

2016  
**Global Reporting  
Initiative Report**

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# INTRODUCTION

**July 20, 2017**

This 2016 Global Reporting Initiative (GRI) Report, based on the internationally recognized GRI Framework for Sustainability Reporting, supplements the Tronox Limited 2016 Annual Report by providing additional data and information on our economic, environmental, and social performance.

In developing this report, we utilized the “GRI Standards” guidelines, applied to data for the fiscal year ending December 31, 2016. We believe this level of data, combined with the required GRI Standard Disclosures, enables Tronox to declare that this report complies with the GRI Standards Core “in accordance” option (see also Disclosure 102-54).

In the past year, we have completed the transition from the GRI G4 Framework to the GRI Standards Framework. This GRI report, therefore, is our first to apply the GRI Standards Guidelines. We also took into account the G4 Mining and Metals Sector Disclosures, including several sector-specific indicators.

Following the 2015 acquisition of the Alkali Chemicals business from FMC Corporation, the year 2016 marks the first full year the Alkali segment was integrated into the Tronox holding. More information on changes to the organization and entities included in this report can be found in Disclosures 102-10 and 102-45 respectively.

Please refer to the GRI Index provided on page 50 for quick reference to specific disclosures and indicators.

## 1. Organizational Profile

### Disclosure 102-1 Name of the organization

Tronox Limited (Tronox, the company, or we)

### Disclosure 102-2 Activities, brands, products, and services

Tronox brightens people's lives. We operate two vertically integrated mining and inorganic chemical businesses. Tronox TiO<sub>2</sub> mines and processes titanium ore, zircon, and other minerals, and manufactures titanium dioxide pigments that add brightness and durability to paints, plastics, paper, and other everyday products. Tronox Alkali mines trona ore and manufactures natural soda ash, sodium bicarbonate, caustic soda, and other compounds which are used in the production of glass, detergents, baked goods, animal nutrition supplements, pharmaceuticals, and other essential products. We operate mines in Australia, South Africa, and the United States. Our chemical plants are based in Australia, the Netherlands, and the United States. We are a diverse global workforce of more than 4,300 who are committed to safe and sustainable business practices that bring value to our shareholders, customers, and business partners. Our two businesses serve more than 1,200 customers worldwide. For more information, visit [www.tronox.com](http://www.tronox.com).

## Products

### Pigment

#### Titanium Dioxide (TiO<sub>2</sub>)

Titanium dioxide is a white inorganic compound used primarily in the production of paints, printing inks, paper and plastic products. Titanium dioxide has a remarkably high refractive index and exceedingly high reflectance, offering maximum opacity and imparting whiteness and brightness to the products in which it is used.

### Electrolytic

#### Elemental Boron / Boron Trichloride

Elemental boron and boron trichloride are used by the automotive industry in airbags and as a reactant in pharmaceutical production, respectively. Under U.S. federal export rules, elemental boron is restricted from export to certain countries. The company is prohibited from hosting visitors from those countries at its production facility.

#### Electrolytic Manganese Dioxide (EMD)

EMD is used in the production of alkaline primary (non-rechargeable) batteries. It is also the starting material for making lithium manganese oxide (LMO), which is used in the production of rechargeable batteries.

# GRI 102: General Disclosures

## Mineral Sands

### Rutile

Naturally occurring rutile contains a very high titanium concentration and does not need to be upgraded for use in the company's titanium dioxide pigment process. Feedstock with high concentration of titanium produces less waste at pigment plants and is more efficient. Rutile is also used for the coating of welding rods and the production of titanium metal.

### Chloride Slag and Slag Fines

Ilmenite is the most abundant titanium mineral in the world. Tronox upgrades ilmenite using a smelting process to create chloride slag and slag fines, which are converted by pigment manufacturers into titanium dioxide.

### Synthetic Rutile

Tronox also upgrades ilmenite into synthetic rutile using a rotary kiln. Synthetic rutile has a higher titanium content than chloride slag or slag fines, but not as high as natural rutile.

### Leucoxene

Leucoxene is a naturally occurring mineral formed through the geological alteration of ilmenite. It is an amorphous iron-titanium oxide mineral that contains high levels of titanium. In addition to its use as a raw material for chloride-process TiO<sub>2</sub> pigment, higher grades of leucoxene are suitable for welding rod flux manufacturing.

### Zircon

Zircon is a primary co-product of heavy mineral sands mining. Zircon is separated from heavy mineral concentrate after being transported to a mineral separation plant or dry mill. A non-magnetic and non-conductive mineral, zircon is used in the production of ceramics, tiles and sanitary ware, refractories, TV screens, computers, and a wide range of industrial and domestic products.

### High-purity Pig Iron

High-purity pig iron is a co-product of the titanium slag smelting process. It is typically low in manganese, phosphorous and sulfur, and is sold to foundries as a diluting agent for trace elements and to steel producers for iron units.

### Activated Carbon

Activated carbon is a byproduct of the synthetic rutile reduction kiln, in which coal is used both as a fuel and a reductant. Activated carbon is used as an absorbent, decolorizer or deodorizer in water, vapor and gas purification/filtration.

### Natural Soda Ash (sodium carbonate)

Soda ash is an essential component in the production of every type of glass, such as flat glass for automobiles, homes and office buildings; container glass for consumer products; lighting; and other uses including glassware, consumer electronics and solar panels. Soda ash is also widely used in soaps, detergents, and other cleaning products. It is an effective component for softening water and provides the sodium source for the production of pharmaceuticals, food preservatives, adhesives, and pulp and paper.

## GRI 102: General Disclosures

### Sodium Sesquicarbonate and S-Carb (purified sodium sesquicarbonate)

Sodium sesquicarbonate is an alkali used in the manufacturing of various household goods and industrial applications, such as bath salts, laundry detergents, mild industrial cleaners, swimming pool pH buffering, and water softening. S-Carb is used for animal nutrition to improve electrolyte balance and to boost heat stress tolerance for cattle, poultry, and swine.

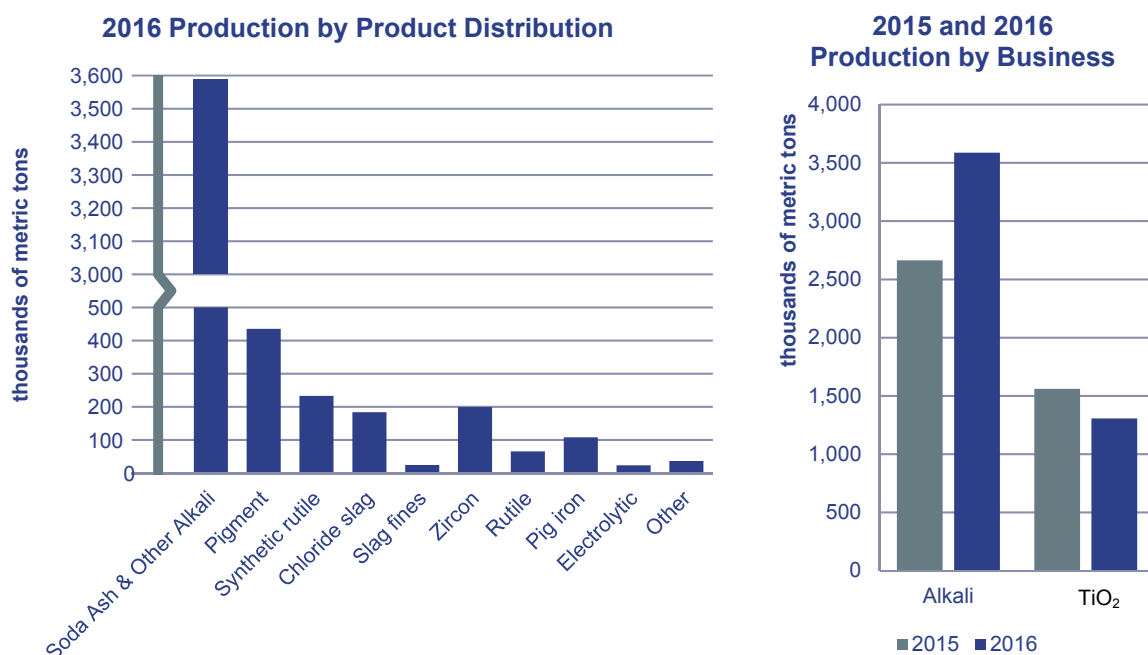
### Sodium Bicarbonate (baking soda)

Sodium bicarbonate is used for numerous industrial and consumer applications, including abrasive blasting, baked food goods, carbonated beverages, household cleaning and personal hygiene products, pharmaceutical and health care goods, and animal feed.

### Caustic Soda (aqueous sodium hydroxide)

Caustic soda is an essential ingredient in the manufacturing of soaps and detergents, textiles, aluminum, chemical neutralizers, bleach and paint removal solutions, pigment, and fuels.

In the 2016 fiscal year, Tronox produced a total of 4.9 million metric tons of products, resulting in net sales of US\$2,093 million. A breakdown of the 2015 and 2016 production quantities are presented below.



The 2015 data related to the Alkali business segment refers only to the period after the date of the acquisition (April 1, 2015). See also Disclosure 102-10.

**Note:** Soda Ash & Other Alkali includes natural soda ash, sodium sesquicarbonate and s-carb, sodium bicarbonate, and caustic soda.

## GRI 102: General Disclosures

### Disclosure 102-3 Location of headquarters

Tronox operates manufacturing and mining facilities, research and development labs, and corporate, sales and marketing offices in 19 locations worldwide. The company maintains corporate offices in Australia and the United States, at the locations detailed on the back cover.

### Disclosure 102-4 Location of operations

Tronox operates in 19 locations globally, including manufacturing and/or mining in the United States, the Netherlands, South Africa, and Australia.

Our eight primary manufacturing and mining facilities and their associated production capacities are summarized below.

	Capacity (metric tons)
<b>TiO<sub>2</sub> Pigment Facilities</b>	
1. <b>Hamilton</b> (Mississippi, USA)	225,000
2. <b>Botlek</b> (the Netherlands)	90,000
3. <b>Kwinana</b> (Western Australia, Australia)	150,000
<b>Electrolytic Facilities</b>	
4. <b>Henderson</b> (Nevada, USA)	
EMD	27,000
Boron Products	525
<b>Mineral Sands Facilities</b>	
5. <b>Cooljarloo/Chandala</b> <sup>1</sup> (Western Australia, Australia)	
Synthetic Rutile	220,000
Zircon	40,000
Rutile	15,000
Leucoxene	20,000
6. <b>Namakwa Sands</b> (Western Cape, South Africa)	
Titanium Slag	190,000
Zircon	125,000
Pig Iron	100,000
Rutile	31,000
7. <b>KZN Sands</b> (KwaZulu-Natal, South Africa)	
Titanium Slag	220,000
Pig Iron / Scrap Iron	121,000
Zircon	55,000
Rutile	25,000

<sup>1</sup> Tronox operates its Cooljarloo mine and its Chandala synthetic rutile plant jointly as "Northern Operations".

# GRI 102: General Disclosures

## Soda Ash Facilities

8. Green River (Wyoming, USA)

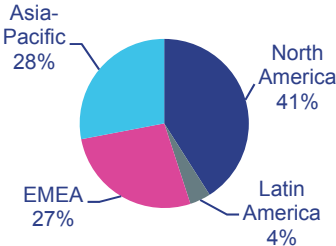
3,600,000

### Disclosure 102-5 Ownership and legal form

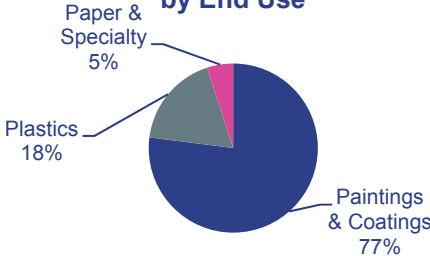
Tronox Limited is a public company traded on the New York Stock Exchange (NYSE) and registered in the state of Western Australia, Australia, under the Corporations Act 2001.

### Disclosure 102-6 Markets served

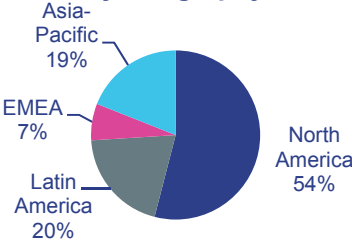
2016 TiO2 Sales Volume Distribution by Geography



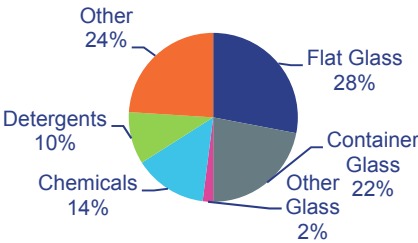
2016 TiO2 Sales Volume Distribution by End Use



2016 Alkali Sales Volume Distribution by Geography



2016 Alkali Sales Volume Distribution by End Use



### Disclosure 102-7 Scale of the organization

#### Human Resource Scale

As of December 31, 2016, Tronox employed 4,330 people around the world. More than 95 percent of our employees are based at our eight operational sites.



