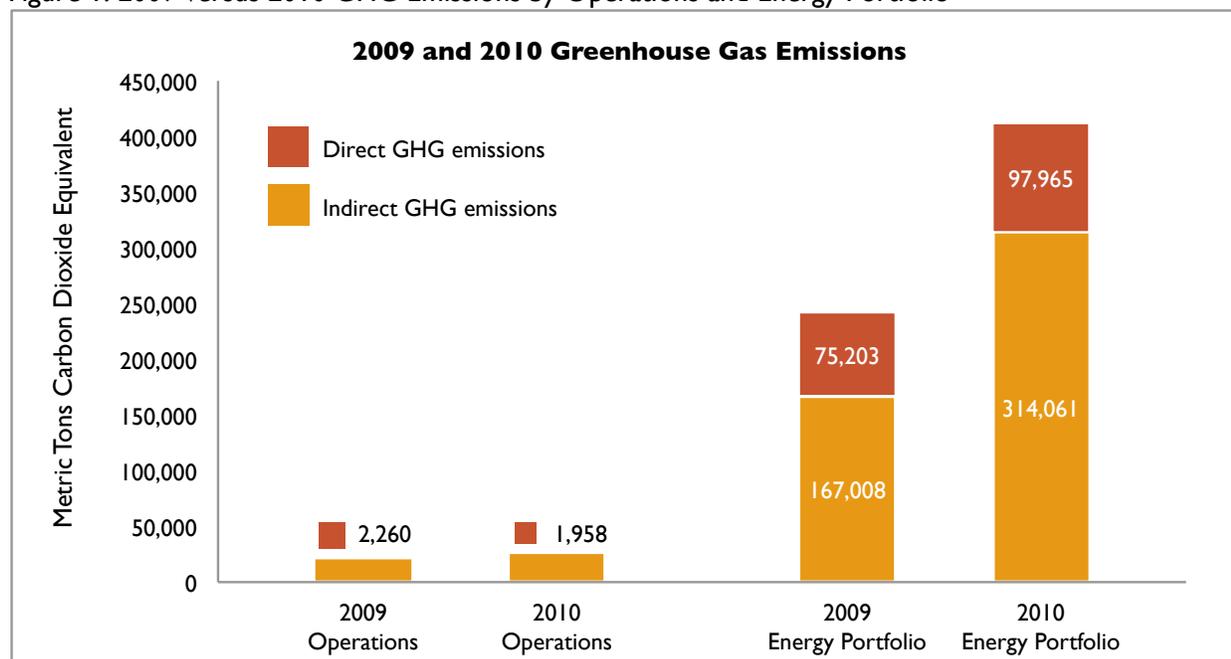
This report quantifies our GHG emissions in two parts. The Energy Portfolio Inventory measures the GHG emissions associated with EWEB's owned, co-owned and contracted electric power resources and steam plant. The Operations Inventory measures the GHG emissions associated with EWEB's core business operations such as building energy consumption, vehicle and equipment operation, and our supply chain.

### EWEB'S ENERGY PORTFOLIO AND OPERATIONS CARBON FOOTPRINTS

Our 2010 energy portfolio GHG emissions totaled 412,026 metric tons of carbon dioxide equivalent (MT CO<sub>2</sub>e), an increase of 70% above 2009-levels (see Figure 1 below)<sup>1</sup>. This increase is primarily related to an increased volume of wholesale power purchases and null power sales<sup>2</sup>. The increase in wholesale power purchases stems from the resumption of hedging activity that declined in 2009 due to both credit constraints related to the financial crisis and staff demands related to the implementation of a new power trading platform.

Overall EWEB's operations GHG emissions also saw an increase above 2009 levels, totaling 28,365 MT CO<sub>2</sub>e, up nearly 30%. This increase is largely attributable to additional indirect GHG emissions in our supply chain associated with capital infrastructure and building maintenance projects. Encouragingly, EWEB's direct operations emissions saw a 13% decrease from 2009 levels.

Figure 1: 2009 versus 2010 GHG Emissions by Operations and Energy Portfolio



<sup>1</sup> All GHG emissions totals include both “anthropogenic” and “biogenic” sources—see p. 5 for further discussion.

<sup>2</sup> Null power sales are those transactions where electricity generated by a qualifying renewable resource is unbundled from its associated Renewable Energy Certificate (REC) and sold separately—see p. 6 for further discussion.

## CALCULATING THE CARBON FOOTPRINT OF ELECTRICITY USE

EWEB's advice to customers preparing their own corporate greenhouse gas inventories is to acknowledge the interconnected nature of the electricity grid and follow The Climate Registry's *General Reporting Protocol* guidelines and calculate the emissions associated with their electricity consumption using *both* the emissions factor for the regional electric grid – the Northwest Power Pool – as well as EWEB's Retail Power Deliveries average emissions intensity (see table below).

