

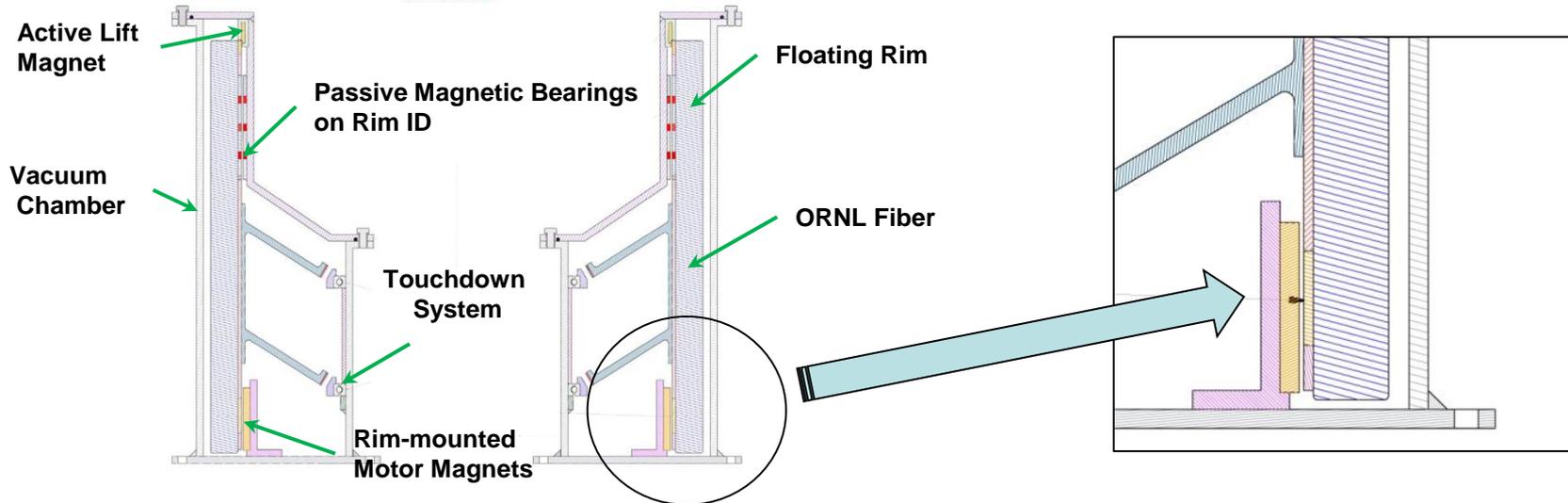
Development of a High Power Motor/Generator for the ARPA-E Hub-less Flywheel

ARPA-E Hub-less Flywheel

Increase PM M/G Power Capability by 4 times

100 kWh – 100 kW

100 kWh – 400 kW



Limitations of ARPA-E Flywheel

- 1 Hour of Storage
- Limited to Longer-term Applications
- Power Limited by Magnet Properties and Losses

Program Objectives

- 400 kW PM Motor/Generator
- Reduced Losses
- Additional Applications Possible
 - ✓ Frequency Regulation
 - ✓ Frequency Response
 - ✓ Pseudo-inertia

Program Challenges

- Develop Higher Energy Flexible Magnets
- Add back-iron to ironless topology
- Reduce and/or accommodate losses

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Chief Technology Officer

