

# Base Titanium's total economic and tax contributions in Kenya

Prepared for Base Titanium

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## Executive Summary

This report quantifies the economic and tax benefits of Base Titanium's Kwale Mineral Sands Project ("the Project") in Kenya. The report analyses Base Titanium's ("Base") past economic and tax contributions related to the mine's development and operations from November 2011 through 2015. In addition, the report presents forward-looking estimates of Base's projected full-scale operations in FY2016.

Base's total economic and tax contributions extend beyond the company's investments and operations at the mine to include additional activity supported by purchases from domestic suppliers and consumer spending by employees. To express this, Base's total economic and tax contributions are classified as direct, indirect, and induced effects. These contributions are measured in terms of GDP or value added (the total value of labour income, taxes, and gross operating surplus), gross economic output (the sum of GDP and intermediate inputs), labour income (value of wages and benefits), employment (total full-time and part-time employees), and government tax revenues in Kenya.

- **Direct contributions** related to the mine's construction are the temporary construction and engineering jobs in place during the investment period (2012-2014). Direct contributions related to projected operations during FY2016 include the number of Base employees as well as Base's contribution to Kenyan GDP.
- **Indirect contributions** related to Base's capital expenditures and operations are the result of purchases from Kenyan suppliers (e.g. construction materials, utilities, petroleum, professional services) and the subsequent rounds of supplier purchases in the Kenyan economy.
- **Induced contributions** are related to consumer spending by Base's employees, workers employed during the construction period, and employees of suppliers in the indirect impact. As these employees purchase goods and services from Kenyan grocers, farmers, and retailers, they contribute further to Kenyan GDP and employment.

The results estimated in this report are based on investment and operations data provided by Base and industry averages using publicly available data describing industry relationships in Kenya in 2003. Data on Base's capital investments and expected operations were provided by Base management and have not been audited or independently verified by EY.

### ***One-time contributions related to mine construction & development (2012-2014)***

Contributions related to capital expenditures are referred to as "one-time" impacts because they do not reoccur over the mine's life. Base's investments supported temporary jobs and incomes during the construction period.

- **Base's US\$310 million capital investment generated nearly US\$190 million of economic output, of which nearly US\$70 million was GDP over a two-year period.** Between 2012 and 2014, Base invested a total of US\$310 million (KES 26.4 billion) to construct and equip the mine and build related infrastructure. This investment resulted in a

one-time total contribution of US\$69.5 million (KES 5.9 billion) to Kenyan GDP and US\$7.9 million (KES 670.5 million) in government revenues.

- **Base's capital projects supported approximately 3,285 direct jobs, 1,314 of which were filled by workers from the local community.** The temporary employment impact is described in terms of the total number of jobs over the construction period lasting an average of one year each ("one-year jobs"). During construction, Base's capital expenditures supported a total of 8,255 one-year jobs (average of 4,127 jobs per year for two years).

### ***Snapshot of projected future annual contributions related to Base's FY2016 operations***

Projected contributions related to FY2016 operations are referred to as "ongoing" or "annual". Figures in this report are likely to change over the mine's operation life as mineral prices fluctuate based on market factors. Production throughput and output will vary over the life of the mine in accordance with the ore body composition and plant design. However, the FY2016 figures provide a snapshot of current operations and an indication of the Project's current and future contributions.

- **In FY2016, Base will employ 642 workers directly at the Kwale project, equivalent to 5% of existing mining sector employment in 2014.<sup>1</sup>** Base will directly employ 642 workers in FY2016 and will support an additional 2,790 indirect and induced employees in the broader economy (1,429 indirect and 1,361 induced). The overall employment multiplier of 5.3 can be interpreted to mean that, for every 10 direct Base employee jobs, an additional 43 jobs will be supported elsewhere in the Kenyan economy – 53 jobs in total.
- **Base's FY2016 non-labour operational spend will be an estimated US\$44.2 million (KES 4.5 billion).** Of this, an estimated 87% (US\$37 million, KES 3.7 billion) will be purchased from Kenyan businesses.
- **Base's expenditure with Kenyan suppliers generates indirect employment in the local economy, mostly concentrated in the services, utilities and construction sectors.** A total of 1,429 indirect jobs will be supported by Base's operations, including 388 jobs in the finance and professional sector, 305 jobs in the utilities and construction sectors, and 256 jobs in the non-durable manufacturing sector.
- **In FY2016, Base's Kenyan national employees will earn an annual average of US\$9,200 (KES 927,400) per worker.** This is approximately 1.5 times the average wage per worker in the Kenyan economy (US\$6,300; KES 637,900).
- ▶ **Spending by Base's employees and Base's suppliers generates induced employment in the Kenyan economy.** A total of 1,361 induced jobs are supported. Most of these induced jobs are concentrated in the personal and household services, non-durable manufacturing, and agriculture sectors.

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<sup>1</sup> According to the Kenya National Bureau of Statistics, mining sector employment totaled 12,800 in 2014.

## Base Titanium's economic contributions in Kenya

- ▶ **Base's projected operations in FY2016 will generate a total of US\$186.4 million (KES 18.8 billion) of economic output.** Of this total, Base's direct economic output (or revenue) will be US\$119 (KES 12.0 billion), meaning that Base's operations will support US\$1.57 in total economic output per dollar of revenue. The remaining US\$67.4 million (KES 6.8 billion) will be indirectly generated or induced by further economic activity that is stimulated by Base's direct operations in Kenya.
- ▶ **Base's projected operations in FY2016 will directly or indirectly support US\$108.5 million (KES 11.0 billion) of GDP, equivalent to 0.1% of Kenya's 2014 total GDP.** Of this amount, US\$14.7 million (KES 1.5 billion) will be earned directly by Base employees as labour income and US\$13.5 million (KES 1.4 billion) is labour income to indirect and induced employees.
- ▶ **Base's operations will directly contribute an estimated US\$1.1 billion of GDP to Kenya's economy from 2016 to 2026.** Assuming that Base maintains FY2016 operating levels over the remaining life of the mine (annual GDP contribution of US\$108.5 million; KES 11.0 billion), Base's future operations will directly contribute an approximate total of US\$1,085 million (KES 110 billion) of GDP over 10 years, through 2026.
- ▶ **In FY2016, Base's projected operations will generate US\$28.2 million (KES 2.8 billion) in employee compensation for workers at Base and Kenyan businesses.** Of this total, US\$14.7 million (KES 1.5 billion) is what Base will pay to its employees. The remaining US\$13.5 million (KES 1.4 billion) will be paid to employees of Kenyan businesses, including Base's local suppliers.
- ▶ **Base's total tax contribution will amount to an estimated US\$19.2 million (KES 1.9 billion) in FY2016.** Direct, indirect, and induced economic activity related to Base's projected operations will generate an estimated total of US\$19.2 million (KES 1.9 billion) in FY2016 Kenyan taxes, including US\$14.3 million (KES 1.5 billion) of taxes paid directly by Base and Base's employees. The total tax contribution includes taxes paid by both businesses and individuals on their income, purchases, and property.

**Table ES-1. Base's total economic and tax contributions in Kenya**  
USD millions; Number of full and part-time jobs

	Direct contribution	Indirect contribution (supplier spending)	Induced contribution (employee spending)	Total contribution
<b>Mine &amp; infrastructure development, 2012-2014</b>				
One-year jobs	3,285	3,184	1,785	8,255
Employee compensation	US\$7.0	US\$6.9	US\$5.0	US\$18.9
GDP	31.9	26.6	11.1	69.5
Economic output	106.3	61.3	22.3	189.9
Tax revenues	3.2	2.9	1.7	7.9
<b>Base operations, FY2016</b>				
Employment	642	1,429	1,361	3,432
Employee compensation	\$14.7	\$7.8	\$5.8	\$28.2
GDP	\$74.8	\$21.0	\$12.7	\$108.5
Economic output	\$119.0	\$41.8	\$25.6	\$186.4
Tax revenues	\$14.3	\$2.9	\$2.0	\$19.2

**Table ES-2. Base's total economic and tax contributions in Kenya**  
KES millions; Number of full and part-time jobs

	Direct contribution	Indirect contribution (supplier spending)	Induced contribution (employee spending)	Total contribution
<b>Mine &amp; infrastructure development, 2012-2014</b>				
One-year jobs	3,285	3,184	1,785	8,255
Employee compensation	KES 596.8	KES 586.7	KES 426.9	KES 1,610.4
GDP	2,710.0	2,257.5	941.1	5,908.6
Economic output	9,033.4	5,207.6	1,897.0	16,138.0
Tax revenues	274.3	249.5	146.7	670.5
<b>Projected operations, FY2016</b>				
Employment	642	1,429	1,361	3,432
Employee compensation	KES 1,482.1	KES 784.0	KES 581.3	KES 2,847.4
GDP	7,555.4	2,118.8	1,283.9	10,958.1
Economic output	12,020.9	4,225.5	2,586.1	18,832.5
Tax revenues	1,446.6	288.7	199.8	1,935.2

Note: Figures may not appear to sum due to rounding.

Source: EY analysis using International Food Policy Research Institute ("IFPRI") model, data provided by Base Titanium management and national data from the Kenya National Bureau of Statistics ("KNBS").

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## 1. Introduction & background on Base's projected operations

Compared to other countries in the region, Kenya has not developed a robust mining sector. Base Titanium Limited (Base), the Kenyan subsidiary of Australian and UK-listed Base Resources, will play a significant role in the growth and development of Kenya's mining sector through its mineral sands mining operations in Kwale.

Given Base's projected annual production levels, Kenya will become one of the world's top producers of titanium products. These products will be exported for uses across a broad range of industrial applications, primarily as pigments.

Construction began on Base's Kwale Mineral Sands project ("the Project") in November 2011, with \$310 million invested in mine and related infrastructure development over the following two years. Base reached its full-scale operations at the Kwale mine in FY2015 (fiscal year ending June 30<sup>th</sup>, 2015), and anticipates sustaining this level of production over the next eleven years, with mine closure in 2026.

The economic contributions presented in this report represent the one-time economic impacts related to Base's capital investments as well as the projected impacts related to Base's annual operations during FY2016, which provide a snapshot of anticipated annual operations over the mine's life.

Data on Base's capital investments and expected operations were provided by Base management and have not been audited or independently verified by EY.

### **Highlights of Base's direct economic and tax contributions include:**

- ▶ **Capital investments.** Base invested \$310 million to develop the mine and related infrastructure ("legacy projects") from 2011 through 2013. Legacy projects accounted for \$61 million (20%) of spending to develop a port facility, roads, a dam and water supply boreholes, and electrical grid upgrades that will continue to function beyond the mine's anticipated closure in 2026.
- ▶ **Projected operating revenue and contribution to GDP, FY2016.** Base's operations will directly contribute US\$74.8 million (KES 7.6 billion) in Kenyan gross domestic product ("GDP") in FY2016. Assuming that Base maintains FY2016 operating levels over the remaining life of the mine, Base's future operations will directly contribute an approximate total of US\$748 million (KES 75.6 billion) of GDP over 10 years.
- ▶ **Projected employment, FY2016.** In FY2016, Base's Kwale Project will employ a total of 642 workers – 94% of these workers will be Kenyan.
- ▶ **Projected employee compensation, FY2016.** The average annual wage per worker expected to be received by Kenyan nationals is US\$9,200 (KES 927,400), which is approximately 40% higher than the national average (US\$6,300 in 2014). Average wages at

## Base Titanium's economic contributions in Kenya

Base are more than two and half times those paid in the mining sector in Kenya in 2014 (US\$3,500, KES 307,000).<sup>2</sup>

- ▶ **Projected tax payments, FY2016.** In FY2016, Base and its employees expect to pay approximately US\$14.3 million (KES 1.4 billion) in Kenyan taxes, including US\$6.0 million (KES 601 million) of mineral royalties, US\$4.1 million (KES 414 million) in Pay As You Earn (“PAYE”) income tax on behalf of employees, US\$1.5 million (KES 155.3 million) of interest withholding taxes, and over US\$212,000 (KES 21.4 million) in environmental fees. Using current price and cost projections, Base estimates it will pay approximately US\$236 million (KES 23.8 billion) in Kenyan taxes, including US\$116 million (KES 11.7 billion) in royalties, US\$70 million (KES 7.1 billion) in corporate tax, and approximately US\$50 million (KES 5.1 billion) in PAYE on behalf of employees from 2013 to 2026.<sup>3</sup>

### 1.1 Base's capital investments, 2012-2014

Between November 2011 and November 2013, Base invested US\$310 million (KES 26.4 billion) to develop its Kenyan mining operations. This amount included US\$249 million (KES 21.2 billion) to construct and outfit the Kwale mine and US\$61 million for development of project infrastructure. Of the US\$310 million of investment to construct and equip the mine, US\$106 million (KES 9.0 billion) was for construction, US\$56 million (KES 4.8 billion) was for engineering and design, US\$41 million (KES 3.5 billion) was for equipment, and US\$107 million (KES 9.1 billion) was for miscellaneous other operations.