Emissions Factors for EWEB Customers Calculating Indirect Emissions Associated with Electricity Consumption		
Emissions Factor	Metric MT CO <sub>2</sub> e/MWh	Standard lbs. CO <sub>2</sub> e/MWh
Northwest Power Pool Regional Average	.392	864
EWEB Retail Power Deliveries Average	.033	72

EWEB's Retail Power Deliveries Average—the carbon intensity of our retail power sales as defined in methodology by The Climate Registry's Electric Power Sector Protocol—decreased from 102 lbs CO<sub>2</sub>e/MWh in 2009 to 72 lbs CO<sub>2</sub>e/MWh in 2010. This decrease results from improved data collection on the type and quantity of contracted and purchased electric power resources delivered to EWEB's retail customers, rather than significant changes in the actual composition of those electric power resources. Specifically, the 2010 reporting more accurately reflects the carbon intensity of the Bonneville Power Administration hydroelectric-dominated resources that EWEB sells to our retail customers.

## GREENHOUSE GAS REPORTING SCOPES AND INVENTORY BOUNDARIES

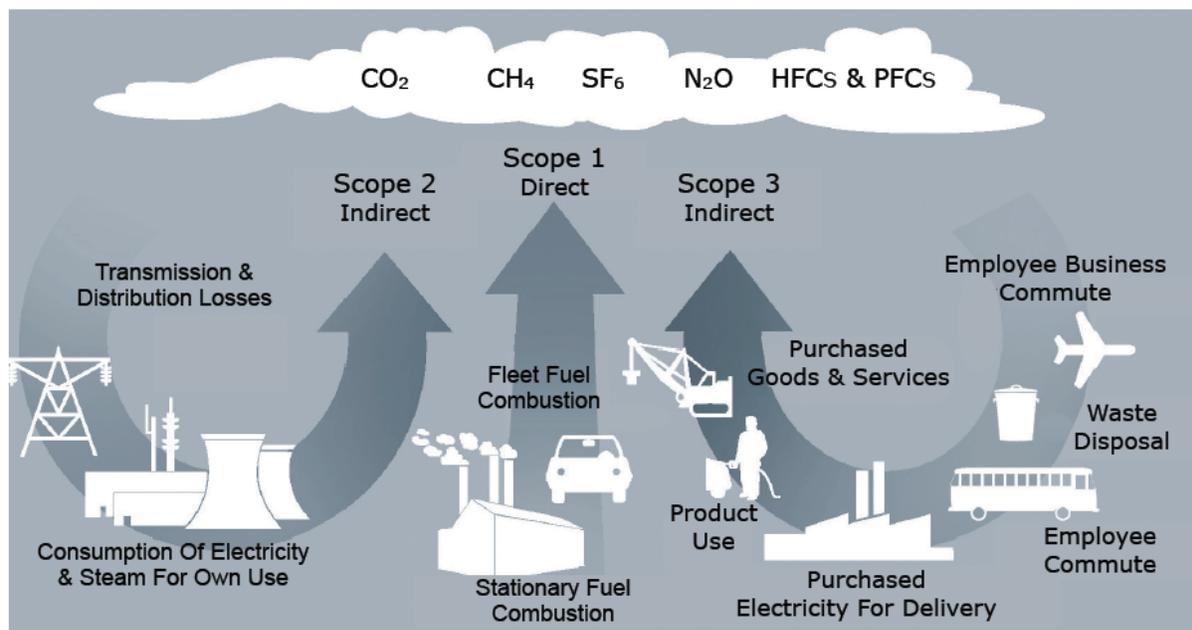
In quantifying our emissions, EWEB followed the guidelines of The Climate Registry's *Electric Power Sector Protocol* and *General Reporting Protocol*. Per The Climate Registry's protocols emissions sources are distinguished among three reporting scopes (see Figure 2 below).

Scope 1 – for the Operational Inventory this includes direct GHG emissions that originate from operations-based equipment and facilities owned or operated by EWEB such as the stationary and mobile combustion of fossil fuels. For the electric power industry as shown in the Energy Portfolio Inventory, Scope 1 emissions include stationary and mobile combustion of fuels at owned and co-owned energy generating sources as well as the fugitive release of sulfur hexafluoride (SF<sub>6</sub>) from the operation of high voltage equipment used in electricity transmission and distribution equipment. EWEB has had no fugitive emissions of SF<sub>6</sub> since 1999.

Scope 2 – for the Operational Inventory, this includes indirect GHG emissions associated with the purchase of electricity and steam for internal consumption. For the electric power industry, as shown in the Energy Portfolio Inventory, Scope 2 emissions include emissions associated with electricity purchased from other power generators that is “lost” over transmission and distribution systems.

Scope 3 – for the Operational Inventory, this includes all other indirect GHG emissions resulting from EWEB's operational activities that occur from sources owned or controlled by another entity such as business travel, employee commute, embodied emissions in purchased goods and services, and emissions from landfilled solid waste. For the Energy Portfolio Inventory, Scope 3 emissions also include emissions associated with the generation of electricity purchased from other power generators.

**Figure 2: Greenhouse Gas Accounting Reporting Scopes**



Source: WRI/WBCSD Greenhouse Gas Protocol, Corporate Accounting and Reporting Standard (Revised Edition), Chapter 4.

