



WIND PRODUCTS

Doug Herr

Wind Products Manager



A subsidiary of

EBO Group

Employee Owned Companies

- Founded in 1978
- 105 employees – 34 engineers
- 29 US Patents
- 100% Employee-owned
- 20% Annual Growth



EBO Group Inc. — An Awarding Winning company

Cleveland
Plain Dealer



Crain's &
Entrepreneurs
Edge
2009-2011



2009 & 2011
winner



2010 ESOP
Company
of the year —
OH/KY Chapter



EBO Group



Torque Control Products



Safe Patient Handling – Medical Chairs



Solar Energy innovation



Hybrid Electric Vehicle Drives



Who is PT Tech? *Small company, BIG customers*



Our customers
include:



TIMKEN

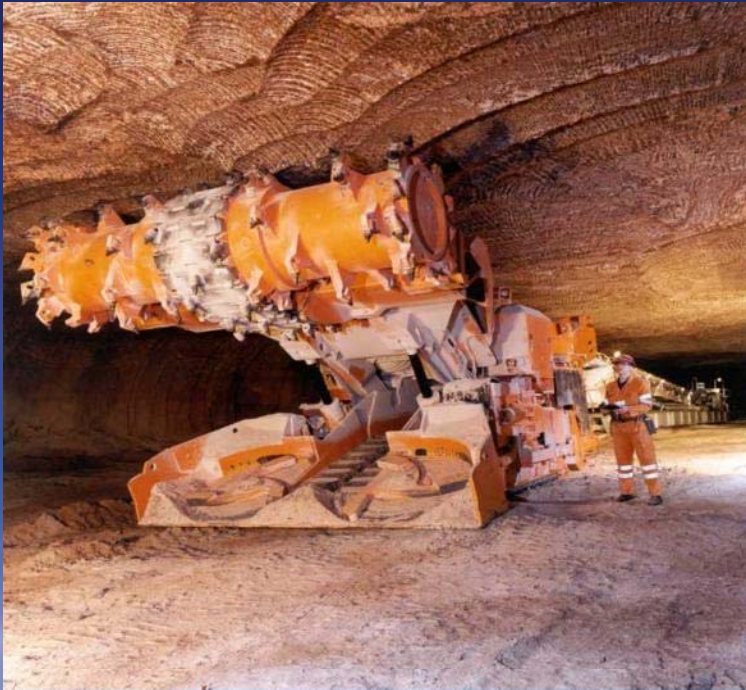


Who is PT Tech? *We are a net exporter...*

*Distribution
around the
world.*

*Components
sourced in US,
primarily OH.*





Torque Control in Mining and Tunneling





Torque Control in Steel Mills & Waste Grinding





Torque Control in Rock Crushing, Dredges & Submarines



Why is PT Tech in wind market?

The opportunity:

Wind turbine drivetrains are very dynamic & gearboxes fail far too often.

There is room for American innovation.



PT Tech in Wind – An immature market



The mid-90's:
Torque Limiting for Kenetech

Early 2000's:
Torque Limiting and Brakes for
US WIND/The Wind Turbine Co.



PT Tech and Wind – The first 10 years

After the failure of both companies,
PT Tech left Wind Industry in 2002.

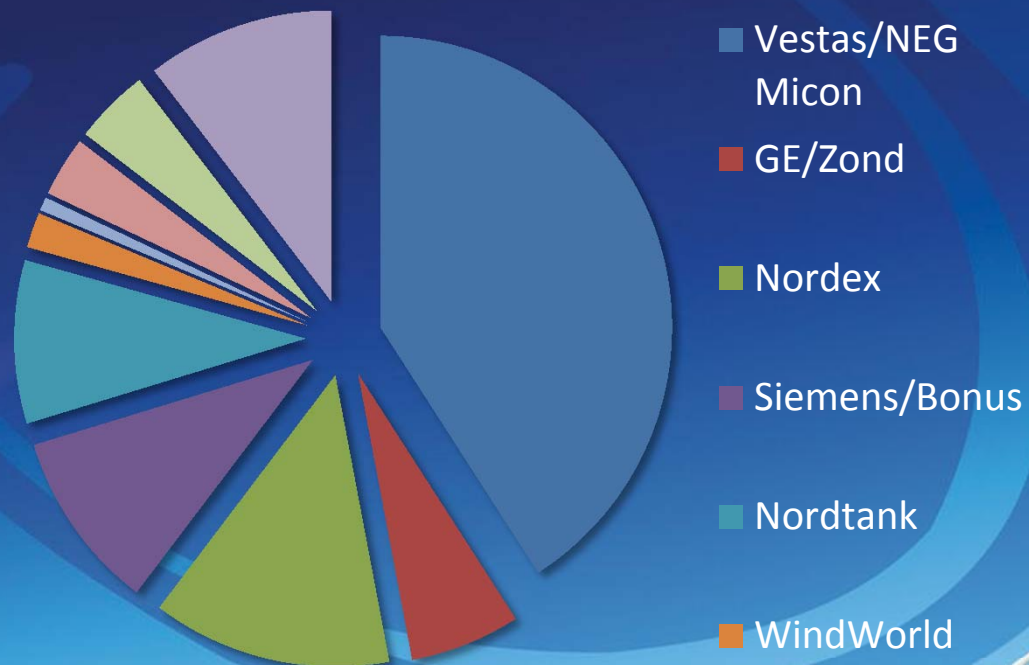
In 2008, we were again approached
by an OEM for our expertise in
torque management.