In addition to direct investment at the mine site, Base also invested in several infrastructure projects, which are referred to by Base as “legacy projects” because they will remain as economic assets upon closure of the mine. These projects included the Mukurumudzi Dam and boreholes (US\$14.5 million; KES 1.2 billion), electrical grid upgrades and expansions (US\$5.7 million), an access road to the mine (US\$6.6 million; KES 561 million) and a port and ship loading facility in Likoni, on the south bank of the Mombasa shipping channel (US\$34.0 million; KES 2.9 billion). Base's expenditures on mine access road development – US\$6.6 million (KES 561 million) – equates to approximately 1% of Kenya's national expenditures on road infrastructure during FY2014.<sup>4</sup>

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<sup>2</sup> It is important to note that the wages shown are for 2014, reflecting the most recent data reported by the Kenya National Bureau of Statistics (KNBS).

<sup>3</sup> Projections provided by Base management in USD. Current exchange rate applied to estimate KES value.

<sup>4</sup> In FY2014, KNBS reported that KES 94.7 billion (US\$1.1 billion) was spent in Kenya on the development of roads, and increase of 47% from the prior year. Source: Data from the Kenya Ministry of Transport and Infrastructure, as reported in the KNBS “2015 Statistical Abstract.”

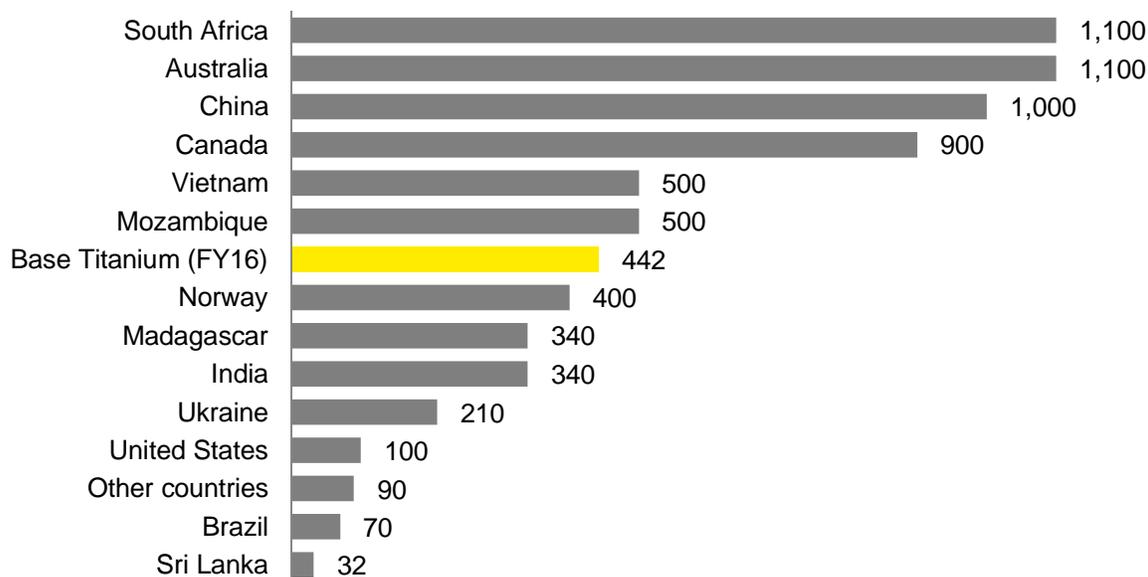
## 1.2 Projected operating revenue & contribution to GDP, FY2016

Base’s Kwale Project is Kenya’s first large-scale modern mining venture focused on exporting minerals to international markets.<sup>5</sup> Prior to the Kwale Project, Kenya’s mining sector produced soda ash, fluorspar, gemstones, and salt.<sup>6</sup> Base’s anticipated revenues will increase mining sector economic output by 34% and will more than double the value of minerals exported from Kenya.<sup>7</sup> Assuming all of Base’s products will be exported, FY2016 production levels would have added 2.6% to Kenya’s total domestic exports (all commodities) in 2014.<sup>8</sup>

Base will produce three products at Kwale – ilmenite, rutile, and zircon. Ilmenite and rutile are two forms of titanium-containing minerals, while zircon, a zirconium-containing mineral, is an additional product mined from the same sands as ilmenite and rutile. Prior to Base’s investment, Kenya was not in the top 15 countries for either ilmenite or rutile production. However, based on global production in 2014, Base will become the seventh largest ilmenite producer and the third largest rutile producer globally, indicating that Base’s investment will make Kenya a major producer in the international titanium industry. See Figures 1 and 2.

**Figure 1. Global ilmenite production, 2014**

Thousands of tonnes of ilmenite



Source: Global production data from USGS Titanium Mineral Concentrates, 2015. Base production projections provided by Base management.

<sup>5</sup> In 2014, Kenyan miners exported KES 7.8 billion (US\$89 million; 2% of total commodity exports) of soda ash. Source: KNBS. “Kenya Facts and Figures 2015.” Republic of Kenya, 2015.

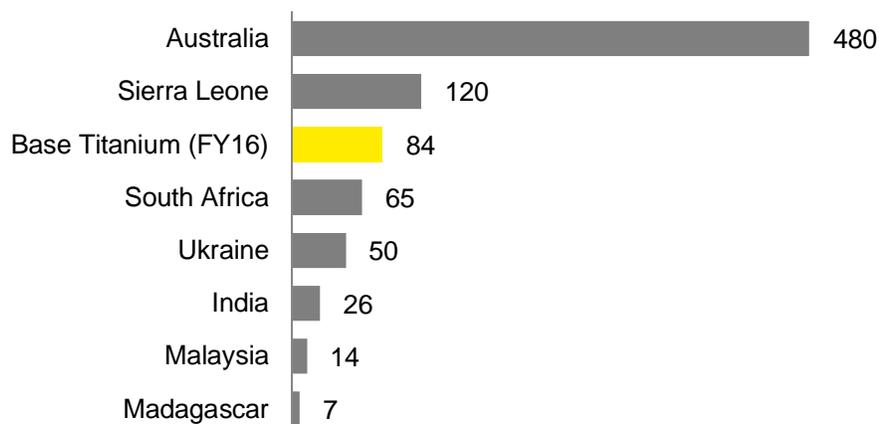
<sup>6</sup> KNBS. “2013 Statistical Abstract.” Republic of Kenya, 2014.

<sup>7</sup> Based on mining and quarrying sector output at basic prices in 2012, as reported in the national accounts by KNBS. According to KNBS, cement production is included in the manufacturing sector, as per the ISIC Revision 4 industry classifications.

<sup>8</sup> Exports totaled KES 460.6 billion in 2014. See: KNBS. “Kenya Facts and Figures 2015.” Republic of Kenya, 2015.

**Figure 2. Global rutile production, 2014**

Thousands of tonnes rutile



Source: Global production data from USGS Titanium Mineral Concentrates, 2015. Base production projections provided by Base management.

Base's FY2016 total revenue will be US\$119 million (KES 12.0 billion), generated by sales that will exceed its projected production in FY2016 as they will include inventory sales. Table 1 shows Base's anticipated production volumes and revenues, by product. The average prices per tonne reflect differences in the quantity of titanium dioxide of each product. Ilmenite, while much more abundant than rutile, has a lower concentration of titanium dioxide (~55%) and is usually reserved for lower-quality applications. Rutile typically contains 90-95% titanium dioxide and is reserved for higher-quality applications such as the production of titanium alloys.

**Table 1. Base's projected production and sales, FY2016**

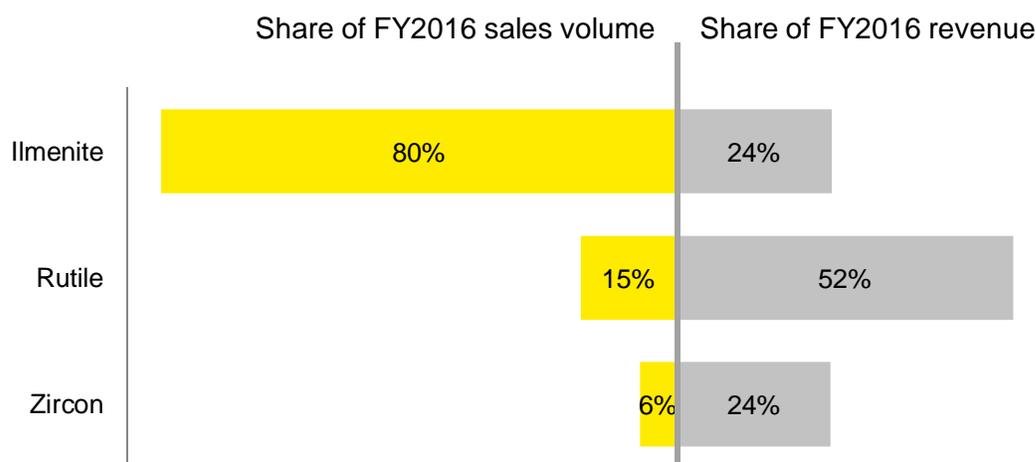
	<b>Ilmenite</b>	<b>Rutile</b>	<b>Zircon</b>	<b>Total</b>
Production (tonnes)	441,744	83,894	30,521	556,159
Sales (tonnes)	437,257	80,986	30,646	548,888
Revenue	US\$28.6m KES 2.9b	US\$62.0m KES 6.3b	US\$28.4m KES 2.9b	US\$119.0m KES 12.0b
Average revenue per tonne	\$65 KES 6,602	\$766 KES 77,338	\$927 KES 93,673	\$217 KES 21,900

Note: Figures may not appear to sum due to rounding.

Source: Data provided by Base management and are projections based on modelling. Prices (and therefore revenue) are subject to change in line with market forces.

As illustrated in Figure 3, Base anticipates that ilmenite will comprise 80% of exported tonnage and 24% of annual revenues, implying average revenue of US\$65 per tonne (Table 1). By comparison, rutile sales will comprise 15% of exported tonnage and 52% of annual revenues, or an implied US\$766 per tonne.

**Figure 3. Share breakdown of Base’s production and revenues**



Source: Data provided by Base management.

As shown in Table 2, Base’s revenues translate into economic activity in Kenya either as purchases from domestic suppliers or contribution to Kenyan GDP. Of Base’s total projected revenue of US\$119 million (KES 12.0 billion), US\$44.2 million (KES 4.5 billion) will be spent on supplier purchases, which include both imports and domestically supplied goods or services, and US\$74.8 million (KES 7.6 billion) will contribute to Kenyan GDP. GDP includes all payments to labour and capital, including employee compensation, indirect business taxes (such as customs and import duties), and gross operating surplus. GDP is also known as value added. Of the US\$74.8 million of Base’s direct contribution to Kenyan GDP, US\$14.7 million (KES 1.5 billion) will be for employee compensation and US\$8.8 million (KES 886.9 million) will be Base’s tax payments to the Kenyan government. Base’s direct tax contribution includes an additional US\$5.5 million (KES 559.6 million) of taxes paid by Base’s employees, of which US\$4.1 million (KES 414.1 million) is PAYE income tax withheld and remitted by Base (see Section 1.4).