### INVENTORY BOUNDARIES

This inventory estimates calendar year 2010 GHG emissions associated with EWEB's facility operations and energy generation portfolio. The quantification of our facility operations emissions is limited to our facilities in the Eugene-Springfield, Oregon metropolitan area and at our EWEB's McKenzie River hydroelectric facilities.

The quantification of our energy portfolio emissions includes our owned and co-owned electric power resources as well as contracted electric power resources.

#### **A NOTE ON BIOLOGICAL FEEDSTOCKS**

This inventory includes sources whose GHG emissions are classified as “anthropogenic” and “biogenic,” with more than 20% of our total emissions coming from biologically derived fuels such as biomass and biofuels.

“Anthropogenic GHG emissions are those emissions associated with human activities (e.g. carbon dioxide emitted from combustion of fossil fuels) or are the result of natural processes that have been affected by human activities (e.g. methane emitted from the anaerobic decomposition of organic matter in solid waste landfills).

Biogenic GHG emissions are those carbon dioxide emissions associated with the combustion of non-fossilized, biologically based materials, such as biomass (e.g. wood waste) and biofuels (e.g. biodiesel). Carbon dioxide emissions associated with the life cycles of these biologically derived fuels have the potential to be “carbon neutral” on a full life-cycle basis, depending on the specific energy conversion technologies used, the feedstocks involved, and the associated agriculture and forestry practices.

However, the net life-cycle carbon cost or benefit of biologically derived fuels is controversial and complicated, and remains unresolved in policy and analysis. After intense political scrutiny and controversy in 2009 and 2010, EPA suspended its preliminary judgment under the Clean Air Act’s Tailoring Rule on bioenergy, with a pledge to study the issue and provide additional guidance by 2013.

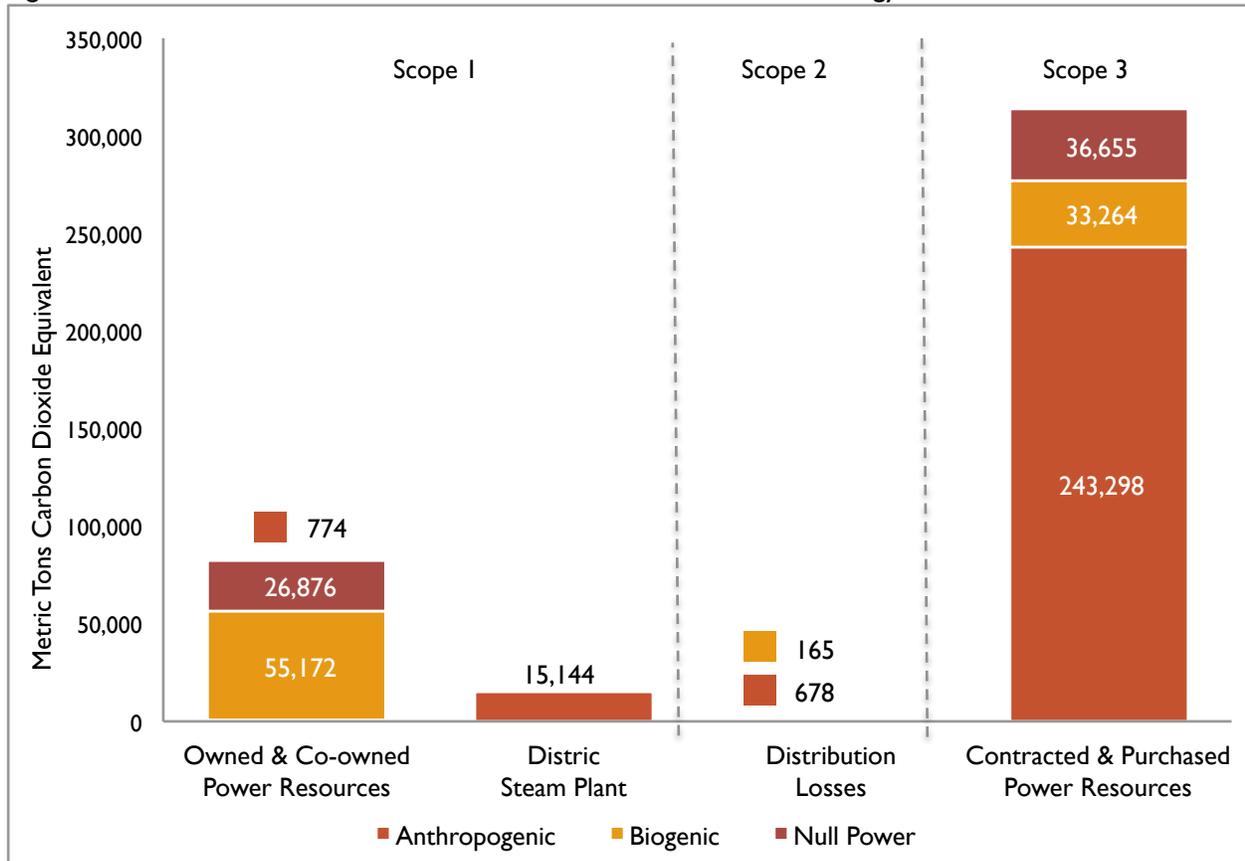
At a minimum, the net consequences depend on the details of individual fuels and circumstances, and EWEB has not examined these issues for the various “biogenic” sources in our portfolio. We include our biogenic emissions in our emissions totals for context and to inform on-going discussions of these important issues. In the future, EWEB may consider evaluating the full life-cycle GHG emissions impacts associated with its fuel supply chains.