In 2010, we actively began to work
in the industry again.

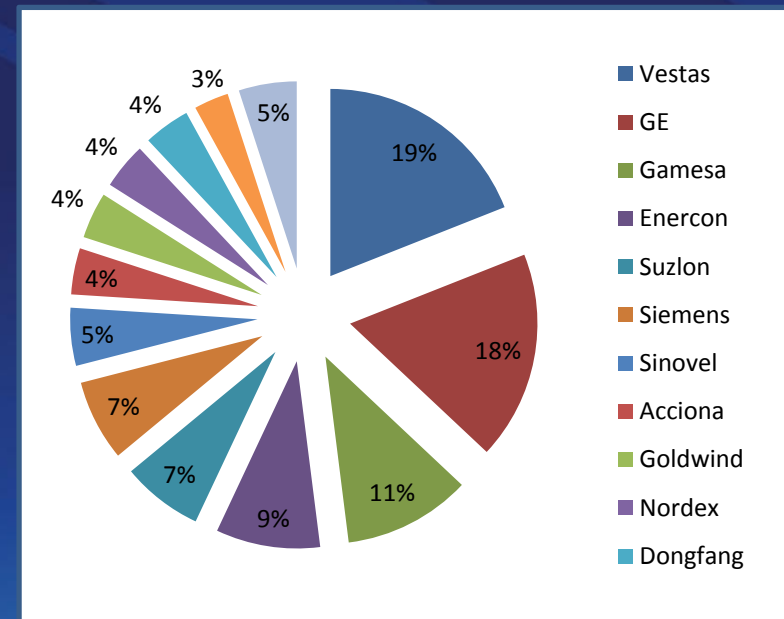
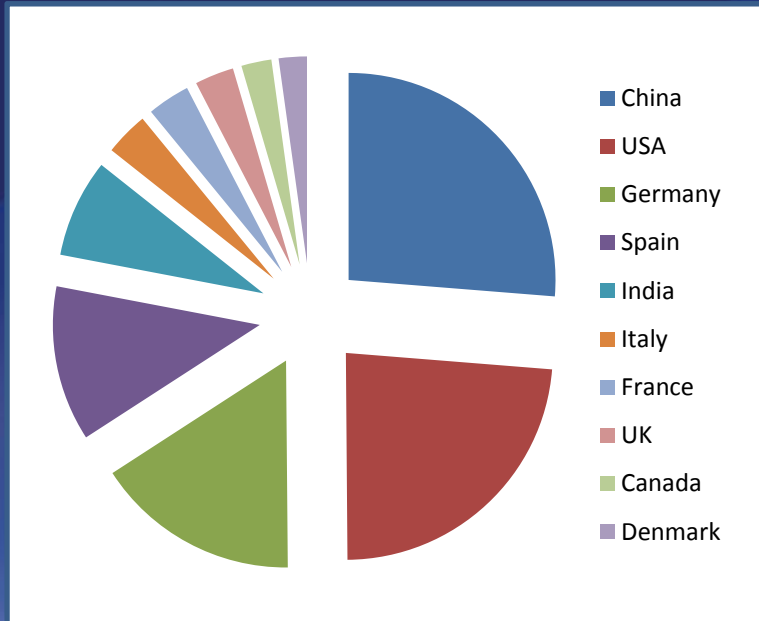


Today: A mature market

Older Turbine Retrofit Market Size – 8700 turbines from 400kW to 1.5mW



Modern Turbine Market size



The top 40 largest markets have
195,928 MW of installed base as of 2010

Ohio and Wind Supply Chain

Currently, OH manufacturers have seen success in fasteners, blades and other items...