**Table 2. Base’s payments to stakeholders, FY2016**

	Amount (USD millions)	Amount (KES millions)	Share of revenue
<b>GDP</b>			
Taxes	US\$8.8	KES 886.9	7%
Employees (wages & benefits)	14.7	1,482.1	12%
Other components of GDP	51.3	5,186.4	43%
<b>Total GDP</b>	74.8	7,555.4	63%
<b>Supplier purchases</b>	44.2	4,465.5	37%
<b>Base’s projected FY2016 revenue</b>	<b>US\$119.0</b>	<b>KES 12,020.9</b>	<b>100%</b>

Note: Figures may not appear to sum due to rounding. “Other components of GDP” includes all other payments to labour and capital made by Base, including consumption of fixed capital (depreciation). Supplier purchases include both domestically supplied goods and services and imports.

Source: EY analysis of data provided by Base management.

### 1.3 Projected employment and employee compensation, FY2016

In FY2016, Base will directly employ 642 workers at the Kwale Project site –equivalent to 5% of 2014 Kenyan mining sector employment.<sup>9</sup>

Of Base's anticipated 642 employees in FY2016, 94% (602 employees) will be Kenyan nationals. This ratio is comparable to mature mining operations in Tanzania and Ghana, two countries with developed mining sectors and local employment capacity. As reported in a study conducted for the Tanzania Ministry of Mines, on average between 2004 and 2010, Tanzanian nationals comprised 94% of total on-site employees at AngloGold's Geita gold mine.<sup>10</sup> EY found consistent levels for African Barrick Gold ("ABG") – where Tanzanian nationals averaged 91% of ABG's total workforce over the past five years.<sup>11</sup> A 2001 report on the mining sector in Ghana reported data from the Ghana Minerals Commission showing that expatriate workers made up 5% or less of the total workforce at mines operating in Ghana in 1995.<sup>12</sup>

Base anticipates that, over the next few years, the workforce will stabilize at 400 employees. The share of jobs at Base held by Kenyan nationals will increase over the next few years as knowledge transfer occurs. Base has already implemented succession and high-potential employee identification programs in order to identify future managers from local staff and will spend close to US\$1 million in FY2016 on various training programs.

In FY2016, employees of Base will earn a total of US\$14.7 million (KES 1.5 billion) in total compensation, averaging approximately US\$22,800 (KES 2.3 million) in annual compensation per worker. The total compensation is composed of wages, short-term incentive plans (bonuses), travel costs, and long-term incentive plans (performance rights to shares in ASX listed parent entity Base Resources Limited).

Figure 4 shows the expected composition of the total compensation for all employees in Base during FY2016 in terms of take-home wages, individual income tax withholding, and benefits (travel costs and long-term incentive plans), totalling US\$14.7 million (KES 1.5 billion). This figure also illustrates that the total compensation includes US\$4.1 million (KES 414.1 million) in individual income tax withholding.

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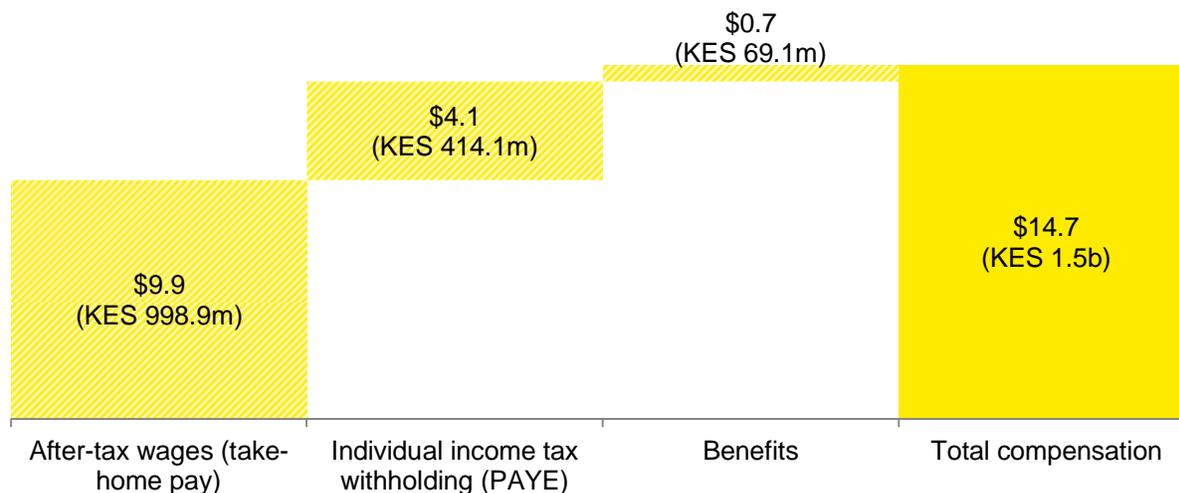
<sup>9</sup> KNBS, "2014 Statistical Abstract," Republic of Kenya, 2015.

<sup>10</sup> Tanzania Ministry of Energy and Minerals, "Tanzania Investment Benefits Study," September 2011.

<sup>11</sup> Ernst & Young (EY), "African Barrick Gold's total economic and tax contributions in Tanzania, 2013," July 2014.

<sup>12</sup> Report includes data for eight mines, of which six have data reported. Akabzaa, Thomas and Abdulai Darimani, "Impact of mining sector investment in Ghana: A study of the Tarkwa mining region," January 2001.

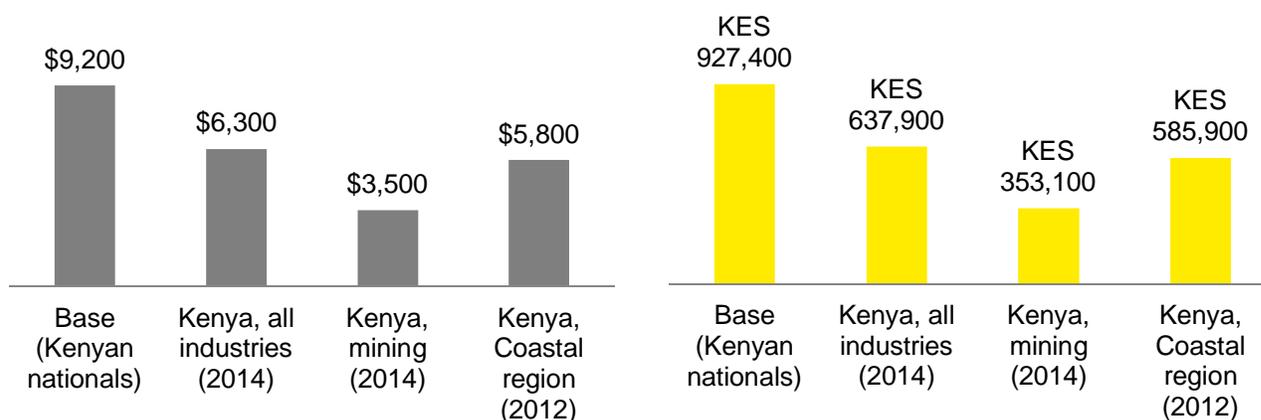
**Figure 4. Composition of Base's total compensation for all employees in FY2016**  
USD and KES millions



Note: Base's wages are in current dollars. The withholding tax may not reflect actual net income taxes after refunds. Source: Provided by Base management.

Base's Kenyan national employees will earn an annual average of US\$9,200 (KES 927,400) per worker. As illustrated in Figure 5, the average wage for Kenyan nationals working for Base is approximately 1.5 times the average wage per worker in the Kenyan economy (US\$6,300; KES 637,900). The average wage for employees in the coastal region where Kwale is located is US\$5,800 (KES 585,900) which Base exceeds by a factor of 1.6. Furthermore, Base's average wage per employee is nearly 2.6 times the average wage in the mining industry in 2014 (US\$3,500; KES 353,100).<sup>13</sup>

**Figure 5. Average compensation of Base employees, relative to economy average**



Average wages for Kenya are for 2014. Base's wages are in current dollars.

Source: Base data provided by Base management. Kenya employment and wages from KNBS "Statistical Abstract 2015".

<sup>13</sup> KNBS defines earnings or wages as "all cash payments, including basic salary, cost of living allowances, profit bonus, together with the value of rations and free board, and an estimate of the employer's contribution towards housing." See: KNBS, "2013 Statistical Abstract".

## 1.4 Projected tax payments, FY2016

Base's direct tax contribution includes both the business taxes paid directly by Base as well as the individual taxes paid by Base employees on their incomes and purchases. In FY2016, Base's direct tax contribution – which includes both taxes paid by Base and Base employees – will total US\$14.3 million (KES 1.4 billion) in FY2016, including US\$8.8 million (KES 886.9 million) paid by Base and US\$5.5 million (KES 559.6 million) paid by Base's employees. See Table 3.

The majority of taxes paid directly by Base will be royalty payments to the Kenyan government, totalling US\$6.0 million. In addition, Base will pay a total of US\$2.5 million (KES 252.9 million) in interest withholding tax (US\$1.5 million; KES 155.3 million) and customs duties (US\$966,000; KES 97.6 million). Other taxes include environmental fees and taxes paid on non-cash employee benefits such as vehicles, meals, and airtime.

Once Base has repaid its US\$310 million capital investment, tax receipts will increase as it starts to pay corporate tax. According to Base, the company expects to pay nearly US\$236 million (KES 23.8 billion) in taxes from 2013 to 2026, when estimated using current price projections.<sup>14</sup> Of this total, US\$116 million (KES 11.7 billion) will be paid in royalties, approximately US\$70 million (KES 7.1 billion) will be paid in corporate tax, and US\$50 million (KES 5.1 billion) will be paid in PAYE income taxes on behalf of employees from 2013 through 2026.

No value added tax ("VAT") is included in Base's direct tax contribution. Because all of Base's production is exported, the VAT on sales is zero-rated and all VAT paid on intermediate expenditures is eligible for refund.

In Kenya, resident and non-resident individuals working for resident companies must pay Kenyan income taxes. For this reason, foreign nationals working for Base also generate individual income taxes for the country. In FY2016, Base anticipates withholding nearly US\$4.1 million in individual income taxes under the PAYE system. This equates to an effective withholdings rate of 28% of employee compensation.<sup>15</sup>

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<sup>14</sup> Projections provided by Base management in USD. Current exchange rate applied to estimate KES value.

<sup>15</sup> In 2015, the top marginal individual income tax rate is 30% for income greater than KES 466,704 (approximately US\$4,620). Ernst & Young ("EY"), *Worldwide Personal Tax Guide (2015-2016)*, January 2015.

**Table 3. Distribution of estimated direct taxes paid by Base and Base employees, FY2016**

	Direct, Base	Direct, Base Employees	Total direct tax contribution
<b>USD thousands</b>			
Taxes on income			
Income tax from corporations	--	--	--
Mining royalties	US\$5,950.4	--	US\$5,950.4
Income tax from individuals	--	US\$4,100.0	4,100.0
Value Added Tax (VAT)	--	1,158.8	1,158.8
Other taxes on goods & services	--	255.4	255.4
Taxes on transactions	2,503.4	--	2,503.4
Other taxes	327.0	26.1	353.1
<b>Total tax collections</b>	<b>US\$8,780.7</b>	<b>US\$5,540.3</b>	<b>US\$14,321.0</b>
<b>KES millions</b>			
Taxes on income			
Income tax from corporations	--	--	--
Mining royalties	KES 601.0	--	KES 601.0
Income tax from individuals	--	KES 414.1	414.1
Value Added Tax (VAT)	--	117.1	117.1
Other taxes on goods & services	--	25.8	25.8
Taxes on transactions	252.9	0.0	252.9
Other taxes	33.0	2.6	35.7
<b>Total tax collections</b>	<b>KES 886.9</b>	<b>KES 559.6</b>	<b>KES 1,446.6</b>

Notes: Figures may not appear to sum due to rounding.

Source: Data provided by Base management.

## 1.5 Base's contributions to community development

In addition to the economic contributions through its operations, Base invests in the local community through its Community Development Management Plan ("CDMP"), which was formed in collaboration with local communities. Base's CDMP sets out parameters and priorities for ongoing community-related expenditures designed to provide sustainable benefits to local communities and improve the long term performance of Base's operations. Focus areas of the CDMP include education, health, livelihoods, and infrastructure.

