

# Amorphous Metal - Metglas® SA1

## Amorphous Metal Distribution Transformers Reduce Greenhouse Gas Emissions from Generation Facilities

### ● Minimum Efficiency Performance Standards (MEPS)

- US Department of Energy (DOE) issued mandatory MEPS for Distribution Transformers in October 2007
- MEPS will become mandatory for transformers manufactured after January 1, 2010

### ● Advantage of Amorphous Metal

- Metglas® is amorphous structure randomized by process having absence of regular structure which helps magnetization process

### ● Features

- Lower Hysteresis Loss
- Low Eddy Current Loss
- Lower Temperature Rise, Reliable
- Low Loss under Harmonic, Power Quality
- Flexible Manufacturing Processes
- Consistent Properties

### IMPACT ON CO2 GENERATION

Region / Country	Electricity Consumption 2004 (TWh) (1)	Distribution Transformer Core Losses 2004 (TWh) (2)	Potential Annual Savings with AMDT's 2004 (TWh) (3)	Potential Annual Savings with AMDT's (Million US\$) (4)	Annual CO2 Reduction in Millions of Tons (5)
USA	3,974	33.8	27.0	2,027	14.5
EU25	2,982	25.3	20.3	1,521	6.1
China	2,080	17.7	14.1	1,061	12.3
Japan	974	8.3	6.6	497	2.8
Russia	882	7.5	6.0	450	4.2
India	631	5.4	4.3	322	3.8
Brazil	381	3.2	2.6	194	0.2

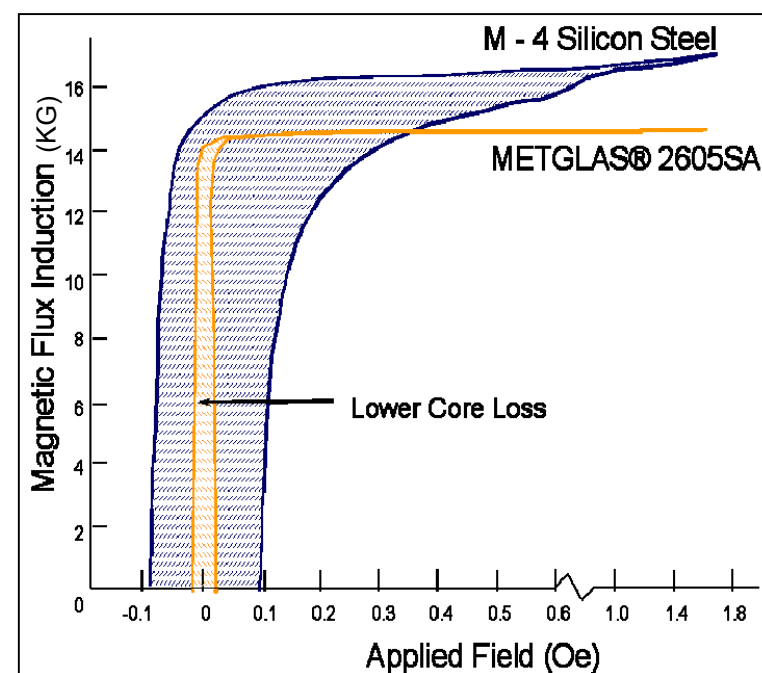
(1) Energy Information Agency-International Energy Outlook 2004

(2) SEEDT Report EIE-05-056 and Our Estimates

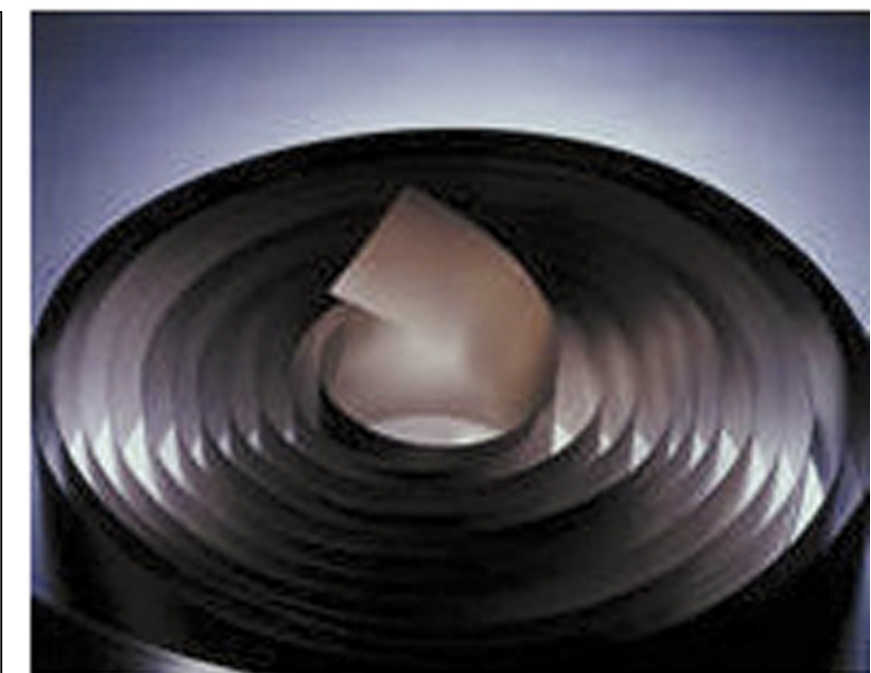
(3) Based on Metglas Experience

(4) \$0.075/kwhr Energy Costs

(5) Based on Percentage and Efficiency of Thermal Generation (0.4 kg CO2 per KWh for EU25)



DC B-H Loop Comparison



Amorphous Metal Ribbon