

## PRESS RELEASE

25 January, 2010

### **SURVEY SHOWS CONCERNS OVER COPPER USAGE IN SEMICONDUCTOR PACKAGING**

#### **First global study, conducted by SEMI, of the semiconductor industry into the use of gold wire vs. copper wire**

*London.* World Gold Council (WGC) has welcomed the results of a survey, conducted by SEMI, the global semiconductor industry association, which shows the semiconductor industry has serious reservations about the reliability and yield of copper bonding wire. This global survey does show that an increasing number of companies are considering using copper for some new products, this despite continued evidence that gold is more reliable.

SEMI surveyed 46 leading semiconductor companies across the world to determine the extent of copper bonding wire programs in the industry and to identify the key issues and considerations related to decisions in selecting bonding wire material. Companies surveyed included both integrated device manufacturers (IDMs) and fabless semiconductor companies, with revenues totalling \$137 billion in 2008, representing of 55% of the global industry, and included responses from 14 of the top 20 supplier rankings for 2008.

The results show that 59% of the companies surveyed do not use copper wire technology in their products, 41% use it in some products and none of the companies use it in the majority of products. Of the companies surveyed, 72% are considering the switch to copper wire for some new products, 13% are considering it for the majority of products and 15% are not considering switching. There were serious concerns about the move to copper usage, of which the main concerns were:

- In-service product reliability
- Process yield
- Unproven historical performance

When asked to expand on these concerns, issues that were highlighted included performance concerns specific to the automotive market, the increased costs in having to purchase new equipment, copper's unsuitability for complex wire loop shapes in advance packages, difference in electrical performance and comfort with the established supply base for gold bonding wire.

The principle of design-for-recycling, which is often promoted by equipment and device manufacturers in the interests of sustainability, does not yet appear to be an issue of significance to IDMs and fabless companies. Whilst half the companies surveyed were aware that over 50% of the economic value of some end-of-life electronic products is derived from the gold content (which underpins the economic viability of electronics recycling), the survey also shows that only 21% of companies consider recyclability of waste electronics when selecting bonding wire material.

Dr Richard Holliday, Director, Industrial at World Gold Council, said: "The results of this survey show that there are still serious reservations in the industry over the use of copper wire in packaging technology. It is clear that gold has proven reliability and a track record - industry professionals still recognise this. We plan to undertake further research to discover the extent of the difference in reliability of gold versus copper.

# WORLD GOLD COUNCIL

Although end-of-life recyclability of electronic goods is becoming an increasingly important issue, it is surprising that very few fabless or IDM companies are influenced by the essential role the value of gold plays in the economic viability of waste electronics recycling. ”

Dr Dan Tracy, Director of Industry Research and Statistics at SEMI added: “This survey shows that the much talked about switch from gold to copper wire in the semiconductor industry is being considered for some new products. However, there are still concerns over copper – both its reliability and its potential limitations in advanced technologies and key industries such as the automotive industry.”

The full survey can be downloaded from:  
[http://www.gold.org/assets/file/rs\\_archive/semi\\_survey.pdf](http://www.gold.org/assets/file/rs_archive/semi_survey.pdf)  
or [www.semi.org/wiresurvey](http://www.semi.org/wiresurvey)

**ENDS**

**For further Information or images, please contact:**

Matt Graydon, Director - Corporate Communications, World Gold Council, on + 44 (0) 207 826 4716, or [matt.graydon@gold.org](mailto:matt.graydon@gold.org)

Mary Clark, Capital MS&L on + 44 (0) 207 307 5336, or [mary.clark@capitalmsl.com](mailto:mary.clark@capitalmsl.com)

Helen Essex, Capital MS&L on +44 (0) 207 307 5343, or [helen.essex@capitalmsl.com](mailto:helen.essex@capitalmsl.com)

Dan Tracy, SEMI on +1 408 943 7987 or [dtracy@semi.org](mailto:dtracy@semi.org)

Richard Holliday, World Gold Council +44 (0)207 826 4712 [richard.holliday@gold.org](mailto:richard.holliday@gold.org)

**Notes to Editors:**

**World Gold Council**

World Gold Council’s mission is to stimulate and sustain the demand for gold and to create enduring value for its stakeholders. It is funded by the world’s leading gold mining companies. For further information visit [www.gold.org](http://www.gold.org).