International Copper Association
Copper Alliance

Copper: A Critical Material for Climate Change Mitigation

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When mining is discussed, what do our stakeholders think about?

The copper mining story cannot be told with only one chapter

- Chapter One: Mining
- The End

Sustainable Development

Energy Efficiency

Climate Change Mitigation

Renewable Energy

Electrical Safety

Public Health

Food Supply

Green Building

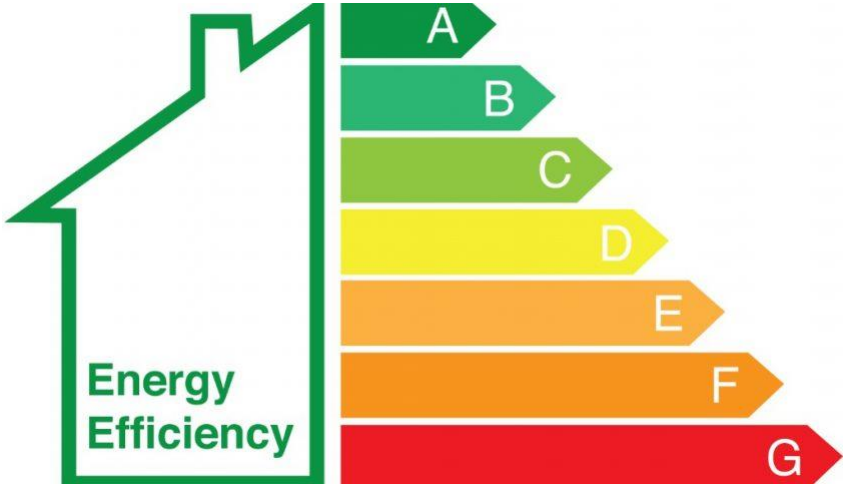
Air Quality

Copper: Critical to Sustainable Development

Cu

- ICA's programs are making an impact on all 17 SDGs

Three Pillars to Clean Energy Transition: Renewables, E-Mobility, Energy Efficiency



Copper: Critical to Clean Energy

- Copper is the best (non-precious) conductor of heat and electricity
- The products that contain copper tend to operate more efficiently
  - Over their life cycles, these products will consume less energy, save money and reduce CO_2 emissions
- Renewable energy: 4-12X more copper
- Electric vehicles: 3-4X more copper
- Energy-efficient products use more copper

