

**China-U.S. Energy Efficiency Steering Committee Meeting**  
**Energy Efficiency Amorphous Transformers Team Report**  
**June 25, 1999**

**Achievements Since the May 1997 Steering Committee Meeting**

- Allied Signal signed up the first Chinese licensee, Shanghai Zhixin, in February 1998 and had Zhixin build a new amorphous metal transformer factory in Puxi, Shanghai. This factory has been completed recently and is able to supply 2000 pcs of transformer annually (assuming 400KVA type).
- Allied Signal has also signed a Joint Venture (JV) agreement with Zhixin for core manufacturing, in which Allied Signal holds a 60% share and Zhixin holds 40%. This JV will start up using existing facilities in Pudong, Shanghai, and eventually increase production capacity to 5000MT per year.
- Allied Signal is working closely with Zhixin to capture existing opportunities in southern and eastern china, and exploring new markets in northern and western China, and expects rapid growth for amorphous metal transformer applications in China under this new JV arrangement.
- Collaborating with International Copper Association (New York) to promote the use of S-9 transformers through technical exchange, workshops, and publicity.

**Issues and Opportunities**

- The main barrier against the amorphous metal transformer produced by the Allied Signal/Zhixin JV is its high price. The transformer at present relies almost exclusively on imported parts, which leads to a price differential of 1.3 compared to existing transformers. It is recommended that certain parts of the transformer, such as the iron core and the amorphous belt be manufactured domestically.

**Next Steps**

- Promote technology transfer of the manufacture of the iron core and amorphous belt from the US to China
- To increase market penetration for amorphous transformers, the US should provide technical and financial assistance.

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**(Joe Huang, LBNL, was the US representative at the meeting)**