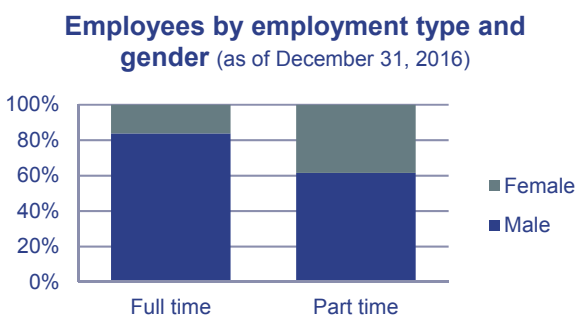
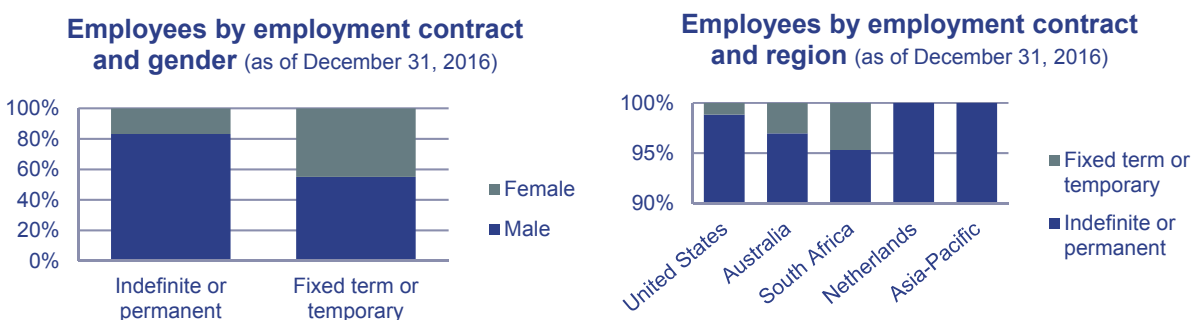
# GRI 102: General Disclosures

## Economic Scale

Breakdowns of our capitalization for 2015 and 2016 are provided below.

Total capitalization broken down in debt and equity [millions of US\$]	2015	2016
Current Liabilities	548	522
Non-current Liabilities	3,369	3,267
Equity	1,110	1,161
<b>Assets</b>	<b>\$5,027</b>	<b>\$4,950</b>

## Disclosure 102-8 Information on employees and other workers



## Disclosure 102-9 Supply chain

Tronox mines and manufactures inorganic chemical compounds in the United States, the Netherlands, South Africa, and Australia. The company operates an integrated supply chain to support its two primary businesses, Tronox Alkali and Tronox TiO<sub>2</sub>, as well as its corporate and administrative functions. Through a “hub and spoke” process, the company is able to leverage economies of scale to supply and produce materials to support our business operations and our global customers. At the same time, we are able to work with local business partners leading to socioeconomic advances in the communities in which we operate.

## GRI 102: General Disclosures

### Tronox Supplier Standards

Tronox values its partnerships with suppliers and fully recognizes that our mutual success is built on open communication and a commitment to common principles and business practices. Accordingly, the company has set high standards for the way it conducts business in the areas of regulatory compliance, social responsibility, and environmental stewardship.

It is the responsibility of each supplier to ensure that its employees and representatives understand and comply with this Code.

### Ethics and Legal Requirements

Suppliers will conduct their business in a legal and ethical manner and act with integrity. Further, they will ensure that all third parties and subcontractors are in full compliance with contractual agreements and compliance requirements, including:

#### *Compliance with Applicable Laws and Regulations*

Meet and document compliance of all applicable regulatory and statutory requirements.

#### *Avoid Conflicts of Interest*

Avoid any conflict of interest when interacting with Tronox employees.

#### *No Bribery*

Refrain from engaging in any form of commercial bribery with its suppliers, agents or customers, nor offer any incentive to any Tronox employee or family member of a Tronox employee in order to obtain or retain business. Abstain from any form of governmental bribery with any political, regulatory or other government employee and comply with all applicable laws dealing with the bribery of government officials, including the U.S. Foreign Corrupt Practices Act (FCPA) and the U.K. Bribery Act.

#### *Fair Competition*

Comply with all applicable laws regarding fair competition and antitrust.

#### *Protect Information*

Safeguard Tronox's confidential information and act to prevent its misuse, theft, fraud or improper disclosure.

#### *Identification of Concerns*

Provide means for their employees to report concerns or potentially unlawful activities in the workplace. Treat any report in a confidential manner. Investigate such reports and take corrective action if needed.

### Human Dignity and Labor

Suppliers are expected to protect the human rights of their employees and to treat them with dignity and respect, including:

#### *Child or Forced Labor*

Comply with the applicable child labor laws of the countries in which they operate and zero tolerance of child labor that are not in accord with local laws. Demonstrate zero tolerance of forced or involuntary labor of any type and the trafficking or involuntary servitude of any worker.

## GRI 102: General Disclosures

### *Nondiscrimination*

Nondiscrimination in hiring practices on grounds of race, creed, gender, religion, national origin, age, disability or sexual orientation or other factors as mandated by the applicable laws of the countries in which they operate.

### *Fair Treatment*

Respect for workers, and zero tolerance for any engagement in corporal punishment, violence or threats of violence, or other forms of physical coercion or harassment. Sexual harassment of employees will not be tolerated.

### *Working Hours, Wages and Benefits*

Working hours for suppliers' employees will not exceed the maximum set by the applicable national law. Compensation paid to employees will comply with applicable national wage laws in the interests of providing an adequate standard of living. Employees must be paid in a timely manner in accordance with local laws.

### *Freedom of Association*

In accordance with local laws, respect the rights of employees to associate freely, join labor unions, seek representation, and engage in collective bargaining.

## **Environment, Health and Safety**

Tronox's commitment to sustainability includes efficient use of resources, respect for the environment, and safe and healthy workplaces. The company expects its suppliers to make similar commitments to continuously improve their environmental, health and safety performance, including:

### *Respect the Environment*

Collaborate to eliminate waste and cost from the supply chain such as programs to reduce emissions and waste, promote the efficient use of energy and natural resources, and encourage responsible management of their products and processes through their entire life cycle, and for their intended end use.

### *Protect Health and Safety*

Demonstrate and actively work to advance sustainable business practices and a clear commitment to a safe workplace by complying with the Tronox LIFE Saving Rules. Health, safety and security must be priorities in product manufacturing and in planning for new products, facilities, or processes. Employees must work in a safe and healthy workplace, with the appropriate controls, training, work procedures, and personal protective equipment.

## **Quality**

Tronox strives for continuous improvement in quality of goods and services in all facets of operations and expects suppliers to partner in the investment. Suppliers will maintain a documented quality system that utilizes process controls and emphasizes defect prevention rather than defect detection, including:

### *Communication*

Promptly notify Tronox of changes to goods or services that may adversely impact Tronox's product usage and/or business relationship. Notify, in advance, any plans to discontinue goods or services and channel all communications on terms, conditions and pricing through

## GRI 102: General Disclosures

designated Tronox supply chain or departmental representatives. Obtain prior approval before soliciting or reaching out to others in the company.

### *Information*

Give a timely response to requests for information, technical assistance, or corrective actions. Commit to openly share information on all elements of cost and cost improvement initiatives. Share sustainability and related data and, if necessary, cooperate in a sustainability audit.

### *Service*

Accept only specifications or requirements that can be met. Pay prompt and professional attention to the highest customer service standards. Comply with purchase order and contract compliance regarding schedules and deliveries for goods and services.

## **Innovation**

### *Process Development*

Collaborate to develop process improvements and new applications. Provide goods, services or innovations that give Tronox a technical, process or service advantage over our competition.

### *Productivity Improvements*

Assist with research and the implementation of productivity improvements that result in lower costs every year as well as provide ideas and solutions that will improve the cost of goods and services.

### *Effective Use of Electronic Commerce*

Cooperate to improve efficiency of interaction through the utilization of e-Sourcing, e-Invoicing and other web-based electronic tools. Include purchase order numbers and reference numbers, where applicable, on all transaction documents. Participate in the automation of procure-to-pay processes, when applicable, and in the construction of parts catalogs.

## **Compliance**

This Code is supplemental to any contract between Tronox Limited and its subsidiary businesses and suppliers. To the extent that more specific or stringent terms are agreed in a contract, the contract terms shall control.

Suppliers are expected to maintain management systems and controls to promote and facilitate compliance with applicable laws and the principles set forth in this Supplier Code of Conduct. Suppliers should also apply these or similar principles to the subcontractors and suppliers they work with in providing goods and services to Tronox.

## **Disclosure 102-10 Significant changes to the organization and its supply chain**

In April 2016, the Fairbreeze Mine, part of the KZN Sands mine and ore beneficiation complex, officially opened. In total, US\$184 million was invested during the construction of the mine. With the support of the provincial government, more than 1,000 jobs were created during construction, and a further 1,000 indirect and direct jobs were created for the local community in the months following the opening of the mine.

## GRI 102: General Disclosures

Tronox currently owns three mines as part of the TiO<sub>2</sub> business segment, and one mine as part of the Alkali business segment. This last segment was acquired in 2015, making 2016 the first full year the Alkali segment was integrated into the Tronox holding.

**All 2016 data presented in this report includes full year information on both the TiO<sub>2</sub> and Alkali segments. The 2015 data related to the Alkali business segment only refers to the period after the date of the acquisition (April 1, 2015), unless indicated otherwise.**

### Disclosure 102-11 Precautionary approach

Tronox supports the precautionary approach to evaluate and address potential environmental impacts, reflected in the Tronox Code of Ethics and Business Conduct, which integrates our commitment to core values:

**Health & Safety:** We work safely – all the time

We believe passionately that everyone at Tronox should experience a safe and healthy workplace. We proactively identify and manage risk, conduct ourselves responsibly, exercise good judgment and take responsibility for our actions.

**Responsibility:** We care for our environment and our communities

We are responsible citizens, as a company and as individuals. We are stewards of our environment and active in our communities.

**People:** People are our most important resource

We create opportunities for development and act intentionally to create a diverse and supportive work environment. Each of us is committed to personal growth and development, embraces change, and learns from our successes and mistakes in order to create a high-performance culture.

**Teamwork:** We will win – as a team

We collaborate effectively, communicate openly, engage honestly, treat others respectfully, and make informed decisions.

**Customers:** It really is all about the customer

Our collective purpose is to create and sell differentiated and competitive products and services, and to make it easy for our customers – internal and external – to do business with us.

**Results:** We measure, own and deliver results

We encourage creativity and measure results. We set clearly defined and challenging objectives; we own those objectives, and we deliver results, with a relentless focus on operational excellence. We innovate our processes to continuously deliver better results.

Every facility owned and operated by Tronox must comply with the company's safety, health and environmental policies, and demonstrate compliance with all applicable safety, health, environmental and security laws pertaining to its operations. Each employee is expected to play a critical role in ensuring the quality and safety of Tronox products, from design through manufacturing, ongoing improvements, and customer support.

## GRI 102: General Disclosures

Tronox implements these requirements through (i) management and employee engagement; (ii) allocation of sufficient human and capital resources; and, (iii) rigorous measurement, review and corrective action systems.

Advancing our safety, health and environmental policies is an integral part of the company's commitment to ethical business conduct. We have a steadfast commitment to the safety and health of our employees, those that visit our operations, and the surrounding communities in which we live and work. We maintain an equal commitment to environmental stewardship and sustainable business practices. We work with our global business partners so they can meet our standards and we provide information and assistance on how to do so.

We have established a corporate responsibility committee, consisting of the executive committee of Tronox Limited and reporting to the corporate governance committee of the Board of Directors of Tronox Limited, to assess the company's overall compliance with applicable law and the Code of Ethics and Business Conduct ("the Code"). The committee oversees the compliance training program and considers the appropriate response to significant compliance matters and legal developments.

Any employee who learns of a suspected violation of the Code must immediately report it by following defined procedures. Employees are required to come forward with any such information without regard to the identity or position of the suspected offender. Tronox will treat the information in a confidential manner and will ensure that no acts of retribution or retaliation will be taken against anyone for making a report in good faith.

### **Cybersecurity**

Tronox takes the security of its information, infrastructure and applications very seriously. We are committed to protecting our critical assets and resources through the implementation of technology, policies, controls and standard procedures. As cyber security threats continue to evolve and attacks against individuals and corporations continue to increase, Tronox will continue to take appropriate steps to detect, protect and mitigate these threats.

### **Disclosure 102-12 External initiatives**

Our South African operations annually publish the South African Mining Charter Scorecard. This Scorecard measures their progress against the Broad-Based Black Economic Empowerment criteria, posed by the Department of Mineral Resources in South Africa.

Please refer to page 49 for the 2016 South African Mining Charter Scorecard. Both South African operations (KZN Sands and Namakwa Sands) are included.

### **Disclosure 102-13 Memberships of associations**

- Industrial Minerals Association - North America
- European Chemical Industry Council (Cefic)
- Titanium Dioxide Manufacturers Association (TDMA)

## 2. Strategy

### Disclosure 102-14 Statement from senior decision-maker

I am pleased to present the 2016 Global Reporting Initiative (GRI) summary for Tronox Limited.

As a global leader in the inorganic chemical and mining industries, we at Tronox believe that sustainable business practices, measured in both socio-economic and environmental terms, are essential elements of our business.

Our Tronox Values are at the core of this philosophy. These values define our business, and everyone at Tronox seeks to live, communicate, and reinforce them every day, everywhere we operate.

Last year, we continued to invest in sustainable technologies and solutions to improve our environmental contributions, promote a safe and healthy workplace, and support our local communities. Around the globe, Tronox made advances in reducing our energy consumption, water use, carbon emissions, and waste. We also made progress in land rehabilitation at our mining areas in Australia and South Africa.

In 2016, Tronox made direct and in-kind investments of nearly US\$2 million to support local communities around the world. Once again, our employees took an active role in these efforts by devoting thousands of volunteer hours throughout the year.

Most importantly, our safety performance in 2016 improved companywide, reflecting our ongoing initiative to identify and eliminate risks in the workplace and advance a culture of safe production of quality, low-cost products.

In all facets of our business, we maintain an active dialogue with stakeholders – investors, customers, business partners, government and non-government entities, community leaders, and employees. This open communication reflects the company's long-standing belief that financial performance and corporate responsibility are essential drivers to our business success.

