

Excited about grid-interactive buildings!

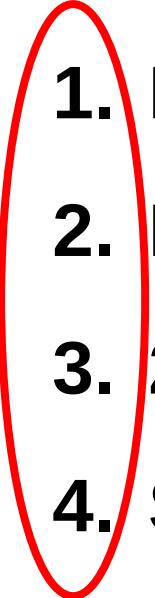
Buildings as Batteries®

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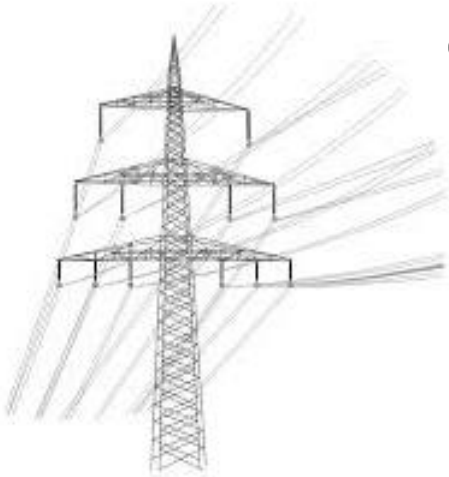
August XX, 2015

The good and the bad

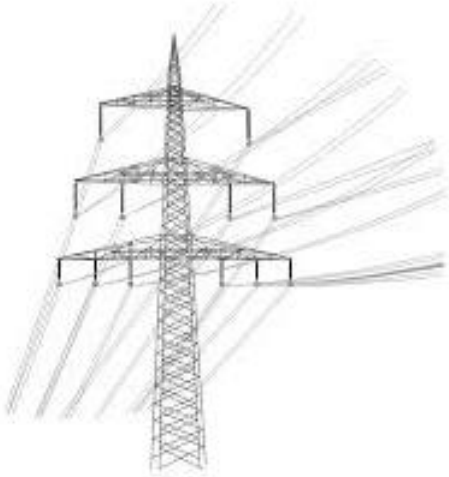
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- 1. Large, untapped \$\$\$\$ opportunity!**
 - 2. Multi-disciplinary RD&D!**
 - 3. 2nd best energy policies?**
 - 4. Self-inflicted wounds?**
 - 5. Handicapping building engineers?**
 - 6. Too many institutional hurdles?**

Large, untapped \$\$\$\$ opportunity!