As shown in Table 4, Base has either invested or plans to invest in FY2016 more than US\$9.0 million (KES 816.4 million) in the surrounding communities, of which US\$3.0 million (KES 301.3 million) was budgeted for FY2016 and US\$1.4 million (KES 119.0 million) was invested in projects completed prior to the start of mining operations. Current tentative projections are for Base to invest over US\$30 million (KES 2.6 billion) in community development during the 12-year life of the mine. Base classifies CDMP projects into four categories, described below: (1) community infrastructure, (2) community projects, (3) community health, and (4) scholarships.

**Community infrastructure** projects include borehole drilling, water pump installation, construction of health facilities and school facility upgrades or repairs. Base's expected contribution to community infrastructure projects by the end of FY2016 is approximately US\$4.8 million (KES 435 million), which is equivalent to 0.3% of the Kenyan government's FY2012 infrastructure development expenditures.<sup>16</sup> Base recently completed the US\$300,000 (KES 25.5 million) phase one construction of the Magaoni Health Centre. The centre treats up to 50 patients a day, serving nine surrounding villages, catering for 3,000 residents. Phase two of the project will include the construction of full surgical and maternity wards.

**Community projects** are programs focused on livelihood improvement through agriculture extension or small and medium-sized business development, raising awareness and providing education and training. Community projects include a program to improve life skills development behaviour of school children via participation in sports, donations of sports equipment to schools and football clubs, marine safety training, and agricultural training programs. Currently, community projects comprise nearly 31% of total expended or planned CDMP funds. With livelihood enhancement being a key component in Base's approach to sustainable development in the area, the proportion of future funds allocated to these projects will increase in future years. Since the majority of Kwale residents carry out farming as their primary livelihood activity, Base intends to focus on agricultural training projects which are intended to diversify current farming trends and link small-holder farmers with large industrial markets both nationally and internationally. To this end, Base has conducted trial programs with potato and cotton farmers in Kwale and is now planning for commercialization of these products.

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<sup>16</sup> In 2012, the Kenyan Government invested KES 159 billion (US\$1.5 billion) in infrastructure projects. See: The Kenya Institute for Public Policy Research and Analysis (KIPPRA), "Kenya Economic Report 2013," 2013.

**Community health initiatives** are designed to raise community health standards through constructing and equipping medical dispensaries and organizing health campaigns. Support of vaccination campaigns and the eradication of jiggers add to the health and wellbeing of local communities. Health initiatives comprised 9% of actual or planned community spending, at approximately US\$819,600 (KES 72.2 million). This amount is equivalent to 0.4% of total national public and private health expenditure in 2012 (US\$200 million; KES 17.0 billion).<sup>17</sup>

**Student scholarships** are awarded by Base to fund secondary and tertiary education. For FY2016, Base budgeted nearly US\$173,000 for student scholarships, in addition to the US\$42,400 (KES 3.6 million) previously awarded. To complement the Kwale County government's education funding, a scholarship process review was undertaken in consultation with local stakeholders to ensure scholarships and bursaries are issued in a fair and transparent manner. Other scholarship programs are also underway with local specialist NGOs in the area. Over 200 local students have been awarded scholarships to date.

**Table 4. Summary of Base's expended and planned CDMP project funding**

Item	Prior to FY2015, completed	Prior to FY2015, ongoing	FY2015 budgeted amount	FY2016 budgeted amount	Total expended & planned	Share of total
<b>USD thousands</b>						
Local infrastructure	US\$937.8	US\$462.4	US\$1,823.5	US\$1,592.5	US\$4,816.2	53%
Community projects	269.4	97.6	1,364.7	1,060.40	2,792.10	31%
Community health	149.9	7.1	505.9	156.7	819.6	9%
Scholarships	42.4	0.0	400.0	173.2	615.6	7%
<b>Total</b>	<b>US\$1,399.5</b>	<b>US\$567.1</b>	<b>US\$4,094.1</b>	<b>US\$2,982.8</b>	<b>US\$9,043.5</b>	<b>100%</b>
<b>KES thousands</b>						
Local infrastructure	KES 79,716	KES 39,300	KES 155,000	KES 160,859	KES 434,875	53%
Community projects	22,899	8,300	116,000	107,111	254,310	31%
Community health	12,740	600	43,000	15,828	72,168	9%
Scholarships	3,600	0	34,000	17,495	55,095	7%
<b>Total</b>	<b>KES 118,955</b>	<b>KES 48,200</b>	<b>KES 348,000</b>	<b>KES 301,293</b>	<b>KES 816,448</b>	<b>100%</b>

Notes: Figures may not appear to sum due to rounding. Expenditure amounts do not include planned expenditures for the Kwale region, which are currently unavailable. Amounts were translated to US dollars using an exchange rate of 1 USD = 85 KES in 2015 and 1 USD = 101 KES in 2016.

Source: EY analysis of Base's "Current and Planned Contributions by Base to Community Development 2014" report.

<sup>17</sup> Health care spending was calculated as health spending as a share of GDP (World Bank) to 2012 GDP (KNBS).

**Worker training.** Base has a program to build internal and external capacity through worker and youth training programs at the Project. Base has implemented graduate, internship, apprenticeship, and high school programs with more than 2,200 Kenyan participants expected over the life of mine. When space is available, Base opens its training sessions to community members, free of charge. Table 5 presents participation statistics for Base's training programs during FY2016, showing over 6,600 course completions during the year. In FY2016 Base will invest close to US\$1 million on training programs.

**Table 5. Base training and certificate program participation, FY2016**

<b>Course completions</b>	<b>FY2016</b>	<b>Share of FY2016</b>
Type of attendee		
Base employees	3,888	59%
Contractor employees	862	13%
Community members	720	11%
Graduate program and apprenticeships	1152	17%
<b>Total course completions</b>	<b>6,622</b>	<b>100%</b>

Note: Course completions is calculated as the number of participants multiplied by courses attended.

Source: Data provided by Base management.

## 2. Projected indirect and induced economic contributions related to Base's FY2016 operations

Base's total economic and tax contributions extend beyond the company's investments and operations described in Section 1 to include additional activity supported by the company's domestic supply chain and consumer spending by employees. Base's total economic and tax contributions are estimated as direct, indirect, and induced effects. These effects are measured in terms of gross economic output, GDP, labour income (value of wages and benefits), employment (total full-time and part-time employees), and tax revenues in Kenya.

The economic contribution results presented in this study are estimated using an input-output multiplier framework, adjusted to reflect key aspects of Base's projected operations in Kenya. This methodological framework is well-documented in the literature and widely accepted to estimate the economic effects of industry operations.<sup>18</sup>

Highlights of Base's projected total economic and tax contributions from operations include:

- **Employment.** In FY2016, Base's operations will support 3,432 Kenyan jobs, including Base employees and jobs at companies that sell goods and services to Base and Base's employees. Base's overall employment multiplier is 5.3, meaning that, for every 10 jobs at Base, an additional 43 jobs will be supported elsewhere in the Kenyan economy.
- ▶ **Supply chain.** In FY2016, Base will purchase US\$44.2 million (KES 4.5 billion) of goods and services from suppliers – of which, an estimated US\$37.0 million (KES 3.7 billion) will be supplied by Kenyan businesses.
- ▶ **Indirect effects.** Base's purchases from Kenyan suppliers will support indirect jobs across a wide range of industries, including the utilities, construction, manufacturing, and professional services sectors. These indirect jobs will in turn generate US\$41.8 million (KES 4.2 billion) of indirect economic output, of which US\$21.0 million (KES 2.1 billion) will be indirect GDP.
- ▶ **Induced effects.** Wages earned by direct and indirect employees (US\$22.4 million; KES 2.3 billion) will support 1,361 induced employment related to consumption spending by Base and supplier employees. These induced jobs will be concentrated in the services and agricultural sectors, and will generate US\$25.6 million (KES 2.6 billion) of induced output, of which US\$12.7 million (KES 1.3 billion) will be induced GDP.
- ▶ **Tax revenues.** Base's total tax contribution will exceed US\$19.2 million during FY2016, including US\$14.3 million directly from Base and its employees, US\$2.9 million related to indirect economic activity (paid by suppliers and their employees) and an additional US\$2.0 million related to induced economic activity.
- ▶ **Total contribution.** Given the projected level of sales during FY2016, Base will directly or indirectly generate US\$186.4 million (KES 18.8 billion) of economic gross output, of which

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<sup>18</sup> Appendix A details the economic impact estimation approach used in this study and documents recent findings in other mining sector studies in Kenya and the region.

## Base Titanium's economic contributions in Kenya

US\$108.5 million (KES 11.0 billion) is Kenyan GDP. This total GDP contains US\$28.2 million (KES 2.8 billion) of employee compensation earned by workers in Kenya and US\$19.2 million (KES 1.9 billion) of taxes paid to the Kenyan government.

Table 6 summarizes Base's direct, indirect, and induced contribution in terms of employment, labour income, GDP (value added), and economic gross output (revenue or sales).

**Table 6. Base's annual economic contributions from operations, projected for FY2016**

	Direct contribution	Indirect contribution (supplier related)	Induced contribution (employee spending)	Total contribution
<b>USD millions</b>				
Employment	642	1,429	1,361	3,432
Labour income	US\$14.7	US\$7.8	US\$5.8	US\$28.2
GDP	\$74.8	\$21.0	\$12.7	\$108.5
Economic output	\$119.0	\$41.8	\$25.6	\$186.4
Tax revenues	\$14.3	\$2.9	\$2.0	\$19.2
<b>KES millions</b>				
Employment	642	1,429	1,361	3,432
Labour income	KES 1,482.1	KES 784.0	KES 581.3	KES 2,847.4
GDP	7,555.4	2,118.8	1,283.9	10,958.1
Economic output	12,020.9	4,225.5	2,586.1	18,832.5
Tax revenues	1,446.6	288.7	199.8	1,935.2

Note: Figures may not appear to sum due to rounding. Figures in Kenyan shillings were calculated with the following currency exchange rate: US\$1 = KES 101.

Source: EY analysis using the IFPRI model, data provided by Base management and national data published by KNBS.

### 2.1 Base's direct, indirect, and induced economic contributions

In FY2016, Base's projected operations will generate a total of US\$186.4 million (KES 18.8 billion) in economic output. Of this amount, US\$41.8 million (KES 4.2 billion) will be related to indirect activity and US\$25.6 million (KES 2.6 billion) will be related to induced activity, totalling US\$67.4 million (KES 6.8 billion) – one-third of total output. These indirect and induced effects are driven by (1) input purchases by Base and its suppliers; (2) the percentage of each type of commodity that is purchased from within Kenya; and (3) average household consumption profiles.

Base makes significant purchases of Kenyan goods and services related to its operations, generating indirect economic output in Kenya. In FY2016, Base anticipates that supplier purchases will be approximately one-third of revenues, totalling US\$44.2 million (KES 4.5 billion).<sup>19</sup> Of this amount, an estimated 87% (US\$37.0 million, KES 3.7 billion) will be purchased

<sup>19</sup> See Table 2.

## Base Titanium's economic contributions in Kenya

from businesses within Kenya (see Table 7). Nearly half of Base's purchases from Kenyan firms will be for power and fuel (petroleum), totalling US\$17.9 million (US\$9.2 million of electricity and US\$8.7 million of petroleum).

The majority of products purchased from Kenyan firms will be produced within Kenya, totalling an estimated US\$30.2 million (KES 3.0 billion), including all locally-provided services, transportation, and electricity. This amount is equivalent to 68% of Base's US\$44.2 million (KES 4.5 billion) of total supplier purchases.