To all our stakeholders, I want to thank you on behalf of Tronox for your support. In the year ahead, we look forward to working with you to build a sustainable and more prosperous future.

Sincerely,



**Peter B. Johnston**  
Chief Executive Officer



### 3. Ethics and Integrity

#### **Disclosure 102-16 Values, principles, standards, and norms of behavior**

We are building a lasting foundation for growth around the six core values of Tronox: Health & Safety; Responsibility; People; Teamwork; Customers; and, Results, described more extensively under Disclosure 102-11. These values define our approach to business and corporate citizenship. The Tronox Code of Ethics and Business Conduct applies to all employees worldwide. The Code consolidates all company policies with respect to business ethics and conflict of interest.

The company has also adopted business standards and principles for all of its global business partners and suppliers (see also Disclosure 102-9).

### 4. Governance

#### **Disclosure 102-18 Governance structure**

The company's business and affairs are managed by a multinational executive management team under the oversight of the Tronox Board of Directors, which is comprised of nine members. Six Directors are elected annually by a vote of Class A common stock holders. Three Directors are elected annually by Class B Shareholders.

The listing standards of the New York Stock Exchange (NYSE), as well as our Corporate Governance Guidelines, require that a majority of our Board of Directors be comprised of independent directors. Our Board has affirmatively determined that eight of the nine current directors were independent in 2016.

#### **The Board's Role in Risk Oversight**

The Board of Directors administers its risk oversight function directly and through its various committees. The Board's role in the company's risk oversight process includes receiving regular reports from members of senior management on areas of material risk to the company, including operational, financial, competitive, management retention, and legal risks. The Board of Directors routinely discusses with senior management major risk exposures, their potential financial impact, and steps taken (both short-term and long-term) to manage them.

In 2012, the Board of Directors established three committees: corporate governance; human resources and compensation; and audit. Each committee is governed by a written charter. A current copy of each charter is available to our shareholders at [www.tronox.com](http://www.tronox.com).

The audit committee assists the Board of Directors in fulfilling its oversight responsibilities with respect to the areas of financial reporting, internal controls and compliance with legal and regulatory requirements, and, in accordance with NYSE requirements, discusses policies with respect to risk assessment and risk management and their adequacy and effectiveness. The audit committee routinely discusses with senior management and an independent registered public accounting firm any financial risk exposures, including risks related to financial reporting,



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tax, accounting, disclosure, internal control over financial reporting, financial policies and credit and liquidity matters, steps taken to manage those exposures and the company's risk tolerance in relation to its overall strategy.

In addition, the Company has a nominating committee which is a subcommittee of the corporate governance committee. Each such committee is governed by a written charter, and a current copy of each such charter is available to our shareholders at [www.tronox.com](http://www.tronox.com).

As noted earlier in G4-14, also reporting to the corporate governance committee is the Tronox corporate responsibility committee, consisting of the executive committee of Tronox Limited. The corporate responsibility committee assesses the company's overall compliance with applicable law and the Tronox Code of Ethics and Business Conduct, which defines obligations for ethical behavior and corporate responsibility by Tronox employees, directors, suppliers, contractors and other related parties.

Effective May 25, 2016, we evaluated the Board committee composition which resulted in a rotation of committee members and the change of the chairman of several committees. Specifically, Mr. Kaufthal assumed the chairman role of the HRCC and stepped down as a member of the Audit Committee and the Corporate Governance and Nominating Committee; and Mr. Quinn became a member of the Audit Committee and stepped down as chairman of the HRCC. The table below provides current membership for each of the board committees.

The Tronox Board of Directors (as of December 31, 2016)

Name	Audit	Human Resources and Compensation	Corporate Governance
Thomas Casey*			
Daniel Blue	•	•	
Andrew P. Hines	Δ		
Wayne A. Hinman		•	Δ
Peter Johnston			•
Ilan Kaufthal		Δ	
Jeffry N. Quinn	•		
Sipho Nkosi			•

\* Chairman of the Board

Δ Chair

• Member

### Subsequent event

In May 2017, Tom Casey, the chairman and CEO of Tronox from 2011- 2017, passed away. Under the company's succession plan, Peter Johnston, a member of the company's Board of Directors was appointed interim CEO, and currently holds that position. He remains a member of the Board. Tim Carlson, the CFO of Tronox, was elected to serve as an interim member of the Board of Directors. At the time of this report's publication, the Board is evaluating candidates for the CEO position and the Board vacancy.

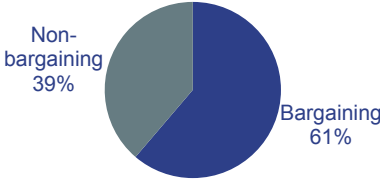
## 5. Stakeholder Engagement

### Disclosure 102-40 List of stakeholder groups

Tronox engages a number of external and internal stakeholder groups, including the communities in which we live and work, business partners, community and tribal leaders, and employees. In addition, we engage with a number of regional or international not-for-profit and advocacy organizations.

### Disclosure 102-41 Collective bargaining agreements

Percentage of employees covered by collective bargaining agreements (as of December 31, 2016)



### Disclosure 102-42 Identifying and selecting stakeholders

Stakeholders are identified based on active community outreach and engagement activities at all Tronox business operations worldwide.

### Disclosure 102-43 Approach to stakeholder engagement

We are a diverse global company and, as such, our approach to stakeholder engagement is determined at the local, regional and corporate levels, as appropriate. Operating under our Code of Conduct and adhering to our corporate citizenship principles and guidelines, each operating site determines the frequency and level of interaction with local stakeholders.

Our corporate affairs and investor relations teams conduct routine communications with key external stakeholders and shareholders.

### Disclosure 102-44 Key topics and concerns raised

Stakeholder engagement is an integral component of the Tronox business strategy. Based on feedback from relevant constituents, the company has developed and implemented comprehensive programs in areas, such as:

## GRI 102: General Disclosures

- Health & Safety;
- Suppliers and business partner standards;
- Community-based initiatives that support STEM education, environmental awareness, health and sanitary concerns, and equal rights and empowerment;
- Reducing waste and lowering our carbon footprint; and,
- Investing in skills training and development curricula for our workforce.

## 6. Reporting Practice

### Disclosure 102-45 Entities included in consolidated financial statements

In 2016, the company had two reportable operating segments: TiO<sub>2</sub> and Alkali. These two segments were formed in connection with the acquisition of the Alkali business from FMC Corporation on April 1, 2015. Both segments are covered in this report.

### Disclosure 102-46 Defining report content and topic boundaries

Applying the GRI principles for defining report content and completeness, this report focuses on the most material issues facing the company. These issues are guided by the GRI definition of materiality: topics and indicators that reflect the company's significant economic, environmental, and social impacts or that would substantively influence the assessments and decisions of stakeholders. Our key stakeholders include employees and prospective employees, investors, lenders, customers, suppliers, governments and regulatory bodies, communities, and nongovernmental organizations.

To identify material issues to Tronox, we solicited input from our senior management team, and then asked relevant managers in the business to identify the matters of highest interest to external stakeholders with which they engage. A representative sample of this engagement follows:

External Stakeholder	Tronox Representatives Engaging
Investors	CEO, CFO, VP Investor Relations
Lenders	CEO, CFO, VP Treasury
Customers	CEO, Business Unit Presidents, SVP & Chief Commercial Officer TiO <sub>2</sub> , VP Sales Alkali, Sales Teams
Suppliers	VP Procurement & Supply Chain, Supply Chain Team
Government and Regulators	SVP & General Counsel; Assistant General Counsels; VP Corporate Affairs & Communications; General Managers of Operating Sites; VPs of Safety, Health & Environment (SHE); Site SHE Managers

# GRI 102: General Disclosures

External Stakeholder	Tronox Representatives Engaging
Communities	Business Unit Presidents; General Managers of Operating Sites; VP Corporate Affairs & Communications; VPs of Safety, Health & Environment (SHE); Site SHE Managers
Non-Governmental Bodies	VP Corporate Affairs & Communications; General Managers of Operating Sites; VPs of Safety, Health & Environment (SHE); Site SHE Managers, SHE General Counsel

The resulting issues and topics that are most material to our business are summarized and explained on the next page. The topics selected formed the basis of our 2015 reporting, and are now being evaluated in this 2016 report.

We welcome feedback from stakeholders on our report content, and further request that matters of additional interest that are not covered here be communicated to Tronox via the appropriate communication channels described under Disclosure 102-53.

## Disclosure 102-47 List of material topics

The table below includes the 2016 Tronox material topics for the economic, environmental, and social categories. Descriptions of the topics, boundaries, and management approaches are stated in the category-specific Disclosure 103 on page 22 (economic), 25 (environmental), and 40 (social).

Category	Material Topic to Tronox
<b>Economic</b>	Economic Performance
<b>Environmental</b>	Energy
	Water
	Biodiversity
	Emissions
<b>Social</b>	Effluents and Waste
	Labor/Management Relations
	Occupational Health and Safety
	Diversity and Equal Opportunity
	Indigenous Rights
	Local Communities

Other relevant issues and topics were evaluated for report content, but were not deemed material at this time. Nevertheless, simply because these other issues were not deemed material does not mean they are not important nor that Tronox is not already engaged in addressing the relevant sustainability elements of the matter. It simply means that the matter is not yet material to Tronox from a GRI Standards reporting perspective.

## GRI 102: General Disclosures

### **Disclosure 102-48 Restatements of information**

All re-statements of data and information provided in earlier reports are noted in the particular report section and can be identified by the text following a “**Note.**”

### **Disclosure 102-49 Changes in reporting**

There are no significant changes from previous reporting periods in the list of material topics and topic boundaries.

### **Disclosure 102-50 Reporting period**

The reporting period is based on a fiscal year, which, at Tronox, coincides with a calendar year: January 1 to December 31.

### **Disclosure 102-51 Date of most recent report**

The most recent report, which is the Tronox Limited 2015 Global Reporting Initiative Report, was published on July 15, 2016.

### **Disclosure 102-52 Reporting cycle**

The reporting cycle of Tronox GRI Reports is on an annual basis.

### **Disclosure 102-53 Contact point for questions regarding the report**

Questions regarding the report or its contents can be communicated with the Tronox Limited Corporate Affairs & Communications Department:

*263 Tresser Boulevard  
Suite 1100  
Stamford, CT, USA 06901  
T: +1-203-705-3800  
E: [sustainability@tronox.com](mailto:sustainability@tronox.com)  
W: [www.tronox.com](http://www.tronox.com)*

### **Disclosure 102-54 Claims of reporting in accordance with the GRI Standards**

This report has been prepared in accordance with the GRI Standards: Core option. See also the introduction on page 2.

## GRI 102: General Disclosures

### **Disclosure 102-55 GRI content index**

The location of the General Standard Disclosures and Performance Indicators in this report can be found in the GRI Index, presented on page 52.

### **Disclosure 102-56 External assurance**

Although no external assurance was obtained for the development of this report, Tronox has followed the GRI Standards “Reporting Principles” regarding (i) defining report content, and (ii) ensuring the quality of reported information.

The environmental data in this report is subject to internal audits in line with our Environmental Management Systems, and external audits in connection with ISO 14001 certification requirements, with which the majority of our operations are compliant.

In this report, a total of 15 indicators are reported. We also included three indicators from the Mining and Metals Sector Supplement.

**Disclosure 103 Management Approach – Economic**

Material Topic to Tronox	Description	Topic Boundary		
		Within Tronox	Outside Tronox	Geography
<b>Economic</b>				
<b>Economic Performance</b>	Tronox operates in cyclical commodity markets, and the economic sustainability of our business (of interest to all stakeholders) is linked to being a safe, quality, low-cost provider, which means we must invest and spend cash efficiently, where it can generate the highest returns.	TiO <sub>2</sub> segment; Alkali segment; all employees	Investors, Lenders, Customers, Suppliers, Communities	US, EUR, ZA, AU

Geography abbreviations: US = United States; EUR = Europe; ZA = South Africa; AU = Australia.

(All monetary figures are in US Dollars unless otherwise noted.)

**Safe Quality Low-Cost Tons (SQLCT)**

Tronox aims to be recognized as the global leader in providing trusted high-quality mineral sands, titanium dioxide (TiO<sub>2</sub>) pigment, and other goods, as well as exemplary service. Through continuous improvement of products and processes, our customers can have confidence that Tronox’s products and capabilities will meet or exceed their needs. Thanks to the dedication and diligence of Tronox employees at every step and every location, we will continue to produce safe, quality, low-cost tons, satisfying current customers and attracting new ones.

Tronox stakeholders, including investors, lenders, governments and regulators, customers, employees, suppliers and communities, have a clear preference for a business that is committed to the health and safety of its workforce, superior product quality, strong customer relationships, and economically sustainable.

An economically sustainable business is one that uses its resources efficiently and responsibly so that the business can operate indefinitely. Two core elements of economic sustainability are (i) generating sufficient cash profits to satisfy our providers of debt and equity capital, and (ii) spending resources in such a way as to satisfy all our other stakeholders and retain our license to operate.

GRI Sustainability Guidelines identify four topics of economic disclosures that may be material to an organization: Economic Performance, Market Presence, Indirect Economic Impacts, and Procurement Practices. Tronox has identified Economic Performance as the only material topic to its stakeholders, using 201-1 as the performance indicator.

## GRI 200: Economic Topics

### **Economic Performance**

Given that Tronox principally operates in commodity markets, the economic sustainability of our business is linked to being a low-cost provider. This means that we must invest and spend cash efficiently, where it can generate the highest returns. Our annual 10-K report, filed with the U.S. SEC and available on the tronox.com website, is the primary mechanism we use to report our economic performance, and should be read in conjunction with this report. The 201-1 indicator we report here is intended to measure the economic outcomes of our activities, and the effects of those outcomes on our stakeholders.

