



SPECIAL RELEASE

CAR Asset Accounts for Mineral Resources: 2004-2016 Copper Metal Content

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Cordillera Administrative Region (CAR) Asset Accounts for Mineral Resources under the Environment and Natural Resource Accounting (ENRA) Project presents estimates on physical and monetary valuation of mineral resources covering the period 2004 to 2016. The UN System of Environmental-Economic Accounting (SEEA) 2012 – Central Framework was used in the accounting of mineral resources.

Copper reserves in metal content posted 10.6 million MT in 2016

- The closing stock of Class A copper in metal content posted the highest in 2010 at 18.2 million MT while the lowest was recorded in 2005 at 10.2 million MT. The stocks generally exhibited a downtrend and decreased by an annual average of 1.6 percent or 78,861.9 MT from 11.6 million MT in 2004 to 10.6 million MT in 2016.

Table 1. Extraction, Closing Stock and Mine Life of Class A Copper Reserve in Metal Content, CAR: 2004-2016

Year	Extraction in Metal Content (in thousand MT)	Closing Stock in Metal Content (in thousand MT)	Mine Life (in years)
2004	1,589.8	11,590.6	7
2005	1,629.0	10,181.9	6
2006	1,831.9	15,001.7	9
2007	2,128.1	14,891.4	9
2008	1,782.7	10,866.7	6
2009	1,727.7	14,609.3	9
2010	1,888.6	18,182.4	11
2011	1,675.2	14,281.5	9
2012	1,026.9	13,458.9	8
2013	1,398.9	11,943.7	7
2014	1,739.1	10,922.9	7
2015	1,668.0	12,643.7	8
2016	1,665.6	10,644.3	6

Source: Philippine Statistics Authority – CAR

- For the 13-year accounting period, the level of extracted copper in metal content amounted to 21.8 million MT. The largest mass of extraction was recorded in 2007 at 2.1 million MT; while the lowest extraction was in 2012 at 1.0 million MT. An annual growth in the level of extraction by 2.3 percent or 6,316.9 MT annual increment was recorded from 1.6 million MT in 2004 to 1.7 million MT in 2016.
- It was estimated that it would take an average of eight years for the copper reserves to be depleted. The estimated mine life ranges from six years, as determined for the years 2005, 2008 and 2016, to as long as 11 years for 2010.
- From 2004 to 2016, the 112.8 million MT total copper ore extracted yielded 21.8 million MT of copper metal content. This denotes an average ratio of 0.2 MT of copper metal content for every ton of copper ore.

Value of copper in metal content highest in 2007 at PHP25.2 billion

- The trend of the monetary valuation of copper in metal content at 12 percent discount rate fluctuated but generally sloped upward. It grew by an annual average of 58.6 percent or an addition of PHP325.3 million yearly from PHP1.1 billion in 2004 to PHP5.0 billion in 2016. The monetary estimates ranged from PHP1.1 billion (2004) to PHP25.2 billion (2007).
- Valuation at 15 percent discount rate exhibited the same trend as that of the 12 percent. In 2007, the highest derived monetary estimate was recorded at PHP 22.6 billion. The lowest registered value of copper in metal content was seen in 2004 at PHP978.2 million. In 2016, the ending stock was valued at PHP4.6 billion.

Table 2. Monetary Valuation* of Closing Stock, Class A Copper Reserve, Extraction, CAR: 2004-2016

