

Legal Statement

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The purpose of the information in this presentation is to guide ICA programs and provide members information to make independent business decisions.

Antitrust Guidelines for Copper Industry Trade Association Meetings

The following guidelines with respect to compliance with antitrust laws of the United States, Japan and European Community¹ are intended to govern the conduct of participants in copper industry trade association meetings, both at the meeting itself and in informal discussions before or after the formal meeting.

Price: Competitors should not discuss future prices (including terms of sale) of their products. There is no blanket prohibition against the mention of or reference to current or past prices but limits must be observed. Such references or mentions should occur only when necessary in connection with the development of association programs. For example, reference to a particular price level in comparing the cost of a copper product to a competing product is permitted. Whenever possible, such references should be discussed in advance with legal counsel.

Competitive Information: Competitors should not discuss the market share of a particular copper producer or copper fabricator's products. Furthermore, nothing should be said at a meeting which could be interpreted as suggesting prearranged market shares for such products or producer production levels. The overall market share of copper products may be discussed with regard to competition with non-copper products and general market acceptance.

New Products: Competitors should not encourage or discourage the introduction of a new product by another competitor or reveal a particular copper company's plans to change the production rate of an existing product or to introduce a new product. No company should disclose to another company whether it is in a position to make or market a new product. New products may be discussed in a technical manner or from the standpoints of competition with non-copper products and general market acceptance. In addition, proposed methods for and results of field and laboratory testing can be considered.

The Role of Legal Counsel: Legal counsel attends association meetings to advise association staff and other meeting attendees regarding the antitrust laws and to see that none of the matters discussed or materials distributed raise even the appearance of antitrust improprieties. During the course of a meeting, if counsel believes that the discussion is turning to a sensitive or inappropriate subject, counsel will express that belief and request that the attendees return the discussion to a less sensitive area.

A paper entitled 'Copper Industry Trade Associations and Antitrust Laws' is available upon request.

10/92, 5/93, 10/10

1. Other foreign competition laws apply to International Copper Association, Ltd. (ICA)'s activities worldwide.



International Copper
Association
Copper Alliance

Copper's Role in Sustainable Development

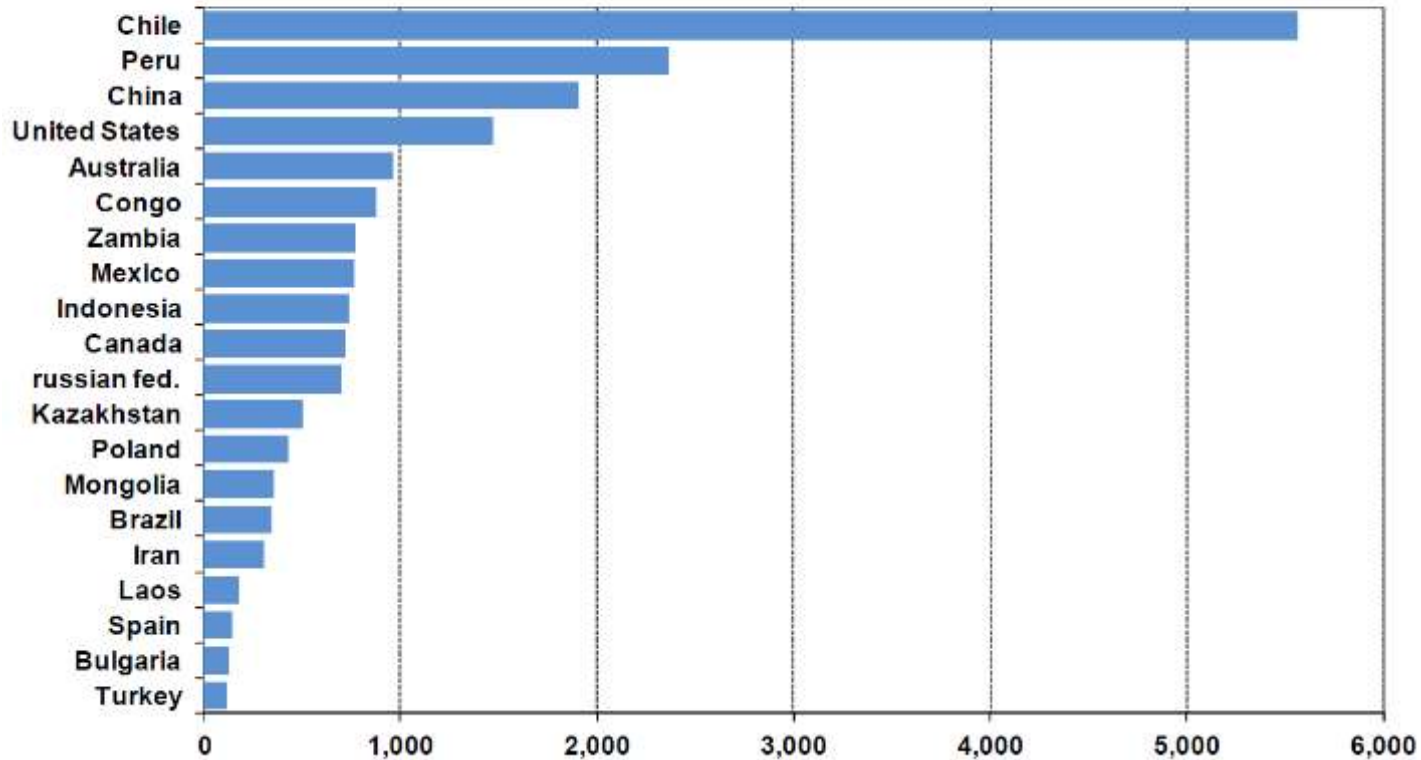
Andrea Vaccari
Director, Health, Environment & Sustainable Development



