



Environment

DMA: Respect for the natural environment is paramount and essential to the sustainability of our business. From our potash mines in Saskatchewan to our Florida phosphate operations and blending facilities in Brazil, we strive to optimize our production processes and reduce our environmental footprint.

At Mosaic, we believe lasting success comes from making smart choices about how we manage resources. We are committing significant resources to advancing our efforts in water conservation, land reclamation and waste reduction, and producing clean energy through cogeneration in our phosphates operations. We are also committed to the responsible and sustainable use of our products. By promoting and advancing 4R Nutrient Stewardship, we are working to mitigate potentially negative environmental impacts stemming from improper use of fertilizer.

This year, we have developed sustainability targets to help focus our efforts and track our progress in the areas of water, energy, greenhouse gases and waste. We are committed to achieving these targets and will work to evaluate future areas for measurement and improvement.

**View Our
Sustainability
Targets** 



Managing Our Water Footprint

Responsible use of water is a fundamental component of Mosaic’s global sustainability vision. Our water management programs involve facility-specific and business unit-wide initiatives to reduce our water footprint.

Water Withdrawals

(G4-EN8) The primary sources of water for our operations are surface water, rainwater and groundwater. Secondary sources of water include water supplied by local authorities and partially treated industrial and domestic reclaimed water, also supplied by local authorities. Surface water withdrawals include once- through cooling water used by operations in Louisiana.

Mosaic operations capture rainfall, a portion of which is impounded and used in the various production processes, with some discharged through permitted outfalls. Traditionally, Mosaic has considered captured rainfall use as an “alternative water supply.” Captured rainfall is used in part to estimate recycle/reuse water usage rates at Florida concentrate and minerals operations.

Global Water Withdrawals

,000m³

	2010	2011	2012	2013	2014
Groundwater	62,699	58,746	71,218	67,277	64,380
Municipal	112	94	118	133	781
Reclaimed Water	897	971	1,084	1,167	3,429

Surface Water	225,009	208,952	215,854	250,427	240,780
Total	288,717	268,763	288,274	319,004	309,370

In alignment with our [Sustainability Targets](#), we have modified our water intensity reporting to reflect a freshwater intensity measurement. In setting a water target, our intent is to drive water efficiency improvements across our business and to increase the use of alternative sources.

Mosaic's freshwater withdrawals per tonne of dry product crop nutrient and animal feed production are as follows:

Freshwater Intensity

m³/Tonne

	2010	2011	2012	2013	2014
Mosaic	4.38	4.37	5.43	5.07	4.59

Notes: "Intensity" refers to the volume of water used in making product (m³) per unit of product manufactured (metric tonnes). Production includes all crop nutrients and animal feed ingredients produced in the calendar year. "Freshwater" is defined as groundwater and surface water and excludes reclaimed water, brine, seawater and Mississippi River water used for once-through cooling.

For withdrawals and total intensity broken down by business unit, please see our [Environment Metrics Supplement page](#).

(G4-EN9) Mosaic's Central Florida fertilizer production facilities operate on more than 90% recycled or reused water. Deep well pumping from the Floridan Aquifer is strictly regulated, and is used as a supplemental water supply on an as-needed basis. Local regulations favor the use of available alternative water supplies, such as reclaimed water from municipalities, before groundwater use. Mosaic Florida sites received reclaimed water from six municipal waste water treatment plants in 2014 at an average rate of 2.1 million gallons per day (MGD). Please see [G4-EN8](#) and [G4-EN10](#) for additional context.

Once water use permits are issued, permit holders must regularly evaluate and report to the Southwest Florida Water Management

In the Phosphates Business Unit, to avoid any impacts on adjacent wetlands and other surface water sources, active mining areas are surrounded by a protective recharge ditch and berm system that assists in maintaining the groundwater table elevation. The Phosphates Business Unit does not withdraw water from rivers or lakes to supplement freshwater needs, further protecting ecological resources from undue stress.

The final Areawide Environmental Impact Statement (AEIS), a two-plus-year study released by the U.S. Army Corps of Engineers (ACOE) in April 2013 and addended in July 2013, evaluating the cumulative impacts of phosphate rock mining in Central Florida, concluded that the effects from mining on groundwater resources would be "minor" in magnitude and not "significant." A similar conclusion was

District on water conservation efforts to minimize groundwater use for processing needs on an annual basis. To demonstrate the substantial results achieved through water conservation efforts over time, in 1991, Mosaic’s predecessors used approximately 1,000 gallons of water to process one ton of phosphate rock; currently the water use has been reduced by approximately 50% to about 500 gallons of water per ton of phosphate rock. Mosaic’s water use permit also reflects this decrease in demand. In fact, the Integrated Water Use Permit was renewed in 2012 with an annual average permitted quantity of 69 MGD versus the previous permit for the same area authorizing water use of 99 MGD, representing a reduction of 30%.

reached for surface water resources in the July 2013 AEIS Addendum, which also indicates that surface water and ecological impacts would be “minor” and with mitigation would not be significant.



Today phosphate rock is processed using half the amount of water that was used more than 20 years ago

Water Recycling

(G4-EN10) Our facilities continuously monitor and evaluate water use to ensure it is minimized, and water recycling and reuse are maximized. Recycle and reuse percentage rates for Mosaic’s Potash and Phosphate Business Units are presented here. Rates and volume are based on total water used by facility, less freshwater withdrawals.

Recycle and Reuse Volume Rate

Business Unit	Recycle and Reuse Volume ,000m ³	Recycle and Reuse Rate
Potash	195,195	90%
Phosphates	672,712	90%

Notes: Carlsbad, N.M., South Pasture, Plant City, and

APPROXIMATELY
90% of water is reused
or recycled in
Florida Phosphate
Operations and
Saskatchewan
Potash Operations

South Pierce, Fla., and Faustina and Uncle Sam, La., are not included in respective business unit calculations. Belle Plaine is a solution mine and therefore, water use and methodology for recycle/reuse rate differs from shaft mining operations. Mosaic operations capture rainfall, a portion of which is impounded and used in the various production processes, with some discharged through permitted outfalls at Phosphates facilities. Traditionally, Mosaic has considered captured rainfall use as an alternative water supply, and it is used in part to estimate recycle/reuse water usage rates at Florida concentrate and minerals operations.

Effluents & Waste

Water Discharges

(G4-EN22) Discharges from Mosaic's U.S. phosphate operations to nearby water bodies are highly regulated through federal National Pollutant Discharge Elimination System (NPDES) permits (administered by FDEP), which require ongoing demonstration of compliance with effluent limitations. These limitations are based on the water quality standards that protect the designated uses of the receiving water body. As an overarching principle, water that falls within the active, operational footprint at Mosaic's phosphate mining and fertilizer production facilities is actively managed, treated if necessary and discharged only through outfalls, whose locations are permitted through the NPDES program. Discharges are monitored, sampled and analyzed regularly by Mosaic, and reported to the regulatory agencies to demonstrate ongoing compliance with these permit limitations. By maintaining compliance with all NPDES permits, Mosaic ensures that its discharges meet existing regulations.

In 2014, Mosaic's Canadian Potash facilities helped preserve water quality off-site by maintaining a zero-discharge approach, with the capture of surface water runoff from the sites. In certain circumstances of high precipitation events, off-site discharges of freshwater surface runoff are warranted and are approved in advance by the Saskatchewan Ministry of Environment. There were two such instances in 2014.

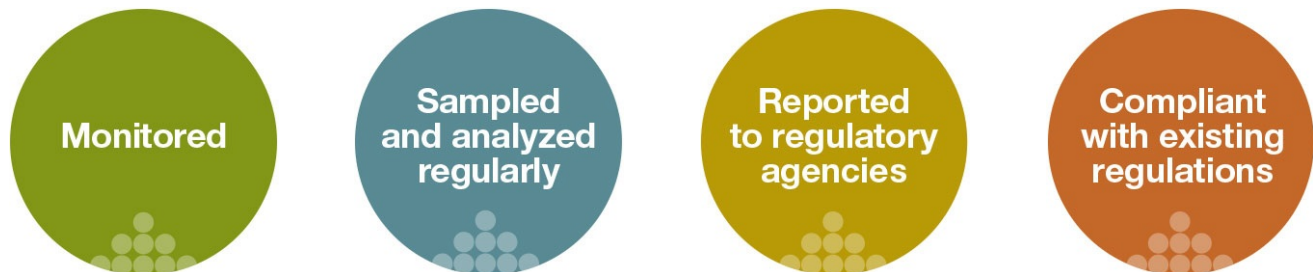
A significant percentage of the total outfall discharge from Florida Phosphate operations is from rainwater. The discharge pattern tends to follow the rainfall pattern (e.g., more discharges occurring immediately following rainfall events) and the total can vary year to year depending on the levels of precipitation. In Florida, our operations are located in the following river basins: Alafia River, Hillsborough River, Little Manatee River, Myakka River and Peace River, with one fertilizer manufacturing facility's outfalls directing water to Tampa Bay. Mosaic's Phosphates facilities in Louisiana have permitted outfalls that discharge water to the Mississippi River. The following table summarizes the total surface water discharge from our Phosphate operations in Florida and Louisiana combined. As of the date of this publication's release, 2014

discharge data is not available. We expect to publish 2014 data here after July 2015.