**Table 7. Distribution of Base's purchases from Kenyan suppliers, by industry, projected for FY2016**

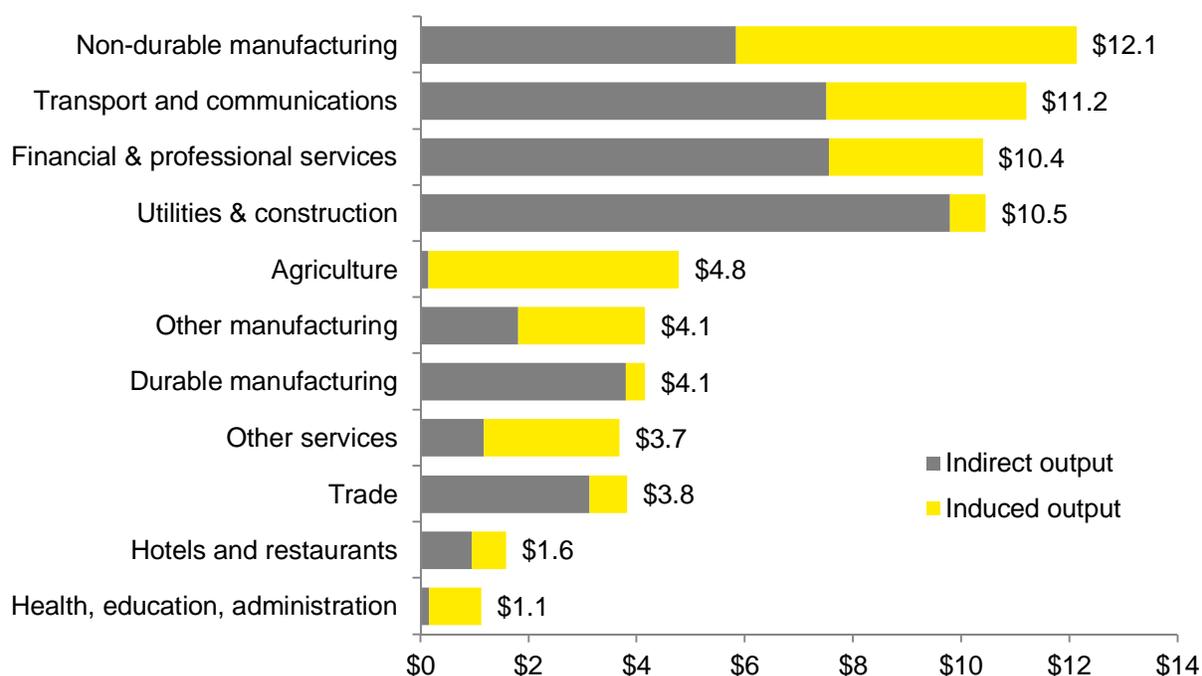
Industry	Purchases from Kenyan firms		Value of goods/services produced in Kenya	
	USD millions	KES millions	USD millions	KES millions
Electricity	\$9.2	KES 929.0	\$9.2	KES 929.0
Petroleum	8.7	879.1	4.9	495.2
Machinery & metal manufacturing	6.8	687.0	3.7	377.2
Transportation	5.3	535.8	5.3	535.8
Professional services & real estate	5.2	523.4	5.2	523.4
Hotels & restaurants	0.9	87.4	0.9	87.4
Other manufacturing	0.6	57.4	0.6	57.4
Financial & other services	0.4	42.2	0.4	42.2
<b>Total purchases</b>	<b>US\$37.0</b>	<b>KES 3,741.3</b>	<b>US\$30.2</b>	<b>KES 3,047.7</b>

Note: Figures may not appear to sum due to rounding.  
Source: EY analysis using data provided by Base management and KNBS.

The US\$30.2 million (KES 3.0 billion) of goods and services produced in Kenya is described as the "first round" of indirect contributions, related to Base's immediate purchases from suppliers. Subsequent rounds of indirect impacts occur when Base's suppliers purchase additional goods and services in Kenya. These additional rounds will add an estimated \$11.6 million (KES 1.2 billion), for a total indirect output contribution totalling US\$41.8 million (KES 4.2 billion).

Figure 6 illustrates how Base's supplier spending and additional rounds of economic activity flow through to a range of sectors. As shown in the figure, indirect output is concentrated in the largest sectors of Base's supply chain: non-durable manufacturing (petroleum), transportation services, and utilities (electricity).

**Figure 6. Distribution of estimated indirect and induced economic output, FY2016**  
USD millions



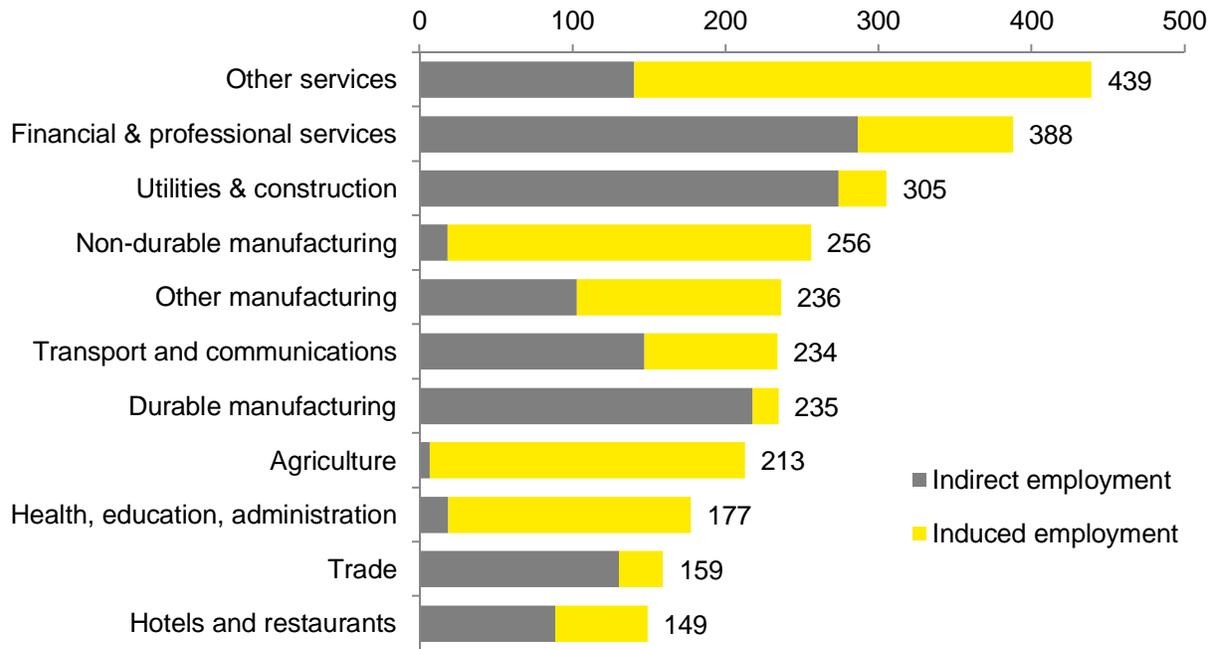
Note: Direct output in the mining sector is not included in the figure above. Industry labels were aggregated in the following manner: other services (personal and household services); agriculture (farming, fishing, forestry); utilities & construction (electricity, water, construction); durable manufacturing (metals & machines, non-metallic products); non-durable manufacturing (manufactured foods, chemicals, petroleum); and trade (wholesale and retail trade, including repairs). Detailed results are shown in Appendix B. Source: EY analysis.

Based on current worker productivity, businesses would require additional employees in order to meet additional demand related to Base’s operations. Figure 7 illustrates how indirect and induced output translates into corresponding estimates of indirect and induced jobs.

As shown in the figure, the estimated jobs are primarily concentrated in labour-intensive sectors including other services (personal and household services), financial and professional services, and agriculture. These industries rely heavily on labour and therefore support a larger number of employees for every dollar of sales. In sectors that sell directly to consumers, such as industries that supply food products (agriculture and non-durable manufacturing) and well as other services, health care, and education, nearly all of the impact by Base’s operations is related to the induced effect.

In FY2016, the analysis estimates total indirect and induced employment will total 2,790, for a total job contribution of 3,432 including Base’s employees. Base’s employment contribution can be described as having a total multiplier of 5.3 – interpreted as, for every 10 jobs at Base, and additional 43 jobs are supported elsewhere in the Kenyan economy through indirect and induced economic activity.

**Figure 7. Distribution of estimated indirect and induced employment, FY2016**



Note: Direct employment in the mining sector is not included in the figure above. Industry labels were aggregated in the following manner: other services (personal and household services); agriculture (farming, fishing, forestry); utilities & construction (electricity, water, construction); durable manufacturing (metals & machines, non-metallic products); non-durable manufacturing (manufactured foods, chemicals, petroleum); and trade (wholesale and retail trade, including repairs). Detailed results are shown in Appendix B. Source: EY analysis.

## 2.2 Base's direct, indirect, and induced tax contributions

Collectively, Base and its employees will pay US\$14.3 million (KES 1.4 billion) in taxes to the Kenyan government in FY2016, comprising Base's direct tax contribution. In FY2016, Base will pay an estimated US\$8.8 million (KES 887 million) in direct taxes to the Kenyan government. Of this, US\$6.0 million (68% of Base's direct tax payments, KES 601 million) will be mining royalties, with the majority of the remainder being taxes on international transactions (customs duties and interest withholding). Base's employees will pay US\$5.5 million (KES 559.6 million) in taxes, of which 74% (US\$4.1 million; KES 414 million) is from the individual income tax.

Base's total tax contribution is also comprised of the indirect taxes related to Base's suppliers. In FY2016, Base's operations are expected to increase its suppliers' revenues, increasing its tax contribution by nearly US\$2.9 million (KES 288.7 million). The bulk of the indirect tax payment, 36%, is comprised of the corporate income tax, with the remainder composed by individual income taxes, VAT, taxes on goods and services, and other transactions taxes.

Base employees' spending in the Kenyan economy spurs growth in revenues in the wider economy, contributing to increased tax payments through an induced effect. For instance, more than US\$1.6 million (KES 169.1 million) in corporate income tax will be paid by Kenyan businesses that are indirectly related to Base's operations.

As shown in Table 8, the total tax contribution of Base in Kenya in FY2016 will total US\$19.1 million (KES 1.9 billion), of which 46% will be paid directly by Base and an additional 29% will be paid by Base's employees. Base's direct tax contribution is likely to increase in future years once the capital investment has been paid off and it starts paying corporate tax.

Using current price and cost projections over the life of the mine, Base expects to pay a total of US\$236 million (KES 23.8 billion) in direct tax payments to the government. This estimate includes US\$116 million (KES 11.7 billion) in royalties, US\$70 million (KES 7.1 billion) in corporate tax and approximately US\$50 million (KES 5.1 billion) in PAYE income tax on behalf of employees from 2013 to 2026.

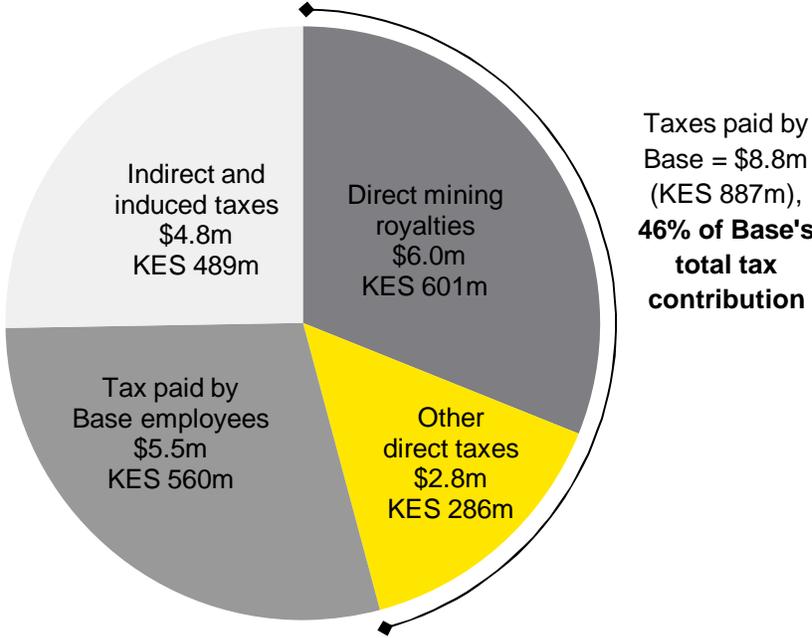
**Table 8. Distribution of estimated direct, indirect, and induced tax collections, FY2016**

	Direct contribution		Indirect contribution	Induced contribution	Total contribution
	Base	Base Employees			
<b>USD thousands</b>					
Taxes on income					
Income tax from corporations	--	--	US\$1,042	US\$631	US\$1,674
Mining royalties	US\$5,950	--	--	--	\$5,950
Income tax from individuals	--	US\$4,100	\$641	\$475	\$5,216
Value Added Tax (VAT)	--	\$1,159	\$613	\$455	\$2,226
Other taxes on goods & services	--	\$255	\$273	\$203	\$731
Taxes on transactions	\$2,503	--	\$260	\$193	\$2,956
Other taxes	\$327	\$26	\$30	\$22	\$405
<b>Total tax collections</b>	<b>US\$8,781</b>	<b>US\$5,540</b>	<b>US\$2,859</b>	<b>US\$1,978</b>	<b>US\$19,158</b>
<b>KES millions</b>					
Taxes on income					
Income tax from corporations	--	--	KES 105.3	KES 63.8	KES 169.1
Mining royalties	KES 601.0	--	--	--	601.0
Income tax from individuals	--	KES 414.1	64.7	48.0	526.9
Value Added Tax (VAT)	--	117.1	61.9	45.9	224.9
Other taxes on goods & services	--	25.8	27.6	20.5	73.9
Taxes on transactions	252.9	--	26.2	19.5	298.6
Other taxes	33.0	2.6	3.0	2.2	40.9
<b>Total tax collections</b>	<b>KES 886.9</b>	<b>KES 559.6</b>	<b>KES 288.7</b>	<b>KES 199.8</b>	<b>KES 1,935.2</b>

Notes: Figures may not appear to sum due to rounding. Taxes on other goods and services is comprised of excise taxes, taxes on international trade transactions is comprised of interest withholding on foreign debt and customs duties and other taxes not elsewhere classified (payroll taxes (employer-paid) and environmental fees/charges). Source: EY analysis.