## ENERGY PORTFOLIO INVENTORY

As the primary provider of electricity in the community, EWEB has the social, environmental and fiscal responsibility of reliably meeting the energy demands of our customers at a reasonable cost. While we assist our customers in using energy efficiently and seek to acquire power from sources with low environmental impacts, electricity generation is EWEB's largest source of GHG emissions.

In 2010, the majority of GHG emissions from EWEB's energy portfolio were associated with contracted and purchased electric power resources (see Figure 3 below). The next largest source of GHG emissions was from null power sales of owned, co-owned and contracted electric power resources<sup>3</sup>. EWEB's co-owned biomass cogeneration facilities were also a significant source of "biogenic" emissions.

**Figure 3: 2010 Greenhouse Gas Emissions Associated with EWEB's Energy Portfolio**



<sup>3</sup> Null power refers to electricity generated by a qualifying renewable resource that is unbundled from its associated Renewable Energy Certificate (REC) and sold separately and where the REC is not retired or reserved. RECs are tradable environmental commodities that represent the renewable attributes associated with the generation of electricity from qualifying renewable energy resources. RECs may be retired to show compliance with a renewable portfolio standard or participation in a voluntary green power program, sold or traded to another entity, or placed in a reserve account in order to withdrawal the REC from circulation without retiring it. When the underlying electricity from a qualifying renewable resources is sold to an end user but the associated REC is not retired or reserved, the electricity can no longer be considered renewable or "zero carbon." The assignment of a carbon equivalency to this null power is necessary to avoid double counting because the associated RECs could also be sold to other entities who could, under the current conventions of GHG reporting protocols, utilize them to reduce the emissions associated with their own resale or purchase of electricity. If both entities claimed the "zero carbon" attributes this would result in double counting of the benefits.

The table below summarizes the sources of EWEB's energy portfolio emissions. For additional detail on the methods and assumptions underlying these calculations please refer to the 2009 GHG Inventory available at: <http://www.eweb.org/public/documents/sustainability/GHGreport2009.pdf>.

Scope I			
Emissions Category	GHGs (MT CO <sub>2</sub> e)		Comments
	2009	2010	
<b>Owned &amp; Co-owned Power Resources</b>			
Anthropogenic	6,460	774	Emissions from the combustion of fossil fuels, primarily natural gas, at EWEB's co-owned International Paper Springfield Mill and Georgia-Pacific Wauna Mill cogeneration facilities.  The decrease in GHGs from 2009 is attributable to a greater share of fuel use at the International Paper cogeneration facility coming from biomass by-products (leftover pulping liquors) derived from other processes that occurred at the mill.
Biogenic	44,453	55,172	Emissions from the combustion of biologically derived fuel inputs at EWEB's co-owned International Paper (IP) Springfield Mill and Georgia-Pacific Wauna Mill cogeneration facilities.  The increase in GHGs above 2009-levels is the result of additional biomass fuel combustion at the IP cogeneration facility.
Null Power	7,080	26,876	Emissions associated with the sale of electricity from owned and co-owned renewable resources where the associated Renewable Energy Certificates (RECs) were not retired or reserved. The increase in GHGs above 2009-levels results from the completion of EWEB's Harvest Wind project from which no RECs were retired or reserved when the power was sold to the wholesale market.
<b>District Steam Plant</b>			
Anthropogenic	17,211	15,144	Emissions from the combustion of fossil fuels, primarily natural gas, to produce steam for EWEB's district heating steam plant that serves customers in downtown Eugene. The facility is EWEB's largest direct source of anthropogenic emissions.  The decrease in GHGs below 2009-levels is a result of reduced demand for steam as EWEB customers began to transition to other electricity sources in light of EWEB's decision to decommission the steam plant.

Scope 2			
Transmission Losses			
Emissions Category	GHGs (MT CO <sub>2</sub> e)		Comments
	2009	2010	
Anthropogenic	7,261	678	Emissions associated with line losses on EWEB's local transmission and distribution (T&D) grid from contracted and purchased electric power resources.
Biogenic	108	165	The apparent decrease in anthropogenic GHG emissions results from improved data collection on the type and quantity of contracted and purchased electric power resources delivered over EWEB's local T&D grid, rather than on improvements to the T&D grid.