Total Water Discharge of Mosaic Phosphates Business

	2010	2011	2012	2013
Phosphates Business Unit Annual Outfall Discharges ,000m ³	404,149	287,978	321,318	444,035
Phosphates Outfall Discharge Annual Phosphorous Loadings Tonnes	2,216	1,785	2,465	2,691
Phosphates Outfall Discharge Annual Nitrogen Loadings Tonnes	228	123	210	210

Water Discharges are:



(G4-EN26) The discharge of water and runoff from Mosaic’s mining and fertilizer manufacturing is a highly regulated activity that has stringent reporting and compliance requirements. The release of water via storm water or discharge must comply with these requirements. The standards enforced by the regulatory authorities are designed to protect water bodies and associated habitats from degradation and secondary environmental impacts. None of the points of discharge releases water directly into a designated protected area.

Water discharge examples at our major facilities:

- Any releases are subject to water constituent limitations designed to be protective of downstream biological communities. This water quality protection is particularly important as segments of the Little Manatee River and the Myakka River, downstream of Mosaic’s operations, are designated as Outstanding Florida Waters—with a portion of the Myakka River also being classified as a Florida Wild and Scenic

The five riverine basins in which Mosaic operates in Florida include the Hillsborough, Peace, Alafia, Little Manatee and the Myakka Rivers. These riverine systems vary in size, as indicated below.

Florida Riverine Basins Where Mosaic Operates

Water Body/Basin	Basin Size Hectares	River Length km
Hillsborough River	175,000	95
Peace River	608,000	169
Alafia River	109,000	38
Little Manatee River	58,000	58
Myakka River	155,000	106

River. The final AEIS released by the ACOE in April 2013 and supplemented in July 2013, which documented the findings of a comprehensive two-plus-year study on the direct, indirect and cumulative impacts of proposed and reasonably foreseeable phosphate mining projects in the Central Florida Phosphate District, concludes that the effects of mining will not have a significant water quality impact, in part, because the proposed projects are not expected to cause violations of water quality standards. While acknowledging that NPDES-permitted discharges associated with the proposed mine alternatives may add some authorized quantities of certain regulated or targeted constituents to receiving waters, the final AEIS concluded that anticipated, resulting levels of these parameters would not constitute a health risk nor present an unacceptable risk to stream biota.

- In Louisiana, our Faustina and Uncle Sam plants intake and outfall to the Mississippi River. This process is highly regulated by the state to ensure that gross contaminant levels are acceptable.
- For our Canadian Potash operations, we have no off-site releases of water or runoff as part of normal operations. See [G4-EN22](#) for additional context.



Reducing Our Energy Use & Emissions

Since our company's formation in 2004, Mosaic has invested in site- specific initiatives and companywide programs aimed at reducing energy use and emissions. These efforts are resulting in operating cost savings and improvements in environmental performance.

Energy

(G4-EN3) Mosaic's worldwide total direct energy consumption in 2014 was 95.43 million gigajoules (GJ).

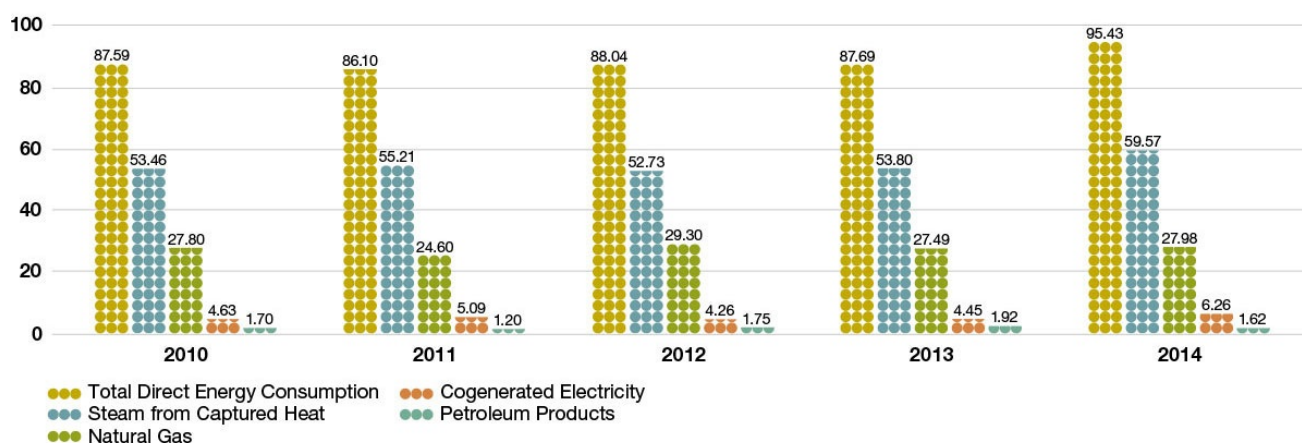
Energy Consumption by Source

Approximately 92% of Mosaic's worldwide total direct energy consumption in 2014 was from two sources: waste heat from sulfuric acid production and natural gas. The remaining portion was made up of petroleum products and propane.

Our Phosphate operations require the production and consumption of sulfuric acid to liberate crop nutrients (phosphorous) from raw material inputs. The manufacture of sulfuric acid is an exothermic process, generating tremendous amounts of waste heat. Most of our finished phosphate crop nutrient manufacturing operations have installed bottoming cycle combined heat and power systems to convert this waste heat primarily into steam, used in the phosphate manufacturing facilities and mines.

Total Direct Energy Consumption by Source

Million GJ



Note: Waste heat and steam from the processing of sulfur is used as a source of energy.

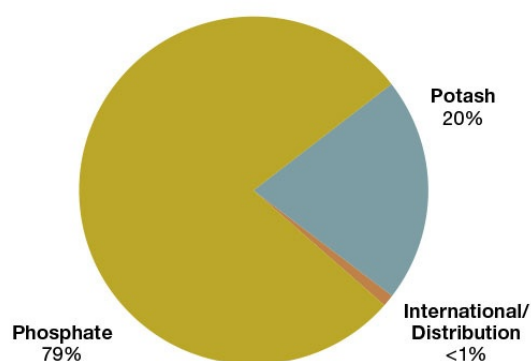
In 2014, our Phosphate operations used a portion of this energy to produce 5.8 million GJ of electricity, approximately 90% of which was used internally. We consider the waste heat from sulfuric acid production to be a direct primary energy source for our operations.

Natural gas is primarily used in our Phosphate and Potash operations to generate thermal energy for drying. However, a small portion of this fuel is used to produce steam for internal combined heat and power generation.

Energy Consumption by Business Unit

Almost all of Mosaic's worldwide total direct energy consumption is attributable to its phosphate and potash crop nutrient manufacturing operations. Specifically, approximately 79% is consumed in the production of phosphate crop nutrients while almost 20% is consumed in production of potash. The remaining portion—less than 1%—is consumed within Mosaic's product distribution network and international production facilities.

Mosaic Direct Energy Consumption by Business Segment 2014



Note: The Phosphates Business Unit uses a significant amount (53.46 million GJ) of waste heat energy from the sulfuric acid manufacturing process, which is accounted for here.

5.8 MILLION GJ

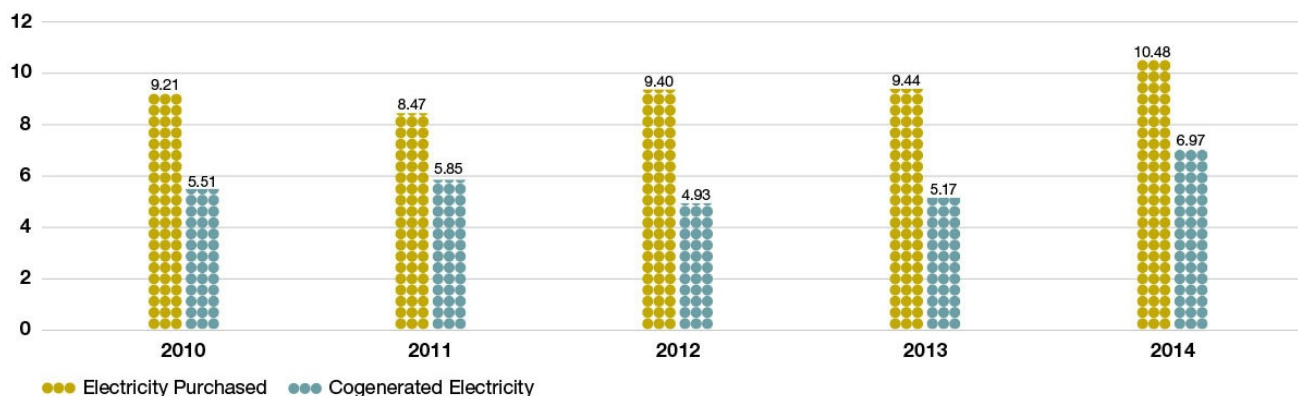
of electricity produced by our phosphate operations in 2014