Optimized individually



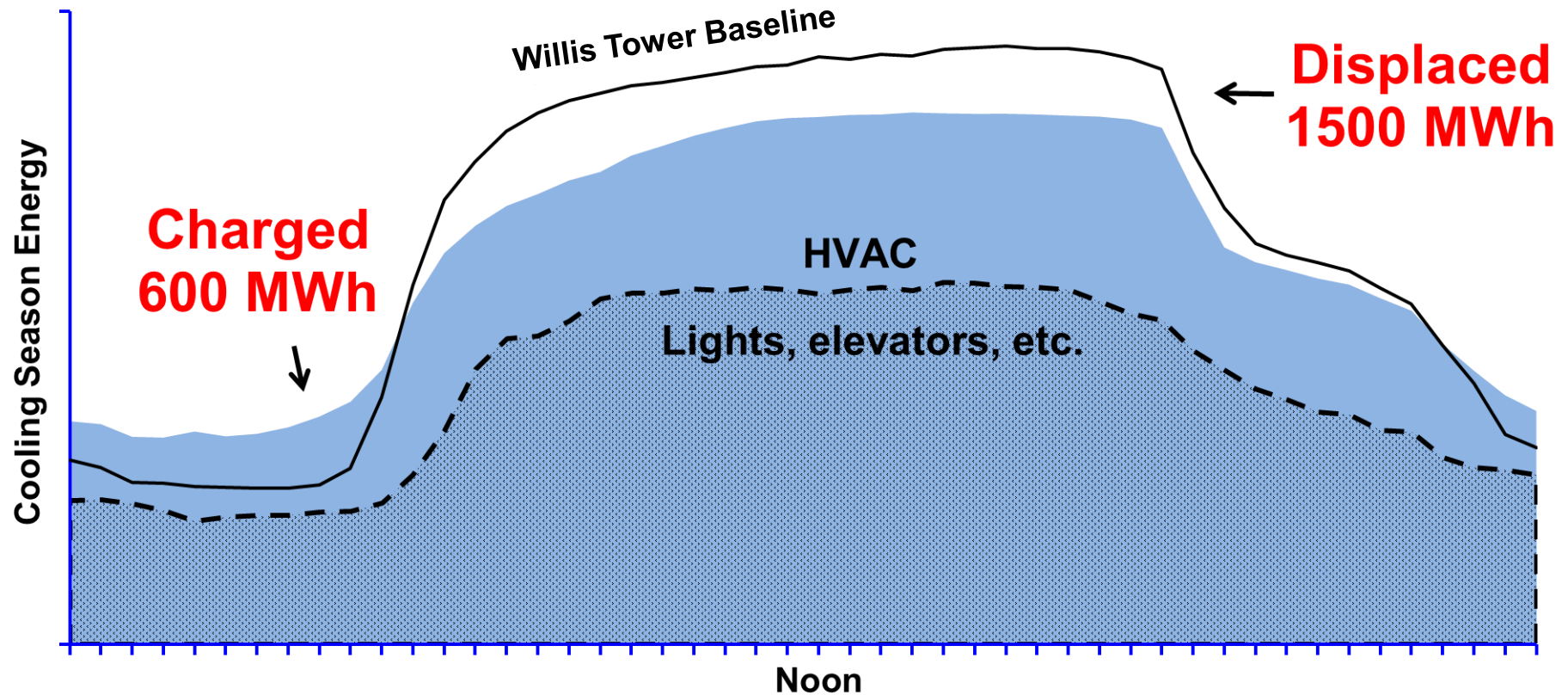
Optimized as one



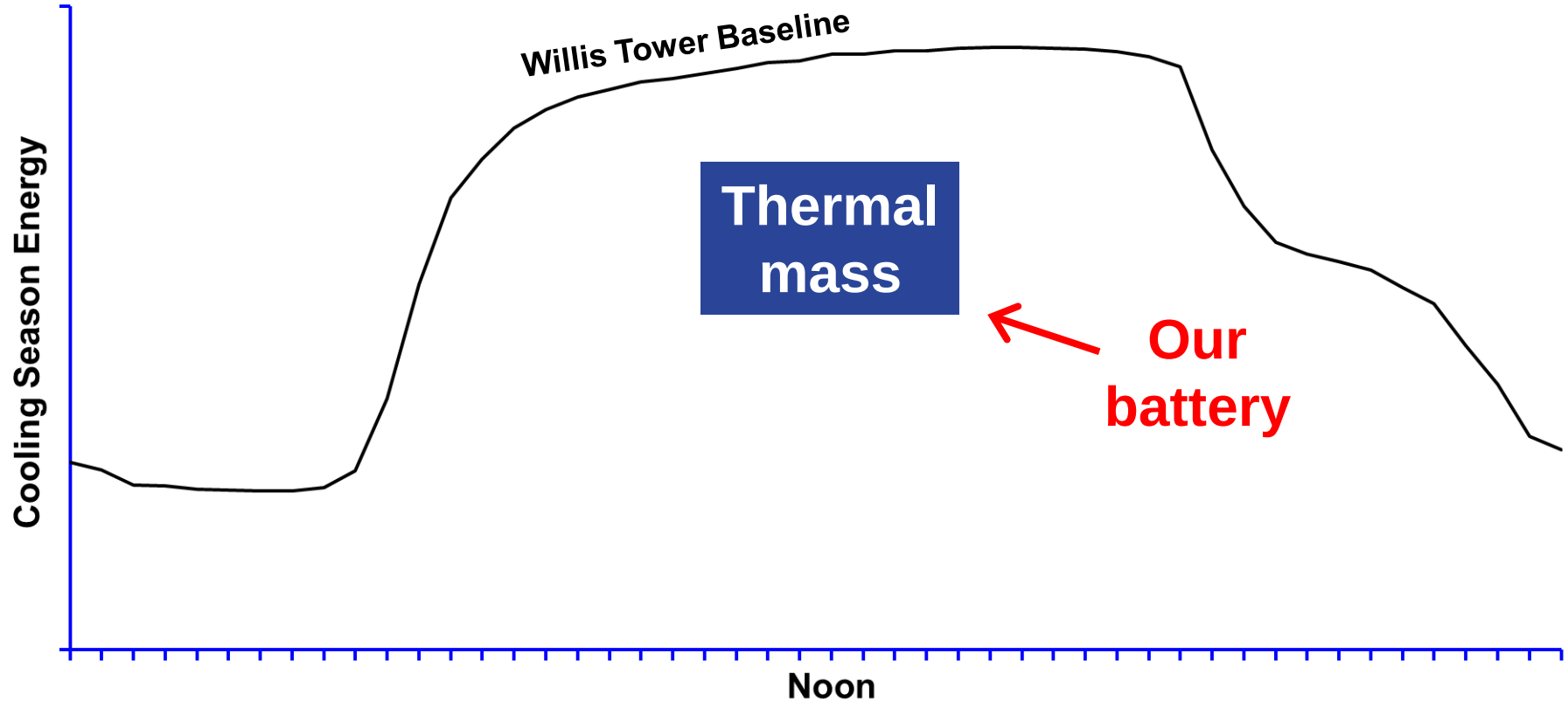
**20-40% better
economy, emissions,
efficiency**