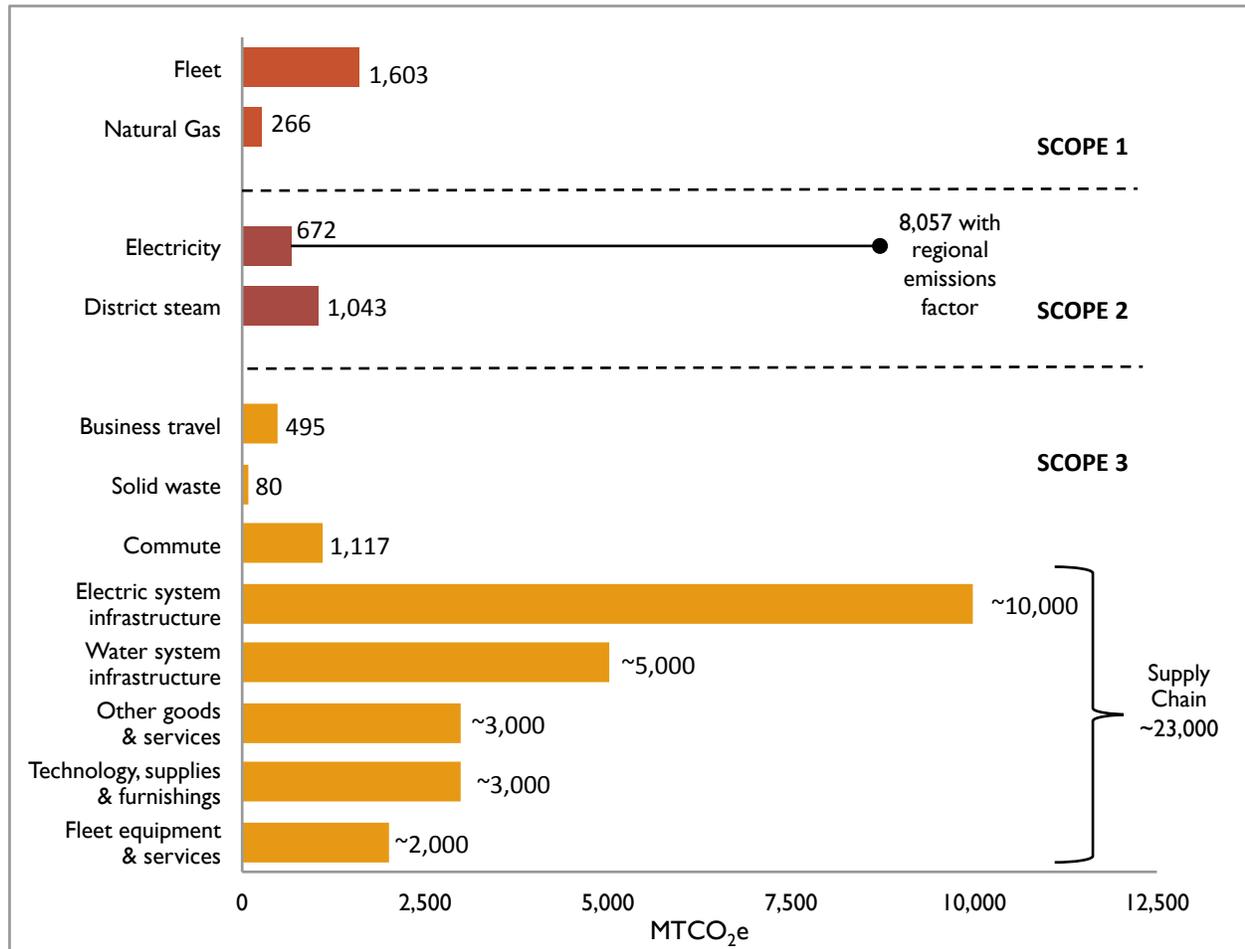
Scope 3			
Contracted & Purchased Power Resources			
Emissions Category	GHGs (MT CO <sub>2</sub> e)		Comments
	2009	2010	
Anthropogenic	125,344	243,298	<p>Emissions from the combustion of fossil fuels associated with contracted and purchased electric power resources. These resources include specified resources (e.g. Bonneville Power Administration Block) and unspecified market purchases.</p> <p>The increase in GHGs above 2009-levels is the result of increased wholesale market purchases by EWEB resulting from increased hedging activity.</p>
Biogenic	2,340	33,264	<p>Emissions from the combustion of biologically derived fuels associated with contracted or purchased electric power resources. The most significant source of these emissions are associated with International Paper's share of the output from the Springfield Mill cogeneration facility co-owned with EWEB and brought on to EWEB's transmission and distribution system.</p> <p>The apparent increase in GHGs is a result of improved data collection. In 2009, the emissions associated with International; Paper's share of the output from the Springfield Mill cogeneration facility were not included. The 2010 data shows this power being delivered to EWEB's transmission and distribution system. Future year-to-year comparisons will be more meaningful.</p>
Null Power	31,954	36,566	Emissions associated with the sale of electricity from contracted and purchased renewable resources where the associated Renewable Energy Certificates were not retired or reserved. The increase in GHGs above 2009-levels results from an increase in the production of wind energy at the Stateline and Klondike III wind projects from which no Renewable Energy Certificates were retired or reserved when the electricity was sold by EWEB to the wholesale market.

## OPERATIONS INVENTORY

In 2010, the largest single source of emissions associated with EWEB's operations was from our supply chain — those GHG emissions embodied in purchased goods and services (see Figure 4 below). Given the inherent limitations of the methodology<sup>4</sup> used to calculate supply chain GHG emissions they are represented in this report as estimates denoted with a tilde (“~”).