Tronox sells a range of commodity products, including titanium dioxide pigment, titanium feedstock, zircon, rutile, pig iron, and natural soda ash. Prices for those products typically cycle upward when supply is constrained and/or demand is high, and then cycle downward when supply expands and/or demand decreases.

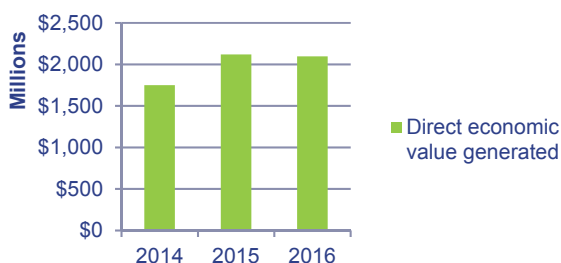
In our 2016 Annual Report, we noted that over the course of the year, worldwide demand for TiO<sub>2</sub> pigments began to rise and that our Alkali business sold every ton of soda ash it produced. We also restated our commitment to achieving ever-greater levels of operational excellence and cost efficiencies. As a result of these efforts, our consolidated margin doubled, growing from six percent in 2015 to 12 percent in 2016.



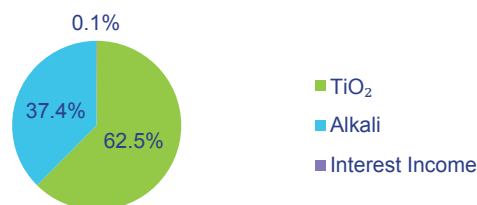
## 201-1 Direct economic value generated and distributed

This indicator reflects the economic value generated<sup>2</sup> (including community investment), distributed<sup>3</sup>, and retained<sup>4</sup> during the fiscal year of 2016. The 2015 data related to the Alkali business segment only refers to the period after the date of the acquisition (April 1, 2015).

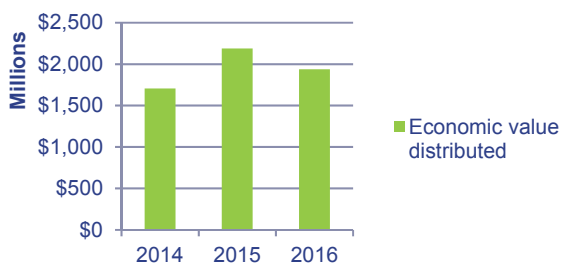
**Direct economic value generated**



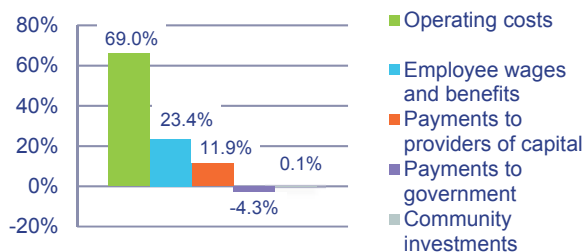
**2016 Components of Economic Value Generated**



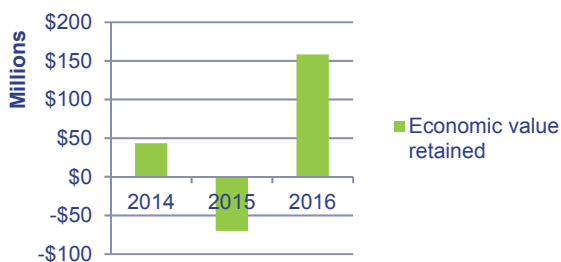
**Economic value distributed**



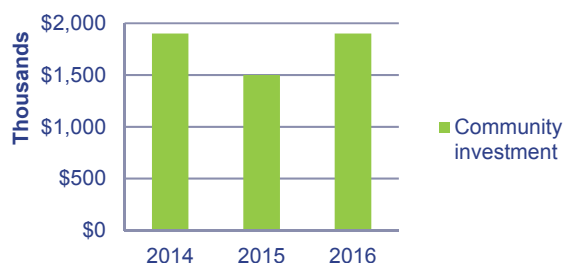
**2016 Components of economic value distributed (total =100%)**



**Economic value retained**



**Community investment**



<sup>2</sup> Direct economic value generated refers to total revenue on a cash basis.

<sup>3</sup> Economic value distributed refers to operating costs, employee wages and benefits, payments to providers of capital, payments to government, and community investments on a cash basis.

<sup>4</sup> Economic value retained is calculated as direct economic value generated less economic value distributed.

## Disclosure 103 Management Approach – Environmental

Material Topic to Tronox	Description	Topic Boundary		
		Within Tronox	Outside Tronox	Geography
<b>Environmental</b>				
<b>Energy</b>	Tronox consumes material amounts of energy in both its TiO <sub>2</sub> and Alkali operations, but particularly at our slag furnaces in Namakwa Sands and KZN Sands, ZA, and at our Soda Ash processing plants in Wyoming, US.	TiO <sub>2</sub> segment; Alkali segment	Markets, Communities, Regulators	US, ZA
<b>Water</b>	Tronox uses material amounts of water in mining, beneficiation and processing in its TiO <sub>2</sub> business segment, and in processing in its Alkali business segment. Water efficiency has become particularly critical at our Namakwa Sands and KZN Sands, ZA locations.	TiO <sub>2</sub> segment; Alkali segment	Markets, Communities, Regulators	ZA
<b>Biodiversity</b>	Tronox operates three above-ground ilmenite/rutile/zircon mines (two in ZA, one in AU) and one underground trona ore mine (in the US). Each of these mines disturbs the land and the biosphere.	TiO <sub>2</sub> segment; Alkali segment	Markets, Communities, Regulators	US, ZA, AU
<b>Emissions</b>	The reduction of Greenhouse Gas (GHG) emissions is a matter of interest to all Tronox stakeholders, and increasingly to customers. Most Tronox GHG emissions are generated from our TiO <sub>2</sub> slag furnaces (ZA), Synthetic Rutile kiln (AU), TiO <sub>2</sub> chemical plants (US, EUR, AU), and soda ash processing plants (US).	TiO <sub>2</sub> segment; Alkali segment	Markets, Communities, Regulators	US, EUR, ZA, AU

Geography abbreviations: US = United States; EUR = Europe; ZA = South Africa; AU = Australia.

Our business – mining and chemicals processing – can be disruptive to the environment. Among other activities, we disturb the ground to extract minerals and ore, we employ water in mineral separation, we burn carbon when we beneficiate ilmenite into titanium slag or synthetic rutile in our furnaces/kiln, we consume large amounts of energy in soda ash evaporators, we generate various emissions from our titanium dioxide pigment and soda ash plants, and we dispose of waste tailings.

## GRI 300: Environmental Topics

The Tronox Code of Ethics and Business Conduct holds managers and employees responsible for:

- Pursuing a business strategy that builds on sustainable innovation, operations and business practices as we seek to grow our businesses and improve the quality of people's lives everywhere;
- Openly conducting our business in a manner that is protective of public and occupational health, the environment and employee safety;
- Giving environmental considerations priority in manufacturing our products and planning for new products, facilities and processes;
- Complying with all environmental laws and regulations;
- Striving to reduce emissions and waste, and use energy and natural resources efficiently as we grow;
- Actively soliciting constructive discussions with our employees, suppliers, customers, neighbors and shareholders on managing environmental issues to ensure continuous improvement; and,
- Supporting the principles of responsible environmental stewardship, as embodied in voluntary standards and management systems appropriate to our operations around the world. These goals are accomplished by working with our employees, suppliers, customers, contractors and commercial partners to promote responsible management of our products and processes through their entire life cycle, and for their intended end use, worldwide.

We implement these standards through management and employee engagement, allocation of sufficient human and capital resources, and rigorous measurement, review and corrective action systems.

Tronox has determined that five of the 12 environmental aspects identified in the GRI Sustainability Guidelines are material to its stakeholders:

- Energy (302-1, 302-3)
- Water (303-1)
- Biodiversity (304-3, G4-MM1)
- Emissions (305-1, 305-2, 305-4)
- Effluents and Waste (306-2)

Within these aspects, we report on environmental indicators that cover performance related to both inputs (e.g., energy, water) and outputs (e.g., emissions, waste).

### **Energy**

The production of high-quality Mineral Sands, TiO<sub>2</sub>, and Alkali products are associated with considerable energy consumption demand. Therefore, energy availability issues have a direct impact on operational efficiency at all locations. Also, energy consumption for mining and manufacturing operations is the primary driver of greenhouse gas (GHG) emissions. Proper management of energy consumption is therefore required in order to mitigate our impact on the local environment and on the climate.

Beginning in 2015, Tronox TiO<sub>2</sub> launched a multi-year operational excellence initiative that, among other things, addressed our energy demand. These efforts continued in 2016. Energy

## GRI 300: Environmental Topics

efficiency improvements include, but are not limited to, process control automation, heating and cooling optimization, and insulation measures, at all locations.

Tronox also invests in efficient energy-generation options, the reuse of process emissions, and renewable energy sources. Examples include: the combined heat and power plant that generates electricity and steam for the Kwinana TiO<sub>2</sub> Pigment Plant; the carbon monoxide (CO) gas facility that reuses CO gas formed during the furnace smelting operations at KZN Sands; the cogeneration plant that utilizes previously flared furnace gases to fuel eight General Electric Jenbacher gas-fired engines for electricity production at Namakwa Sands; and, the consumption of renewable electricity from the hydroelectric Hoover Dam in Nevada, USA, satisfying 100 percent of Electrolytic and Specialty Chemicals business' electricity needs.

### **Water**

Tronox realizes that fresh water is not an infinite resource. In fact, only 2.5 percent of all the water on Earth is considered fresh water, of which the majority is stored in glaciers and ice caps.<sup>5</sup> We therefore focus on “fit-for-purpose” water. In this way, we match water of a certain quality to a use appropriate for that quality, reducing our reliance on municipal water around the world.

A good example of fit-for-purpose water can be found at the Mine and Mineral Separation Plant (MSP) of our Namakwa Sands Operations in South Africa, where 79 percent of total water consumption is sea water. This low-quality water is sufficient for use in the concentration processes of heavy mineral sands in the Primary and Secondary Concentration Plants. At our Botlek Operations in the Netherlands, an even higher total of 95 percent of water demand is satisfied by the use of low-quality brackish water from the adjacent river.

At Kwinana, Western Australia, in the past 10 years, a large portion of municipal water has been replaced with high-quality, industrial-grade water from the Kwinana Water Reclamation Plant (KWRP). The KWRP recycles industrial waste water and provides water at varying levels of quality to neighboring industries. We are currently investigating additional uses of water supplied by the KWRP, reducing Kwinana's dependency on municipal water even further.

Additional to our focus on fit-for-purpose water, Tronox relies on multiple water reuse and recycling systems to make sure scarce fresh water can be allocated as efficiently as possible. We also collect and consume rain water at our operations in Green River, Wyoming, USA, and KZN Sands, South Africa.

### **Biodiversity**

Tronox operates three above-ground mines (two in South Africa, one in Australia) and one underground mine in the United States. Activities at our mines may disturb local ecosystems, which could have lasting impacts on biodiversity in the region. It is our mission to mitigate any impact from mining and beneficiation to make sure designated ecosystems are protected, restored and able to thrive in the long term.

Studies have been conducted, as part of Environmental Management Programs (EMPs) and Environmental Impact Assessments, to determine areas for mining and development, as well as for restricted areas. Rehabilitation measures have been included in the EMPs, Rehabilitation

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<sup>5</sup> United States Geological Surveys (USGS) (2016). *The World's Water*. Available on the world wide web: <<http://water.usgs.gov/edu/earthwherewater.html>>

## GRI 300: Environmental Topics

Guidelines, and Procedures, and are integrated in our way of doing business. These measures are monitored and reported on a consistent basis to ensure that closure objectives are met.

In case rehabilitation of land is more effective in areas other than the affected land, Tronox identifies offset areas, such as the 12 hectare (30 acre) wetland area close to the KZN Sands' Fairbreeze Mine in South Africa. The offset commitment made by Tronox was to restore the historical biodiversity functions of the targeted wetlands, which would not only benefit the site, but also improve water quality and quantity to the Siyaya River.

Our Green River, Wyoming, USA, operations work closely with state and federal agencies to review opportunities to protect wildlife habitat and to replace or enhance Greater Sage Grouse habitat to the degree that environmental conditions allow. Tronox Alkali's reclamation and habitat protection efforts have been recognized by the U.S. Bureau of Land Management and the Wyoming Department of Environmental Quality.

At Western Australia's Northern Operations, Tronox has implemented plans to eradicate invasive flora, including *Phytophthora Cinnamomi* (Dieback), in order to protect indigenous plant species on the site.

### **Emissions**

The reduction of GHG emissions is a matter of interest to all Tronox stakeholders, and increasingly to customers. GHGs absorb and emit radiation in the atmosphere and are the fundamental cause of the greenhouse effect. Most Tronox GHG emissions are generated from our four TiO<sub>2</sub> slag furnaces (ZA), a synthetic rutile kiln (AU), three TiO<sub>2</sub> chemical plants (US, EUR, AU), and soda ash processing plants (US).

GHG emissions are a direct result of the combustion of fossil fuels. The energy efficiency improvements, which are a key element of our operational excellence initiative described above, directly enhance our performance from a GHG emissions point of view. In addition, we employ strategies to minimize high-carbon content energy sources where possible (for example, favoring natural gas delivered by pipeline versus coal transported by truck).

