



MODERN WIND-MILL DRIVE WITH FULL-POWER CONVERTER

November 18, 2011.

A close-up photograph of a man's face, looking directly at the viewer with a serious expression. He has short, dark hair and a mustache. In the background, the blades of a white windmill are visible against a cloudy sky.

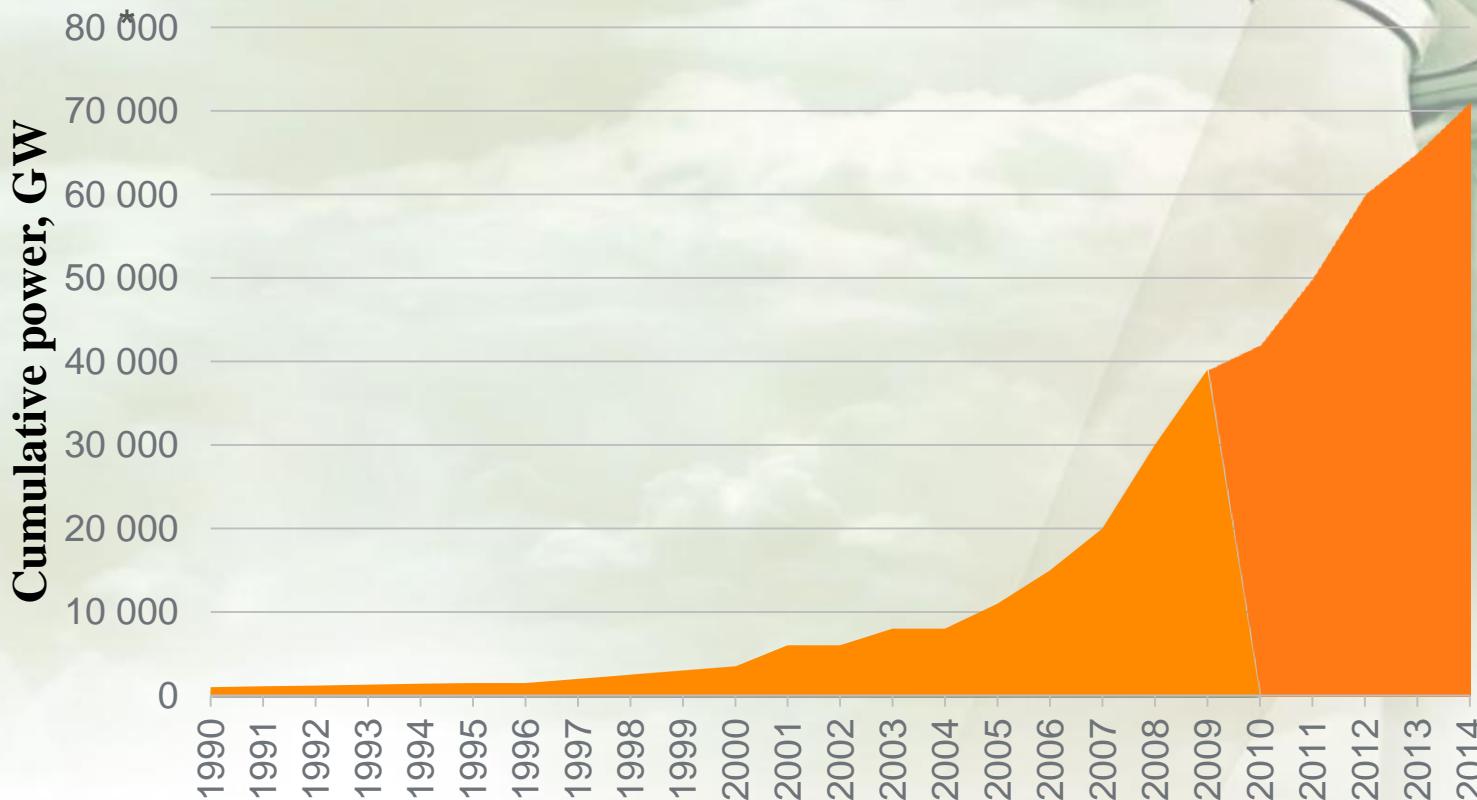
"WHEN THE WINDS OF CHANGE BLOW,
SOME PEOPLE BUILD WALLS AND
OTHERS BUILD WINDMILLS."