The next largest source of emissions depends on which emissions factor is used for the calculation of indirect emissions associated with internal electricity consumption. When the indirect emissions associated with internal electricity consumption are calculated using EWEB's retail power delivery emissions factor (72 pounds CO<sub>2</sub>e / MWh) this consumption translates into 672 MT CO<sub>2</sub>e, an amount roughly equivalent to most of EWEB's other direct and indirect sources of emissions. However when electricity emissions are calculated using the regional emissions factor (846 pounds of CO<sub>2</sub>e / MWh) this consumption translates into 8,057 MT CO<sub>2</sub>e, an amount considerably larger than other sources. While EWEB does not have complete or direct control over all of our emission sources, we can to varying degrees influence all sources by incentivizing change among our customers, employees, vendors and contracted electric power providers.

**Figure 4: 2010 Greenhouse Gas Emissions Associated with EWEB Operations**



<sup>4</sup> The methodology for estimating supply chain carbon is Economic Input-Output Life-Cycle Analysis (EIO-LCA). EIO-LCA, while reputable and credible as an estimation tool, lacks precision because the analysis is not built on vendor-specific data from thousands of purchases. Therefore, the estimate, while useful for “sense of scale”, is not precise.

The table below summarizes the sources of EWEB's operations emissions. For additional detail on the methods and assumptions underlying these calculations please refer to the 2009 GHG Inventory available at: <http://www.eweb.org/public/documents/sustainability/GHGreport2009.pdf>.

Scope I		
GHGs (MT CO <sub>2</sub> e)		Comments
2009	2010	
<b>Fleet</b>		
1,688 (Anthropogenic)	1,603 (Anthropogenic)	Tailpipe emissions associated with the combustion of fuels for the operation of EWEB's vehicle and equipment fleet. EWEB reduced fleet and equipment fuel consumption by 4.2% from 2009 to 2010 leading to small decreases in GHGs. The rise in "biogenic" emissions results from new state rules mandating 5% biodiesel (B-5) is blended with conventional diesel fuel.
61 (Biogenic)	87 (Biogenic)	
<b>Refrigerants</b>		
511	0	Emissions associated with the fugitive release of refrigerants used in EWEB's HVAC systems. Emissions are based on the quantity of refrigerants periodically added to a HVAC system and as a result emissions vary from year to year depending on maintenance cycles.
<b>Natural Gas</b>		
0	266	Emissions associated with the combustion of natural gas used to heat EWEB's Roosevelt Operation's Center, which was completed and opened in October 2010.

Scope 2		
GHGs (MT CO <sub>2</sub> e)		Comments
2009	2010	
<b>Electricity</b>		
976 — EWEB emissions factor	672 — EWEB emissions factor	Emissions associated with EWEB's self-consumed electricity usage—60% of which is related to water utility operations.  Per GHG accounting protocols, electricity emissions are calculated using both EWEB's retail power delivery and regional power grid emissions factors.  The decrease in emissions is the result of two factors: less electricity consumption (a result of lower water sales) and lower emissions factors (for both EWEB and the region).
8,720 — Regional emissions factor	8,057 — Regional emissions factor	
<b>District Steam</b>		
1,054	1,043	Emissions associated with EWEB's internal consumption of district steam for heating EWEB's headquarters facility buildings.

Scope 3		
GHGs (MT CO <sub>2</sub> e)		Comments
2009	2010	
<b>Business Travel</b>		
497	495	Estimated emissions associated with air travel, employee-owned vehicles used for business purposes and rental vehicles. Data for business travel via bus or train were not available for reporting; therefore this total may represent a small emissions undercount.
<b>Solid Waste</b>		
76	80	Emissions associated with unsorted non-hazardous solid waste landfilled at the Lane County Short Mountain Landfill. Not included in this total are emissions associated with the disposal of hazardous materials (e.g. incineration of used motor oil) as information about the processes used in that disposal was unavailable and therefore emissions could not be accurately calculated.
<b>Employee Commute</b>		
1,086	1,117	<p>Estimated emissions associated with employee commute based on 2011 employee survey about mode of transportation and distance traveled.</p> <p>Emissions increased as a result of increased use of single occupancy vehicles as some employees shifted commute modes after being transferred to the Roosevelt Operation Center.</p> <p>Not included in this total are emissions associated with customer or visitor trips to EWEB facilities.</p> <p>Note: The methodology used to extrapolate survey results to the entire workforce changed this year. As a result, year-to-year comparisons in the future will be more meaningful.</p>
<b>Supply Chain</b>		
~16,000	~23,300	<p>Estimated emissions embodied in purchased goods and services. Embodied emissions are those emissions associated with energy consumption in the manufacture and production of goods and services.</p> <p>Not included in these totals are embodied emissions associated with several large capital improvement projects, most notably the Roosevelt Operations Center. These projects were excluded because insufficient data was available to accurately report associated emissions. This results in a significant understatement of supply chain GHG emissions. For a sense of scale, more than \$23 million in 2009 and \$33 million in 2010 expenditures were excluded from the analysis.</p>