Where does copper come from?

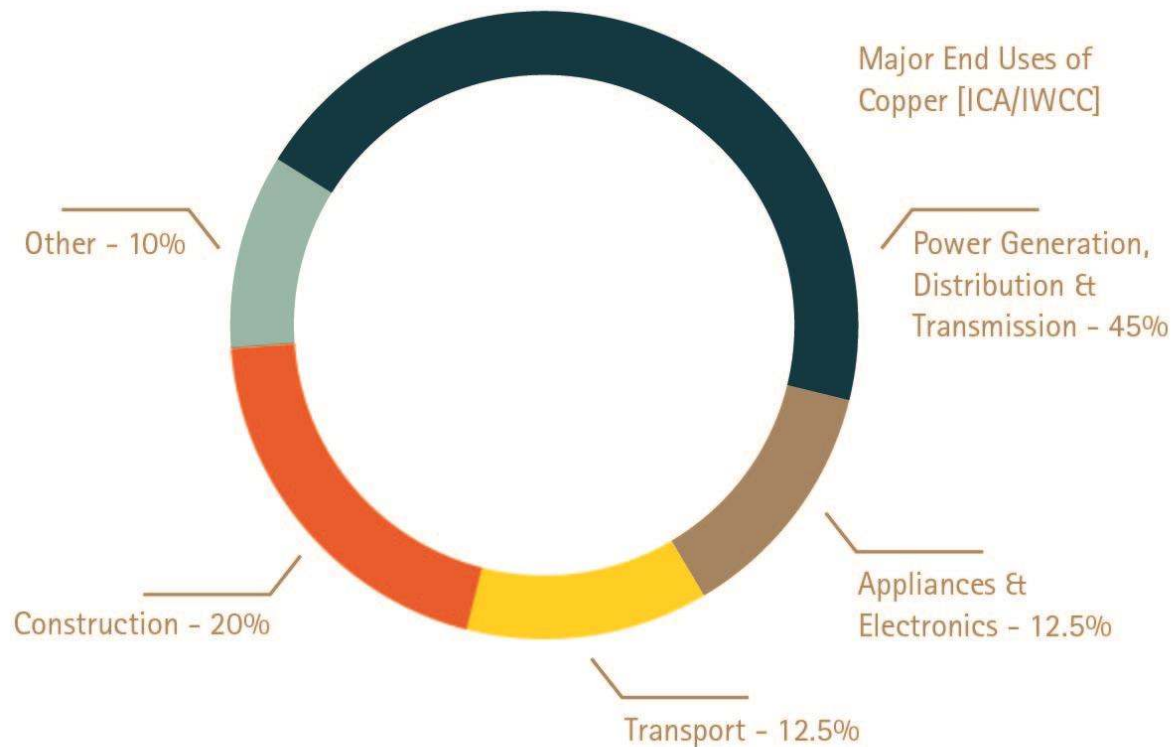
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Copper Mine Production by Country: Top 20 Countries in 2016
(Thousand metric tonnes)
Source: ICSG