Old Chinese proverb



WIND POWER

+5 to 10 GW yearly



* New installations in MW

THE SWITCH

Bringing you power

Bringing you power • Bringing you power • Bringing you power • Bringing you power • Bringing you power

THE SWITCH DRIVE™

The soul of every reliable wind turbine



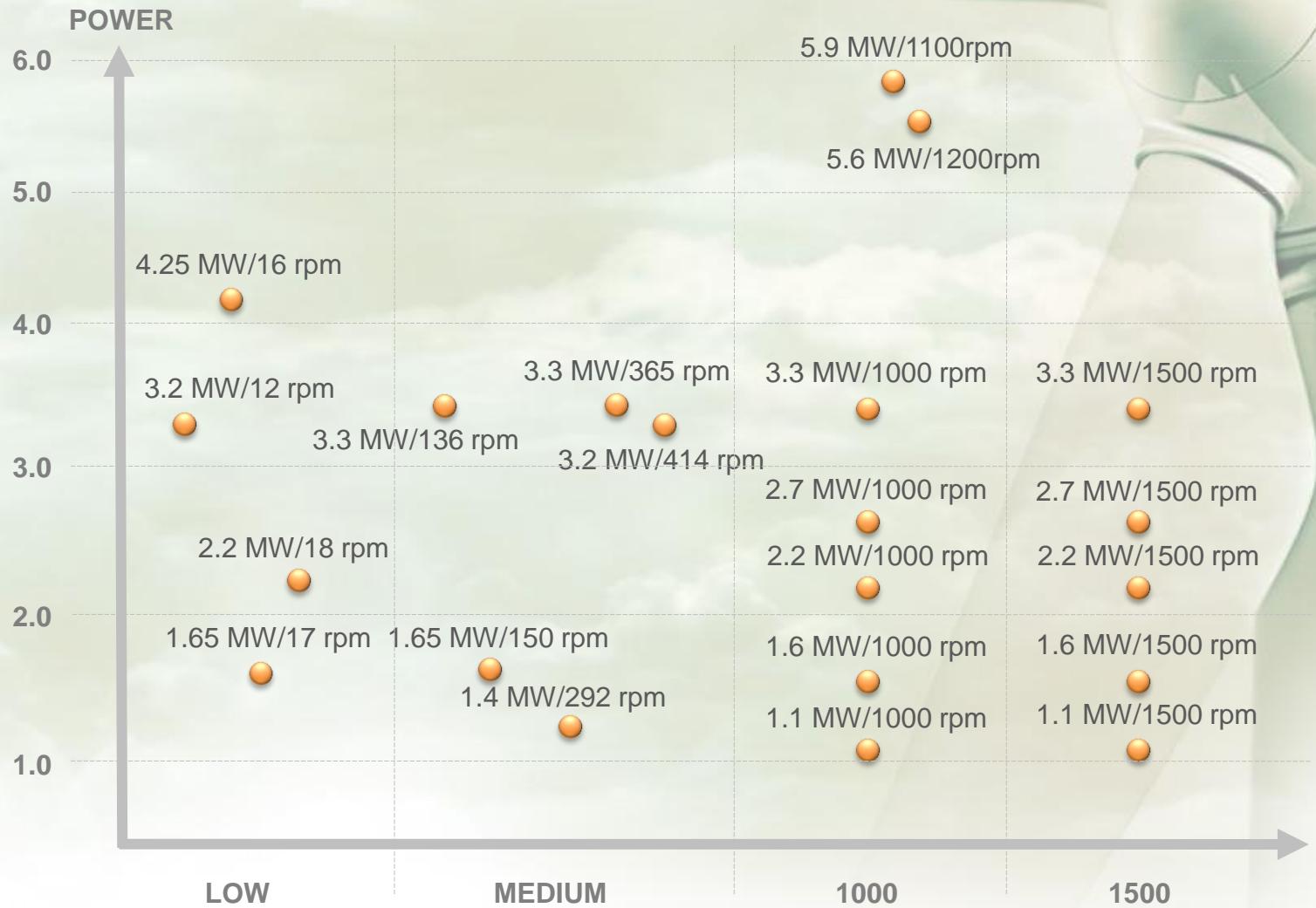
PERMANENT MAGNET
GENERATOR



FULL-POWER
CONVERTER



PORTFOLIO NOW



SPEED

THE SWITCH

REFERENCES



ScanWind, Norway