The amount of GHG emissions (measured in CO<sub>2</sub> equivalents) is often used as a measure for environmental sustainability. Tronox, as a member of the Titanium Dioxide Manufacturers Association (TDMA), has contributed to a cradle-to-gate analysis that mapped the carbon footprint of its TiO<sub>2</sub> operations. This analysis was later expanded to a full-size cradle-to-gate life cycle assessment, of which carbon footprint is just one of 16 parameters measured in the process. The results from these studies will be used to engage with supply chain partners to advance product life cycle sustainability.

### **Effluents and Waste**

All Tronox waste is managed according to local waste management procedures that are based on the principles of cradle-to-gate waste management. We ensure that all waste leaving our sites is labeled, weighed, and only handled by contracted and/or authorized service providers. Waste processed onsite is either used to fill and contour mined out areas (overburden and waste rock), deposited in sedimentation lagoons (tailings), or placed in specifically designed landfill pits (hazardous and non-hazardous waste).

## GRI 300: Environmental Topics

At the Tronox Alkali Green River facility in Wyoming, USA, process and cooling waters are captured in an onsite evaporation lake. The water quality in this lake is monitored and managed in such a way that the water can be reused in Green River's processes. The outcome of this is an operation without discharge of process water to surface water. Our operations in Henderson, Nevada, USA, also maintain a zero-discharge operation, which uses two waste recovery distillation systems to recover clean distillate from process wastewater.

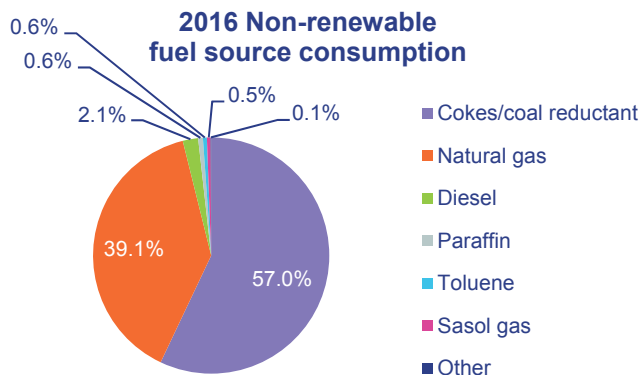
Tronox continuously seeks alternatives for waste streams. For example, the Tronox Botlek pigment plant in the Netherlands partners with local industries to research the application of filter cake (currently land filled) in concrete. Also, roundtable sessions should result in new destinations for waste streams including sulfuric acid and hydrochloric acid. The Kwinana plant in Australia provides hydrochloric acid that can be upgraded for use in swimming pools.

**The year 2016 was the first full year the Alkali business was integrated into the Tronox holding. This had a significant impact on all Tronox global environmental intensities, as all four Alkali operational quarters have now been taken into account to calculate the 2016 intensities (only three Alkali quarters were included to calculate the 2015 intensities).**

### 302-1 Energy consumption within the organization

This indicator reflects the primary energy consumption within the organization during the 2016 fiscal year. The 2015 data related to the Alkali business segment only refers to the period after the date of the acquisition (April 1, 2015).

[millions of gigajoules]	2014	2015	2016
Non-renewable fuel sources	18.6	35.1	41.0
Electricity and steam sold	-0.6	-0.6	-0.9
<b>Total direct primary energy consumption</b>	<b>18.1</b>	<b>34.5</b>	<b>40.2</b>



**Note:** Tronox does not consume direct renewable energy and does not self-generate electricity, heating, cooling, or steam from energy sources other than non-renewable sources.

## GRI 300: Environmental Topics

[millions of gigajoules]	2014	2015	2016
Electricity	24.4	21.7	16.6
Steam	1.1	1.0	1.0
<b>Total indirect primary energy consumption</b>	<b>25.5</b>	<b>22.7</b>	<b>17.6</b>

**Notes:** 1) Decreased electricity use at Hamilton due to lower chlorate production and cessation of the chlorate facility at the end of 2015.  
2) Year-over-year reductions in electricity consumption at KZN and Namakwa due to lower production and furnace downtime.

### Standards, methodologies, and assumptions used

Energy consumption within the organization includes the components stated below. All components are converted into primary energy in order to arrive at total direct and indirect primary energy consumption.

- **Non-renewable fuel consumed**  
These sources are assumed to be primary energy sources, even though some sources have been through a transformation process.
- **Electricity and steam sold**  
This component is only applicable to the Kwinana pigment plant in Western Australia, where efficiencies of the combined heat and power plant and steam boilers, that generate electricity and steam respectively, are taken into account to arrive at primary energy.
- **Electricity and steam purchased for consumption**  
Intermediate energy purchased for consumption is converted to primary energy by taking into account the energy input of the production process where possible, or by using efficiency assumptions. No primary energy conversion is applied for electricity and steam from renewable sources.

In case non-renewable fuel sources were consumed to produce electricity or steam used on site, only the non-renewable fuel sources were counted, in order to prevent double counting of energy consumption.

### Source of the conversion factors used

Calorific values that were used to convert volumes of **non-renewable fuel sources** into primary energy were taken from the energy suppliers where possible, or from the Guidelines for National Greenhouse Gas Inventories.<sup>6</sup>

Efficiencies used for **electricity and steam sold** were based on local metered input and output values and annual efficiency samples, respectively.

Regarding **electricity and steam purchased for consumption**, conversion efficiencies are provided by energy suppliers where possible, or assumptions of country-average efficiencies were taken from the Trends in Global Energy Efficiency Report.<sup>7</sup>

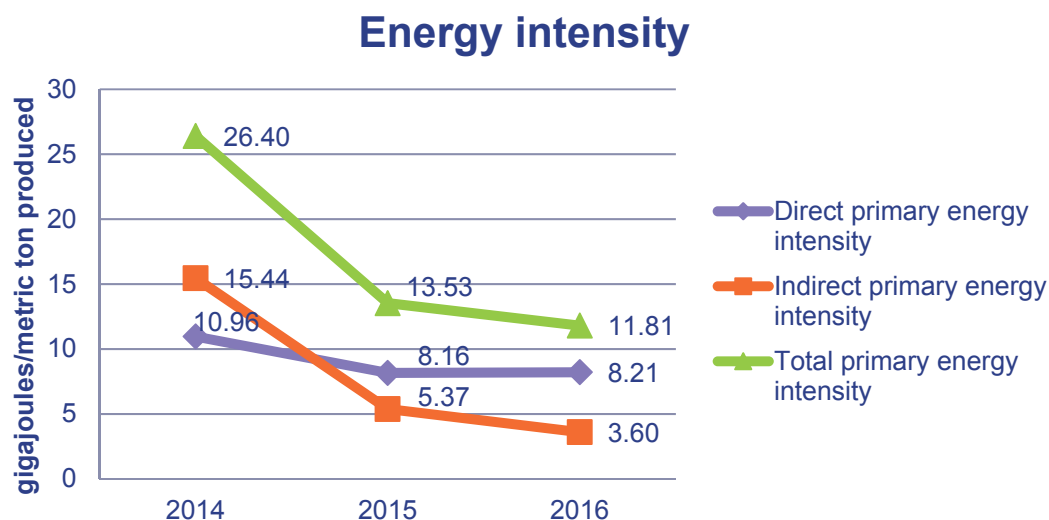
<sup>6</sup> Intergovernmental Panel on Climate Change (IPCC) (2006). *Guidelines for National Greenhouse Gas Inventories*. Hayama, Japan.

<sup>7</sup> Asea Brown Boveri (ABB) (2011). *Trends in Global Energy Efficiency 2011*. Zurich, Switzerland.



## 302-3 Energy intensity

This indicator reflects the primary energy intensity during the fiscal year of 2015. The 2015 data related to the Alkali business segment only refers to the period after the date of the acquisition (April 1, 2015).



**Notes:** 1) The total primary energy intensity is calculated by dividing the sum of direct and indirect primary energy consumption by the total weight of products produced.  
 2) All energy sources included in 302-3 (non-renewable fuel, electricity, and steam, minus electricity and steam sold) are included in the energy intensity calculations.

In Hamilton, Mississippi, USA, the shutdown of the sodium chlorate plant in November of 2015 resulted in the cessation of sodium chlorate production (Tronox did not produce any sodium chlorate in 2016). This halt in production had a negative impact on direct energy intensity, as the majority of the direct energy sources are consumed by the adjacent TiO<sub>2</sub> plant. Contrary, the stop of sodium chlorate production positively impacted the indirect energy intensity, as the majority of electricity was consumed by that operation.

## 303-1 Water withdrawal by source

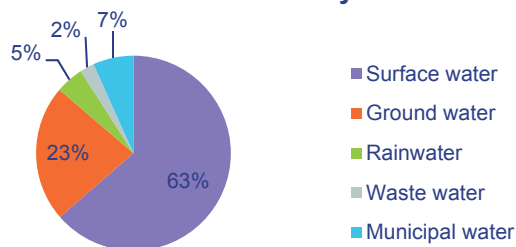
This indicator reflects the total water withdrawal during the fiscal year of 2016. The 2015 data related to the Alkali business segment only refers to the period after the date of the acquisition (April 1, 2015).

[millions of cubic meters]	2014	2015	2016
<b>Total water withdrawal</b>	<b>62.9</b>	<b>70.3</b>	<b>71.4</b>

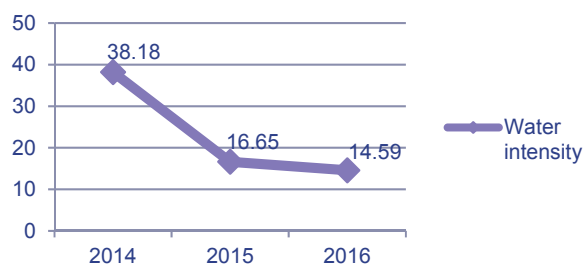


## GRI 300: Environmental Topics

**2016 Water withdrawal by source**



**Water intensity**



**Note:** The water intensity is calculated by dividing the total water consumption by the total weight of products produced.

Total water withdrawal only takes into account water that is used for the first time. Water that is reused or recycled to be consumed twice or more times, either in the same process or in a different process, is not included in this indicator.

In 2016, total water withdrawal has increased, mainly because the Fairbreeze Mine at KZN Sands started production. However, there were also sites that experienced significant decreases in water withdrawal: 1) ground water at Hamilton was reduced due to the cessation of sodium chlorate production in November 2015, and 2) ground water consumption at Northern Operations decreased because of the closure of the North Mine in December 2015.

### 304-3 Habitats protected or restored

#### G4-MM1 Amount of land disturbed or rehabilitated

The combined indicators 304-3 and G4-MM1 reflect the total land use of the organization in terms of area protected, area disturbed, area in rehabilitation, and area restored. Partnerships and approval from independent external professionals are also reported on page 35. The 2015 data related to the Alkali business segment only refers to the period after the date of the acquisition (April 1, 2015).

[hectares]	2014	2015	2016
Area protected	108,406	109,053	87,875
Area disturbed	4,449	7,357	7,369
Area in rehabilitation	2,012	2,073	2,179
Area restored	3,702	4,536	4,825
<b>Total land use</b>	<b>118,569</b>	<b>123,018</b>	<b>102,248</b>

**Notes:** 1) All data refers to a snap shot at year end (December 31 of the relevant year).  
2) The land use footprint includes all Tronox operations, however more than 95 percent of total land use can be attributed to our three titanium feedstock mines in South Africa and Australia. Our trona ore mine in the United States is an underground mine and takes in a relatively small area of surface land.

## GRI 300: Environmental Topics

At Northern Operations, select exploration leases were ceded. As such, the area of protected land decreased (undisturbed land is included in our definition of area protected, see also “Standards, methodologies, and assumptions used” below).

Restored habitats at our mines		Area actively mined at year end [hectares]	Area restored during fiscal year [hectares]	Expenditures on rehabilitation during fiscal year [US\$]
KZN Sands	2014	0	104	\$4,830,660
	2015	0	56	\$2,223,194
	2016	0	20	\$596,665
Namakwa Sands	2014	1,359	246	\$4,718,385
	2015	1,516	73	\$2,882,829
	2016	1,380	224	\$2,632,120
Northern Operations	2014	60	117	\$2,044,056
	2015	53	107	\$2,397,500
	2016	48	54	\$304,566
<b>Total</b>	<b>2014</b>	<b>1,419</b>	<b>467</b>	<b>\$11,593,100</b>
	<b>2015</b>	<b>1,569</b>	<b>236</b>	<b>\$7,503,523</b>
	<b>2016</b>	<b>1,428</b>	<b>298</b>	<b>\$3,533,351</b>

**Note:** Rehabilitation and restoration of mined out land is inseparably connected to the way we operate our mines. In the table above, the area actively mined, area restored, and expenditures on rehabilitation are presented for our surface mines (titanium feedstock mines).

Expenditures on rehabilitation have decreased significantly at KZN Sands and Northern Operations during 2016. At KZN Sands, expenditures only include land management and maintenance at the retired Hillendale Mine. These costs are only a fraction compared to the costs related to the production of specialized soil for rehabilitation, which was completed in the prior years. Rehabilitation activities at the new Fairbreeze Mine have yet to commence. At Northern Operations, costs related to rehabilitation of disturbed areas reduced because only pasture rehabilitation was completed. This activity has a lower unit rate compared to native rehabilitation.

### Standards, methodologies, and assumptions used

We apply the following definitions to the different land use categories:

#### *Area protected:*

This category includes undisturbed land (land not affected by any operations) that remains in its original state and land that is actively protected from operations to maintain a healthy functioning ecosystem.