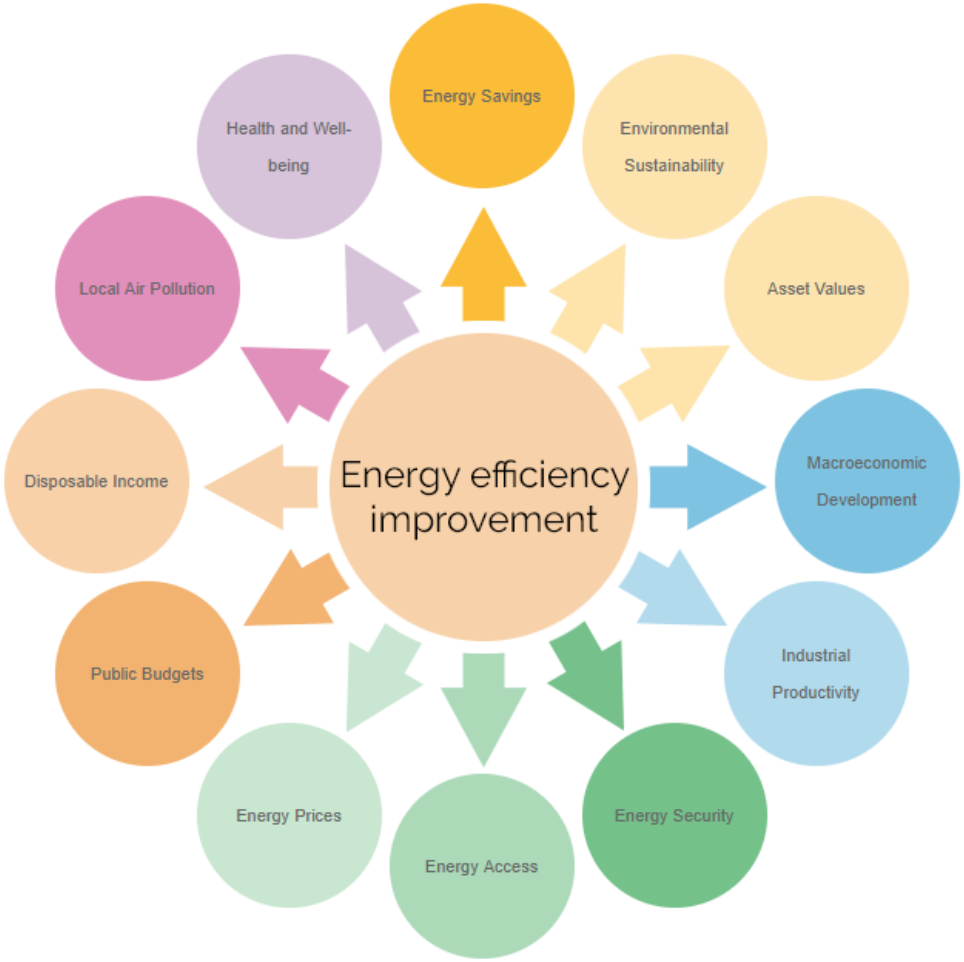
Energy Efficiency

2-Minute Video on Energy Efficiency

Energy Efficiency Benefit: Climate Change Mitigation

40% of the Path to Limiting Climate Change to 2ºC Can Be Achieved With Energy Efficiency (Int'l Energy Agency, IEA)

Multiple Benefits of Energy Efficiency: IEA



Energy Efficiency Benefit: Climate Change Mitigation

There are many sources of CO_2 emissions

Copper and Climate Change

=

1 tonne **3.5 tonnes**

Copper and Climate Change

Cu

- Chapter One:
  One tonne of copper cathode = 3.5 tonnes of CO_2 emissions.
- The End
- The story of copper and CO_2 cannot be told in one chapter
- Copper is the best non-precious conductor of heat and electricity
- The products that contain copper tend to operate more efficiently
- A vast majority – 70% – of copper is used in conductive applications that benefit from copper's efficiency
- In the end-use phase of these products, because of copper's efficiency, CO_2 emissions are reduced by 100-7,500 tonnes
- That's a mitigation factor of between 30 and 2,000-to-one!

Copper and Climate Change

7,500 tonnes

Preparing for COP25:

Concrete Actions – YES!
Green-Washing – NO!

Program Example:
Early Motor Replacement, Turkey

Goal: replace 4.3M motors with premium efficiency IE3!

Concrete Action: Chile Motors Replacement Program (1/2)