Ohio and Wind Supply Chain

For long-term success and growth,
Ohio and the US must gain a foothold
in the drivetrain of turbines.

This is the heart of the innovation and
value stream of the industry.



windtm Torque Monitor

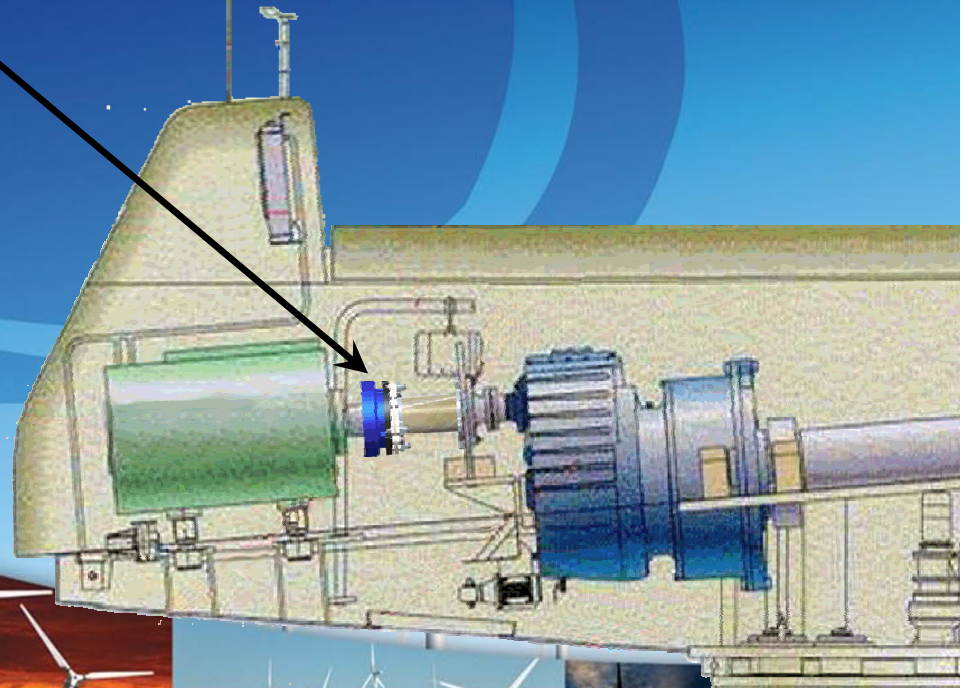
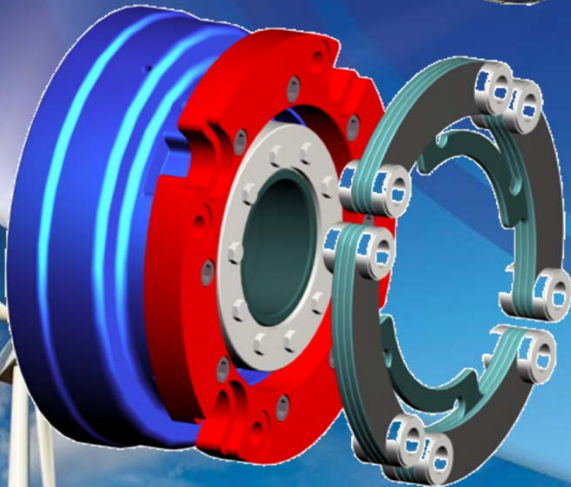
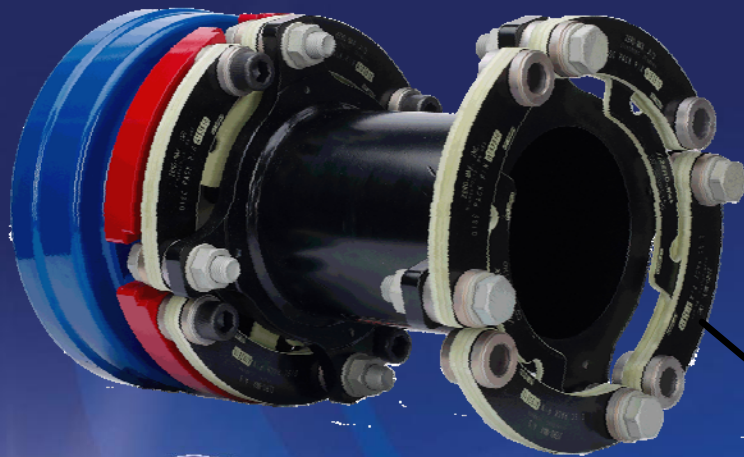
Quickly and easily
installs on low speed
shaft. Monitors &
continuously logs
torque and speed.