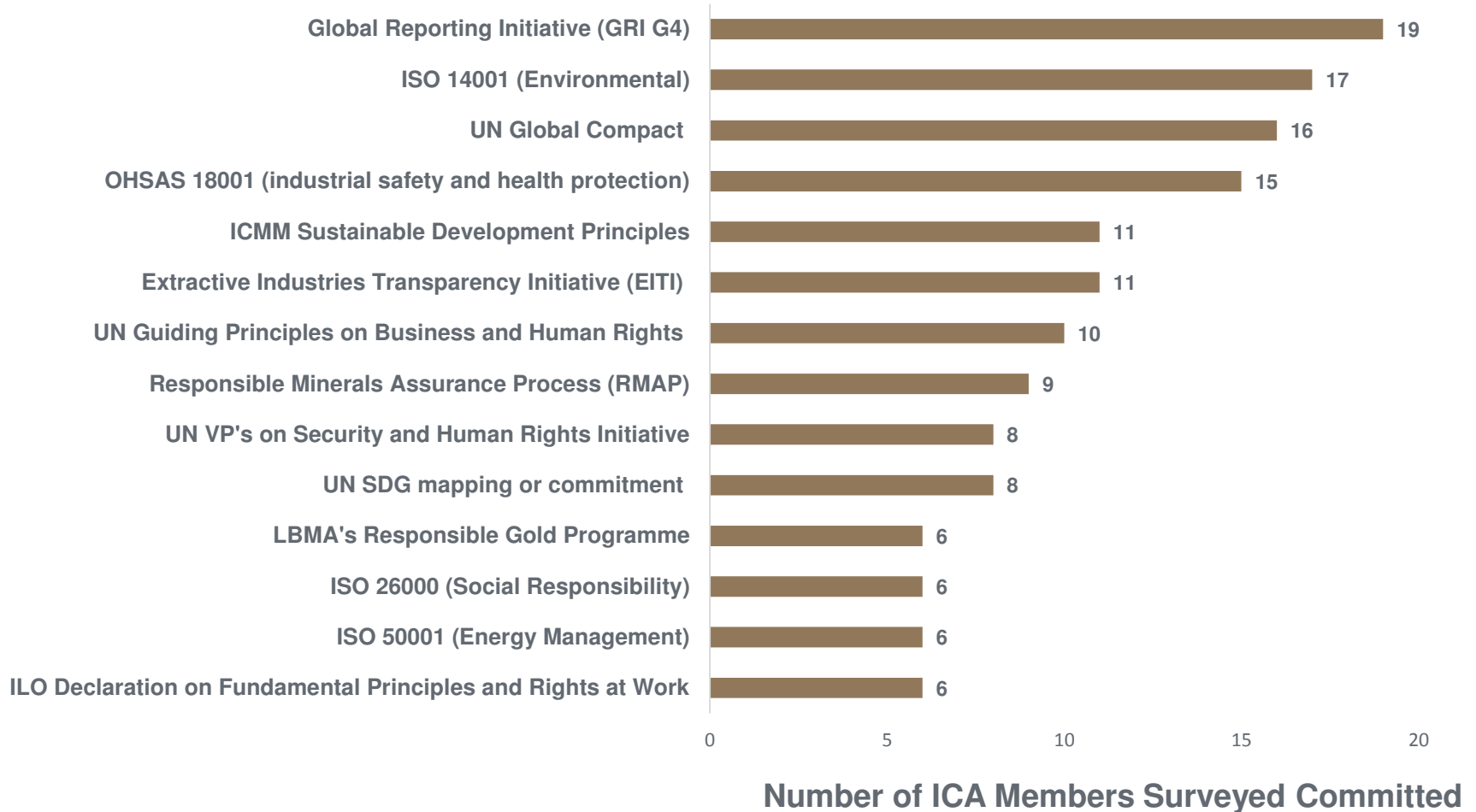
Copper is critical to sustainable development

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ICA member commitments to sustainability