90%

used internally

Indirect Energy Consumption by Primary Energy Source

Million GJ



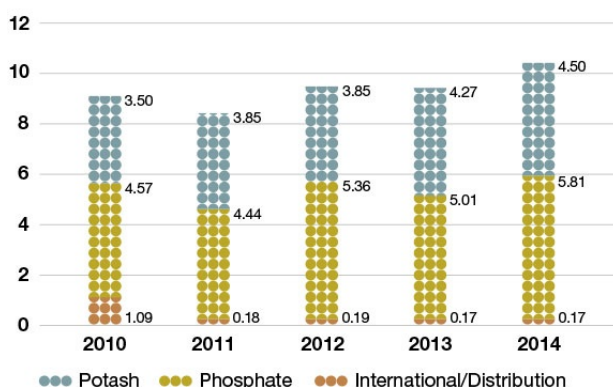
Note: 6.97 million GJ represents the total cogeneration produced, a portion of which is sent to the utility grid. The total cogenerated power consumed by Mosaic is reported above.

Indirect Energy Consumption by Business Unit

Mosaic consumes indirect energy solely through the purchase of electricity produced by third parties. Mosaic's worldwide indirect energy consumption was 10.48 million GJ for 2014. This is an increase over 2013 levels, due primarily to our acquisition in 2014.

Indirect Energy Consumption by Business Unit

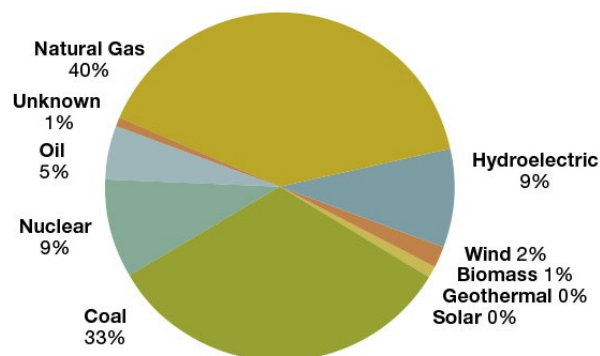
Million GJ



Indirect Energy Consumption by Fuel Source

Approximately 12% of Mosaic's worldwide indirect energy consumption is from renewable sources, including hydroelectric, biomass sources and wind power. Since 2009, almost 100% of the electricity used in our Brazilian operations has come from hydroelectric sources.

Mosaic Indirect Energy Consumption by Generation Source 2014



Note: Purchased electricity sources for facilities in the United States are based on the U.S. Department of Energy 2012 Emissions & Generation Resource Integrated Database (eGRID) regional. Canada-purchased electricity sources are based on Saskpower 2011 Annual Report. International facilities' power generation sources are based on the U.S. Energy Information Administration's national energy profiles. Renewable sources, including hydroelectric, wind, biomass, geothermal and solar total 1,219,963 GJ, or 12%.



Our new turbo generator at New Wales adds 35 megawatts of GHG emissions-free electrical generation capacity

As previously noted, Mosaic's Phosphate operations produce a significant amount of electrical power through steam turbine generation from waste heat generated in sulfuric acid production. Phosphate crop nutrient manufacture requires the production and consumption of sulfuric acid to liberate crop nutrients (phosphorous) from raw material inputs. In 2014, Mosaic's Phosphate operations produced 5.8 million GJ of electricity through this process. Of this 5.8 million GJ, Mosaic consumed approximately 5.1 million GJ internally, offsetting the purchase of electricity from third-party utilities.

Mosaic continuously looks for opportunities to improve the efficiency of, and expand the electricity output of, our cogeneration assets. In 2014, Mosaic began operation of a new turbo generator (TG) at our New Wales facility. This investment adds 35 megawatts of greenhouse gas (GHG) emissions-free electrical generation capacity using heat recovered from sulfuric acid manufacturing.

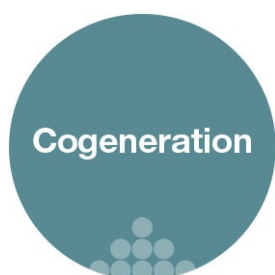
Energy Consumed Outside the Organization

(G4-EN4) Mosaic has engaged upstream and downstream stakeholders in our supply chain to better quantify the impacts of our business. We report GHG emissions associated with various sources in [G4-EN17](#) and continue to collaborate with vendors and contractors to quantify the amount of energy consumed outside the organization. We anticipate expanding the scope of our reporting for this indicator in the near future.

Energy Intensity

(G4-EN5) Mosaic's three-pronged approach of energy management through cogeneration, conservation and greater efficiency aims to lead the industry in reducing the energy we use and maximizing the clean energy we generate. We are committed to evaluating alternative energy sources to satisfy our energy requirements. By 2020 we aim to reduce our total energy use by 10% per tonne of product.

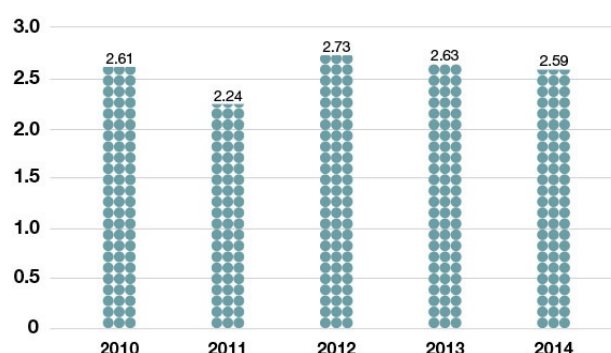
Mosaic's three-pronged approach to energy management:



A portion of the electricity required in Mosaic's operations is satisfied through internal generation of electricity. This process of waste heat recovery, called cogeneration, allows several of our plants and mines to significantly reduce the amount of third-party electricity required from utilities. In October 2005, the Florida state legislature formally recognized that cogenerated electricity is "renewable energy" under Florida statute 366.91. In 2014, Mosaic produced enough electricity in all business units—approximately 6.97 million GJ through cogeneration—to satisfy approximately 38% of our companywide electrical demand. Over 800,000 GJ of this cogenerated electricity was sent for use at our mines.

Mosaic could have additional opportunities for harnessing emissions-free power under a more supportive regulatory construct. We advocate for a balanced renewable energy policy that incentivizes and expands the generation and consumption of existing, low-cost renewables, such as waste heat recovery, and promotes fairer pricing for third-party renewable producers when selling power back to the electrical grid.

Total Energy Per Tonne Finished Product
GJ/Finished Product Tonnes



Notes: Total energy includes electricity, fuels and energy from waste heat consumed by Mosaic operations including mines, manufacturing plants, distribution sites, offices, agricultural operations and our Streamsong resort. In alignment with our sustainability targets and progress tracking, steam is excluded as a source of energy. Accordingly, prior years' energy per tonne of finished product have been restated. Energy consumed in sinking the K3 shaft mine and the operation of our Streamsong resort are included since 2012 only.



1.6 million GJ of energy saved through continuous energy improvements companywide

Reducing Our Energy Consumption

(G4-EN6) Our continuous energy improvement and sustainability process is part of a broader strategic business plan designed to help Mosaic meet or exceed production and profitability requirements. This plan includes strategies for lowering purchased energy consumption through more efficient processes and maximizing use of energy generated through the crop nutrient manufacturing process.

To identify and capture potential energy opportunities, we have formed teams of energy representatives at our sites. These teams investigate a number of issues, such as improvements in natural gas use (e.g., efficiencies in boilers, dryers, mine air heating and cogeneration) and improvements in electrical systems (e.g., efficiencies in cogeneration systems and slurry pumping, including extensive use of variable speed drives, air compression, and heating and lighting systems). We also pursue energy savings by improving equipment use efficiency. For example, in 2014, operating crews at our Florida mining facilities initiated an energy conservation contest—a friendly competition across shifts and locations to see which crew runs its shift using the least amount of energy. Before the

In addition, Mosaic regularly conducts energy reviews to help identify potential efficiency projects and assess major manufacturing processes such as combustion, general electrical, electric motor systems, compressed air systems and heating. We also have engineers assigned to individual facilities to help identify and execute energy efficiency initiatives. Projects are monitored and audited, and the resulting metrics are used to establish key performance indicators. These efforts reduce Mosaic's overall energy profile, operational costs and use of indirect natural resources.