#### *Area disturbed:*

Reflects areas that are used during or affected by operational activities, including:

- Operational plants and units (including tank and silo storage)
- Office buildings (including maintenance shops, storage locations, and contractor areas)
- Other areas (occasionally used, including roads and parking lots)

## GRI 300: Environmental Topics

- Waste treatment/storage (including ponds and storage of fine and coarse material fractions)
- Areas prepared for surface mining (i.e., areas where the top soil has been removed)
- Areas actively mined
- Former mining or operational areas where backfilling operations are in progress but where the top soil has not yet been replaced

### *Area in rehabilitation:*

Reflects former mining or operational areas where the top soil has been placed back but where rehabilitation measures have not yet been completed. Offsetting areas where rehabilitation measures have commenced are also included in this category. This is a temporary phase between area protected/disturbed and area restored.

### *Area restored:*

Former mining or operational areas where rehabilitation measures have been completed and a specified quality level has been achieved according to pre-determined agreements with authorities, or, in case of absence of agreements with authorities, according to internal standards. These agreements can include restoration to farm land, native land, land with a high biodiversity value, etc. Once the agreed quality level has been achieved, the area is considered to be restored, even if Tronox is still putting in effort (through third parties or otherwise) to maintain the area at that quality level.

### **Approval from independent external professionals**

Our Namakwa Sands operations in South Africa are currently in the process of determining (i) the criteria for rehabilitation success and (ii) establishing a methodology that can measure compliance with the criteria. The process will be open for public comment and submitted to the relevant authorities for final approval.

At our Northern Operations location in Australia, rehabilitation monitoring is conducted by an external contractor and is undertaken to track rehabilitation development over time, to confirm successful practices and identify improvement opportunities. Tronox, with an external contractor, has developed formal rehabilitation completion criteria in order to clearly define rehabilitation objectives, how these will be achieved and measures to demonstrate success. These are outlined in the Cooljarloo Mine Closure Plan<sup>8</sup>, as endorsed by government.

Where performance issues are recognized for any given site, appropriate corrective actions are identified and implemented. Where a solution is not obvious, further investigation is undertaken through research programs with the University of Western Australia, Murdoch University, external contractors, and internal on-site trials. Rehabilitation improvement programs have been detailed in the Cooljarloo Mine Closure Plan.

The rehabilitation data is presented to the Mineral Sands Agreement Rehabilitation Coordinating Committee (MSARCC; various government departments) each year. To date, no areas of rehabilitation have been signed off.

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<sup>8</sup> Tronox (2013). *Cooljarloo Environmental Management Programme*. Cooljarloo, Australia.

## GRI 300: Environmental Topics

### Partnerships

As part of Tronox KZN Sand's impact mitigation measures at the Fairbreeze Mine in South Africa, the company has established protected areas, such as the Siyaya Biodiversity Offset (230 hectares / 568 acres). The strategic offset management plan was drafted by an outside consultant group (Eco-Pulse) and is retained by KZN Sands to finalize all offset management plans.

Tronox Northern Operations has provided grants, on an annual basis since 2005, to the Department of Parks and Wildlife (DPAW). This funding is for important conservation projects within the catchment area of the Chandala Processing Plant. Each year, a list of projects is submitted to Tronox by DPAW. Tronox then selects projects with a focus on improving the health of the surrounding environment. Since its inception, this program has delivered around US\$186,000 worth of funding to local environmental projects. Listed below are a few of the projects Tronox has funded:

#### *2011: Fox predation impact on Western Long-Necked Tortoise study*

This study confirmed that fox predation is having a significant impact on the western long neck turtle. This resulted in the implementation of methods for reducing fox predation specifically during the breeding cycle of the turtles.

#### *2013: Feral European honey beehive mapping and eradication re-survey and control*

The feral European honey bee is recognized as a major threat to biodiversity in Western Australia. Feral honey bees also pose a serious threat to native bees and other insect pollinators by out competing them for limited food resources. The vegetation types common to the Chandala Region support a number of threatened species and communities, such that the presence of feral honey bees has the potential to place greater pressure on their conservation.

#### *2011 – 2016: Macro invertebrate and reptile studies across catchment*

Thanks to funding from Tronox, the area surrounding the Chandala Plant has undergone the most comprehensive macro-invertebrate and reptile inventory in Western Australia. The studies looked at hundreds of species of spiders, insects, lizards, snakes and other fauna.

#### *2012 – 2016: Supporting the Chittering Wildlife Caretakers*

Tronox Chandala has committed funding to a local wildlife caretakers group to allow them to achieve their goal of treating and caring for sick, injured and immature native wildlife in order to re-establish rehabilitated wildlife into their natural environment.

Another Tronox-funded project is the satellite tracking of Wedge Tail Eagles to gain insight into the movement and behavior of these birds. This project will follow the full life cycle of the birds.

### 305-1 Direct (Scope 1) GHG emissions

This indicator reflects the direct GHG emissions (Scope 1)<sup>9</sup> of operations over which Tronox had operational control during the fiscal year of 2016. The 2015 data related to the Alkali business segment only refers to the period after the date of the acquisition (April 1, 2015).

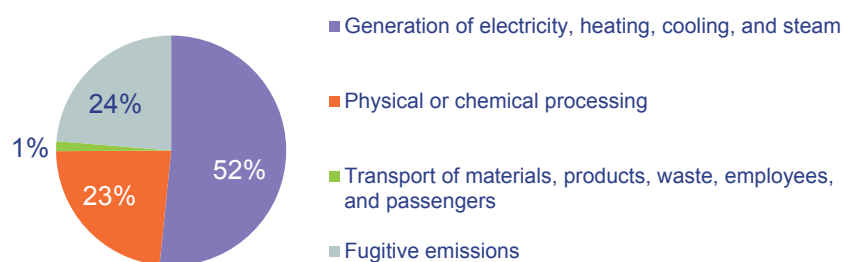
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<sup>9</sup> Direct GHG emissions, or scope 1 emissions, refer to GHG emissions from operations that are owned or controlled by Tronox.

## GRI 300: Environmental Topics

[millions of metric tons of CO <sub>2</sub> -equivalents]	2014	2015	2016
Direct GHG emissions (scope 1)	1.4	3.8	4.5

### 2016 Direct (Scope 1) GHG emissions



**Note:** Global Warming Potential (GWP) factors were adjusted in line with the IPCC AR5 Report (see also “Source of the conversion factors used” below)

#### Standards, methodologies, and assumptions used

Greenhouse gases included in this indicator are in line with the GHGs covered by the United Nations Kyoto Protocol, the World Resources Institute, and the World Business Council for Sustainable Development (WBCSD) GHG Protocol Corporate Accounting and Reporting Standard:

- Carbon dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur Hexafluoride (SF<sub>6</sub>)
- Nitrogen trifluoride (NF<sub>3</sub>)

Furthermore, the reporting of Scope 1 and Scope 2 GHG emissions is in line with the WBCSD Standard’s Operational Control Approach.<sup>10</sup>

#### Source of the conversion factors used

GHG emission factors for CO<sub>2</sub> are based on data provided by local energy suppliers. In case this data is not readily available, the emission factors used are in line with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (default emission factors on a net calorific basis).

For GHGs other than CO<sub>2</sub>, GWPs are used to convert GHG emissions into CO<sub>2</sub> equivalents. These GWPs are in line with the IPCC Fifth Assessment Report.<sup>11</sup>

<sup>10</sup> World Business Council for Sustainable Development (WBCSD) (2004). *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard*. Washington, DC, USA.

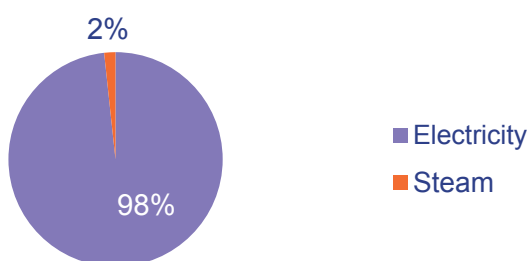
<sup>11</sup> Intergovernmental Panel on Climate Change (IPCC) (2007). *Fourth 2014. Fifth Assessment Report, Climate Change 2007: The Physical Science Basis*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

## 305-2 Energy indirect (Scope 2) GHG emissions

This indicator reflects the energy indirect GHG emissions (Scope 2)<sup>12</sup> of operations during the fiscal year of 2016. The 2015 data related to the Alkali business segment only refers to the period after the date of the acquisition (April 1, 2015).

[millions of metric tons of CO <sub>2</sub> -equivalents]	2014	2015	2016
Indirect GHG emissions (scope 2)	2.0	1.8	1.4

### 2016 Energy indirect (Scope 2) GHG emissions



**Note:** Several electricity emission conversion factors have been updated, taking into account information from the particular local electricity supplier. This has improved the accuracy of energy indirect (Scope 2) GHG emissions data.

All electricity supplied to the Botlek pigment plant in 2016 was produced by renewable sources (wind, biomass, solar, water, geothermal). Botlek is the second production plant that has shifted to clean intermediate energy; the Henderson electrolytic plant is supplied by 100 percent hydroelectric power.

The cessation of the sodium chlorate production at Hamilton positively impacted the Hamilton total indirect energy consumption, as the majority of electricity was consumed by the chlorate operation.

### Standards, methodologies, assumptions, and source of conversion factors

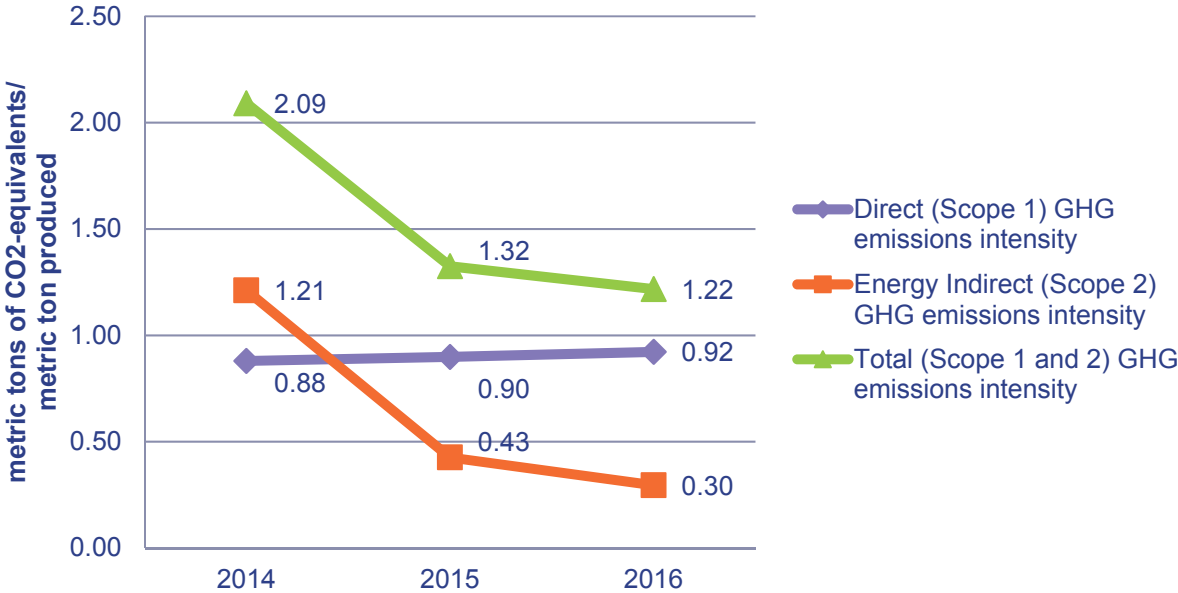
Please refer to 305-1 for the type of GHGs included, the chosen consolidation approach, and the sources of emission factors and GWPs.

## 305-4 GHG emissions intensity

This indicator reflects the GHG emissions intensity during the fiscal year of 2016. The 2015 data related to the Alkali business segment only refers to the period after the date of the acquisition (April 1, 2015).

<sup>12</sup> Indirect GHG emissions, or scope 2 emissions, refer to emissions that result from the generation of purchased or acquired electricity, heating, cooling, and steam consumed by Tronox.

**GHG emissions intensity**



**Notes:** 1) The GHG emissions intensity is calculated by dividing the sum of direct and indirect GHG emissions by the total weight of products produced.  
 2) All GHG emissions included in 305-1 and 305-2 (scope 1 and scope 2) are included in the GHG emissions intensity calculations. This automatically includes all GHGs stated under 305-1.

As illustrated in the above graph, the direct GHG emissions intensity remains constant from 2015 to 2016, while the indirect GHG emissions intensity decreases significantly with the inclusion of the full-year Alkali data. This factor can be explained by the fact that the GHG emissions at Alkali are disproportionate to energy consumption. Namely, significant GHG emissions are the result of the release of CO<sub>2</sub> during chemical processing of the Alkali products, as well as methane emissions from the mineral formation during mining.

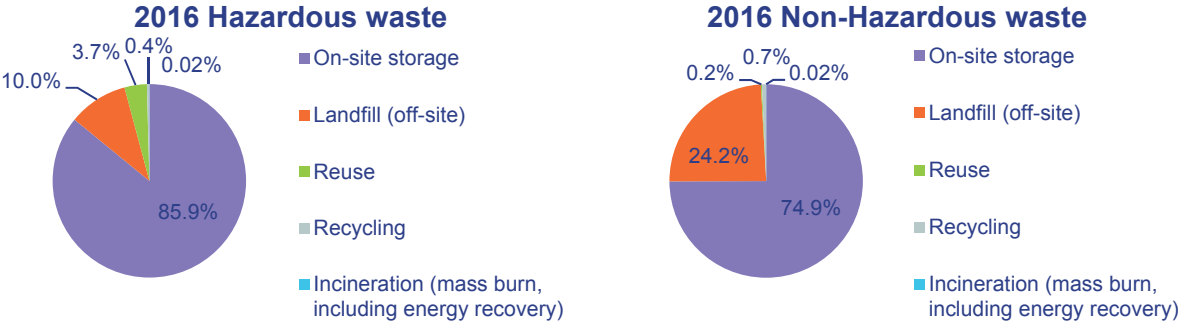
**306-2 Waste by type and disposal method**

This indicator reflects the total weight of waste produced during the fiscal year of 2016. The 2015 data related to the Alkali business segment only refers to the period after the date of the acquisition (April 1, 2015).