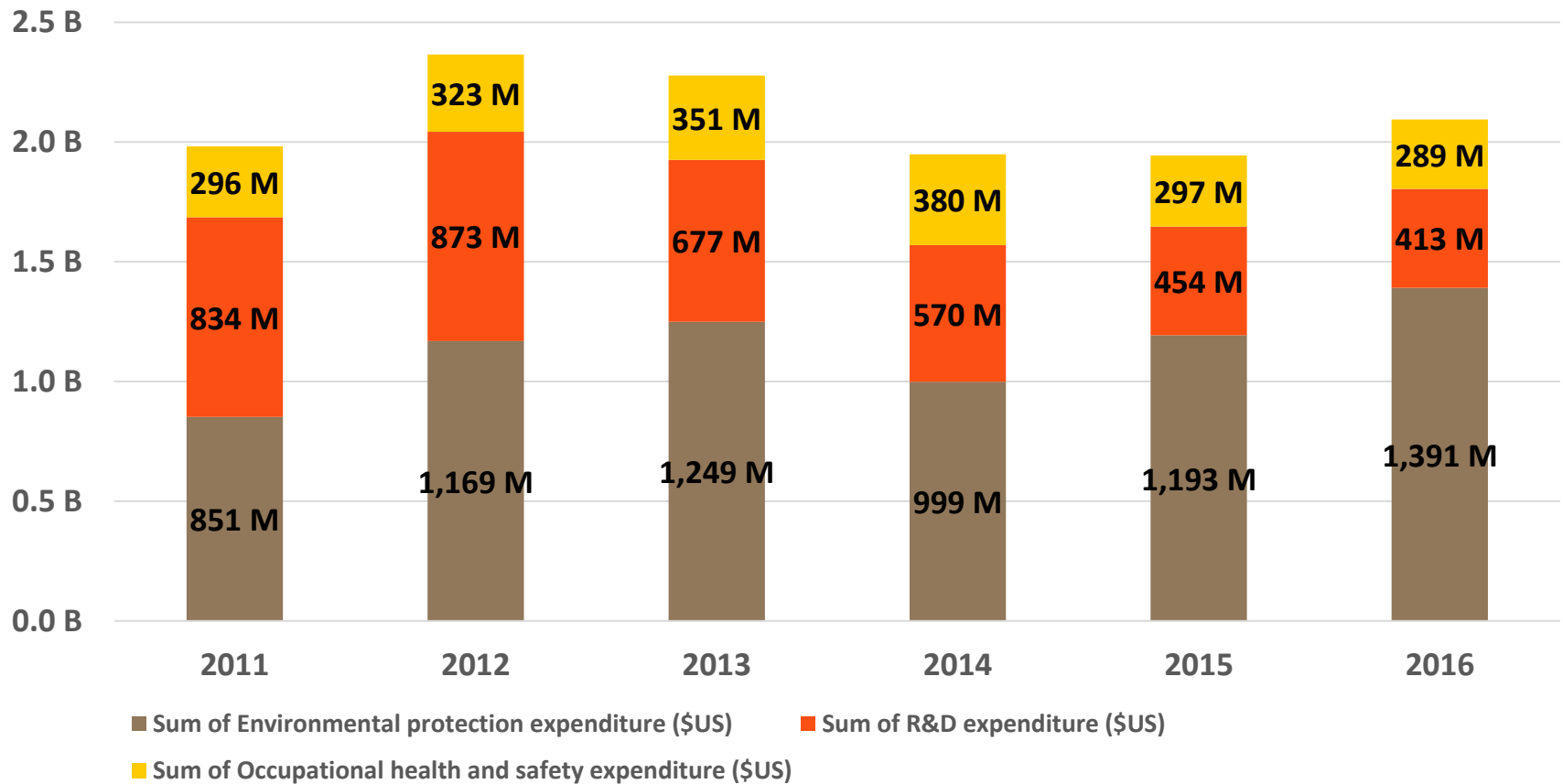
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Investment in sustainable operations*

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* = (Capital + R&D + Environmental protection + Occupational health and safety) expenditures



Copper is key to achieving the UN SDGs

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ICA's programs and its members are making an impact on all 17 United Nations Sustainable Development Goals



Reducing carbon emissions

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Antofagasta announces **first mine to use 100 percent renewable energy** through agreement with a Chilean electric power utility company.



Zaldívar copper mine in Chile (image courtesy of [Antofagasta PLC](#))

Replacing fossil fuels

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Codelco installed a 43,920 m² solar plant to replace petroleum use at the Gabriela Mistral mine. The **solar plant produces 80% of the energy required** for the electrowinning process, avoiding **13,600 tonnes of CO₂** emitted to the environment each year.



Solar plant for Gabriel Mistral (image courtesy of [Codelco](#))

Reducing energy use

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Boliden Aitik mine applies **innovative automation technologies**—resulting in an estimated 10 percent savings in fuel consumption per year.

This corresponds to a reduction of **9,400 tonnes of CO₂ per year.**

Improving energy efficiency

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Freeport McMoRan's Cerro Verde concentrator expansion was completed in 2016.

This included a High Pressure Grinding Roll circuit that is approximately **40 percent more energy efficient** than a traditional Semi-Autogenous Grinding mill circuit.



(© Cerro Verde/Lance Lundstrom)