3.7 MW DD package



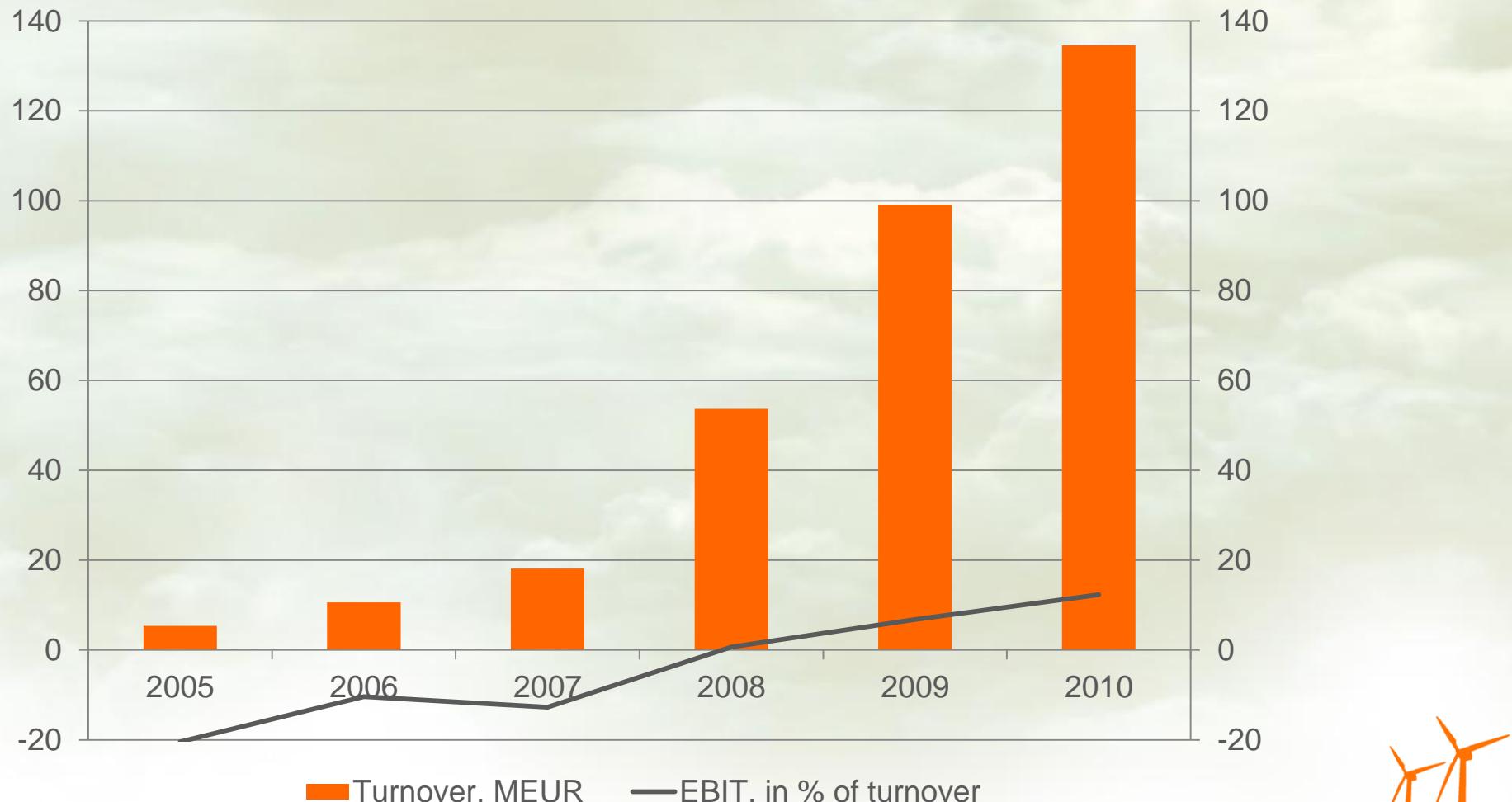
Goldwind, China
1.5 MW and 2.5 MW FPC



Solar Systems, Australia
140 kW inverter



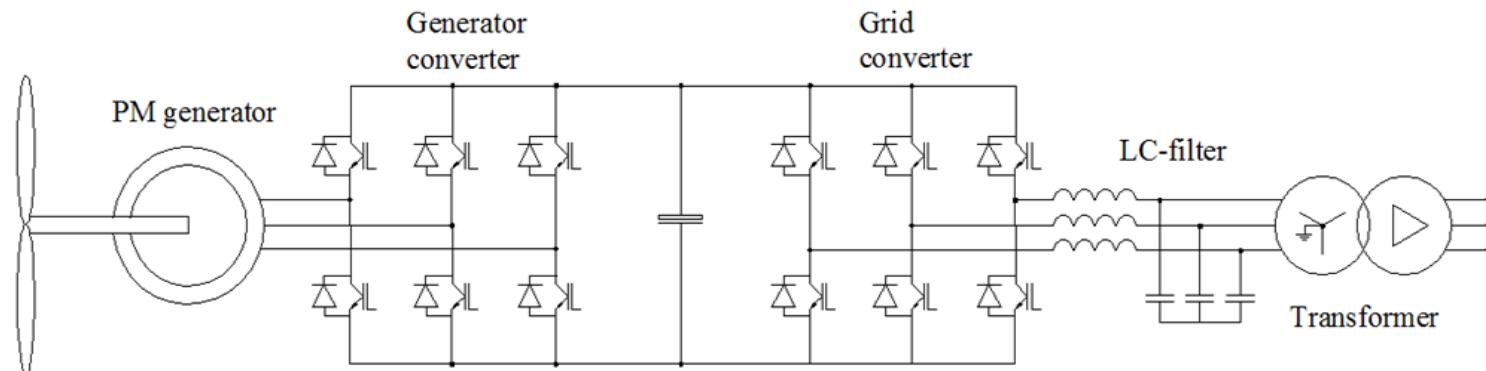
GROWTH IN TURNOVER