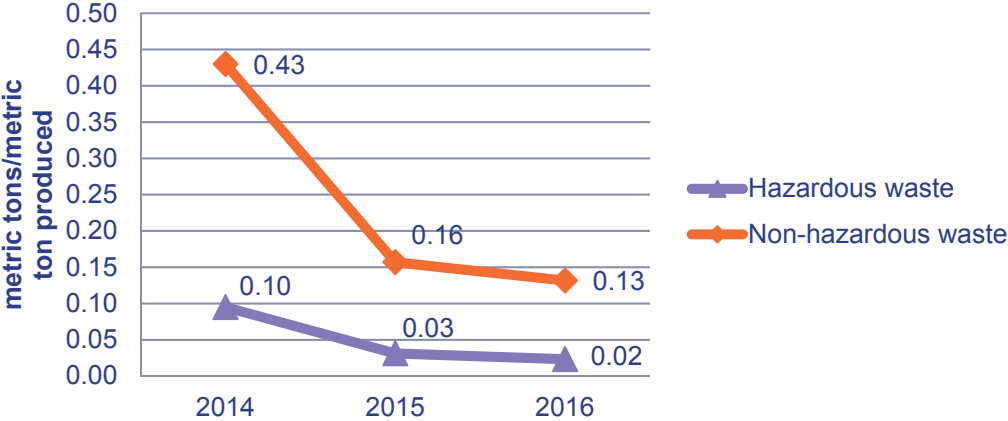
[metric tons x100,000]	2014	2015	2016
Hazardous waste	1.6	1.3	1.1
Non-hazardous waste	7.1	6.6	6.4

**Note:** Based on assumptions, data representing non-hazardous waste stored onsite at Hamilton and Henderson has been adjusted to include the weight of the remaining moisture at end of life of the onsite settling ponds, after dewatering. Waste data of all locations is now in line with how waste is reported at other sites. Prior year data has also been adjusted according to the new assumptions.

# GRI 300: Environmental Topics



## Waste intensity



Hazardous waste decreased in 2016, primarily due to the installment of a new filter press at KZN Sands. This filter press separates the effluent from the solids in a more efficient way, resulting in less moisture being transported to the on-site storage facility.

### Beneficial use of waste sand

The Tronox Hamilton facility obtained a permit from the State of Mississippi to construct an industrial solid waste landfill (ILF#2) for disposition of waste from its TiO<sub>2</sub> operation.

The facility has a non-hazardous industrial waste landfill (ILF#1) located onsite that has been utilized for disposal of waste sand generated in the pigment plant's oxidation unit. Waste sand has been placed into this 2.5-hectare (six-acre) ILF for over 20 years, and it is approaching capacity.

Construction of the ILF#2 requires installation of a leachate collection system, which includes embedding the leachate collection piping in 46 cm (18 inches) of sand. Permission to reclaim and re-use this waste sand from ILF#1 as the sand around the leachate collection pipe in ILF#2 was requested from and approved by the State of Mississippi. By allowing the beneficial re-use of this waste sand, the life of the ILF#1 will be greatly extended; moreover, our waste footprint will not expand. In addition, resources will be conserved because Tronox will not have to purchase sand for this application.



## Disclosure 103 Management Approach – Social

Material Topic to Tronox	Description	Topic Boundary		
		Within Tronox	Outside Tronox	Geography
<b>Social</b>				
<b>Labor/ Management Relations</b>	Approximately 66% of our Alkali segment’s mining and manufacturing employees in the US are members of a union and subject to a collective bargaining agreement (CBA). In ZA, over 70% of our TiO <sub>2</sub> workforce belongs to a union. In AU, most of our TiO <sub>2</sub> employees are not currently represented by a union, but approximately 50% are represented by a CBA. In EUR, approximately 50% of our employees are represented by a CBA and 30% are members of a union.	TiO <sub>2</sub> segment employees; Alkali segment employees	Communities	US, EUR, ZA, AU
<b>Occupational Health and Safety</b>	“Health & Safety” is one of our core values, and we are deeply committed to the safety of our employees and our communities.	All employees	Communities, Regulators	US, EUR, ZA, AU
<b>Diversity and Equal Opportunity</b>	We have made “People” one of our core values, and our business is most effective when it is diverse and our people enjoy a fair and supportive work environment. In ZA, the Mining Charter obligates us to specific objectives for employment equity and human resources development.	All employees	Communities	US, EUR, ZA, AU
<b>Indigenous Rights</b>	Two of our operations (KZN Sands, ZA, and Northern Operations, AU) are in or adjacent to Indigenous Peoples’ territories, and they are important communities to the success of our operations.	TiO <sub>2</sub> segment	Communities	ZA, AU
<b>Local Communities</b>	“Responsibility” is one of our core values, and we believe active engagement in our communities is key to our success. In ZA, the Mining Charter obligates us to address the housing and living conditions of our employees, and the development of our communities.	TiO <sub>2</sub> segment; Alkali segment	Communities	US, EUR, ZA, AU

Geography abbreviations: US = United States; EUR = Europe; ZA = South Africa; AU = Australia.

## GRI 400: Social Topics

Tronox has an impact on the social systems where it maintains operations, and management is engaged in understanding and addressing those social dimensions of sustainability. Our commitment to social sustainability is thoroughly addressed in both the Tronox values and the Tronox Code of Ethics and Business Conduct.

Within the Tronox Values, we define expectations for social sustainability, which include:

- Creating a safe and healthy workplace and driving continuous safety and health improvements;
- Caring for the environment, including taking personal responsibility for environmental stewardship;
- Remaining involved in our communities; and,
- Treating people as our most important resource, creating opportunities for development and acting intentionally to create a diverse and supportive work environment.

Within the Tronox Code of Ethics and Business Conduct, we also address areas that include anti-corruption, anti-competitive behavior, and product stewardship

Tronox has determined that five of the 30 social aspects identified in the GRI Sustainability Guidelines are material to its stakeholders:

- *Under the Subcategory Labor Practices and Decent Work:*
  - Labor/ Management Relations (G4-MM4);
  - Occupational Health and Safety (403-2); and
  - Diversity and Equal Opportunity (405-1)
- *Under the Subcategory Human Rights:*
  - Indigenous Rights (G4-MM5)
- *Under the Subcategory Society:*
  - Local Communities (413-1)

**Labor/Management Relations:** Our TiO<sub>2</sub> segment employees in the United States are not represented by a union or collective bargaining agreement, nearly 66 percent of the employees at the Tronox Alkali mining and manufacturing facility in Green River, Wyoming, are members of a union and subject to a collective bargaining agreement. In South Africa, more than 70 percent of the workforce belongs to a union. In Australia, most employees are not represented by a union, but approximately 50 percent are represented by a collective bargaining agreement. In the Netherlands, approximately 50 percent of Tronox employees are represented by a collective bargaining agreement and 30 percent are members of a union.

**Occupational Health and Safety:** We proactively identify and manage risk, conduct ourselves responsibly, exercise good judgment and take responsibility for our actions. Our goal is that every employee, contractor and visitor to one of our sites leaves that site unharmed.

**Diversity and Equal Opportunity:** We believe our business is most effective when it is diverse and our people enjoy a fair and supportive work environment. We describe the behaviors we expect from our employees as follows: listens to others with diverse perspectives; supports new and different approaches; supports fairness and equality in the workplace; encourages others to be open-minded and to appreciate alternative cultural perspectives; does not tolerate discrimination.

# GRI 400: Social Topics

**Indigenous Rights:** Two of our operations (KZN Sands, South Africa, and Northern Operations, Australia) are in, or adjacent to, Indigenous Peoples’ territories, and they are important communities to our license to operate, and to our community objective as discussed below.

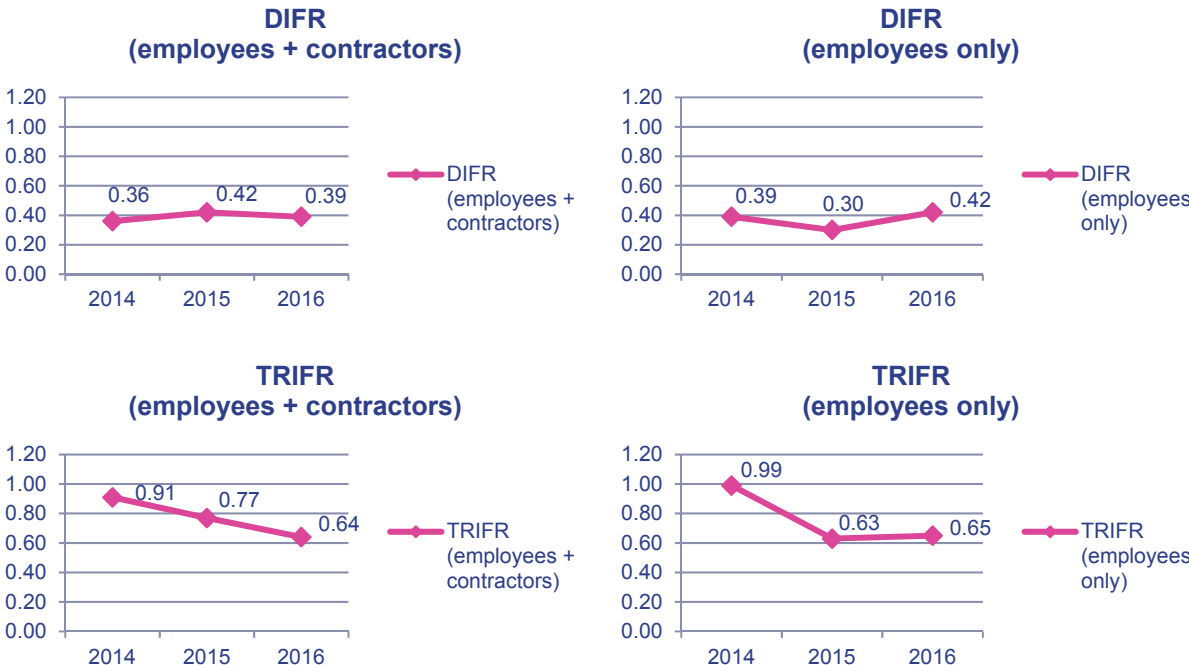
**Local Communities:** Active engagement in our communities is key to our success. We understand the social impacts of our activities and are committed to resolving situations where operational goals conflict with community goals, and to promoting positive engagement with the community. Our employees should act as advocates for the community within our organization, foster a culture of employee volunteerism, and promote community initiatives related to education in science and the arts.

## G4-MM4 Number of strikes and lock-outs exceeding one week’s duration

There are no records of strikes or lock-outs at any Tronox location in the last 10 years.

## 403-2: Type of injury and rates of injury, occupational diseases, and number of work-related fatalities

This indicator reflects our safety results in terms of injuries and injury rates. The 2015 data includes the full year performance of the Tronox Alkali business.



**Notes:**

*Lost time injury* = An injury that prevents the individual from returning to work the next day  
*Disabling injury* = Either a lost time injury or a restricted work injury (when the individual can return to work but cannot perform his/her previously assigned duties)

## GRI 400: Social Topics

*Recordable Injury* = A disabling injury or a medical treatment case (when the individual requires more than basic first aid treatment but can return to work)

*LTIFR* = (# of lost time injuries / total hours worked) x 200,000

*DIFR* = (# of disabling injuries / total hours worked) x 200,000

*TRIFR* = (# of total recordable injuries / total hours worked) x 200,000

In 2016, all injury frequency rates (lost time, disabling, and total recordable) were the lowest in history for Tronox TiO<sub>2</sub> (employees and contractors combined). The Alkali business experienced some challenges in terms of injury frequency rates, as it was not able to record improved rates compared to the exceptional 2015 safety performance.

Recordable Injuries	2014			2015			2016		
	Employees	Contractors	Total	Employees	Contractors	Total	Employees	Contractors	Total
Fatalities	0	1	1	0	0	0	1	0	1
Lost Time Incidents	10	5	15	7	12	19	11	3	14
Restricted Work Cases	4	4	8	7	9	16	6	5	11
<b>DISABLING INJURIES</b>	<b>14</b>	<b>10</b>	<b>24</b>	<b>14</b>	<b>21</b>	<b>35</b>	<b>18</b>	<b>8</b>	<b>26</b>
Medical Treatment Cases	22	14	36	15	15	30	10	7	17
Reversible Occupational Health Illnesses	0	0	0	0	0	0	0	0	0
<b>RECORDABLE INJURIES</b>	<b>36</b>	<b>24</b>	<b>60</b>	<b>29</b>	<b>36</b>	<b>65</b>	<b>28</b>	<b>15</b>	<b>43</b>

### Safety Vision and LIFE Saving Rules

Our Global Safety Vision and Tronox LIFE (Life-altering Incident and Fatal Event) Saving Rules, introduced in 2015, provide a foundational view of how employees and contractors must operate and act. And it lays out our safety policy and illustrates what it means to live safety at Tronox at every level of the company. The set of LIFE Rules is a critical preventative tool, and it is an unconditional obligation that applies to everyone at a Tronox facility.