Figure 8 shows the components of Base's estimated annual tax contributions.

**Figure 8. Base's total tax contribution, by taxpayer, FY2016**  
Total tax contribution = US\$19.2million (KES 1.9 billion)



Source: EY analysis.

### 3. Estimates of Base’s one-time contributions related to mine construction and infrastructure development

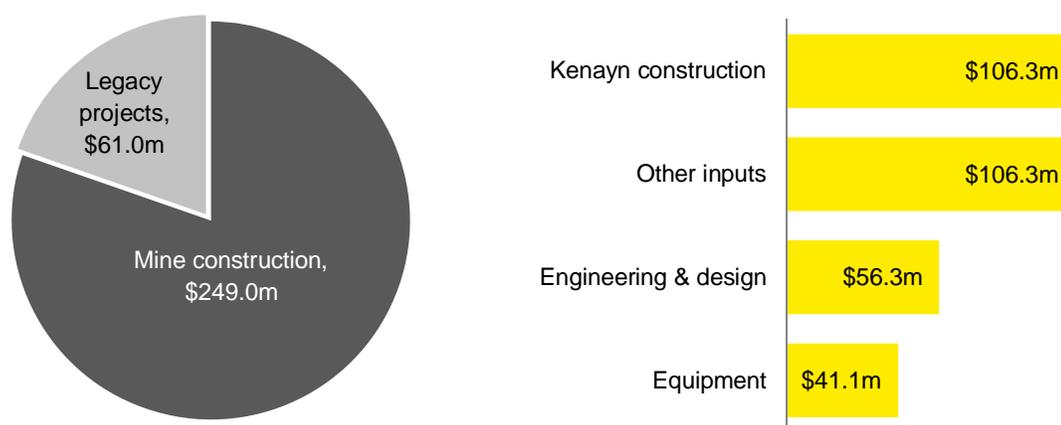
This section provides estimates of Base’s economic contributions through its capital expenditures on mine construction and infrastructure development. These impacts are related to one-time expenditures, which occur only once and will not reoccur as Base continues operations.

Between 2012 and 2014, Base invested US\$310 million in the Kwale project. This amount included US\$249 million to construct and outfit its mining operations in Kwale and US\$61 million for development of area infrastructure (See Figure 9). These infrastructure projects are referred to by Base as “legacy projects” because they will remain as economic assets upon closure of the mine. These projects included the Mukurumudzi dam and boreholes (US\$14.5 million), electrical grid upgrades and expansions (US\$5.7 million), an access road to the mine (US\$6.6 million) and a port and ship loading facility in Likoni, on the south bank of the Mombasa shipping channel (US\$34.0 million).

Figure 9 also breaks down Base’s total capital expenditure of US\$310 million by its spending on inputs, including contracted services and equipment. Of the total US\$231 million spent on construction services, US\$106.3 million was spent on construction services provided by Kenyan firms and equals to Base’s direct economic output from capital investments. The remaining US\$203.7 million of capital expenditures were spent on services and equipment provided by firms outside of Kenya. Therefore, these expenditures did not generate economic impacts in Kenya.

**Figure 9. Distribution of Base’s total capital expenditure on investment type and inputs, 2012-2014**

Total capital expenditure = US\$310.0 million



Source: Data provided by Base management.

## Base Titanium's economic contributions in Kenya

Table 9 summarizes the one-time direct, indirect, and induced economic and tax contributions related to Base's capital expenditures from 2011 through 2013. The temporary employment impact is described in terms the total number of jobs over the construction period lasting an average of one year each ("one-year jobs"). During construction, Base's capital expenditures supported a total of 8,255 one-year jobs (average of 4,127 jobs per year for two years).<sup>20</sup> Temporary direct (on-site construction) jobs totalled 3,285 (average of 1,643 jobs per year). An additional 3,184 one-year jobs (average of 1,592 per year) were supported through domestic purchases of construction-related services and building materials. Spending by direct and indirect workers temporarily supported an additional 1,785 one-year jobs (893 jobs per year).

Base generated a total of US\$0.61 of economic output for every dollar of capital expenditure, meaning that the US\$310 million (KES 26.4 billion) of capital investment by Base resulted in US\$189.9 million (KES 16.1 billion) of total economic output in Kenya over two years. Additionally, for every dollar of direct capital investment, Base supported US\$0.22 of Kenyan GDP through direct, indirect, or induced economic activity, consequently generating a total of US\$69.5 million (KES 5.9 billion) GDP in Kenya through its construction projects. Over the two-year period, direct, indirect, and induced economic activity generated an estimated total of US\$7.9 million (KES 670.5 million) in tax revenue.

**Table 9. Base's one-time economic and contributions related to capital investment, 2012-2014**

	<b>Direct contribution</b>	<b>Indirect contribution</b>	<b>Induced contribution</b>	<b>Total contribution</b>
<b>USD millions</b>				
One-year jobs	3,285	3,184	1,785	8,255
Labour income	US\$7.0	US\$6.9	US\$5.0	US\$18.9
GDP	31.9	26.6	11.1	69.5
Economic output	106.3	61.3	22.3	189.9
Taxes	3.2	2.9	1.7	7.9
<b>KES millions</b>				
One-year jobs	3,285	3,184	1,785	8,255
Labour income	KES 596.8	KES 586.7	KES 426.9	KES 1,610.4
GDP	2,710.0	2,257.5	941.1	5,908.6
Economic output	9,033.4	5,207.6	1,897.0	16,138.0
Taxes	274.3	249.5	146.7	670.5

Note: Figures may not appear to sum due to rounding. Figures in Kenyan shillings were calculated with the following currency exchange rate: US\$1 = KES 85. The jobs numbers presented in the table represent the total number of one-year jobs.

Source: EY analysis using the IFPRI I-O model, data provided by Base management and national data published by KNBS.

<sup>20</sup> Construction began in November 2011. For ease of presentation, average employment assumes a two year (24 month) construction period.

## 4. Study limitations

Readers should be aware of several limitations of this analysis.

- ▶ **Kenya economic models.** This analysis relies on the 2003 Social Accounting Matrix ("SAM") of the Kenyan economy, developed jointly by the International Food Policy Research Institute ("IFPRI") and the Kenya Institute for Public Policy Research and Analysis ("KIPPRA") based on the most recent comprehensive input-output matrix describing economic relationships in Kenya. By using the 2003 SAM, the approach assumes that the structural relationships in the Kenyan economy did not change from 2003 to 2014. Significant changes in the composition of industrial output, worker productivity, or worker compensation could have occurred in Kenya over this period, but more recent input-output data is not available. Actual results may differ than those estimated in this report.
- ▶ **Base's purchases from Kenyan suppliers.** Data provided by Base on its anticipated purchases from Kenyan suppliers in FY2016 included purchases at retail from Kenyan businesses (such as fuel and spare parts). These purchases were adjusted to reflect retail margins based on international data. Purchases of petroleum were assumed to have a 10% retail margin while purchases of replacement parts and components were assumed to have a 20% margin. All retail services were assumed to be provided by Kenyan businesses. The analysis applied economy-wide average import ratios to estimate the share of products purchased at retail that would be produced domestically.
- ▶ **Formal versus informal economic sector activity.** Employment estimates presented in this report are only for wage employees in the formal, or "modern" sector and do not include self-employed proprietors or unpaid family workers. The estimates do not attempt to quantify the impact on jobs in the informal sector, including small-scale farming and pastoralist activities.
- ▶ **Individual income taxes paid by Base employees.** The estimated tax impacts assume that income earned by Base employees, including foreign nationals, is taxable in Kenya. The direct individual income taxes attributable to Base employees is based on individual income tax withholdings (PAYE) and may not reflect net government receipts, after refunds.
- ▶ **Local spending by Base's foreign-national and Kenyan employees.** The analysis generally assumes that Kenyan households spend 86% of their total incomes, allocated based on the average household consumption profile in the IFPRI model. However, Base's employees earn higher levels of income than the Kenyan average wage and likely have a different consumption profile than the average household. Hence, the analysis of Base's induced economic contribution assumes that Base's employees spend 49% of their incomes, with the remainder being saved or paid as taxes. This spending rate is the weighted average calculated based on the assumption that Base's foreign national employees use 40% and Kenyan national employees use 67% of their total income on consumption expenditures. The spending rates of Base's foreign national and Kenyan national employees are different because Base's foreign national employees have a lower

## Base Titanium's economic contributions in Kenya

share of consumption out of total income, although they spend more in absolute terms, and higher effective tax rates.

- ▶ **Distribution of Base's supplier purchases by industry.** The distribution of input purchases and import percentages by industry used in this analysis were based on information provided by Base and averages for the mining sector. In some cases, data on supplier purchases supplied by Base was disaggregated and assigned to industrial sectors using the composition of mining industry inputs from the IFPRI model. The estimates are sensitive to the distribution of purchases, by sector, depending on the labour- or capital-intensity of the supplier industry.
- ▶ **National data from 2012 vs 2014.** Throughout the analysis, Base's operations in FY2016 are compared to the most recent national data reported by the Kenya National Bureau of Statistics ("KNBS"), which is mostly from 2014. Therefore, the reader should note that there is a difference in real value of nominal figures that were used for comparisons because inflation rates in Kenya between 2014 and 2015 were not considered. In 2014, the inflation rate in Kenya was 6.9%.

## 5. Conclusions

This report quantifies the economic activity in Kenya supported by Base's mining operations at Kwale. By using information provided by Base on its anticipated operations at full production in FY2016, the analysis quantifies the jobs, incomes, GDP, and economic output supported across many sectors of the economy.

The analysis finds that, in FY2016, Base will employ 642 workers directly at Kwale and support an additional 2,790 through its supply chain and expenditures by Base and supplier employees – approximately four additional jobs for every Base employee.

Base is also a high-wage employer, with annual wages, bonuses, and benefits averaging US\$9,200 (KES 927,400) per worker for Kenyan nationals, approximately 50% higher than the national average. These wages enable Base's employees to purchase more goods and services locally, generating income for Kenyan farmers, retailers, and service providers.

In FY2016, Base will pay an estimated US\$8.8 million (KES 886.9 million) in Kenyan taxes, primarily in mining royalties (an estimated US\$6.0 million or KES 601 million). Base's employees will pay an additional US\$5.5 million (KES 559.6 million) in taxes annually on their purchases and incomes. Combining the direct taxes paid by Base and its employees with taxes generated through indirect and induced economic activity, Base's total tax contribution in FY2016 will exceed US\$19.1 million (KES 1.9 billion), equivalent to 0.17% of Kenya's FY2014 tax revenues.

Base anticipates sustaining production operations at or around FY2016 levels over the remaining 12-year life of the mine. If Base maintains levels of sales at US\$119 million (KES 12.0 billion) per year, total 12-year direct economic output will be US\$1.4 billion (KES 144 million), translating to US\$0.9 billion (KES 90.7 billion) of GDP.