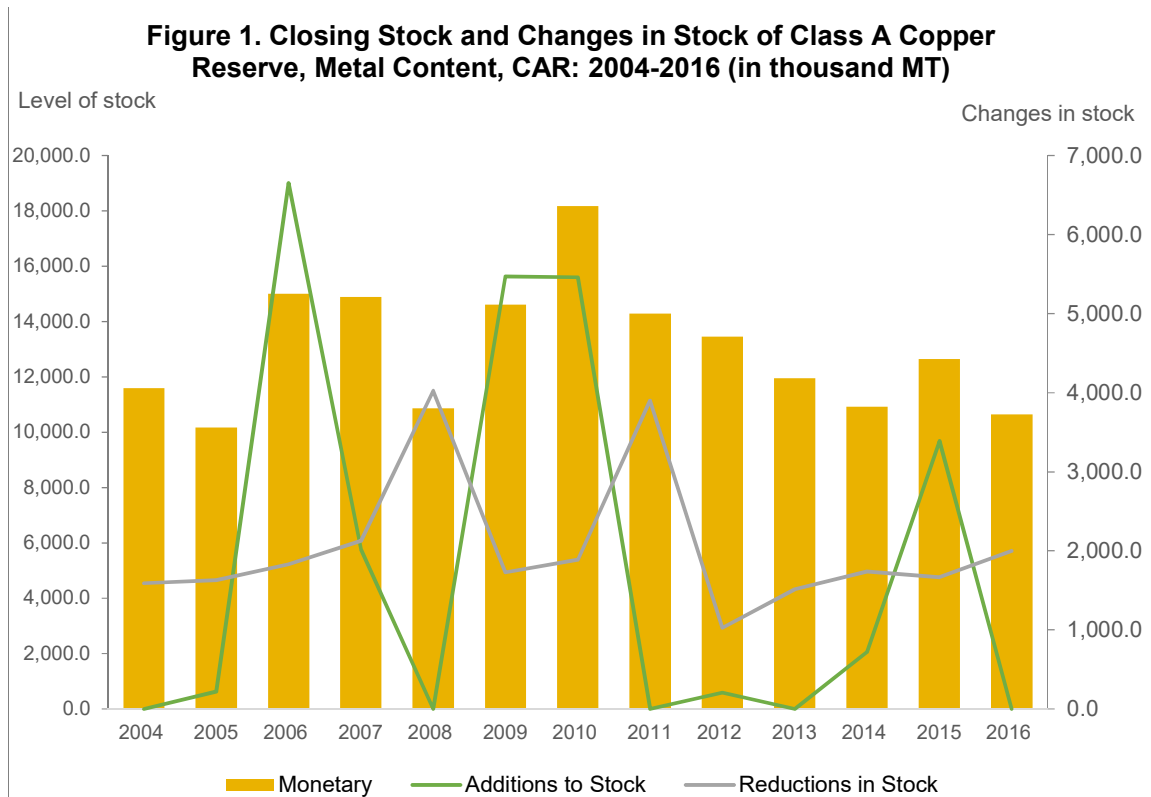
Year	Closing Stock in Metal Content			Extraction in Metal Content		
	Level (in '000 kg)	Valuation at 12% (in '000 PHP)	Valuation at 15% (in '000 PHP)	Level (in '000 kg)	Valuation at 12% (in '000 PHP)	Valuation at 15% (in '000 PHP)
2004	11,590.6	1,073,070.8	978,234.7	1,589.8	147,183.4	134,175.5
2005	10,181.9	6,152,069.5	5,662,878.6	1,629.0	984,241.2	905,977.8
2006	15,001.7	23,927,932.9	21,428,075.7	1,831.9	2,921,939.5	2,616,671.5
2007	14,891.4	25,210,110.1	22,576,298.2	2,128.1	3,602,739.8	3,226,345.6
2008	10,866.7	11,238,558.7	10,344,908.1	1,782.7	1,843,682.5	1,697,079.3
2009	14,609.3	11,177,225.9	10,009,491.6	1,727.7	1,321,833.4	1,183,735.6
2010	18,182.4	22,688,344.9	19,998,362.5	1,888.6	2,356,603.7	2,077,199.3
2011	14,281.5	21,312,549.4	19,085,932.9	1,675.2	2,499,892.1	2,238,717.3
2012	13,458.9	10,229,374.8	9,240,302.3	1,026.9	780,474.6	705,010.9
2013	11,943.7	10,010,702.9	9,125,974.5	1,398.9	1,172,456.3	1,068,836.6
2014	10,922.9	8,850,267.6	8,068,096.4	1,739.1	1,409,065.3	1,284,534.6
2015	12,643.7	9,650,564.6	8,717,457.0	1,668.0	1,273,163.5	1,150,062.1
2016	10,644.3	4,976,831.1	4,581,091.0	1,665.6	778,758.4	716,834.3

*At Net Present Value

Source: Philippine Statistics Authority – CAR

Additions to stock posted the highest in 2006 at 6.7 million MT

- The biggest additions to stock of class A copper was posted in 2006 at 6.7 million MT when the reserve went up by 47.3 percent due to upward reappraisal. The least incurred addition to the total reserve was recorded in 2012 which amounted to 204,266.8 MT of copper in metal content.
- In terms of reductions of stock, the highest was recorded in 2008 at 4.0 million MT with 57.1 percent or 2.2 million MT due to downward reappraisals. The minimum was in 2012 with 1.0 million MT of copper in metal content. From 2004 to 2016, the total estimated reductions amounted to 26.7 million MT.



Source: Philippine Statistics Authority – CAR

Class B and Class C copper reserves recorded the highest metal content in 2007

- The annual average increase of copper reserve in metal content for both Class B and C was 0.1 percent. The changes over the years were only due to the declared ore grade and milling recovery.
- It was in 2007 where the metal content of Class B and C recorded the highest with 12.8 million MT and 58.1 million MT, respectively. Also, it was during this year that ore grade registered the highest at 27.6 percent and milling recovery produced the highest at 84.4 percent.