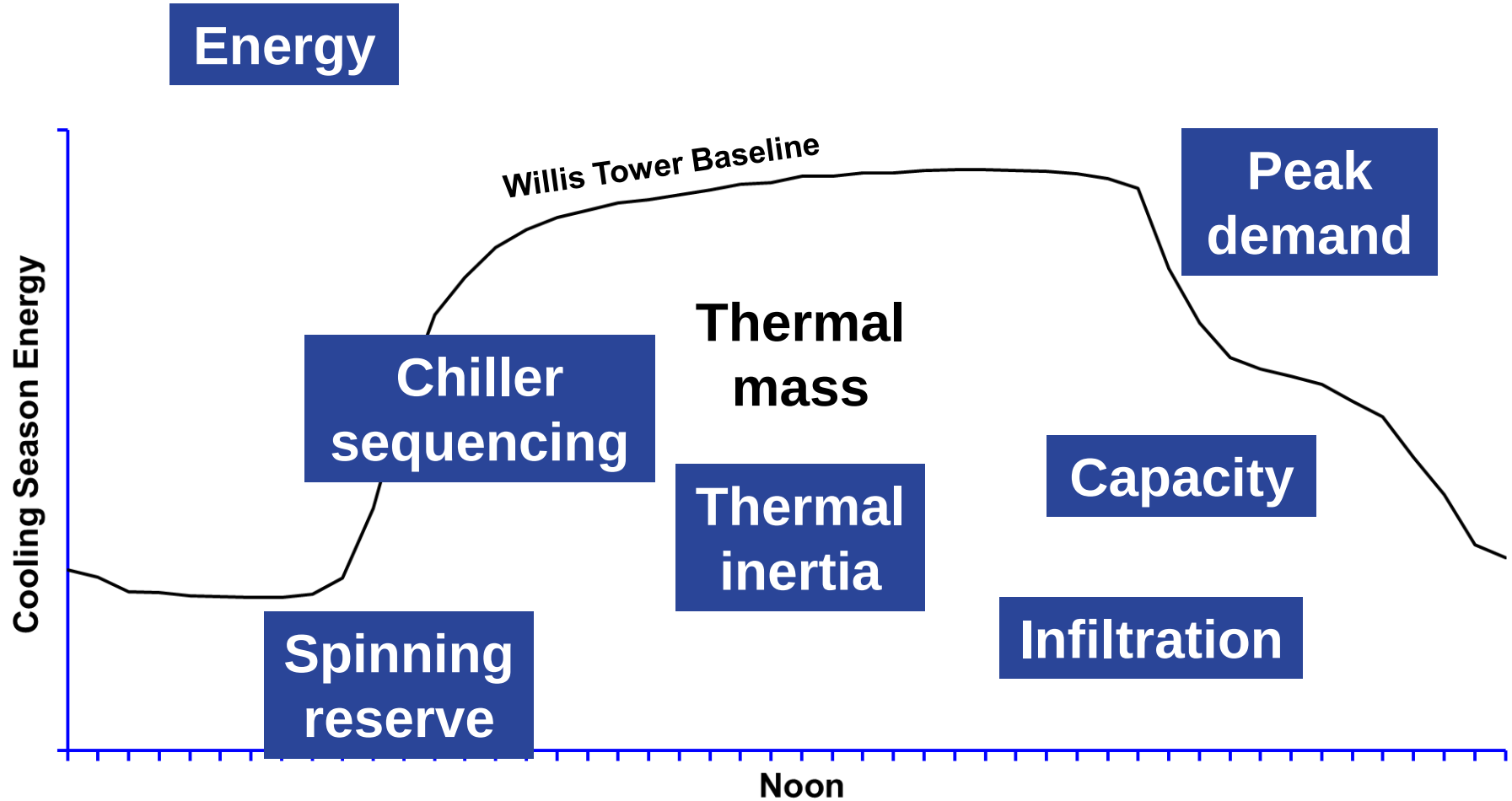
Large, untapped \$\$\$\$ opportunity!