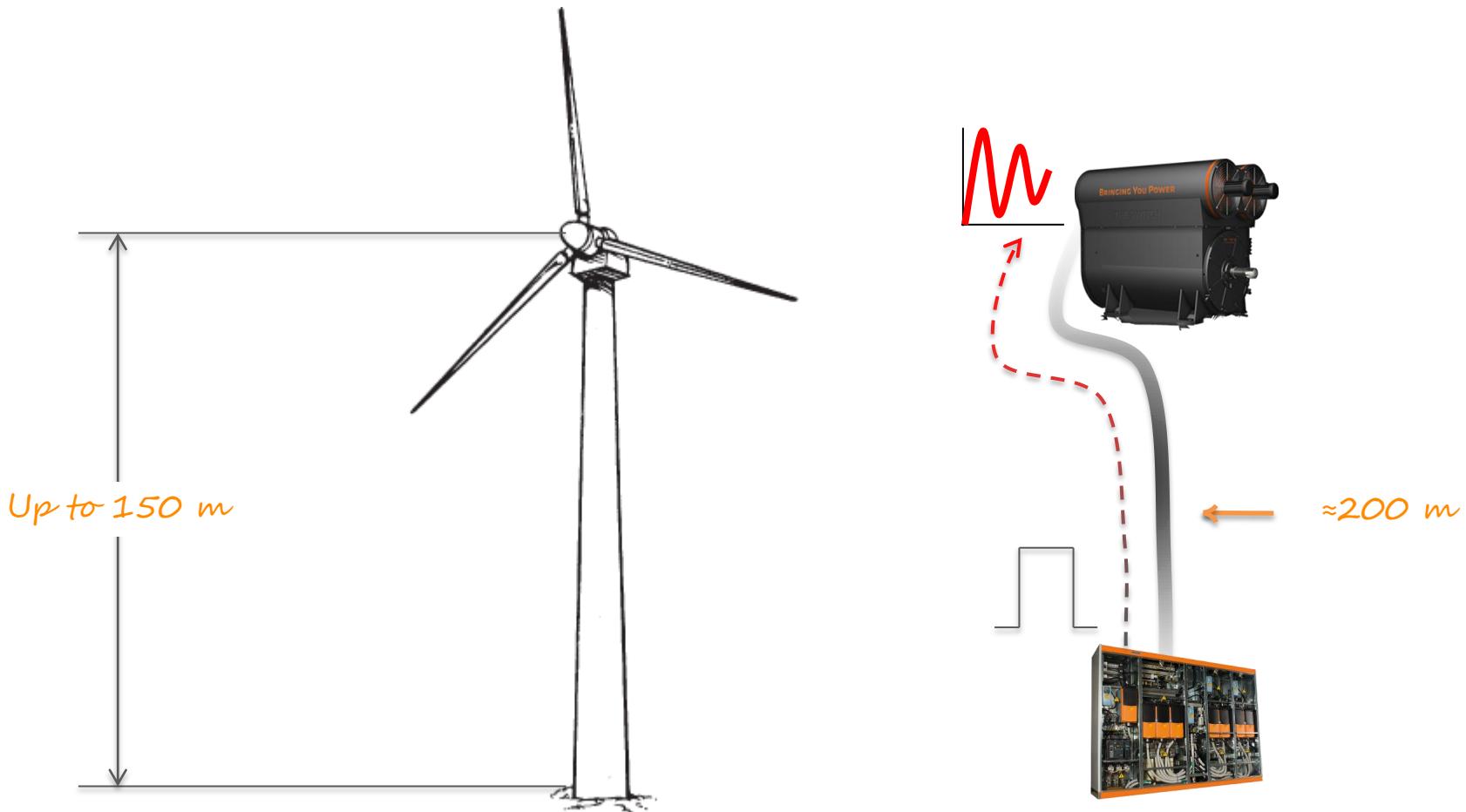
Due to a change of accounting policy from Finnish Accounting Standards (FAS) to International Financial Reporting Standards (IFRS), figures for 2010 and 2009 are not comparable with previous years.



