ARE YOU BUYING DISTRIBUTION TRANSFORMERS MEETING EUROPEAN UNION ECODESIGN REQUIREMENTS?

METGLAS® Amorphous Metal Core Distribution Transformers (AMDTs) ARE MORE EFFICIENT AND HAVE LOWER OPERATING COSTS

Under the Commission Regulation (EU)[1] that establishes EcoDesign requirements for transformers, each transformer installed must operate with energy losses below both maximum No-Load Loss (NLL) and maximum Load Loss (LL) levels.

Due to amorphous metal core material having a random atomic structure and being thin, AMDTs **MUST** have lower NLL than those called out in the regulations.

Therefore, amorphous core transformers will naturally have

- **Higher Efficiency**
- **Less Wasted Energy**

under normal Tier 1 operating conditions than a traditional silicon steel transformer.

THE BENEFITS OF A ECODESIGN TIER 1 AMORPHOUS CORE TRANSFORMER

Europe Losses Designations (CENELEC) Tier 1			Amorphous (AMDT)	Efficiency at 20% Load[2]	
kVA	No-Load Losses (W)	Load Losses (W)	No-Load Losses (W)	GOES	AMDT
	A_0	C_k	$A_0-55\%$	A_0; C_k	$A_0-55\%$; C_k
400	430	4600	194	99.69%	99.81%

AMDT **MUST** be 99.81% Efficient at 20% Load and at C_k Load Losses due to lower No-load Losses; Grain Oriented Electrial Steel (GOES) unit would be 99.69% Efficient at 20% Load for A_0C_k

A TIER 1 AMDT WILL HAVE 38% LESS WASTED ENERGY THAN A TIER 1 TRANSFORMER MADE WITH GOES (20% LOAD)

If all Tier 1 transformers in the EU were to be amorphous, energy savings (reduced generation) would be more than 5,000 kWHr/Year per MVA of Nameplate Distribution Capacity.

If 30,000 MVA of industrial – distribution transformers are installed in a given year, purchase of 100% AMDT would reduce annual CO_2 emission by **57,000** Tons.

(1) COMMISSION REGULATIONS (EU) No 548/2014 of 21 May 2014 (Table 1.1)
(2) VITO's 2010 LOT 2: Distribution and power transformer Draft Chapter 6 – Improvement Potential (Table 27) assumes that EU Distributions Transformer Load Factors are in the 10% to 25% Range, and Industrial Transformers are Loaded at 10% to 60%.