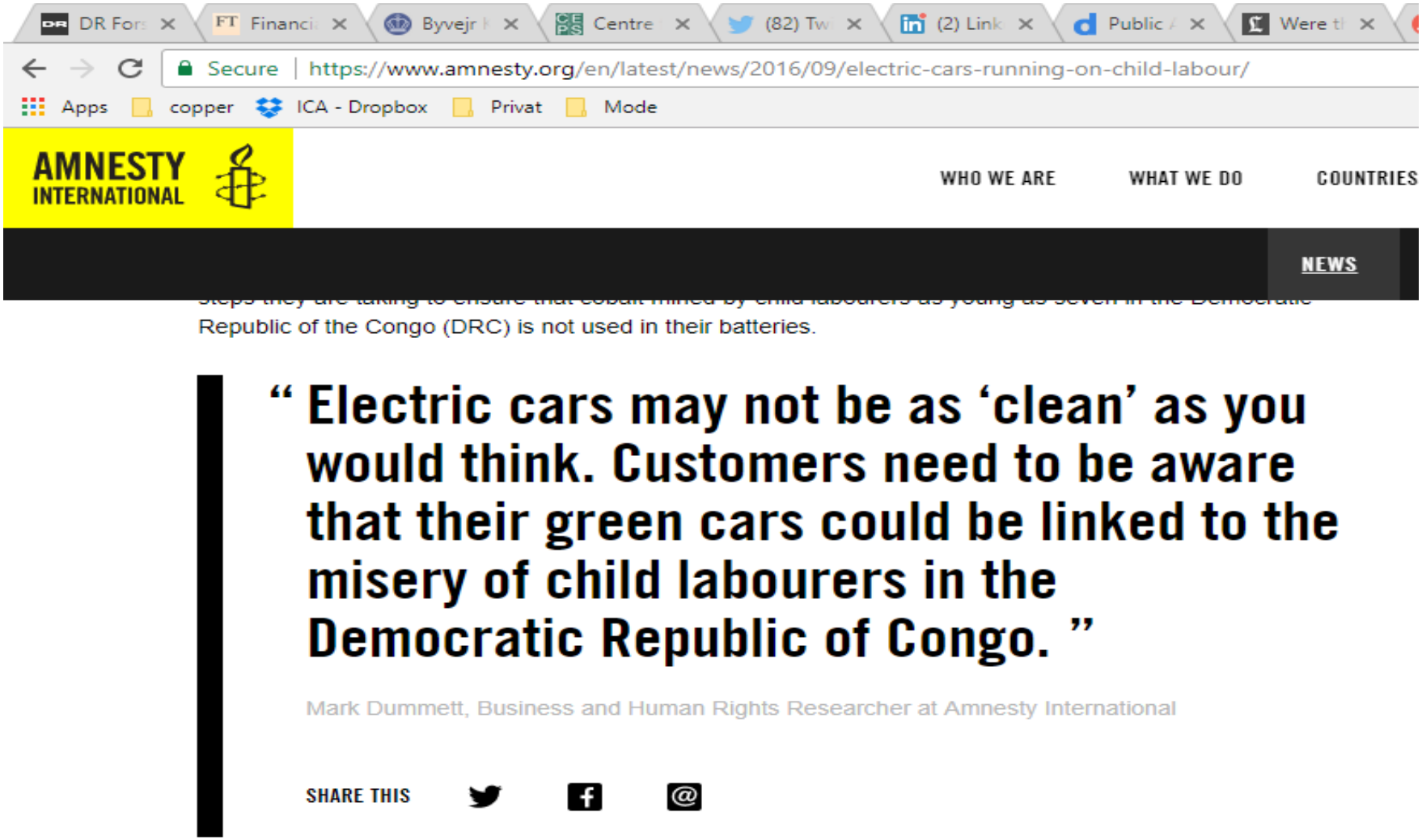
- Industry and mining account for almost two-thirds of Chile's electricity consumption
  - Copper industry accounts for nearly half
  - Motor systems account for more than 60% of industry/mining consumption; **as high as 90% in some mining companies!**
  - Globally, motor systems consume more than 40% of electricity consumption
- Can the Chilean copper industry align on an early motors' replacement program?
  - Audit of four mine sites shows 37 year average to replace electric motors (rewinding done every 8 years)
  - Payback in Turkey is about two years; assume something similar in Chile

Concrete Action: Chile Motors Replacement Program (2/2)

- How do we do it?
  - Commitment from industry
  - Support from government (Nationally Determined Contributions – NDCs)
  - Updated energy audit
  - Create financing facility; zero-payback option being developed in Turkey
    - Energy Services Company (ESCO)
  - Select implementing partner(s)
  - Host meetings/workshops; set objectives, timeline, etc.
  - Announce at COP25
    - Focus not only on the material, but also on the industry itself

Responsible Sourcing

New Opportunities, More Challenges



Responsible Sourcing

"Apple and Climate Change: Company Vows to **Stop Mining** and **Use 100 percent Recycled Material** for the iPhone"

FINANCIAL TIMES

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Industrial metals + Add to myFT

Supply chain scrutiny intensifies for battery materials

"The Commodities Note

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ICA Responsible sourcing strategy

- ICA is developing a responsible sourcing strategy to address needs in the copper supply chain
  - Engaging stakeholders over the last 1.5 years on the topic working to develop the concept
  - Utilizing the SDGs as a framework to demonstrate contribution to sustainable development, beginning with SDG 12 to drive and provide assurance of sustainable production
  - Site-based approach and requires verification by a qualified external firm
  - Will utilize an equivalency approach to avoid duplication and ensure collaboration in the space
  - Utilizes a risk-management-based approach
  - Optional additional SDGs component

Thank you

For more information please contact
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Copper. Makes the World Work Better