Torsional Control

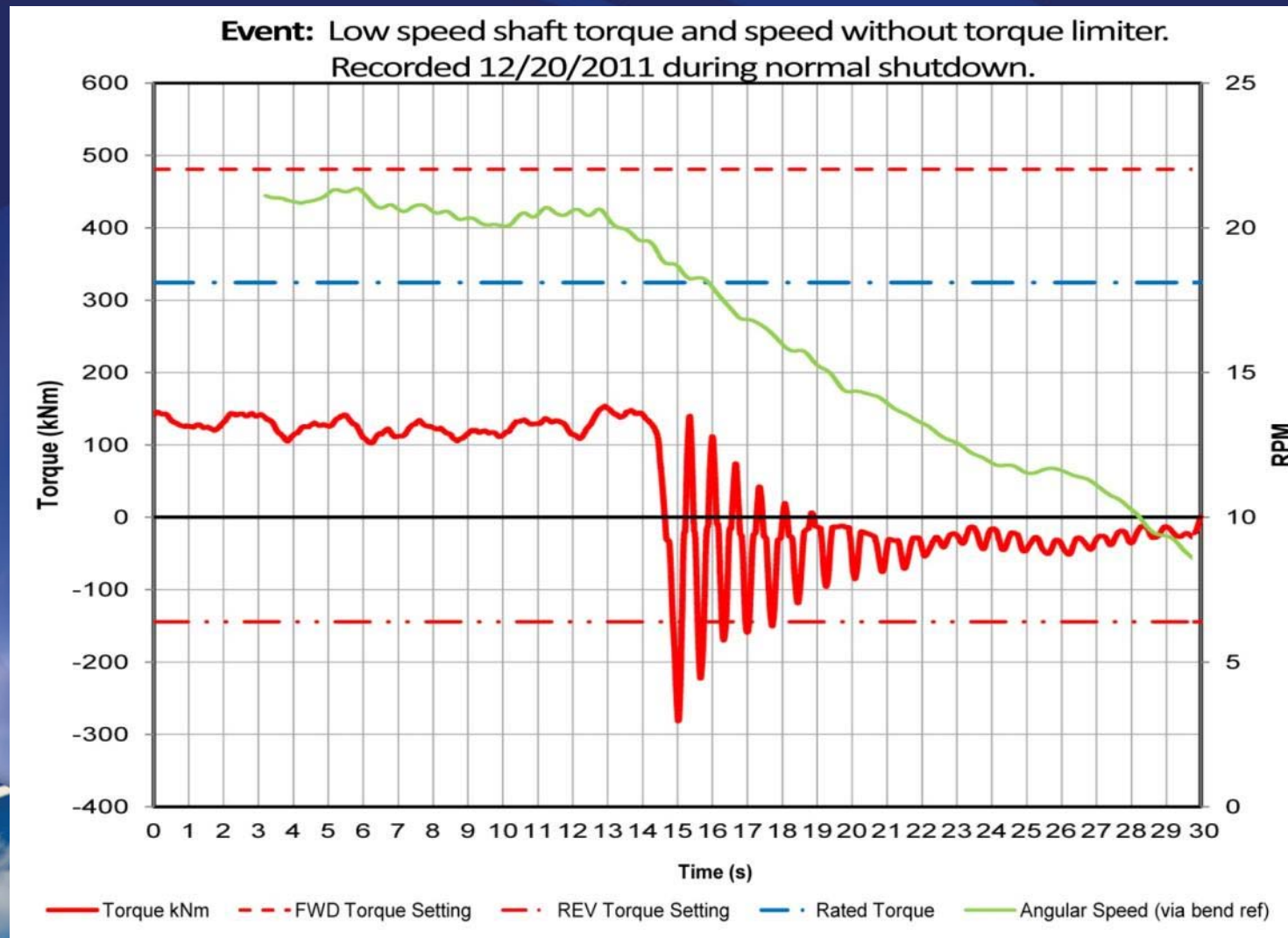
*Easily Retrofitted onto
Generator Shaft and
Adapted to Coupling*