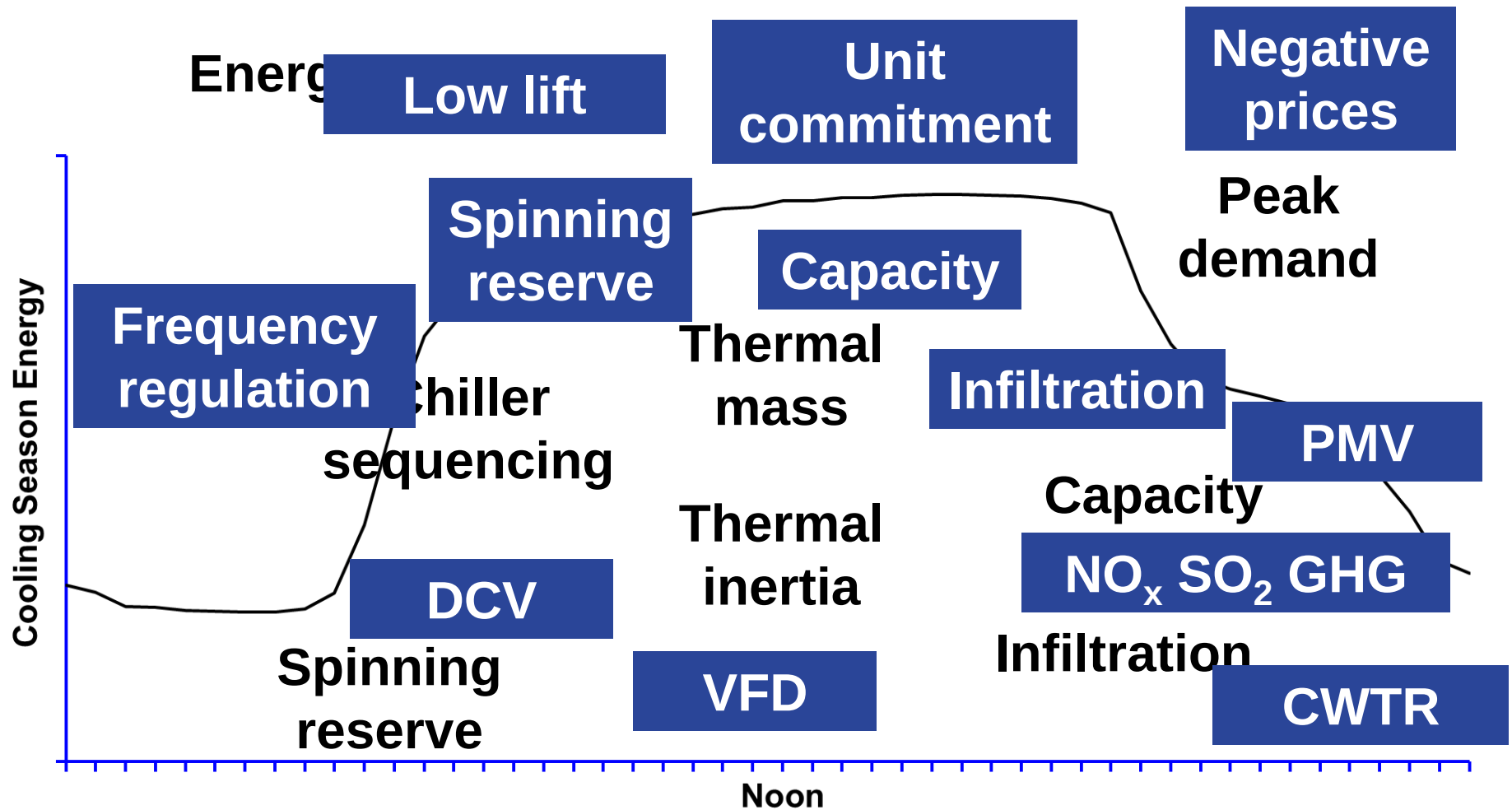
Multi-disciplinary RD&D!