Mosaic also emphasizes energy efficiency in our office facilities. Mosaic's Florida corporate headquarters maintains its ENERGY STAR certification. Mosaic's leased Regina, Canada, offices were built to Leadership in Energy & Environmental Design (LEED) standards and included the purchase of interior design elements, furniture and products, as well as other energy efficiencies associated with LEED. Similarly, Mosaic's Colonsay Mill Dry building in Saskatchewan was designed and constructed according to LEED standards. The LEED certification process for both buildings is underway.

start of each shift, crews use a performance scorecard to communicate energy saving successes and opportunities for improvement. The winning crews are awarded with a meal at the end of the contest.

We forecast savings of approximately 1.6 million GJ due to conservation and efficiency improvement projects that were executed in 2014. Several examples of energy efficiency efforts by our operations are outlined below.

Sustainability Initiatives in Action

Location	Activity	Estimated Annual Energy Savings Gigajoules	Estimated Annual CO ₂ e Savings Metric Tonnes CO ₂ e
Phosphates			
Four Corners	Various efforts at our mining pumping pits resulted in improvements in solids pumping rates. Pumping the same amount of solids in less time translates to energy and GHG savings.	58,186.8	9,775.4
Four Corners	Engineering teams at our Four Corners mining facility developed a system for tracking energy associated with equipment use. The tool, used as a scorecard to communicate successes and opportunities for savings, resulted in improvements in daily energy use.	8,132.4	75,154.3
Four Corners	The purchase of smaller, more efficient sealing water pumps decreased the amount of power required to seal matrix pumps.	244.80	41.1
New Wales	In 2014, our New Wales plant brought two heat recovery systems online to increase the amount of waste heat recovered from sulfuric acid production. Also in 2014, we began operation of a new turbo	500,051.0	25,705.0

New Wales	generator at our New Wales facility, which adds 35 megawatts (MW) of greenhouse gas (GHG) emissions-free electrical generation capacity using heat recovered from sulfuric acid manufacturing.	569,854.8	95,735.6
Phosphates	Our Phosphates Business Unit replaced over 1800 lights with LED fixtures, resulting in energy and GHG savings.	8,973.9	738.7
Phosphates	In 2014, we moved 2.9 million tonnes of product by compressed natural gas fleet, resulting in fewer transportation-associated emissions.	-	118,000
Wingate	By operating a clay dredge at optimized off-peak/on-peak times, our Wingate facility saved \$32,000 in energy costs.	-	0.0
Potash			
Belle Plaine	Through an agreement with an industrial partner in Saskatchewan, Mosaic's Belle Plaine facility sends water to be used in a cooling process at a nearby plant. The heated water returns to Mosaic's facility to be used as part of a potash production process. This synergy allows Mosaic to reduce the amount of energy that would have otherwise been spent on heating the water while allowing the industrial partner to avoid cooling costs.	578,215.0	29,950
Belle Plaine	Employees at our Belle Plaine facility saved about 3 million km traveled per year by carpooling, resulting in less fuel consumption and GHG savings.	2.3	24,845.9
Colonsay	In 2014, our Colonsay site implemented several process engineering improvements that reduced site-wide energy intensity.	373,798.8	33,660.0

International			
Fospar, Brazil	Mosaic invested in a new crane at our Fospar port terminal in Paranagua, which is more efficient and uses less diesel than its predecessor.	13,884.2	369.1
Fospar, Brazil	Installing a regenerative brake system in one of the cranes at our Fospar port operations resulted in diesel savings.	647.5	17.2
Yantai, China	Mosaic's YMF bulk blending plant replaced eight high-pressure sodium lights with LED lights.	8.2	1.7
Total Savings		1,611,948.7	388,289

(G4-EN7) Innovation is one of Mosaic's strategic priorities. Built on our industry-leading product, process and sustainability solutions, it shapes our long-term strategy as we seek to reduce energy use and GHG emissions while delivering unique value to our stakeholders. Mosaic has a vested interest in the success of our customers, for it is their efforts that provide the food that feeds the world. To this end, Mosaic has developed several products and services that enhance customers' productivity and positively impact their energy efficiency.

For example, in 2014, Mosaic continued full-scale production of Nexfos®, the next generation feed-grade phosphate that is characterized as being a combined source of highly available phosphorous, calcium and sodium. Not only is Nexfos the first innovation in feed-grade phosphate in over 40 years, the product is helping Mosaic meet its commitment to sustainability by reducing its environmental footprint. The Nexfos production process has significantly reduced the carbon footprint associated with the production of comparable feed phosphates by requiring approximately 60% less water,

In addition, Mosaic maintains active partnerships with industry-leading research centers, targeting agriculture efficiency and productivity improvements. For more information on our partnerships, please see [G4-EN27](#).

In 2014, energy efficient or renewable energy based initiatives resulted in approximately 550,000 GJ of energy savings. Please refer to the table in [G4-EN6](#) for additional information on our efforts to provide energy efficient or renewable energy based products or services.

We're developing products and services that enhance customers' productivity and positively impact their energy efficiency

70% less natural gas and 55% less electricity per ton to produce. It also reduces purchasing, storing and handling costs for consumers.

Reducing Our Emissions

We strive to continuously improve GHG emissions intensities in our manufacturing facilities and support functions year over year.

Emissions

Direct and Indirect Emissions (G4-EN15, G4-EN16)

Worldwide Greenhouse Gas Emissions

Tonnes CO₂e

Business Unit/Emission Type	2010	2011	2012	2013	2014
International/Distribution	299,596	34,337	100,006	69,530	55,957
Direct Emissions	32,698	21,047	78,263	59,039	42,832
Indirect Emissions	266,898	13,290	21,743	10,491	13,125
Phosphate	2,433,097	1,910,424	2,668,055	2,537,613	2,865,943
Direct Emissions	1,657,887	1,177,986	1,786,223	1,804,960	1,909,898
Indirect Emissions	775,210	732,438	881,832	732,653	956,045
Potash	1,531,362	1,648,629	1,741,518	1,803,108	1,799,198
Direct Emissions	889,467	943,567	1,039,710	929,949	948,638
Indirect Emissions	641,895	705,062	701,808	873,159	850,560
Grand Total	4,264,055	3,593,390	4,509,579	4,410,251	4,721,098

Notes: Direct emissions include Mosaic's consumption of natural gas, diesel, other fuels, process related activities, water treatment and refrigerants. Indirect emissions include electricity purchased from third-party utilities. Mosaic uses guidance from the CDP for calculating and reporting carbon dioxide equivalence (CO₂e).

(G4-EN17) Mosaic has engaged upstream and downstream stakeholders in our supply chain to better quantify the impacts of our business. In 2014, Mosaic collaborated with 14 vendors and contractors to quantify GHG emissions associated with business travel and rail transport of raw materials and finished products.

Scope 3 emissions from ammonia purchases, upstream transportation and business travel are reported below.

Other Indirect Greenhouse Gas Emissions

Tonnes CO₂e

	2011	2012	2013	2014
Ammonia Purchases	2,877,787	2,133,499	2,120,201	2,201,664
Truck Transport (Florida)	-	-	-	14,255
Rail Transport (Florida)	9,788	9,397	10,037	13,409
Business Travel	5,557	5,335	5,140	4,652
Total	2,893,132	2,148,231	2,135,378	2,233,980

Note: Ammonia purchases depicted in the table above are for production of crop nutrients in the Phosphates Business Unit only. Factor for purchased ammonia revised for 2013 and prior years per IPCC 2013 guidance for ammonia production with modern, natural gas ammonia plants. In 2014, we captured emissions totals from one of our trucking partners. These figures represent a portion of our total trucking emissions. These figures are not available for 2011-2013. Emissions associated with product use are addressed as part of our product stewardship programs. Please see the [Food](#) section for more information.

We continue to evaluate additional sources of Scope 3 emissions and anticipate expanding the scope of our reporting to include additional sources in the near future.

Emissions Intensity

(G4-EN18) By 2020, we aim to reduce GHG intensity by 10% per tonne of finished product. Mosaic's historical GHG emissions per tonne of dry product crop nutrient and animal feed production are as follows:

By 2020, we aim to reduce
GHG intensity by
**10% PER TONNE
OF PRODUCT**

2014 Direct and Indirect Greenhouse Gas Emissions Intensity

Per Tonne of Finished Product

	2010	2011	2012	2013	2014

Mosaic	0.26	0.21	0.28	0.27	0.26
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Note: Emissions intensity refers to total CO₂e emissions generated in metric tonnes per unit of product measured in metric tonnes. Excludes co-products. Includes all Scope 1 and Scope 2 emissions sources reported in previous GRI/CDP.

(G4-EN19) Mosaic is taking a proactive approach to reductions in emissions, with particular emphasis on improving energy efficiency and waste management. Since 2005, we improved the Phosphates Business Unit's GHG emissions intensity by 14.5%—surpassing our 2012 goal by nearly 45%. By 2020, we aim to reduce our Scope 1 and Scope 2 GHGs by 10% per tonne of product.