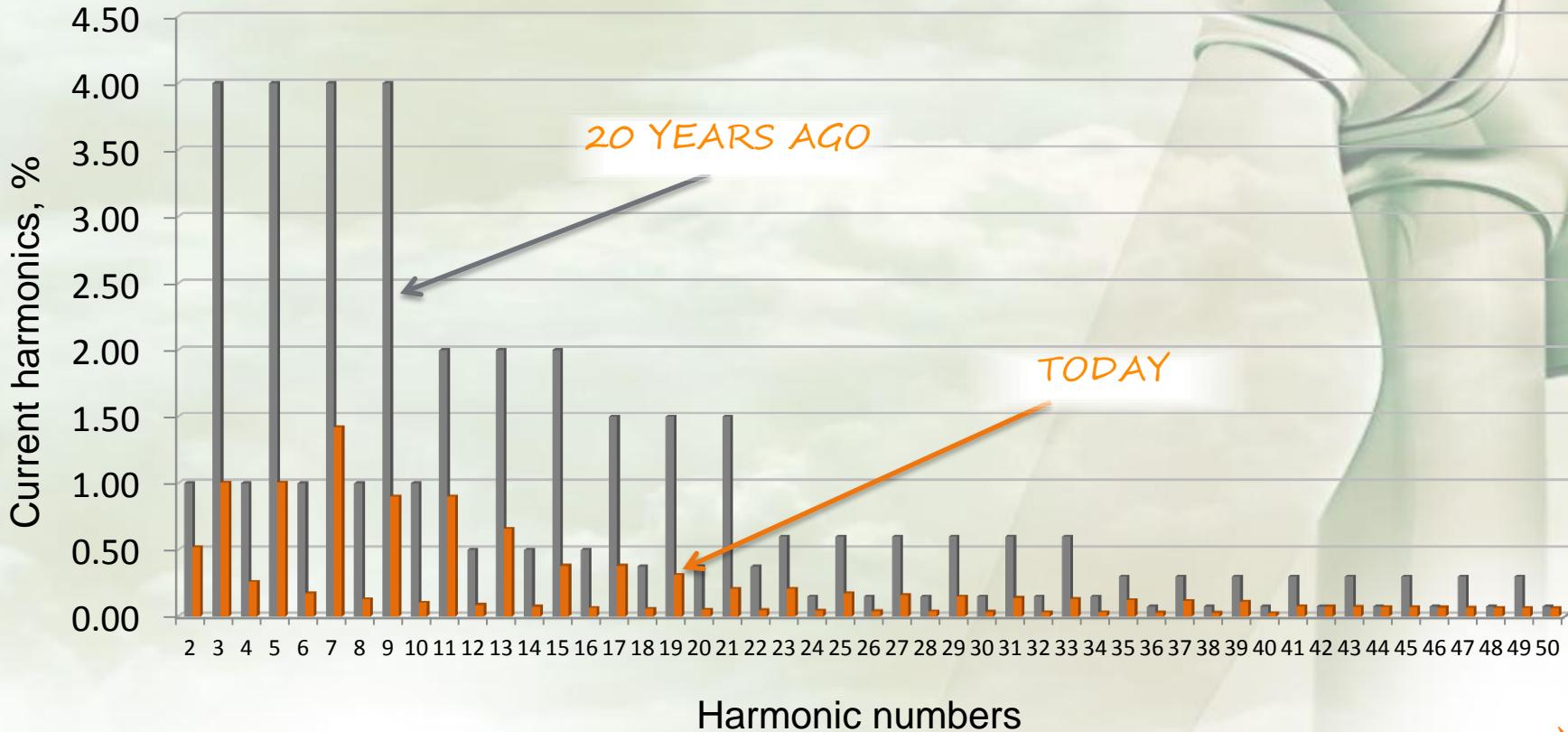
TECHNOLOGY



GENERATOR SIDE



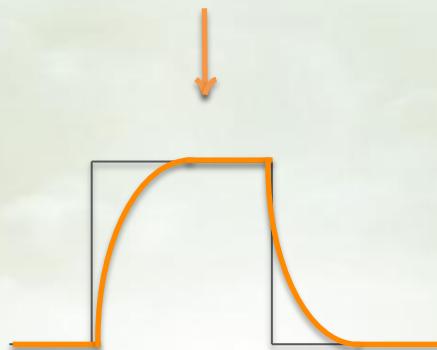
GRID SIDE



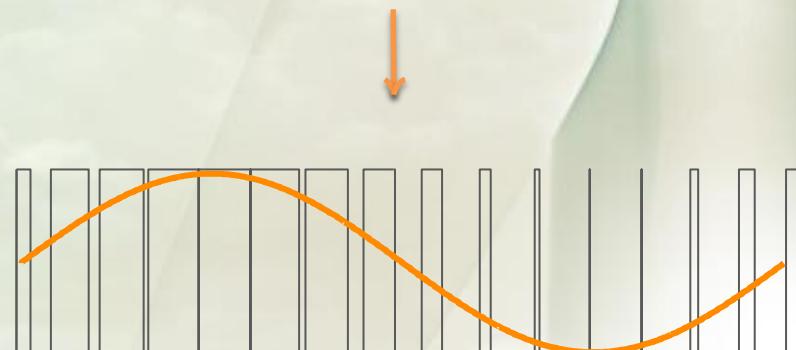
FILTRATION

FILTERS

GENERATOR
 (du/dt)