Using industrial heat to warm cities

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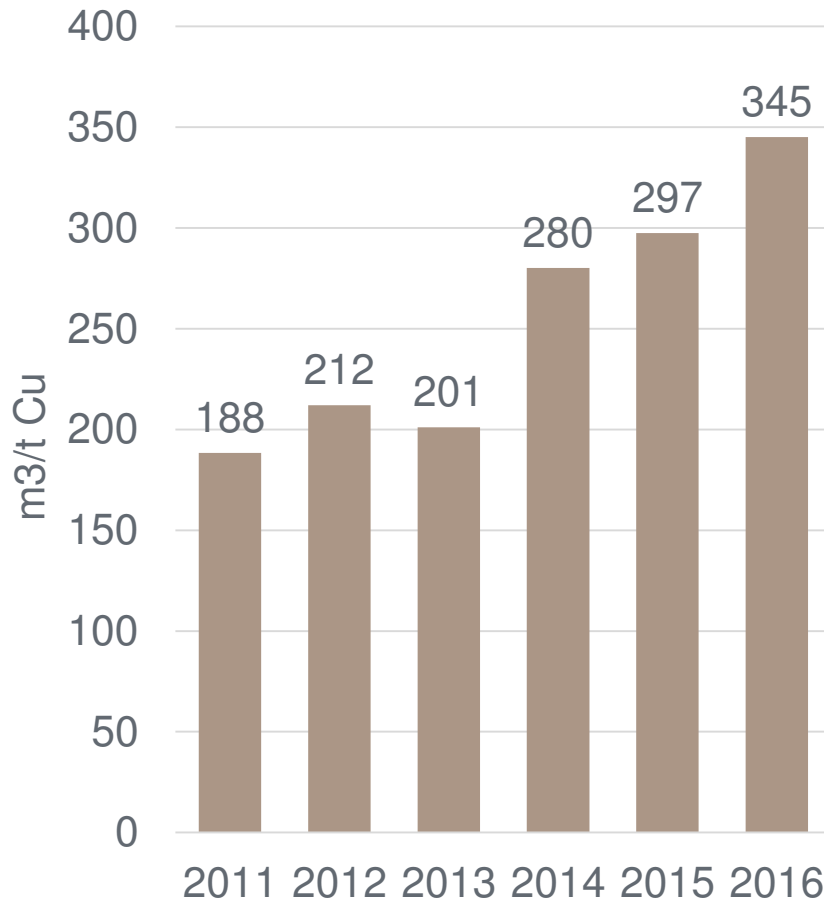


Industrial heat from Aurubis's Hamburg Copper Smelter will provide heat to the district of Hafencity East.

This is the first time that an entire district will be almost completely supplied with industrial heat from industry and is estimated to **save 140,000 tonnes of CO₂ each year.**

Water recycled and reused intensity

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In 2016 water drawn from primary sources was used **at least twice** on average before exiting production sites.



BHP's \$3.4 billion desalination plant

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Largest
desalination plant
in Latin America

Two 42-inch
pipelines transport
water from the sea
to 3,200 m above
sea level

Four high-pressure
pumping stations

45 million person-
hours of work

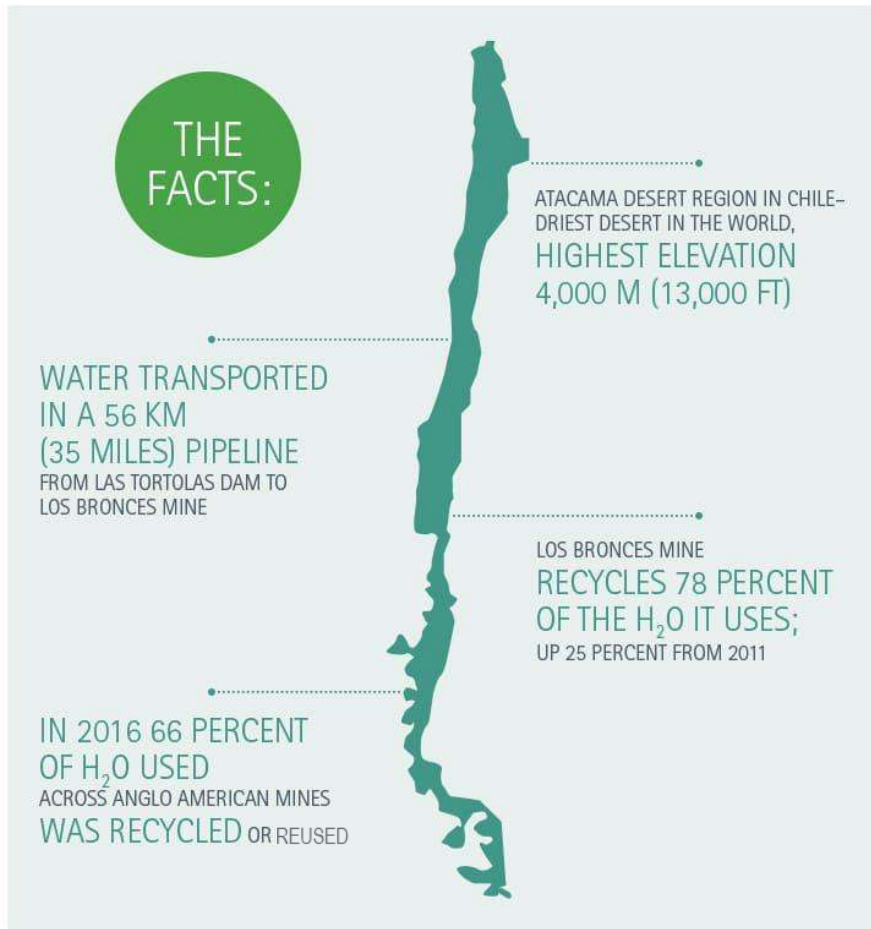
“In Chile, we aspire to cease using fresh water altogether from 2030.”