GHG emission reductions resulting from the initiatives reported in [G4-EN6](#) equal approximately 400,000 tonnes of CO₂e.

For more information on Mosaic's efforts to reduce GHG emissions and address climate change, please see our [2014 CDP Response](#).



We are proactively reducing our GHG emissions by improving energy efficiency and waste management

Other Emissions

(G4-EN20) Mosaic does not produce CFCs, HCFCs, halon or methyl bromide in any of our operations. Refrigerants used in air conditioning units at our offices and production facilities represent a nominal quantity and only appropriate outside firms or certified internal technicians maintain these units. Air conditioning systems on some vehicles and equipment are maintained by Mosaic personnel. Ozone-depleting substances are phased out as

(G4-EN21) Mosaic recognizes the importance of careful air emissions management and proactive reduction of these emissions from our operations. We use published emission factors and engineering estimates, as well as analytical stack sampling results, to calculate the following criteria air and other pollutants emissions for Phosphates and Potash operations. Due to regulatory reporting timelines, 2014's data was unavailable at the time of this publication's release; we expect

required when units are replaced. In 2012, Mosaic inventoried refrigeration units in over half of its worldwide facilities for potential emissions related to global warming potential and ozone depleting potential (OZP). Mosaic has targeted the remaining facilities, including acquisitions, to be inventoried in 2015. Potential GHGs from refrigerants, expressed in CO₂e, are included in [G4-EN16](#).

to publish 2014 data here after June 2015.

Criteria Air and Other Pollutants

in ,000 Tonnes

	2010	2011	2012	2013
NOx	2.70	3.54	4.56	4.56
CO	0.85	0.94	1.77	1.77
PM	3.73	3.96	3.66	3.66
SO²	22.70	16.94	13.11	13.11
VOC	1.29	1.32	2.61	2.61
NH₃	0.77	0.63	1.10	1.10
FL	0.15	0.16	0.15	0.15
H₂S	0.014	0.015	0.11	0.11
SAM	0.14	0.14	0.12	0.12
HF	0.38	0.47	0.45	0.45

Mosaic's significant air emissions per tonne of dry product crop nutrient and animal feed production are as follows:

Normalized Air Emissions 2013 Emissions per Metric Tonnes of Finished Product

kg Emissions Per Tonne of Finished Product

	2013

NOx	0.25
CO	0.10
PM	0.20
SO ₂	0.71
VOC	0.14
NH ₃	0.06
FL	0.01
H ₂ S	0.01
SAM	0.01
HF	0.02

Note: All business units included. Emissions based on stack test and emission factors.



Transportation

In any given year, Mosaic moves upwards of 60 million tons of raw materials, work-in-progress goods and finished products. We strive to transport materials as efficiently as possible, both in terms of cost and environmental impact.

(DMA) In 2014, we engaged 14 external supply chain providers to attempt to better understand the emissions impact associated with upstream and downstream transportation. We continue to evaluate additional sources of emissions and anticipate expanding the scope of our reporting in the future to include additional sources. Please see [G4-EN17](#) for more information.

(G4-EN30) To compare fuel efficiency, the industry standard is to measure ton-miles per gallon (ton/miles/gallon). The following

Fuel Efficiency Analysis

Tons/Miles/Gallon

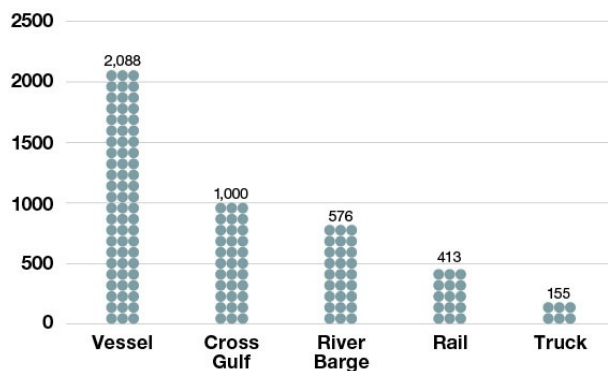


chart compares the efficiency of the various modes of transportation that Mosaic uses to move our raw materials, work-in-progress and finished goods. The most fuel efficient transport is by Panamax vessels, which carry more than 60,000 tons of cargo great distances. In North America, cross-Gulf barges and vessels move raw materials and finished goods across the Gulf of Mexico quite efficiently. Trucks can carry approximately 25 tons and yield approximately 155 tons/miles/gallon.

An N-ViroMotive locomotive uses about 57% less fuel and emits about 80% fewer GHGs than a single-engine diesel locomotive



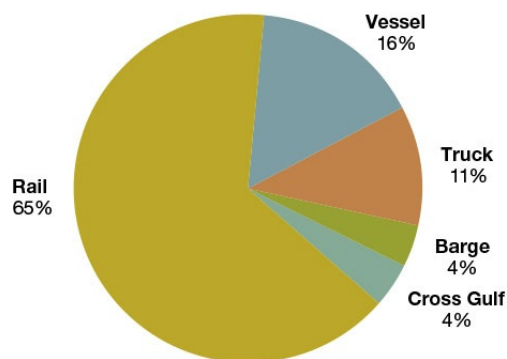
For 2014, our spending on North American transport of materials and products was divided across modes as follows:

The following table summarizes the amount of material transported and percentage by weight for North American shipments.

Transport Mode and Weight

Mode	Tons	Percentage by Weight
Vessels and Cross Gulf	16,258,729	26%
River Barge	4,511,069	7%
Rail		

Transport Costs by Mode 2014



Note: Chart based on actual costs incurred by Mosaic per transport mode. Does not include transport of materials and product from all international distribution facilities.

Rail (Cars)	28,762,231	46%
Truck	13,265,064	21%
Total	62,797,093	100%

Note: This table includes shipments of raw materials and finished product from origin to final destination that originated or ended in North America.

Mosaic and its transportation partners use fuel and GHG emission-saving initiatives:



Establishing partnerships with vendors to increase efficiencies and reduce cost



Chartering the most efficient vessels available



Investing in faster truck loading processes



Using specialized Saddleback trailers to increase backhaul usage to reduce "dead head"

Energy Use and Emissions Associated with Transportation

Because diesel or a heating oil derivative fuels most of the transportation, the lowest-cost option for the customer is often the option that uses the least fuel and has the lowest potential environmental impact. The vast majority of our truck shipments occur within Florida and are associated with time-sensitive intra-company shipments of sulfur, sulfuric acid and phosphate rock. In addition, the distance traveled in most cases is less than 50 miles, making trucks a generally less

- As part of our commitment to sustainability, Mosaic uses RightShip, a vetting service that allows the supply chain team to select vessels that meet certain safety and environmental criteria, including energy efficiency and GHG emissions performance.
- Mosaic, along with our trucking partners, has implemented a number of fuel-saving initiatives, such as automatic engine shutoffs and reduced intra-company truck scaling. We have also invested in faster loading processes to both reduce fuel

expensive and more reliable solution.

Environmental impacts of transporting our materials are primarily related to GHG emissions. During the 2014 reporting period, Mosaic and its transportation partners used various fuel and GHG emission-saving initiatives, including:

- Mosaic continued our participation with the PhosPro Initiative to improve our handling of raw materials that travel by rail. Consisting of cross-functional teams at Mosaic and CSX, the PhosPro initiative focuses on increasing efficiencies and reducing costs for both companies. Mosaic anticipates benefits such as moving more finished products upstream by rail instead of truck, which will result in improved fuel efficiency and lower GHG emissions.

consumption and total trucks deployed.

- Mosaic uses specialized Saddleback trailers to increase backhaul usage to reduce “dead head,” or empty loads. These unique trailers can transport molten sulfur from the Port of Tampa to our production facilities and return to the port with a load of our finished product for shipment to customers.



Mosaic uses CNG trucks to transport raw materials and finished products in our Central Florida operations

- An N-ViroMotive locomotive, used at our South Fort Meade mine, uses approximately 57% less fuel and emits approximately 80% fewer GHGs than single-engine diesel locomotives.
- Mosaic contracts a fleet of 50 clean-burning natural gas-powered trucks to

Waste Associated with Transportation

Mosaic has funded and promoted The Fertilizer Institute (TFI) Bulk Blend Workshops and Manual. Transporting and distributing our crop nutrient products in bulk greatly reduces the amount of packaging required to deliver our products to

transport raw materials and finished products in our Central Florida operations. Benefits include significantly lower emissions of particulates and nitrogen oxides (up to 50% lower) and GHGs (potentially up to 25% lower). We continue to explore opportunities to convert additional shipping volumes to compressed natural gas (CNG).

consumers. Most of our crop nutrient products are transported from production facilities to consumers in bulk quantities. Therefore, environmental impacts associated with packaging are eliminated. In some areas where small-scale farmers purchase our products, bulk distribution is not possible.