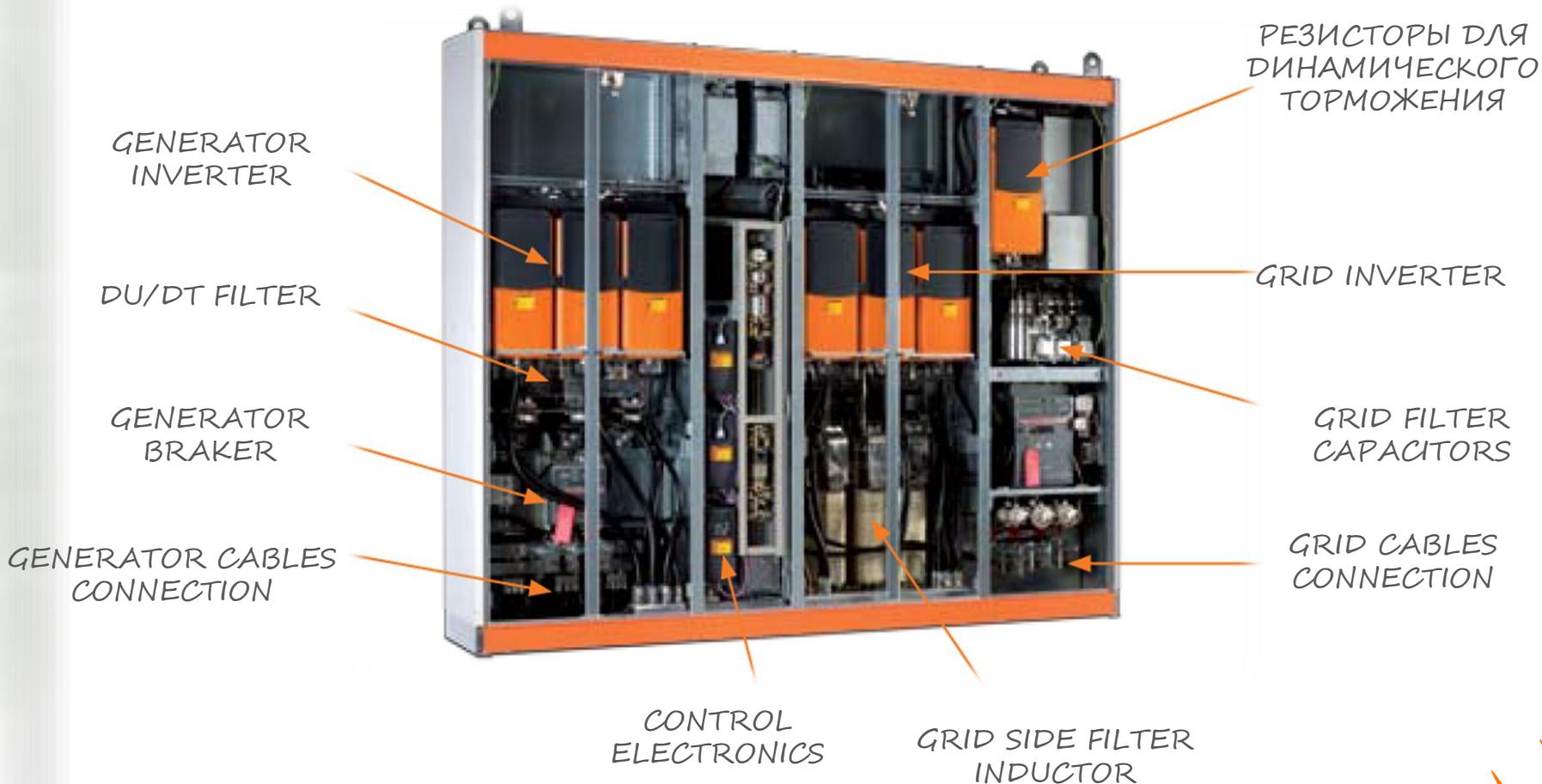


GRID
(sinusoidal)



THE SWITCH

THE SWITCH CONVERTER



THANKS FOR ATTENTION!

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