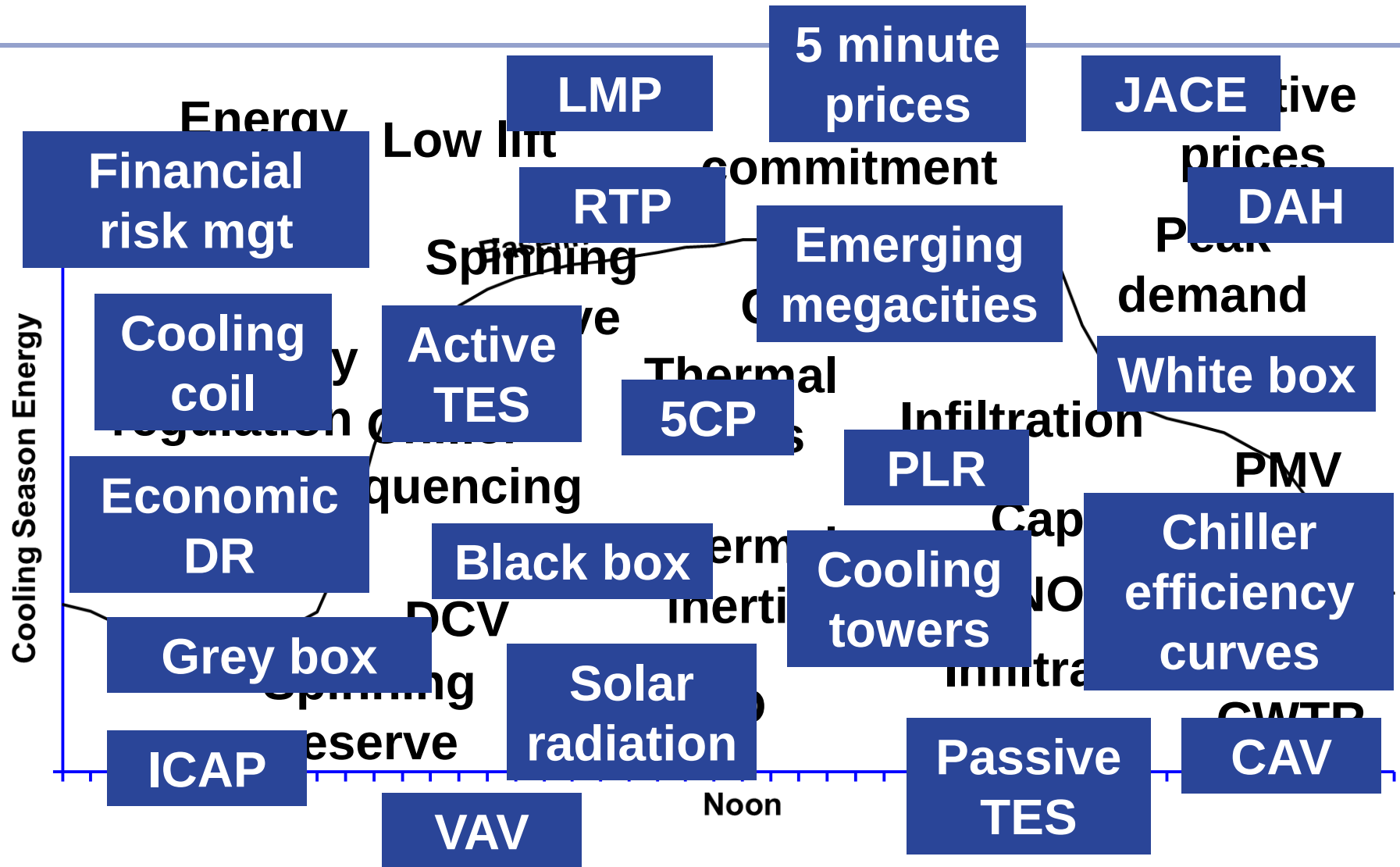
Multi-disciplinary RD&D!