In our Florida phosphates operations, we conduct effective acre-for-acre reclamation and return mined lands to productive uses for both wildlife and people. We are a leader in using advanced science and technology to do this important work.

How & Where We Mine

(G4-EN11) As of Dec. 31, 2014, Mosaic owned or controlled about 355,815 acres of land in Florida related to our Phosphates mining operations. Approximately 109,460 acres of Mosaic's land holdings in Florida are either in the mine permitting process or have not yet entered the permitting process. For each permit, Mosaic works with a team of professional biologists, hydrologists and

We operate three Canadian Potash facilities, all located in the southern half of the province of Saskatchewan, including our solution mine at Belle Plaine, two interconnected mine shafts at our Esterhazy shaft mine and our shaft mine at Colonsay. Mosaic has mineral rights to approximately 575,000 acres in Saskatchewan for potash mining and surface rights to approximately

other specialists, and in conjunction with as many as 12 local, regional, state and federal regulatory agencies to ensure that all mined areas can be successfully reclaimed and to identify areas of high environmental sensitivity that should be preserved and protected.

As of Dec. 31, 2014, Mosaic owns or controls more than 21,000 acres in Florida that are designated as non-impacted floodplain, preservation and granted conservation easements in order to ensure long-term protection of lands or waters of particular sensitivity.

27,850 acres. Our U.S. Potash operations include a shaft mine in Carlsbad, N.M. We have mineral rights to approximately 77,000 acres in Carlsbad for potash mining and surface rights to approximately 7,186 acres. Since shaft mining in Saskatchewan occurs at over 3,000 feet below surface, and solution mining requires limited acreage for pipeline and cluster infrastructure, the only surface areas that are disturbed are the actual footprint of the mine shaft and the adjacent above-ground processing facilities and tailings management areas.

We mine phosphate ore in Florida through surface mining techniques with large earthmoving equipment such as draglines



(G4-EN12) Mining for phosphate ore in Florida is primarily undertaken using surface mining techniques with large earthmoving equipment such as draglines. This is primarily because the ore body is overlaid by sandy soils with a high water table that is not conducive to underground mining. Due to its unique geology, a dredging technique is used at our Wingate mine.

Once all permits are received, a wildlife survey is conducted prior to land clearing in preparation for mining to determine whether protected species are present and if so, whether they need to be physically relocated. Mosaic obtains government approvals and permits to physically relocate specific species, such as the gopher tortoise, in compliance with federal and state laws.

During the mine permitting process, discussions regarding ecological resource preservation are held between Mosaic and the regulatory agencies. Preservation areas can include floodplains, as well as high-quality wetland or upland habitats and buffers. Such evaluations take into consideration the type and quality of the habitat. Balancing the supply of phosphate, an important natural resource, against what is generally a temporary disturbance of ecological resources, is an essential consideration in this process. To reduce the impact associated with lag time (the time period between initial land disturbance for mining and reclamation), Mosaic's current pending permit applications include a "Regionally Ecologically Significant" (RES) project. An RES project involves one or more parcels of property located within the same watershed as the pending permit application that would not be mined, but rather would be restored to an improved ecological condition and then preserved through use of a conservation easement. Some areas of the RES project may include high-quality wetlands or other resources that are preserved in perpetuity through use of recorded conservation easements. The RES projects are permitted at the same time and linked to a proposed mining project, with restoration to be initiated upon receipt of all permits. This allows the restoration work to be completed well before—generally measured in terms of years—all the impacts for mining are made.

After that process is complete, parcels are directionally cleared for mining to allow highly mobile animals to move to adjacent undisturbed or preservation areas. State law requires mining parcels to be recontoured and planted with vegetation within two years of the completion of mining activities; all wetlands are replaced at a minimum of acre for acre and type for type as needed to meet mitigation requirements. Once a particular parcel is mined and reclaimed, many vertebrates and invertebrates will repopulate the site through migration from wildlife corridors and protected riverine systems. Such habitat corridors generally receive permanent protection after mining, with perpetual conservation easements. To ensure biodiversity, Mosaic may introduce certain species into reclaimed lands, such as the gopher tortoise, that may have previously resided on the parcel but had been moved from the site prior to mining.





We mine potash in Saskatchewan and New Mexico using shaft and solution mining techniques

Phosphate mining in Florida, representing our largest phosphate reserve holdings, is heavily regulated by as many as 12 local, regional, state and federal permitting authorities. This robust regulatory oversight ensures the impacts of our mining operations are avoided and minimized in accordance with all legal and regulatory requirements. The benefit of that stringent regulatory oversight is supplemented with (a) areas that are set aside from mining, (b) reclamation practices that are best in class and (c) monitoring activities such as the Horse Creek Stewardship Program and Peace River Monitoring Programs, which are designed to monitor for and protect against significant impact to water quality, water quantity and biodiversity on these riverine systems both within or outside of our property boundaries.

Potash mining operations in Canada and the United States use shaft and solution mining techniques. Because of the limited footprint on surface features, impacts are highly localized to surface infrastructure and tailings management areas. Therefore, the impacts to wildlife and habitats are similarly highly localized.

Land Mined and Reclaimed

(G4-MM1) Mosaic reports our Florida mining and reclamation activities to the Florida Department of Environmental Protection (FDEP) Mining and Mitigation Program. As of the date of this publication's release, 2013 and 2014 figures have not been deemed complete by the agency. We provide estimates of mined and reclaimed acres for those years in the table below. Once we have satisfied all reclamation obligations with respect to mined and disturbed lands, and the regulatory agencies "release" those reclaimed lands, they are considered "released acres." Accordingly, a drop in annual reclaimed acreage may be the result of our satisfaction of reclamation obligations and agency release with respect to reclaimed acres and a resulting recategorization of the land as "released" acres.

Land Mined and Reclaimed

	Total Acres Disturbed, Not Reclaimed		Total Reclaimed		Total Released	
	Mined	Disturbed	Mined	Disturbed	Mined	Disturbed
2012	2,975	4,379	(4,548)	692	4,242	3,687
2013*	1,243	1,728	563	(3,115)	2,508	1,187
2014*, **	12,320	5,320	3,776	2,214	2,994	2,740

*As of the date of this publication's release, this year's data has not been validated by FDEP. Accordingly, these figures are estimates only and may be revised in future reports.

**The increase in mined acres in 2014 is largely due to the inclusion of 7,761 acres from South Pasture mine as a result of the CF acquisition. This figure represents all mined acres for that location since its opening in 1995.

(G4-MM2) All active sites within the United States and Canada operate in compliance with federal, state/provincial and local regulations related to management of habitat and wildlife. Phosphate mining operations within the United States require extensive assessment of the proposed area of operation. Mosaic performs environmental site assessments, impact studies, hydrologic modeling and prepares conceptual reclamation plans prior to receiving a permit to operate on a parcel of land.

Biodiversity in flora and fauna is an important part of reclamation. Most mitigation plans have biodiversity requirements that must be monitored by qualified ecologists and reported to appropriate regulatory agencies as part of permit conditions or regulations. In fact, compliance with these biodiversity standards is a requirement that must be met before regulatory agencies will deem a site successfully reclaimed.

Protecting Biodiversity & Restoring Habitats

We are committed to minimizing our impacts on the environment through responsible mine planning, permitting, operation and reclamation practices.

(G4-EN13) In our Phosphate mining operations, we restore or reclaim every acre of land we mine, with certain areas of high environmental sensitivity set aside for preservation and protected into perpetuity with recorded conservation easements. Mined lands are reclaimed to land uses such as wildlife habitat (both wetlands and upland) and agricultural lands. Much of this land is

Additionally, Mosaic works closely with one of our primary regulators, the FDEP Mining and Mitigation Program, to integrate habitat networks and wildlife corridors into our reclamation planning efforts. The FDEP created, implements and encourages permittees to participate in the development of an Integrated Habitat Network to benefit the water quality and quantity in the area,

also suitable for future conventional development such as parks, housing and commercial use.

Mosaic planted 2,064,817 trees in 2014, reclaiming uplands, significant upland habitats and wetlands that require, at a minimum, acre for acre and type for type per permitting requirements.

improve wildlife habitat, and serve as a connection between the mining region's rivers and significant environmental features outside the mining region.



As part of our reclamation efforts in Florida, we planted more than 2 million trees in 2014

Mosaic has fostered partnerships with, and funding for, a variety of non-governmental organizations (NGOs) and academic institutions to advance our understanding of the habitats we manage through reclamation. Examples of these groups include the Tampa Bay Watch, The Nature Conservancy and Audubon of Florida.

Mosaic's Potash Business Unit is similarly committed to habitat restoration. For example, Mosaic made a grant to Ducks Unlimited for \$2 million that will restore a minimum of 500 acres of wetlands over a 10-year period in Saskatchewan. 2014 marked the third year of this agreement.