Base expects the total tax receipts to the Kenyan government to be US\$236 million (KES 23.8 billion) over the 13-year life of the mine, based on current price and cost projections. This total will consist of US\$116 million (KES 11.7 billion) in royalties, US\$70 million (KES 7.1 billion) in corporate tax, and approximately US\$50 million (KES 5.1 billion) in PAYE income tax on behalf of employees.<sup>21</sup>

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<sup>21</sup> Projections provided by Base management in USD. Converted to KES using current FX rate (1 USD = 101 KES).

## Appendix A. Detailed data and modelling methodology

The economic contribution results presented in this study are estimated using an input-output multiplier framework. This methodological framework is well-documented in the literature and widely accepted to estimate the economic effects of industry operations. This section outlines the approach used in this study and documents recent findings in other mining sector studies in Kenya and the region.

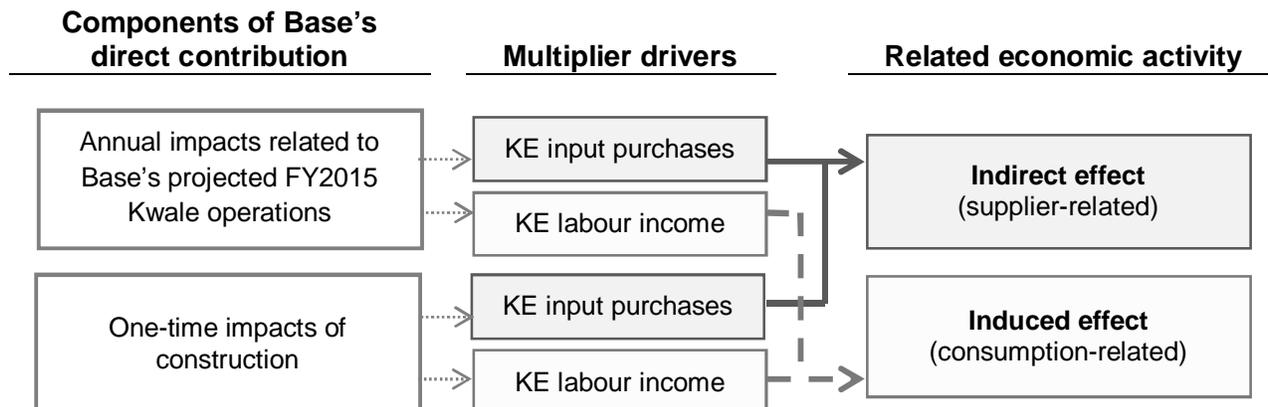
### Economic data and input-output methodology

Base's total economic contribution to the Kenyan economy consists of three elements, described below:

1. **Direct contribution.** Base's direct contribution to the Kenyan economy consists of total employment for the Kwale project, related employee compensation (gross wages and salaries, employer payroll taxes, and other employee costs), capital investments, contributions to Kenyan GDP, and taxes paid by Base and all of Base's employees in Kenya.
2. **Indirect contribution.** Base's indirect contribution is created by the supplier-related economic activity and tax payments that result from Base's purchase of inputs for their mining operations. The mining industry's largest suppliers of goods and services are the utilities, manufacturing, and services (finance, administration, health, education, other services, and communications) sectors. As these suppliers purchase operating inputs from other suppliers, there are additional rounds of indirect economic effects.
3. **Induced contribution.** Base's induced economic contribution reflects the spending in the Kenyan economy created by compensation earned by direct and indirect jobs. For every dollar earned by Base and supplier employees, a portion is spent at local businesses including retailers, restaurants, and service companies, supporting jobs and worker incomes.

Figure A-1 shows how Base generates indirect and induced economic activity in Kenya. The left-hand side of the diagram shows the components of Base's direct contribution: 1) the Kwale Project operations and 2) Base's capital investments within Kenya. Each of these components of Base's direct contribution creates additional economic contributions through the domestic purchases of operating inputs and the payments to employees in the form of wages. Base's domestic input purchases help support sales and employment at other Kenyan businesses (indirect effect). Wages paid to Base employees and to the employees of Base's suppliers support sales at Kenyan businesses that sell to consumers.

**Figure A-1. Economic contribution drivers**



Base’s economic impact on Kenya is largely determined by the purchasing relationships between suppliers and their industries. The impact is expressed using “economic multipliers”, which are metrics equal to the total (direct, indirect, and induced) economic contribution per unit of direct contribution.

The analysis uses publicly-available economic data from a variety of sources to describe the economic relationships in Kenya that drive the indirect and induced economic contribution results. The analysis uses a 2003 SAM for Kenya, jointly developed by IFPRI and KIPPRA. The SAM describes the complex economic interactions between sectors of the economy, including private industries, households, and the public sector.<sup>22</sup> A SAM represents all the economic flows in an economy, providing a framework of the country’s demand flows, purchases, and expenditures. These industry relationships are used to estimate economic multipliers.

By using the 2003 SAM, the approach assumes that the structural relationships in the Kenyan economy did not change from 2003 to 2014. In reality, significant changes in the composition of industrial output, worker productivity, or worker compensation could have occurred in Kenya over this period.

The analysis also considered economic data published by the Purdue Global Trade Analysis Project (“GTAP”) database for 2007.<sup>23</sup> In lieu of building their own SAMs, GTAP transforms data from the 2001 Kenya SAM produced by IFPRI to reflect 2007 macroeconomic data. The 2001 SAM disaggregates the economy into 33 sectors, which were further disaggregated by GTAP into 57 sectors. This data was used to benchmark the data from the 2003 IFPRI model but was not used as the primary model data due to the older underlying input-output framework.

The intermediate demand relationships in the 2003 micro SAM for Kenya are based on updated input-output relationships in the Kenyan economy based on detailed surveys and data analysis

<sup>22</sup> Kiringai, Jane, et. al., “A 2003 Social Accounting Matrix for Kenya,” KIPPRA and IFPRI, August 2006.

<sup>23</sup> Narayanan, G., Badri, Angel Aguiar and Robert McDougall, Eds, “Global Trade, Assistance, and Production: The GTAP 8 Data Base,” Center for Global Trade Analysis, Purdue University, 2012.

## Base Titanium's economic contributions in Kenya

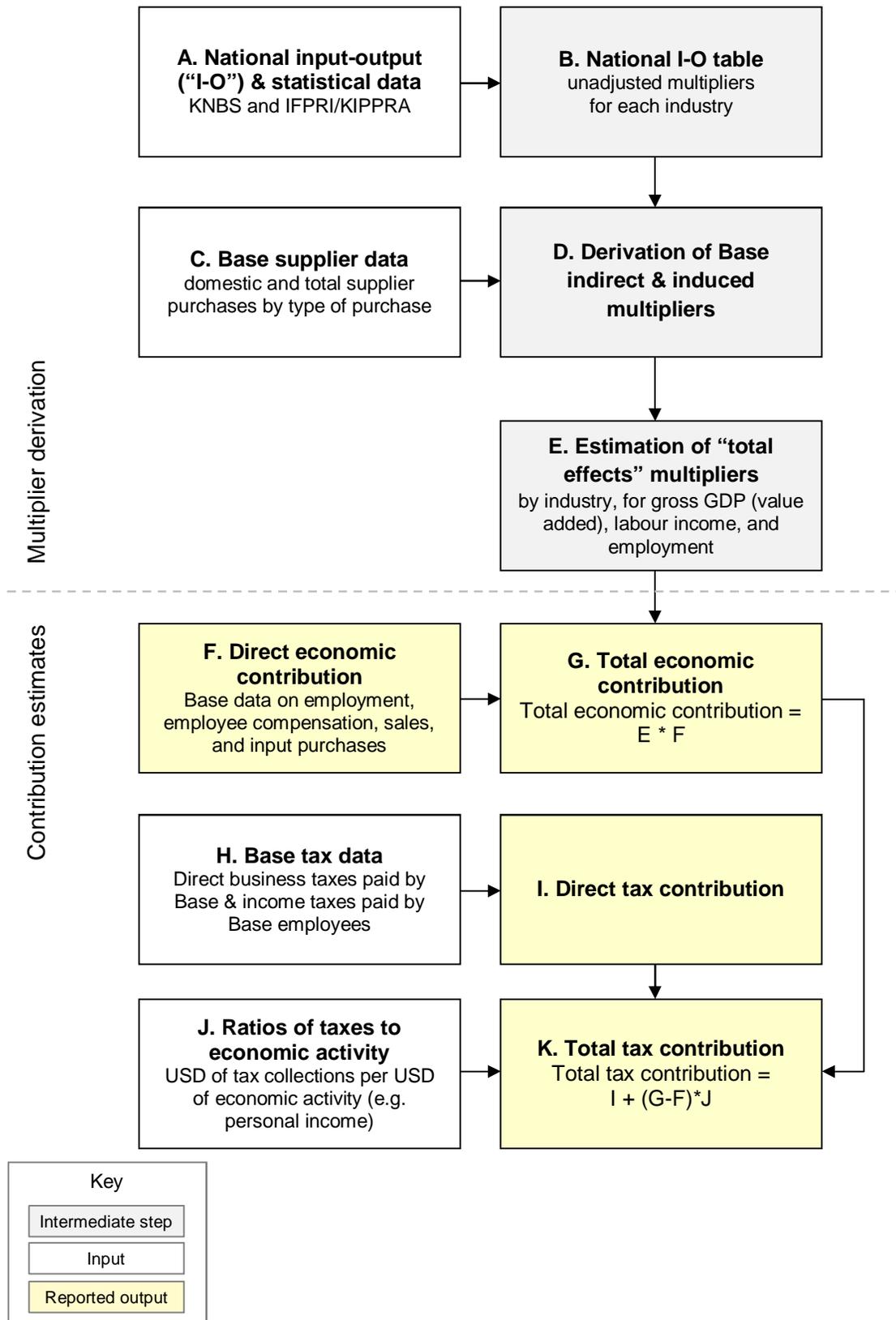
conducted by IFPRI and KIPPRA in conjunction with KNBS. The 2003 SAM replaced an older version reflecting a 1997 input-output ("IO") matrix and 2001 macroeconomic data.<sup>24</sup> The intermediate demand relationships in the 2001 micro SAM for Kenya are based on the input-output relationships in KIPPRA's 1997 Kenya SAM, re-balanced to reflect 2001 levels of economic activity. This approach assumes that the structural relationships in the Kenyan economy did not change from 1997 to 2001.

Figure A-2 outlines the relationships between the key inputs (including source information), the stages of analysis, and the final outputs and results that are described in this report.

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<sup>24</sup> IFPRI, Wobst, Peter and Benjamin Schraven, "The 2001 Social Accounting Matrix (SAM) for Kenya," Washington, D.C., 2004.

**Figure A-2. Diagram of analysis inputs, intermediate results, and outputs**



## Studies of mining economic multiplier effects

Historically, Kenya has not been a dominant player in worldwide commodity production and the mining industry does not comprise a significant share of Kenya's total GDP. Because of this, existing research on the economic impact of foreign mining investment in Kenya is limited. However, a review of recent literature on economic multipliers for other sectors of Kenya's economy, as well as for the mining industry in the region may help provide context for the anticipated economic benefits of Base's projected operations. This section outlines selected studies which have helped to guide the analysis of Base's economic contributions in Kenya.

The existing literature on mining economic multipliers in African nations has shown that, in general, the direct, indirect, and induced output multipliers range from 2.3 to 3.1. Unlike the economic output multipliers, employment and labour income multipliers showed a much greater degree of variation, ranging from 2.6 to 26.8 for employment, and from 2.8 to 12.5 for labour income.

Two studies that provided the strongest basis for this report were studies conducted by EY for African Barrick Gold's ("ABG") total economic and tax contributions in Tanzania and by Steward Redqueen for Newmont Ghana Gold Limited's Brong-Ahafo mine in Ghana.<sup>25</sup> In both studies, the direct, indirect, and induced economic impacts were analysed using detailed input-output economic data describing the relationships between sectors of the economy (including industries, households, and government). Here, multipliers for Ghana and Tanzania are compared based on the similar economic composition of their economies. While Ghana's gold production is about twice that of Tanzania, both have significant employment in the mining sector – about 17,000 workers in Ghana and 15,000 in Tanzania – and historically agrarian economies.<sup>26</sup>

**Ghana gold mine economic multiplier study.** A 2011 economic impact study of a Newmont Ghana Gold Limited (NGGL) gold mine in Brong-Ahafo, Ghana, illustrates the potential multiplier effects and methodological issues that arise when evaluating the economic contribution of the mining industry in Africa.