Table 8. Summary Closing Stock of Class B and C Copper Reserve, Metal Content, CAR: 2004-2016 (in thousand MT)

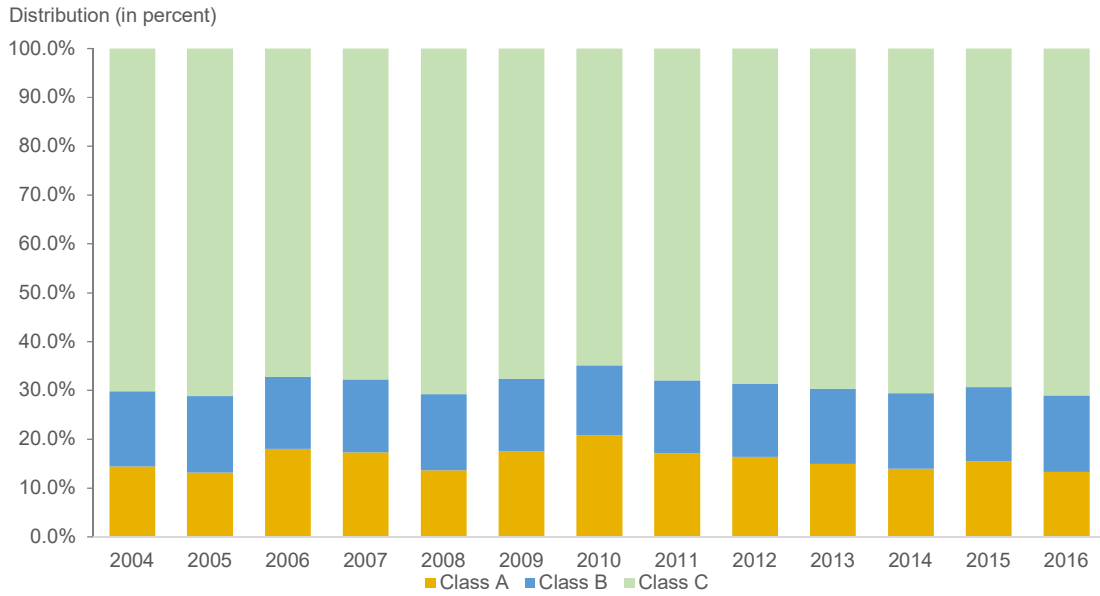
Year	Class B Metal Content (in '000 MT)	Class C Metal Content (in '000 MT)
2004	12,350.3	56,252.3
2005	12,029.2	54,790.0
2006	12,289.0	55,973.4
2007	12,766.7	58,149.0
2008	12,361.1	56,301.7
2009	12,382.0	56,396.9
2010	12,409.9	56,523.8
2011	12,430.2	56,616.2
2012	12,360.2	56,297.7
2013	12,160.9	55,389.6
2014	12,075.1	54,998.9
2015	12,410.9	56,528.4
2016	12,423.2	56,584.6

Source: Philippine Statistics Authority – CAR

Class C had the highest share to the total stock of copper reserve in metal content

- Class C copper in metal content had the highest percentage share to the total stock. In 2005, Class C shared as much as 71.2 percent or 54.8 million MT.
- Class B was highest in 2005 and in 2016 with 15.6 percent of the total stock.
- Class A yielded the highest in 2010 with 20.9 percent or 18.2 million MT of the total volume. The least share for Class A copper was in 2005 with only 13.2 percent or an equivalent of 10.2 million MT in metal content.

Figure 2. Share of Class A, B and C Copper Reserve to the Total Stock, Metal Content, CAR: 2004-2016 (in thousand MT)



Source: Philippine Statistics Authority – CAR

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Technical Notes

Class A refers to commercially recoverable reserves/resources.

Class B refers to potentially commercially recoverable reserves/resources.

Class C refers to non-commercial and other known deposits.

Discount rate is the expected rate of return on the non-produced assets.

Extraction is the quantity of the resource physically removed from the deposit.

Net present value is the value of an asset determined by estimating the stream of income expected to be earned in the future, and discounting the future income back to the present accounting period.

Reappraisal relate to either additions or reductions in the estimated available stock of a specific deposit or to changes in the categorization of specific deposits between class A, B or C based on changes in geologic information, technology, resource price or a combination of these factors.

System of Environmental-Economic Accounting (SEEA) 2012 – Central Framework is an international statistical standard for environmental-economic accounting. It is a multipurpose conceptual framework for understanding the interaction between the economy and the environment.