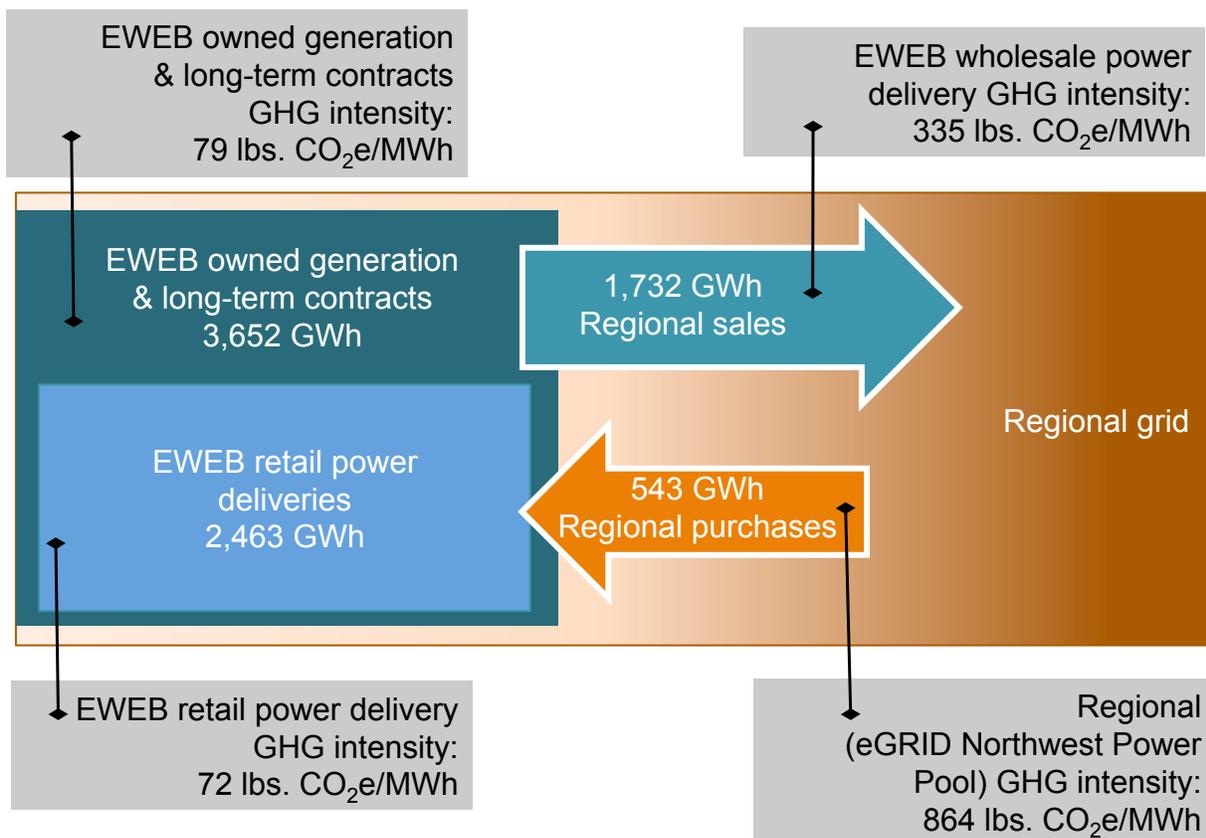
## THE CARBON CONSEQUENCES OF ELECTRICITY: A REGIONAL VIEW

Many EWEB customers are interested in understanding the “carbon footprint” of their electricity use. EWEB has an opportunity and responsibility to provide information on the impacts of electricity generation and use in order to enable our customers to make informed decisions. However, defining the carbon consequences of electricity use is not as straightforward as it may seem (see Figure 5 below).

This report’s specific task is to quantify the GHG emissions associated with all of EWEB’s owned, co-owned, and long-term contracted power resources. These resources have a GHG intensity of 79 lbs. CO<sub>2</sub>e/MWh (.036 MTCO<sub>2</sub>e/MWh). However, the GHG emissions of our electric power resource portfolio are not the same as the GHG emissions associated with EWEB customer electricity use. To think more broadly about those consequences, it is necessary to consider the electric grid to which we are all connected – and the ways in which we are connected to it.

Figure 5 below shows, in simplified form, our connections to – and reliance on – the regional system of electricity generation and distribution. Despite our significant owned resources and long-term contracts, our reliance on the regional grid is substantial. While EWEB has a healthy aggregate portfolio, at any given moment the utility is usually in surplus or deficit, buying from or selling to the regional grid at many times of day, on most days throughout the year. As the diagram demonstrates, EWEB purchased for local consumption or to meet contractual obligations elsewhere – about 543 GWh in 2010. This constituted about 62 aMW (average megawatts), or about 22% of average retail load. Similarly, EWEB sold surplus power back to the regional grid.