The study, conducted by the consulting firm Steward Redqueen, used a 2004 SAM of the Ghanaian economy assembled using a GTAP database of Africa economic data.<sup>27</sup>

The NGGL study found that the mine's activity yielded a direct and indirect employment multiplier of 21.0—for every one direct job at the mine, 20 were created at suppliers and from the suppliers' own spending.<sup>28</sup> Of this additional employment, 28% were created in the agriculture sector, and 41% in trade.<sup>29</sup> The total employment multiplier—including induced

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<sup>25</sup> See: Ernst & Young (EY), "African Barrick Gold's total economic and tax contributions in Tanzania, 2013." July 2014 and Ethan Kapstein and Rene Kim, "The Socioeconomic impact of Newmont Ghana Gold Limited (NGGL)," July 2011.

<sup>26</sup> NGGL, p.8, and "Tanzania Extractive Industry Update." p.2.

<sup>27</sup> NGGL, p.57.

<sup>28</sup> NGGL, p.31-32.

<sup>29</sup> NGGL, p.33.

contributions—was 28.4. The study noted that much of the induced employment impact was related to more labour-intensive sectors of the economy. As impacts moved from the capital-intensive NGGL mine to labour-intensive suppliers and other companies, the employment multiplier increased. However, the study cautioned that multipliers can be inflated by choosing to outsource activities instead of keeping them in-house, or by “procuring from less productive firms.”<sup>30</sup> Operating in this way does not increase the mine's contribution to GDP. The labour income multiplier was 4.9 for direct and indirect contributions, increasing to 5.5 when induced contributions were included.<sup>31</sup>

Contributions to GDP made by the NGGL mine, considering both economic and fiscal contributions, was also estimated.<sup>32</sup> The study found that the mine had a direct and indirect GDP multiplier of 2.80, and a total GDP multiplier of 3.20. The study noted that the “significant tax income” it found to be generated by suppliers came as a result of NGGL's policy of doing business with local suppliers, when available.<sup>33</sup> The NGGL study assumed that all profits and savings accrued to investors outside of Ghana.

**Tanzania gold mine economic multiplier study.** The EY study found that ABG's operations resulted in an employment multiplier of 12.1 (11 indirect and induced employees for every worker at ABG) and a labour income multiplier of 2.8 (US\$1.80 of indirect and induced wages for every US\$1 of wages earned by ABG's employees). In Ghana, Steward Redqueen estimated an employment multiplier for Newmont of 28.4 and a multiplier effect on labour income of 5.5.

The difference between the estimated employment multipliers for ABG's operations in Tanzania (12.1) and Base's operations in Kenya (5.4) is primarily driven by the difference in operating profiles between these two companies. Most significantly, ABG's operations in Tanzania are nearly 13 times the size of Base's (in terms of domestic spending) but only 9 times higher in terms of direct employment – resulting in a higher level of domestic spending by ABG per direct employee. This domestic spending supports a greater number of indirect jobs for each direct employee (indirect employment multiplier). If Base were to increase its level of local expenditures, it would have a bigger employment impact in the Kenyan economy.

**Other mining economic impact studies.** Studies of conditions in the gold mining industry in South Africa in 2004 and 2007 cited GDP multipliers of 2.2 and 2.7, respectively, for direct and indirect impacts.<sup>34</sup> The 2007 multiplier of 2.7, for example, indicates that every ZAR 1 (South African rand) would become ZAR 2.7 of GDP through direct, indirect, and induced economic impacts.

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<sup>30</sup> NGGL, p.32.

<sup>31</sup> NGGL, p.29.

<sup>32</sup> NGGL, p.29.

<sup>33</sup> NGGL, p.30.

<sup>34</sup> Virtual Metals Research & Consulting Limited , “Gold in South Africa,” January 2006, 33 and Genesis Analytics (Pty) Ltd, “Gold in South Africa 2007,” February 2008, 20.

Several other studies have estimated indirect employment multipliers related to mining, ranging from 1.3 in a 2004 South Africa gold mining study, to 11.1 on the high end of an estimate offered in a study by the International Council on Metals & Mining ("ICMM").<sup>35</sup>

Finally, labour income multipliers for the direct and indirect impacts of mining range from 1.2 to 5.7, as reported in a 2009 study of several South American copper and gold mines by the World Bank and International Finance Corporation.<sup>36</sup>

**Economic impact studies in Kenya.** Compared to Tanzania and Ghana, which both have largely agriculture-based economies with large and growing mining sectors, Kenya has a larger share of service sectors in its economy, which includes a community, social, and personal services sector (23% of employment in 2012), a manufacturing sector (17% of employment in 2012), and one of the fastest growing tourism industries in Africa (accommodation was the highest paying sector in 2012, at nearly US\$11,500 on average).

The strong growth of the tourism industry has made it a centrepiece of Kenya's economic story. Economic impact studies of Kenya's industries are sparse outside of tourism and its connection to the broader economy. Valle and Yobesia (2009)<sup>37</sup> used the 2001 Kenya SAM to estimate an income multiplier of 1.59 for tourism (described as "exports of private services"), and they showed that in 2001, tourism accounted for 22.1% of exports and public and private services accounted for 46.3% of GDP.

Table A-1 provides a summary of the economic multipliers from the selected literature. While the literature mostly focused on mining studies, multipliers from related industries such as manufacturing and construction are presented for reference.

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<sup>35</sup> See: AngloGold Ashanti Limited et al. (2006), 33 and MacDonald, Catherine and Alan Roe, "Tanzania: Country Case Study – The challenge of mineral wealth: using resource endowments to foster sustainable development," International Council on Mining & Metals (ICMM), July 2007, 43.

<sup>36</sup> World Bank and International Finance Corporation (IFC), "Large Mines and Local Communities: Forging Partnerships, Building Sustainability," 2002, 6. Note that the multipliers stated in this report have also been cited in the ICMM's "Mining Partnerships for Development"; see p.8.

<sup>37</sup> Valle, Elisabeth, and Mark Nelson Yobesia, "Economic Contribution of Tourism in Kenya," *Tourism Analysis* 14, no. 3 (2009): 401-414.

Table A-1. Summary of mining multiplier studies

Multiplier type and sector	Industry detail	Location	Direct & indirect impact	Induced impact	Total impact	Source
<b>Output multipliers</b>						
Mining	Mining	Brazil	1.20	1.10	2.30	ICMM, 2013
	Mining	Zambia	2.20	0.90	3.10	ICMM, 2014
Manufacturing	Manufacturing	Brazil	1.90	1.10	3.00	ICMM, 2013
	Other mfg.	Zambia	2.34	1.03	3.34	ICMM, 2014
Construction	Construction	Zambia	1.66	1.03	2.69	ICMM, 2014
<b>GDP multipliers</b>						
Mining	Gold mining	Ghana	2.09	1.11	3.20	NGGL, 2011
	Gold mining	Tanzania	2.52	1.04	3.57	EY, 2013
	Gold mining	S. Africa	2.20	n/a	n/a	AngloGold Ashanti, 2006
	Gold mining	S. Africa	2.73	n/a	n/a	AngloGold Ashanti, 2008
<b>Employment multipliers</b>						
Mining	Mining	Tanzania	6.1-11.1	n/a	n/a	ICMM, 2007
	Gold mining	S. Africa	1.34	n/a	n/a	AngloGold Ashanti, 2006
	Gold mining	Ghana	3.83	23.0	26.8	NGGL, 2011
	Gold mining	Tanzania	7.86	4.28	12.14	EY, 2013
	Mining	Zambia	1.30	1.33	2.63	ICMM, 2014
<b>Labour income multipliers</b>						
Mining	Gold mining	Ghana	3.33	2.21	5.54	NGGL, 2011
	Gold mining	Tanzania	2.04	0.80	2.83	EY, 2013
	Mining	Zambia	7.93	4.54	12.47	ICMM, 2014

## Appendix B. Supplementary tables and figures

The Kenya Facts figures are presented in this section as a comparison to the employment numbers reported in the Statistical Abstracts. As shown in Table B-1., there is significant variation for 2009, but for 2010 onwards, the numbers are aligned.

**Table B-1. Employment in Kenya's mining sector as reported in Kenya Facts and the Statistical Abstracts**

	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Statistical Abstract	8,278	8,529	8,732	9,067	N/A	N/A
Kenya Facts and Figures	7,600	8,500	8,700	9,000	9,400	12,800

Source: KNBS.

**Table B-2. Estimated economic output contribution, by sector, related to FY2016 operations**  
USD millions

<b>Industry</b>	<b>Direct economic output</b>	<b>Indirect economic output</b>	<b>Induced economic output</b>	<b>Total economic output</b>
Agriculture, farming, fishing, and forestry	\$0.0	\$0.1	\$4.6	\$4.8
Mining	\$119.0	\$0.0	\$0.0	\$119.0
Manufactured food	\$0.0	\$0.3	\$5.1	\$5.4
Other manufacturing	\$0.0	\$1.8	\$2.3	\$4.1
Petroleum	\$0.0	\$5.5	\$0.8	\$6.3
Chemicals	\$0.0	\$0.0	\$0.5	\$0.5
Metals and machines	\$0.0	\$3.5	\$0.2	\$3.7
Non-metallic products	\$0.0	\$0.3	\$0.1	\$0.5
Water	\$0.0	\$0.1	\$0.2	\$0.3
Electricity	\$0.0	\$9.6	\$0.4	\$10.0
Construction	\$0.0	\$0.0	\$0.1	\$0.1
Wholesale & retail trade	\$0.0	\$3.1	\$0.7	\$3.8
Hotels & restaurants	\$0.0	\$0.9	\$0.6	\$1.6
Transportation	\$0.0	\$6.9	\$2.8	\$9.7
Communication	\$0.0	\$0.6	\$0.9	\$1.5
Finance	\$0.0	\$2.0	\$1.5	\$3.5
Professional services & real estate	\$0.0	\$5.5	\$1.4	\$6.9
Other services	\$0.0	\$1.2	\$2.5	\$3.7
Administration	\$0.0	\$0.1	\$0.1	\$0.2
Health	\$0.0	\$0.0	\$0.4	\$0.4
Education	\$0.0	\$0.0	\$0.5	\$0.5
<b>Total</b>	<b>\$119.0</b>	<b>\$41.8</b>	<b>\$25.6</b>	<b>\$186.4</b>

Note: Figures may not appear to sum due to rounding.  
Source: EY analysis.

**Table B-3. Estimated employment contribution, by sector, related to FY2016 operations**

<b>Industry</b>	<b>Direct employment</b>	<b>Indirect employment</b>	<b>Induced employment</b>	<b>Total employment</b>
Agriculture, farming, fishing, and forestry	0	7	206	213
Mining	642	0	0	643
Manufactured food	0	13	214	226
Other manufacturing	0	103	133	236
Petroleum	0	3	0	4
Chemicals	0	2	24	26
Metals and machines	0	205	13	218
Non-metallic products	0	12	5	17
Water	0	9	19	28
Electricity	0	263	10	273
Construction	0	2	2	4
Wholesale & retail trade	0	130	29	159
Hotels & restaurants	0	89	60	149
Transportation	0	125	50	174
Communication	0	22	37	60
Finance	0	65	47	112
Professional services & real estate	0	221	54	275
Other services	0	140	299	439
Administration	0	12	8	20
Health	0	3	65	68
Education	0	3	86	89
<b>Total</b>	<b>642</b>	<b>1,429</b>	<b>1,361</b>	<b>3,432</b>

Note: Figures may not appear to sum due to rounding.

Source: EY analysis.

**Table B-4. Summary of estimated multipliers from FY2016 operations**

<b>Indicator</b>	<b>Estimated total multiplier</b>
Employment	5.35
Employee compensation	1.92
GDP	1.45
Economic output	1.57

Source: EY analysis

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