- Daniel Malchuk, President of BHP Minerals Americas



Anglo American uses tech to reduce water use

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Anglo developed “Pervasive Sensing” technology with partner Silix

Fiber-optic circuit measures mine water flows in real time and maximizes conservation at multiple points

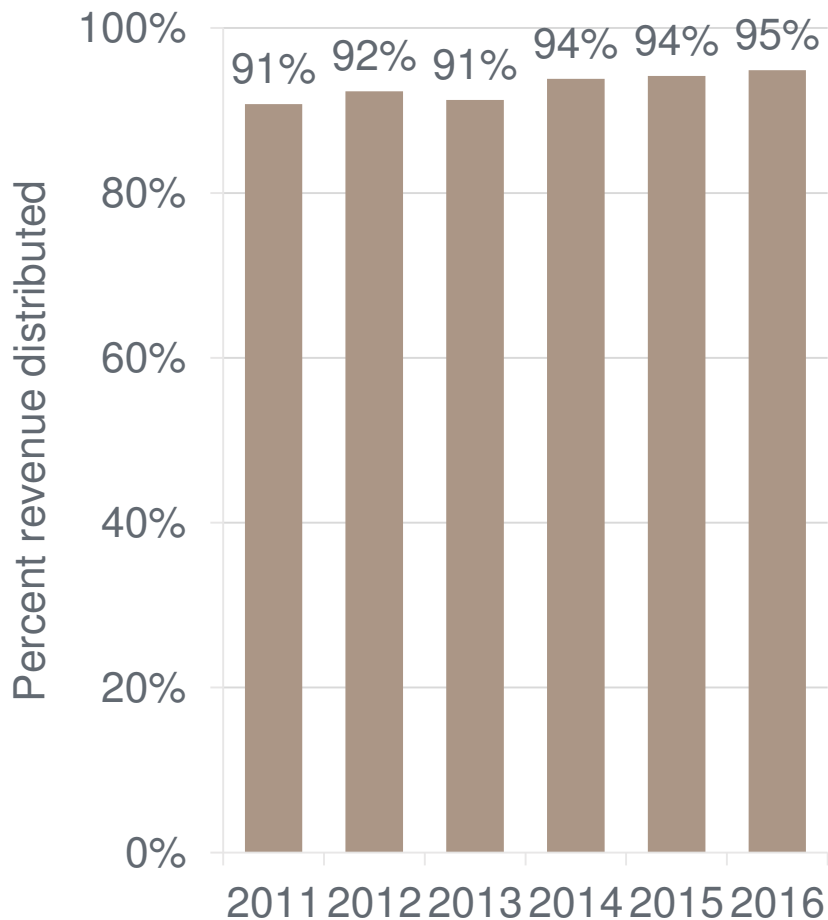
Ability to monitor a region equal in size to Lower Manhattan, NY

Cost efficient and environmentally sound

Supports better process control, water conservation and, ultimately, improved metal recovery

Economic value distributed

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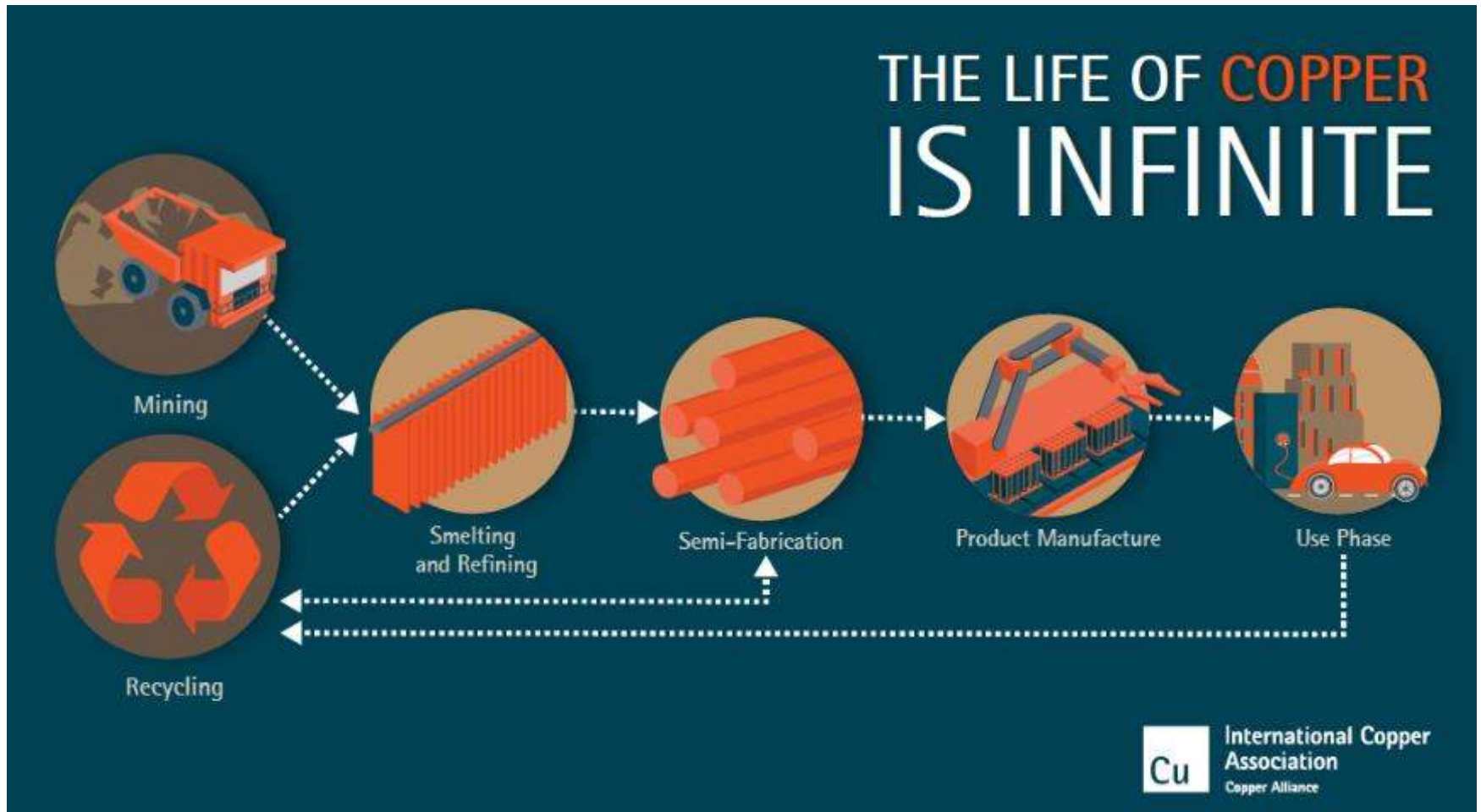
An average of \$115 billion is distributed to the global economy each year from participating members.