**Figure 5: EWEB’s Portfolio, Power Transactions, and Carbon Intensities**



EWEB's contract with Bonneville Power Administration (BPA) requires EWEB to sell the power provided by BPA, with very narrow exceptions, to our retail customers. In combination with EWEB's owned, co-owned and contracted resources these resources are more than sufficient to meet the demand of our retail customers. Any excess power, above the amount required by our retail customers is sold to the regional grid. Therefore, not all of the GHG emissions from EWEB's entire power portfolio are attributable to retail electricity sales. Taking into account EWEB's contracts and purchases involving the regional grid, the GHG intensity of EWEB's Retail Power Deliveries is 72.0 lbs. CO<sub>2</sub>e/MWh (.033 MTCO<sub>2</sub>e/MWh).<sup>5</sup>

Despite having surplus power resources on an annual average basis, there are certain times of the day/week/month when EWEB must still purchase electricity from the regional grid in order to meet the demand of our retail and wholesale customers. The Northwest regional grid from which these purchases come has an average GHG intensity of 864 lbs. CO<sub>2</sub>e/MWh (.392 MTCO<sub>2</sub>e/MWh). This carbon intensity is considerably higher due to the inclusion of coal and natural gas generating plants within the region. When these regional purchases are considered the GHG intensity of EWEB's entire portfolio of power resources increases to 79 lbs. CO<sub>2</sub>e/MWh (.082 MTCO<sub>2</sub>e/MWh).

EWEB's interdependence with the larger regional grid extends beyond the buying and selling of electricity. EWEB's retail customers benefit from an integrated system in a number of ways. The interconnected grid helps assure reliability by allowing the transfer of electricity from one part of the network to another in response to changes in supply (including integration of intermittent resources like wind power) and demand, or in response to planned or unplanned generation or transmission outages. This system also makes possible EWEB's participation in wholesale power markets, the sale of surplus energy providing revenue that subsidizes EWEB's retail electricity rates.

Connection to a regional grid also means that energy efficiency and climate action take on new meaning. Less energy use at peak times, for example, decreases demand for whatever the "marginal" resource is in the region. That marginal resource is rarely an average mix; rather, it is typically natural gas (around 1000 lbs CO<sub>2</sub>e/MWh), or some mix of fossil resources. In short, the average numbers for the portfolio are not a good indication of the impacts of local efficiency and conservation, or "load-shifting" from peak to off-peak times.

### CALCULATING THE CARBON FOOTPRINT OF ELECTRICITY USE

EWEB's advice to customers preparing their own corporate greenhouse gas inventories is to follow The Climate Registry's *General Reporting Protocol* guidelines and calculate the emissions associated with their electricity consumption using *both* the emissions factor for the regional electric grid – the Northwest Power Pool – as well as EWEB's Retail Power Portfolio average emissions intensity (see table below).

Emissions Factors for EWEB Customers Calculating Indirect Emissions Associated with Electricity Consumption		
Emissions Factor	Metric	Standard
	MT CO <sub>2</sub> e/MWh	lbs. CO <sub>2</sub> e/MWh
Northwest Power Pool Regional Average	.392	864
EWEB Retail Power Portfolio Average	.033	72

EWEB's Retail Power Deliveries Average—the carbon intensity of our retail power sales as defined in methodology by The Climate Registry's Electric Power Sector Protocol—decreased from 102 lbs CO<sub>2</sub>e/MWh in 2009 to 72 lbs CO<sub>2</sub>e/MWh in 2010. This decrease results from improved data collection on the type and quantity of contracted and purchased electric power resources delivered to EWEB's retail customers, rather than significant changes in the actual composition of those electric power resources. Specifically, the 2010

<sup>5</sup> The Climate Registry's EPSP requests several "power delivery metrics," including for wholesale power. The GHG intensity of EWEB's wholesale power deliveries is 335 lbs. CO<sub>2</sub>e/MWh (.152 MTCO<sub>2</sub>e/MWh).

reporting more accurately reflects the carbon intensity of the Bonneville Power Administration hydroelectric-dominated resources that EWEB sells to our retail customers.

## **MANAGING OUR GHG EMISSIONS**

The large majority of our emissions are related to the generation, delivery and sale of electricity. This is to be expected, given EWEB's unique role as the primary provider of electricity in the community. EWEB seeks to meet our customers' demand for electricity while balancing the environmental, social and economic impacts of the different resource choices. To that end, we have consistently invested in clean energy resources such as wind power, local solar, and energy efficiency and conservation.

While our operational activities present a near-term opportunity to mitigate our GHG emissions, many of the activities associated with the emissions in the energy portfolio are the result of decisions made over longer-term planning horizons. EWEB is in the process of updating our Integrated Electric Resource Plan (IERP), the plan that will guide resource decisions over the next five years. During the planning process EWEB is evaluating options that may lead to reductions in the carbon emissions associated with our energy portfolio.

While our operations GHG emissions are modest relative to the GHG emissions associated with our energy portfolio, managing these GHG emissions is still important and represents some of the most readily available opportunities for reducing our GHG emissions. To that end, EWEB has adopted a goal of reducing our operations GHG emissions by 25% below 2009-levels by 2020 and to achieve carbon neutrality for our operations by 2050. An internal operations climate action plan is being developed to lay out the steps to achieve this goal.