(G4-EN14) The FDEP's Mining and Mitigation Program oversees mining operations in Florida. The mine permitting

Phosphates and Potash operations' interaction with wildlife in the United States is regulated by state agencies such as the Florida Fish and Wildlife Conservation Commission and by the United States Fish and Wildlife Service (USFWS). These state and federal agencies maintain lists of species, and Mosaic develops species-specific habitat management plans to ensure species are properly protected.

We work closely with regulators to not only ensure compliance with management plans, but to fund and/or conduct research that promotes the goal of wildlife and habitat conservation. Mosaic does not specifically track wildlife species per the International Union for Conservation of Nature (IUCN) Red List designations, but instead tracks species as designated by regulatory

process includes performing extensive ecological, wildlife and hydrological surveys, leading to the establishment of boundaries for preservation of areas identified as having important ecological or hydrological value. In our Potash facilities located in Saskatchewan, Canada, our approach to evaluating potential impacts to biodiversity includes biological assessments for projects located in new footprint areas. These assessments include field surveys to identify rare species of plants, birds, mammals, reptiles and amphibians of special concern that may be impacted. Survey methods follow those recommended by the Saskatchewan Conservation Data Centre. Biological assessments for all expansion areas at the Potash facilities followed this approach.

agencies with authority in the regions in which we operate.

.....
We work closely with regulators to fund and conduct research that promotes the goal of wildlife and habitat conservation



International Union for Conservation of Nature (IUCN) Red List of Species Possibly Affected by Operations

IUCN Red List Designation	Phosphates Operations (Florida)	
Endangered	0	
Vulnerable	4	Florida mouse, gopher tortoise, Florida scrub jay, West Indian manatee
Near Threatened	2	Gopher frog, short-tailed snake
Least Concern	19	Florida bonneted bat, burrowing owl, Florida black bear, sandhill crane, Florida pine snake, least tern, limpkin, little blue heron, osprey, Southeast American kestrel, Sherman's fox squirrel, snowy egret, tricolored heron, white ibis, wood stork, Eastern indigo snake, Northern crested caracara, American alligator, bald eagle
IUCN Red List Designation	U.S Potash Operations (New Mexico)	
Endangered	0	
Vulnerable	0	
Near Threatened	1	Snowy plover
		American kestrel. Coopers's hawk. dunlin. areat horned owl.

Least Concern	18	American osprey, cooper's hawk, osprey, great horned owl, greater yellowlegs, Harris's hawk, killdeer, least sandpiper, lesser yellowlegs, loggerhead shrike, merlin, Northern harrier, Northern pintail, Northern shoveler, red-tailed hawk, sanderling, sandhill crane, Western sandpiper
IUCN Red List Designation	Canada Potash Operations (Saskatchewan)	
Endangered	0	
Vulnerable	0	
Near Threatened	0	
Least Concern	81	American avocet, American bittern, American crow, American goldfinch, American robin, Baltimore oriole, barn swallow, black tern, black-capped chickadee, blue-winged teal, Brewer's blackbird, bobolink, brown-headed cowbird, bufflehead, Canada goose, canvasback, clay-colored sparrow, common goldeneye, downy woodpecker, black-necked grebe, Eastern phoebe, Franklin's gull, gadwall, gray catbird, green-winged teal, horned lark, killdeer, least flycatcher, lesser scaup, mallard, marbled godwit, marsh wren, mourning dove, yellow-shafted flicker, circus hudsonius, Northern shoveler, pied-billed grebe, redhead, red-tailed hawk, red-winged blackbird, ring-billed gull, ruddy duck, Say's phoebe, Savannah sparrow, sharp-tailed grouse, song sparrow, sora, tree swallow, vesper sparrow, warbling vireo, swamp sparrow, Wilson's snipe, yellow warbler, yellow-bellied sapsucker, yellow-headed blackbird, common nighthawk, common raven, turkey vulture, great blue heron, American badger, Northern leopard frog, red-bellied snake, wood frog, boreal chorus frog, plains garter snake, tiger salamander, Eastern cottontail, snowshoe hare, mule deer, white-tailed deer, moose, coyote, Richardson's ground squirrel, thirteen-lined ground squirrel, red squirrel, striped skunk, muskrat, red fox, North American otter, North American deer mouse, American beaver
IUCN Red List Designation	Louisiana Operations	
Endangered	2	Pallid sturgeon, Alabama heelsplitter
Vulnerable	4	Alligator, snapping turtle, paddlefish, West Indian manatee
Near Threatened	2	Gulf sturgeon, Southern creekmussel
Least Concern	2	Bald eagle, long-tailed weasel

Notes: Species listed as possibly affected by Louisiana operations are from Louisiana Department of Wildlife and Fisheries database and may not have been actually observed on or near Mosaic property. Avian species listed as affected or possibly affected by New Mexico and Saskatchewan operations are migratory species with potential migration patterns proximal to our operations on those geographies. The table includes species and designations of the IUCN and not species and designations of federal or state/provincial agencies in the United States and Canada, by



Our conservation measures include providing more than 1,000 acres of managed and maintained gopher tortoise habitat

Additional Biodiversity Highlights

The gopher tortoise, a state-listed threatened species and a species that the USFWS has determined warrants federal protection, is commonly encountered on Mosaic lands in Central Florida. In 2012, Mosaic and the Florida Fish and Wildlife Conservation Commission entered into a 30-year Memorandum of Agreement (MOA) providing a comprehensive approach to gopher tortoise management and conservation on Mosaic lands. Conservation measures provided as part of the MOA include providing over 1,000 acres of gopher tortoise habitat in conservation easement that will be managed and maintained in perpetuity, with up to an additional estimated 2,500 acres (much of it reclaimed land) of tortoise habitat placed under conservation easement and perpetually managed over the life of the MOA. In addition, Mosaic will provide \$60,000 per year (\$1.8 million dollars over the life of the MOA) to The Nature Conservancy or similar organization to carry out gopher tortoise habitat management on non-Mosaic lands.

Since 2013, Belle Plaine has partnered with Wild and Cared Free, a wildlife rehabilitation organization dedicated to rehabilitating all species of animals in southern Saskatchewan. Mosaic has volunteered time and financial assistance to support the organization, and Wild and Cared Free has provided Mosaic access to training opportunities and rehabilitation services for animals around its Saskatchewan Potash mines.

The potash mine in Carlsbad, N.M., has developed an Avian and Bat Protection Plan to minimize risks to migratory birds and bats that can be attracted to mining and milling areas. Mosaic has also partnered with the USFWS to study risks associated with migratory birds and bats in order to develop future strategies aimed at minimizing avian and bat mortality.



We aim to efficiently use the mineral resources and materials needed to make our crop nutrition products.

Materials

(G4-EN1) Our business mined or consumed the following raw materials in 2014:

Materials Mined or Consumed

in Million Tonnes

	2014
Ammonia	1.51
Limestone	0.47
Micronutrients	0.01
Phosphate Rock	16.01
Potash Ore	28.80
Sulfur	4.11

Note: Ammonia purchases depicted in the table above are for production of crop nutrients in Phosphates.

Limestone is used to produce our animal feed products and for water treatment processing. Sulfur, a byproduct of crude oil and natural gas de-sulfurization, is used to produce steam, electricity and sulfuric acid, which is used to produce phosphoric acid. We use byproduct heat from sulfuric acid production to generate steam that we use in our operations and to generate electricity. Sulfur is also used in the production of our MicroEssentials® product line. Various micronutrients, including boron, zinc, sulfur and cupric oxide, are key ingredients in our MicroEssentials product line. Ammonia is used in our finished products, diammonium phosphate (DAP), monoammonium phosphate (MAP) and MicroEssentials, and to neutralize the pH of the stack gases at our Esterhazy potash mine.



We support & promote TFI's Bulk Blend Workshops & Manual, eliminating the need to package major raw materials & products

Products and Materials Reclaimed or Recycled

(G4-EN2) Sulfur is the most significant recycled raw material in our manufacturing processes. The sulfur used is recovered from crude oil and natural gas processing and then recycled in our plant operations to produce sulfuric acid, which we use to make phosphoric acid, steam and electricity. Our use of this product prevents an excess of sulfur that otherwise could be disposed of in landfills. In 2014, sulfur made up approximately 8.1% by weight of our total raw materials. We recover the vanadium catalysts used in our sulfuric acid production for recycling. We also use recycled oil as a flotation aid in our phosphate beneficiation process.

(G4-EN28) Mosaic products, predominantly fertilizer and animal feed ingredients, are used in various stages of agricultural operations with multiple steps and biological processes. To the extent possible, bulk transport is used to minimize the need for extensive packaging throughout the supply chain. Mosaic supports and helps promote

Agricultural operation processes are not within Mosaic's purview to control; however, the nutrient elements of our products often are recycled into these or other agricultural systems. Examples of these systems include:

- Fertilizer is applied to the soil and then taken up by plants; the plants can be used for human or animal food. This food is processed and excreted by humans and animals as manure or biosolids, which may be recycled and used as nutrients similar to mineral fertilizers, depending on infrastructure (e.g., publicly-owned treatment works reuse water distribution systems).
- Animal feed materials are taken up by animals as food and excreted as manure. These materials may be recycled and used as nutrients similar to mineral fertilizers, depending on infrastructure (e.g., feed lot versus free-range grazing).