### Worker Fatality

On December 29, 2016, a worker fatality occurred at our KZN Mineral Separation Plant (MSP) in South Africa. On the top floor of the MSP, a Tronox employee fell through a hole created after a section of grated flooring had given way. The cause of the incident was investigated by internal and third-party engineering experts. Subsequent to this tragic event, to prevent similar accidents, new structural standards were implemented at all Tronox facilities that utilize raised grated flooring.

### NIOSH – Mine Safety and Health Technology Innovation Award for Industrial Minerals

The National Institute for Occupational Safety and Health (NIOSH) presented Tronox Alkali with the Mine Safety and Health Technology Innovation Award. The honor recognizes mining companies that have made an extraordinary effort to apply technology in innovative ways, above and beyond mandatory requirements, to improve mine worker safety and health.

# GRI 400: Social Topics

“It is my pleasure to present Tronox Alkali this award for the implementation of a dry scrubbing system for the reduction of airborne dust in the mine,” said Jeffrey Welsh, director of mining science and technology for NIOSH.

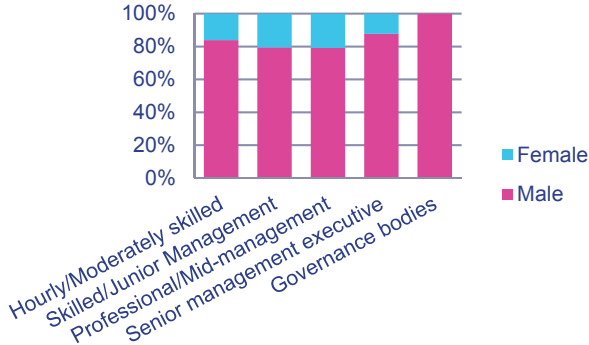
Tronox Alkali Mine Engineer Arash Habibi recognized that the airborne dust generated when trona ore is handled or transported can be a hazard for our miners. Focusing on the conveyor transfer point as a significant airborne dust contributor, Arash, along with the Mine Engineering Technology Team working with other mine departments, deployed a dry scrubber system that separates the dust particles from the air and uses an automated compressed air pulse system to clean the filters. The removed dust is collected in a hopper where it is mixed with water and then pumped to a mine sump and sent to process as solution mine feed.

“The system has delivered favorable results, and plans are underway to have a second system operational soon,” Arash said.

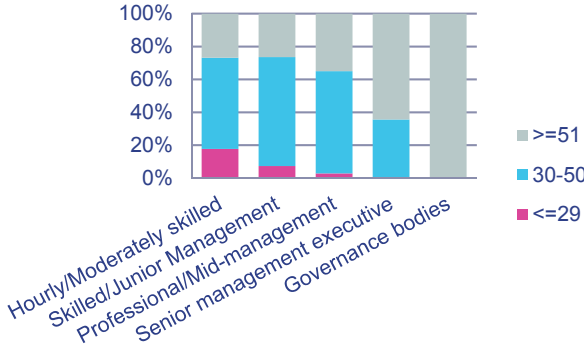
## 405-1: Diversity of governance bodies and employees

The below graphs provide information on the composition of our employee categories, including that of the Board of Directors (governance bodies category), as of December 31, 2016.

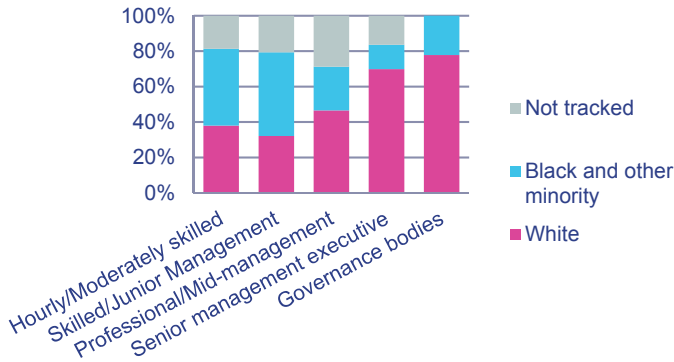
**Workforce representation by gender**  
(as of December 31, 2016)



**Workforce representation by age**  
(as of December 31, 2016)



**Workforce representation by minorities**  
(as of December 31, 2016)



### **G4-MM5 Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities**

Two of our operations (KZN Sands, South Africa, and Northern Operations, Australia) are in or adjacent to Indigenous Peoples' territories. A total of nine Indigenous Peoples' territories have been identified, of which six are in or adjacent to KZN Sands, and three are in or adjacent to Northern Operations. Tronox has formal agreements with all nine communities.

#### **KZN Sands**

Formal benefit agreements (e.g., Local Community Procurement Forum) with six Traditional Authorities (Inkosi) in KwaZulu-Natal, South Africa, form part of the KZN Sands Local Economic Development Projects, which are in line with the KZN Sands Social and Labor Plan (SLP). The SLP is a compliance document initiated through a legislative framework called Mineral and Petroleum Resource Development Act (MPRDA). Each mining house has to submit its SLP to the government every five years to indicate the type of Local Economic Development Projects that the company will embark on for the duration of that five-year period. In this plan, the names and communities are committed along with the budget to be spent.

*Various Indigenous Territories KZN Sands is adjacent to, or on, include:*

- Dube Traditional Authority
- Somopho Traditional Authority
- Mkhwanazi Traditional Authority
- Macambini Traditional Authority
- Nzuza Traditional Authority
- Ogagwini Traditional Authority
- Madlebe Traditional Authority

#### **Northern Operations**

The Cooljarloo Mine site and Chandala processing plant in Western Australia are exempt from Indigenous Land Access Agreements, as the tenements were granted prior to the introduction of Australia's Native Title Act.

Tenements granted subsequent to the original tenements, however, are subject to Land Access Agreements. These include Falcon, Dongara Project, Cooljarloo West and an additional tenement to the south of Cooljarloo, which has been rolled into the Cooljarloo West Agreement.

All sites except the Dongara site are on Yued Native Title Group's land, and Dongara is on the Amangu Native Title Group's land.

## GRI 400: Social Topics

Northern Operations is adjacent to or on various indigenous territories, which include the following formal agreements:

*Falcon Indigenous Territory (all completed now):*

- Work Ready training program
- Educational scholarships
- Apprenticeships
- Traineeships
- Cross-cultural awareness training for Tronox staff
- Business opportunities

*Dongara Project Indigenous Territory:*

- Signing fee (cash component)
- Establishment of administration center
- Workshops and training
- Educational scholarships
- Apprenticeships
- Traineeships
- Work Ready Program
- Business opportunities and support of business establishment
- Cross-cultural awareness training

*Cooljarloo West Indigenous Territory:*

- Signing fee (cash component)
- Educational scholarships
- Apprenticeships
- Traineeships
- Health fund
- Sporting and recreational fund
- Mentor program
- Indigenous community center
- Mogumber training facility
- Business/leadership training

# GRI 400: Social Topics

## 413-1: Operations with local community engagement, impact assessments, and development programs

Below is a summary of the implementation levels of different engagements, assessments, and programs at our operations.

	Botlek	Kwinana	Hamilton	Henderson	KZN Sands	Namakwa Sands	Northern Operations	Green River
Social impact assessments, including gender impact assessments, based on participatory processes	●	●	●	●	●	●	○	●
Environmental impact assessments and ongoing monitoring	●	●	●	●	●	●	●	●
Public disclosure of results of environmental and social impact assessments	◐	●	●	●	●	●	●	●
Local community development programs based on local communities' needs	●	◐	●	●	●	●	●	●
Stakeholder engagement plans based on stakeholder mapping	◐	●	●	●	●	●	●	●
Broad based local community consultation committees and processes that include vulnerable groups	●	●	●	●	●	●	●	●
Works councils, occupational health and safety committees and other employee representation bodies to deal with impacts	●	●	●	●	●	●	●	●
Formal local community grievance processes	●	●	●	●	●	●	●	●

- Fully implemented ●
- Partly implemented ◐
- Not implemented ○

### Participation in Matzikama Municipality Apprentice Initiative

Tronox Namakwa Sands (South Africa) participates in the Matzikama Municipality Apprentice Initiative. The local Matzikama municipality has partnered with the Mining Qualifications Authority (MQA) and National Skills Fund (NSF) to establish a satellite MQA-accredited training facility in Vredendal to train local unemployed youth in the welding, diesel mechanic, and electrical trades, and create qualified, skilled, and employable candidates.

Namakwa Sands has agreed to be a host employer to provide the mandatory practical on-the-job training exposure required for these apprentices to qualify as artisans. Namakwa Sands is



## GRI 400: Social Topics

host to 14 electrical and 18 welder apprentices, who form part of two alternating groups based at the mine site and Mineral Separation Plant (MSP).

Jacques Mattheus and Burnedett Peddie, welder apprentices currently based at the MSP under the guidance of Boilermaker Hentie Goosen, have taken advantage of this opportunity. They assisted in the fabrication and refurbishment of two production-related fan cowlings.

This equipment is vital to the engineering availability of the MSP plant. Because of the application in which these fans are used, removing the off gas from the material drier, there is a high abrasion factor, which causes excessive wear and tear and ultimately the failure of the steel cowling from being “sand blasted” away.

Factory-replaced cowlings are expensive and do not last as long as expected. In an attempt to improve lifespan, and reduce downtime and replacement costs, the MSP boilermakers implemented an initiative to refurbish the equipment by replacing the worn areas with a thicker plate. The effort is currently under test and showing promising results.

During the project, Jacques and Burnedett gained extensive hands-on experience in trade skills such as welding, gas cutting, and rolling and bending. They were responsible for removing the damaged areas of the fan cowlings, preparing the remainder, fabricating and installing the replacement parts and then doing the finishing to the repaired cowlings under Hentie’s direction. Building and refurbishing these fans in-house substantially reduces the restoration expense.

### **Fairbreeze Mine**

In 2016, Tronox commissioned its new 419-hectare Fairbreeze Mine in Mtunzini, KwaZulu-Natal, South Africa.

Tronox is committed to the sustainable and responsible development and operation of Fairbreeze. The company values its relationship with the tribal authorities and local communities, and will continue to engage and partner with them to support the economic development of the surrounding areas.

A major achievement of the Tronox project is the close cooperation with the surrounding communities. The project has tremendous support from these communities, which, in turn, benefit from the supply of services and labor to build and operate the mine. Roughly 45 percent of the 4,200 workers who built the Fairbreeze mine live in the communities and tribal authorities surrounding the site.

During the construction of the mine, the company partnered with four tribal authorities – Mkhwanazi, Ogagwini, Nzuzza, and Mathaba – to develop a skills development and training program for residents of the surrounding area. Once local residents successfully completed the skills development training, where they learned welding, carpentry, electrician and other skills, Tronox employed every student. These new employees not only earned jobs, but also developed new skills which will lead to knowledge transfers that will benefit the local economy. This job training initiative was further supported by joint ventures and strategic alliances designed to empower local communities to become self-sufficient beyond the project lifetime. In 2016, more than 200 individuals received skills training and employment as a result of these programs.

# South African Mining Charter Scorecard

Element	Description	Measure	Weighting	Compliance target by 2016	KZN Sands performance 2016	Score	Namakwa Sands performance 2016	Score
1. Reporting	Has the company reported level of compliance with the Charter for the calendar year	Documentary proof of receipt from the department	Y/N	100%	100.0%		100.0%	
2. Ownership	Minimum target for effective HDSA ownership	Meaningful economic participation	Y/N	26%	30.3%		31.1%	
		Full shareholder rights	Y/N	26%	30.3%		31.1%	
3. Procurement	Procurement Spent on BEE entity	Capital Goods	5%	40%	54.0%		51.8%	
		Services	5%	70%	69.4%		55.8%	
		Consumable Goods	2%	50%	57.9%		65.4%	
	Multinational suppliers contribution to social fund	Annual spend on procurement from multinational suppliers	3%	0.5%	0.0%		0.0%	
4. Employment Equity (Excl White Females)	Diversification of the workplace to reflect the country's demographics to attain competitiveness	Top Management (Board)	3%	40%	50.0%		16.7%	
		Senior Management (Exco)	4%	40%	66.7%		22.2%	
		Middle Management	3%	40%	51.4%		31.4%	
		Junior Management	1%	40%	67.1%		64.5%	
		Core Skills	5%	40%	91.2%		86.9%	
5. Human Resources Development (Excl White Females)	Development of requisite skills, incl. support for South African based research and development initiatives intended to develop solutions in exploration, mining, processing, technology efficiency (energy and water use in mining), beneficiation as well as environmental conservation	HRD expenditure as percentage of total annual payroll (excl. mandatory skills development levy)	25%	5%	1.0%		2.34%	
6. Housing and living conditions	Conversion and upgrading of hostels to attain the occupancy rate of one person per room.	Percentage reduction of occupancy rate towards 2014 target (1 person per room)	Y/N	100%	NA		NA	
	Conversion and upgrading of hostels into family units	Percentage conversion of hostels into family units	Y/N	100%	NA		NA	
7. Mine Community Development	Conduct ethnographic community consultative and collaborative processes to delineate community needs analysis	Implement approved community projects	5%	Up-to-date project implementation	100.0%		100.0%	
	Project implementation	Percentage of Net Profit After Tax (NPAT) spent on community development	10%	1%	100.0%		0.7%	
8. Sustainable Development and Growth	Improvement of the industry's environmental management	Implement approved environmental management programs (EMPs)	12%	Annual progress achieved against approved EMPs	100.0%		100.0%	
	Improvement of the industry's mine health and safety	Implementation of tripartite action plan on health and safety	12%	Annual progress achieved against commitments in tripartite action plan	100.0%		100.0%	
	Utilisation of South African based research facilities for analysis of samples across mining value	Percentage of samples in South African facilities	5%	100%	100.0%		99.6%	

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A Brighter Future – From the Ground Up

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