In 2016, **95 percent** of revenue was distributed in the form of:

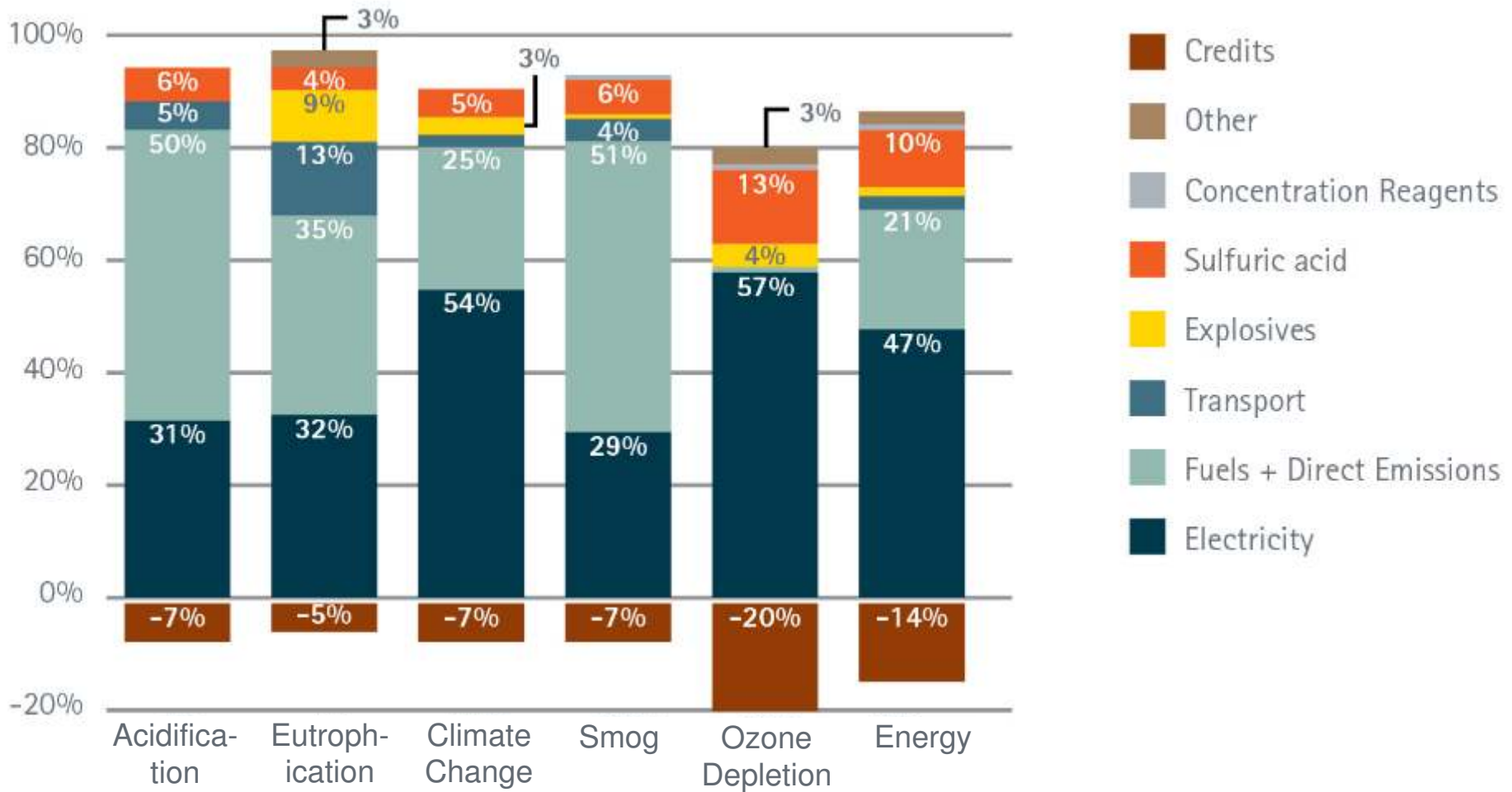
- Wages,
- Operating costs,
- Financing, and
- Investing in local community development.