To further encourage stewardship of our products, Mosaic has formed a product


The Fertilizer Institutes's (TFI) Bulk Blend Workshops and Manual, which eliminates the need for packaging of major raw materials or the final product. This process completely eliminates the need for bags as the product is transferred from dealer to farmer. Because of the sizing and blending capabilities of our bulk materials, we encourage the use of the bulk blending and delivery system in farming operations.

stewardship team from various disciplines and is pursuing opportunities to cooperate with supply chain and logistical partners to identify and implement stewardship enhancements on a global basis.

Mining Wastes

We use industry best practices to manage overburden, tailings and byproducts associated with our mining and production. We comply with federal, state and local regulations related to these materials.

(G4-MM3) Mining and processing of potash and phosphate generate residual materials that must be managed both during the operation of a facility and upon a facility's closure. Potash tailings, consisting primarily of salt and clay, are stored in tailings management areas. A portion of the excess salt generated from potash mining is processed and then used for commercial purposes, including road salt, water softener salt, and use in food grade products and industrial uses. Phosphate clay residuals from mining are deposited in clay settling ponds. These ponds are eventually dewatered and reclaimed. Certain solid wastes generated by our phosphate operations may be subject to regulation under the Resource Conservation and Recovery Act (RCRA) and related state laws. The Environmental Protection Agency (EPA) rules exempt "extraction" and "beneficiation" wastes, as well as 20 specified "mineral processing" wastes, from



A portion of the excess salt generated from potash mining is processed and then used for commercial purposes, including road salt, water softener salt and for use in food grade products and industrial uses

the hazardous waste management requirements of the RCRA. Accordingly, certain residual materials which our phosphate operations generate, like phosphogypsum, as well as process wastewater from phosphoric acid production, are exempt from RCRA regulation. These materials (phosphogypsum and process wastewater) are subject to detailed state rules governing construction, operation, maintenance and closure.

Mining and Mineral Processing Waste Generated and Disposal Method

in Tonnes

Material	2010	2011	2012	2013	2014	
Phosphate						
Overburden	133,634,000	163,931,613	162,012,906	146,522,396	154,240,684	Used for Reclamation
Sand Tailings	38,655,000	30,885,900	37,459,212	34,442,381	37,078,556	Used for Reclamation
Clay	11,949,000	12,798,551	14,315,162	15,786,278	15,588,902	Disposal in Impoundments
Phosphogypsum	19,381,000	20,134,000	21,543,380	20,602,936	23,992,856	Monitored for Potential Phosphorus Release
Potash						
Tailings (Salt)	10,122,250	12,004,876	12,868,386	12,166,694	11,285,000	Stored in Reclamation Cells
Brine	4,651,714	5,722,629	4,775,705	4,408,041	4,237,000	Disposal in Evaporation Ponds

Note: Overburden is stored in piles until used for reclamation. Clay is pumped wet to surface impoundments. The drying process for clay takes many years.

Other Wastes

(G4-EN23) Mosaic's operations generate a variety of non-hazardous solid wastes, including domestic refuse, construction and demolition debris, and waste lubricants. Mosaic has placed an emphasis on reducing and/or eliminating waste and our recycling program seeks to identify materials that can be diverted from landfills and recycled or reused. The following table summarizes materials recycled or reused in 2014.



2014 Recycled Wastes

in Tonnes

	Phosphates	Potash	International/Distribution
Antifreeze	0.23	8.61	0.00
Batteries, Ballasts and Bulbs	7.08	17.33	0.88
Cardboard/Paper	70.96	124.66	13.66
Catalysts	7.62	0.00	0.00
Electronic Waste and Appliances	10.32	6.10	0.05
Glass	0.00	0.00	0.20
Metals	9,169.72	3,066.66	475.68
Miscellaneous	54.72	4.63	9.70
Oil and Oil Contaminated Items	368.23	98.95	22.49
Plastics	0.00	12.82	60.86
Recyclables	778.36	0.00	0.00
Rubber	1.36	30.21	0.00
Solvents	0.00	0.36	0.00
Tile-lined Chutes	0.00	25.00	0.00
Toner Cartridges	0.26	0.00	0.00

Wood	0.00	533.17	24.82
Total	10,468.86	3,928.50	608.34
Grand Total	15,005.70		

.....

We recycled more than
15,000 TONNES
of waste across business units

.....

Mosaic's waste management program provides assurance that all Mosaic locations have a process in place to minimize waste generation and that waste management practices do not adversely affect the environment or health and safety of employees and the public. We continue to improve our comprehensive waste management strategy, which complies with federal, state and local requirements and aligns to the Mosaic environmental health and safety management system. Below are examples of hazardous and non-hazardous wastes generated by disposal methods at Phosphates, Potash and international facilities. As our tracking of waste continues to improve, we anticipate further expanding the scope of our sustainability reporting for this indicator to include data for all facilities in the near future.

2014 Waste Generated by Disposal Method

in Tonnes

	Incineration	Landfill	Other	Recycle	Treatment	Grand Total
International	34.82	23,229.59	1.37	608.33	173.98	24,048.09
Hazardous	1.22	4,054.04	1.37	1.87	8.04	4,066.54
Non-hazardous	33.60	19,175.55		606.46	165.94	19,981.55
Phosphates	1,521.60	13,997.23	39.72	6,632.70	-	22,191.25
Hazardous	27.32	4,622.05	39.72	72.13	-	4,761.22
Non-hazardous	1,494.28	9,375.18		6,560.57	-	17,430.03
Potash	84.53	2,905.56	278.63	3,928.50	43.70	7,240.92

Hazardous	84.53	293.01	278.63	156.52	43.70	856.39
Non-hazardous		2,612.55		3,771.98	-	6,384.53
Grand Total	1,640.95	40,132.38	319.72	11,169.53	217.68	53,480.26

Note: "Other" disposal method includes combinations of co-processing, retort, treatment, incineration and/or deep well injection.



Each facility has an appropriate hazardous waste management system to ensure that waste is properly and safely disposed

(G4-EN25) We endeavor to choose on-site process chemicals that are the least hazardous, thereby ensuring lowest risk to occupational health and safety and minimizing waste management implications. Mosaic facilities generate hazardous waste during production and maintenance operations. In the United States, Mosaic's Phosphate mines and Potash facilities are typically either categorized as Small Quantity or Conditionally Exempt Small Quantity Generators (which generate less than 2,200 pounds of hazardous waste per month). The five concentrate facilities in the Phosphates Business Unit are designated as Large Quantity Generators due to episodic generation of more than 2,200 pounds of hazardous waste in a month. Canadian facilities comply with all national regulations

The types of hazardous waste generated at Mosaic's U.S. facilities typically include spent cleaning solvents, paint-related wastes and some spent laboratory chemicals. At concentrate facilities, wastes generated during production and maintenance operations include waste that is characteristically hazardous for corrosivity and/or toxicity (e.g., low pH and/or metals content). Each location has an appropriate hazardous waste management system to ensure that the waste is properly and safely disposed. No hazardous wastes are shipped internationally for disposal.

Environmental Releases

(G4-EN24) In 2014, we had a total of nine releases equal to or greater than 2,000 gallons. None of these was significant

regarding these materials.

enough to report in our financial statements.

Environmental Releases

Number of Significant Reportable Releases

Mosaic Business Unit	FY2011	FY2012	FY2013	2013	2014
Potash	10	8	12	10	6
Phosphates	4	2	3	4	1
Distribution	0	0	0	0	1
International	0	0	0	0	0
Corporate	0	0	0	0	1
Total Significant Releases	14	10	15	14	9

Note: Table includes environmental releases equal to or greater than 2,000 gallons. Releases meeting this criteria included: Potash – (5) brine and (1) calcium chloride; Phosphates – (1) phosphoric acid; Distribution – (1) Process water; and Corporate – (1) Pond Water.

Compliance

(G4-EN29) In Form 10-K and Form 10-Qs, Mosaic reports any environmental fine or sanction that it has identified as potentially material to investors, or if not potentially material, as potentially meeting or exceeding a significance threshold of \$100,000. In 2014, there were no fines or penalties that met either criterion.

Environmental Protection Expenditures and Investments

(G4-EN31) Mosaic has expended, and anticipates that we will continue to expend, substantial financial and managerial resources to comply with Environmental Health and Safety standards, and continue to improve our environmental stewardship.

In the year ended Dec. 31, 2014, we spent approximately \$300 million for environmental capital expenditures, land reclamation activities, gypstack closure and water treatment activities.



GRI Index

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