Field installations

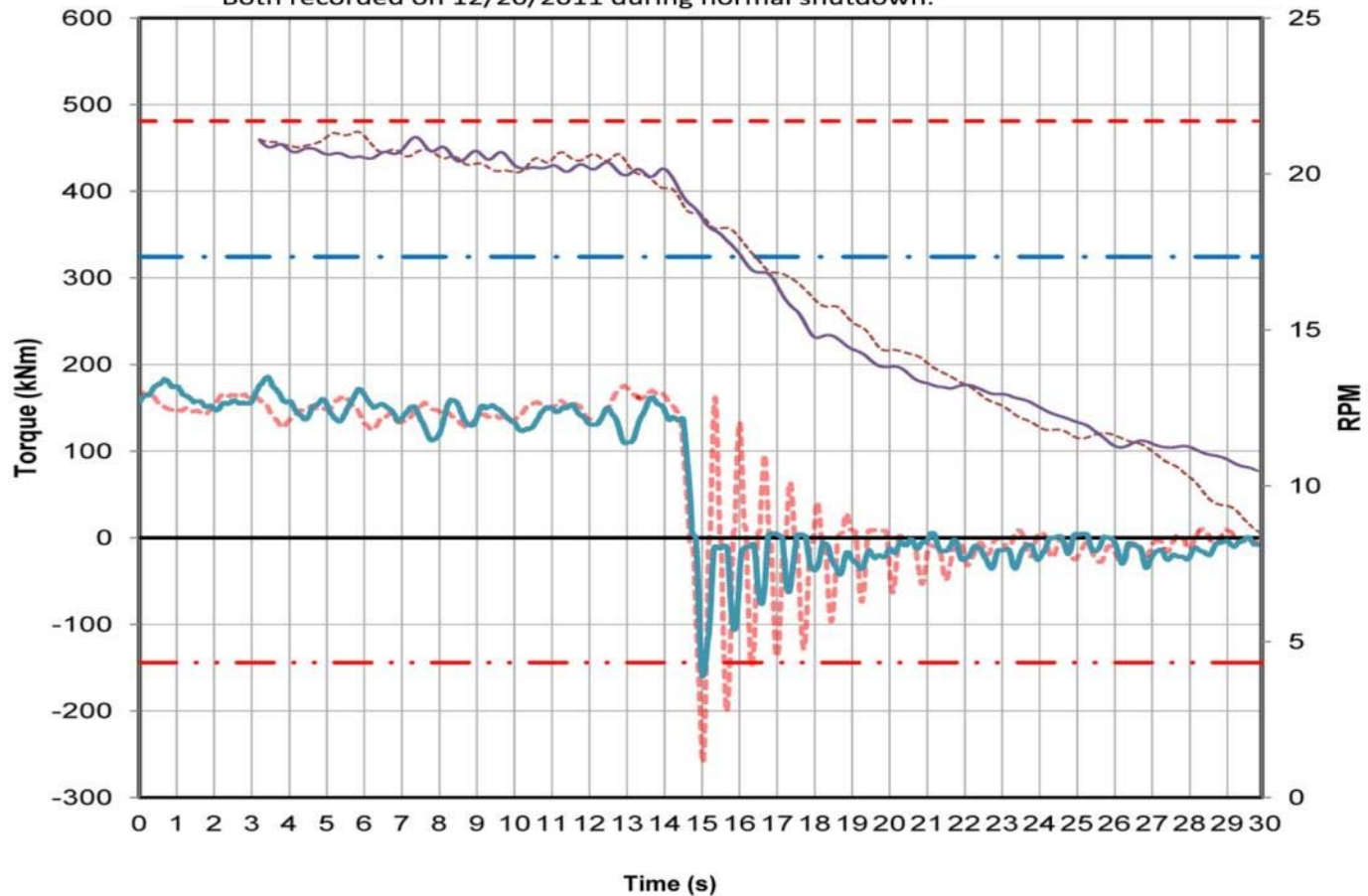


Gearbox Torque event without limiter



Gearbox Torque with & without WindTC

EVENT: Low speed shaft torque and speed with torque limiter and without torque limiter.
Both recorded on 12/20/2011 during normal shutdown.



--- w/o Torque Limiter --- FWD Torque Setting - · - REV Torque Setting - · - Rated Torque
— with Torque Limiter --- Speed w/o Torque Limiter - · - Speed w Torque Limiter

Time is running out...

We need to invest
now in our grids and
our internal markets –
innovation is key –
before we lose the
opportunity.





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