Taking a circular perspective

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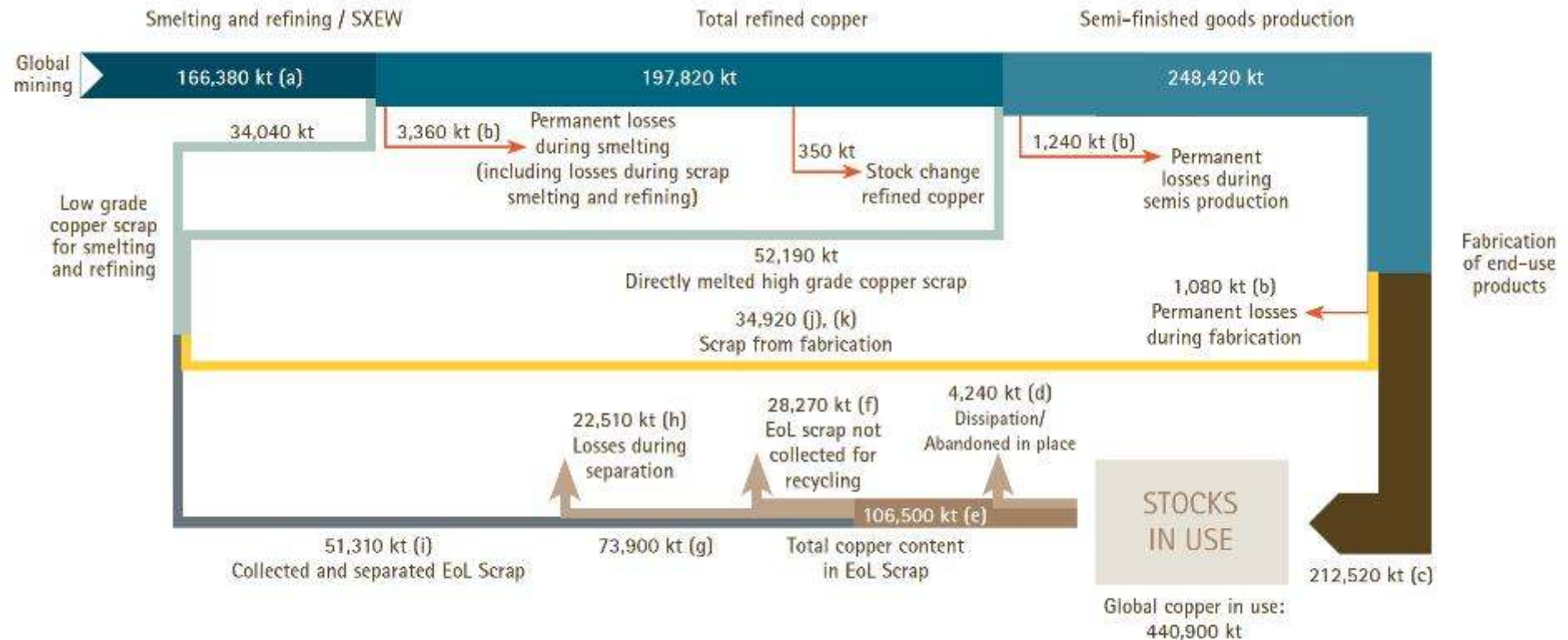


Understanding & reducing our impacts



Mapping copper stocks & flows

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Global copper stocks and flows 2006 - 2015 (ICA/Fraunhofer ISI, 2017)

Keeping it in the loop

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COPPER, THE RECYCLING CHAMPION

On average, 25 million tonnes of copper were used globally (2006 - 2015); 35 percent of this was sourced through recycling.

Source: ICA/Fraunhofer ISI (2017)