Multi-disciplinary RD&D!



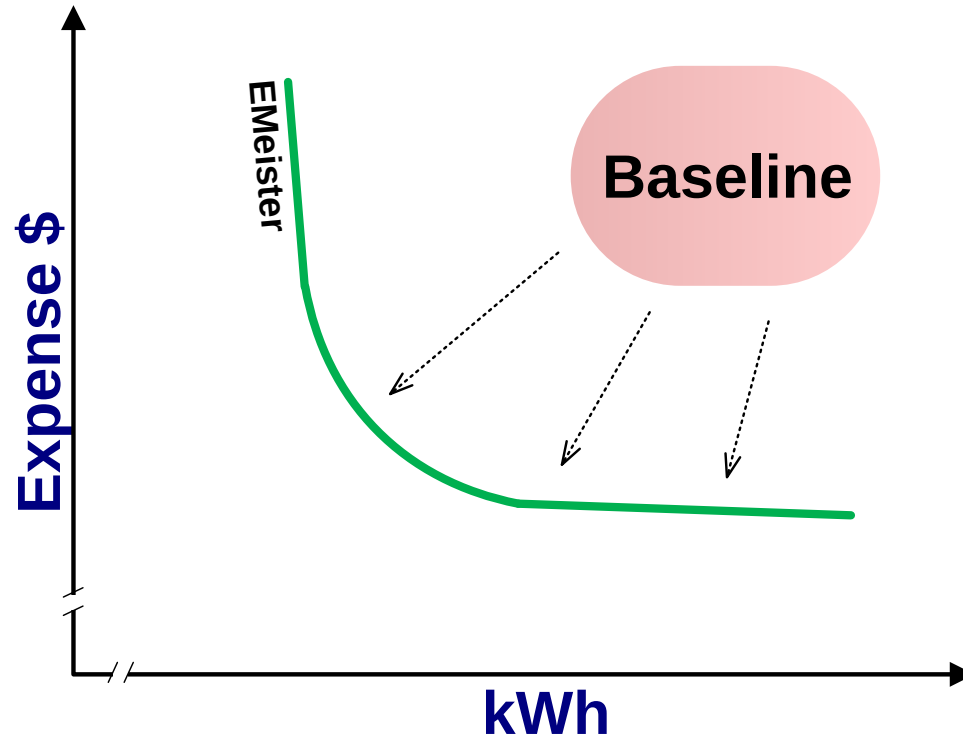
Multi-disciplinary RD&D!



Multi-disciplinary RD&D!

Have POV regarding 5-10 year electric market!
or
Risk obsolescence!

2nd best energy policies?



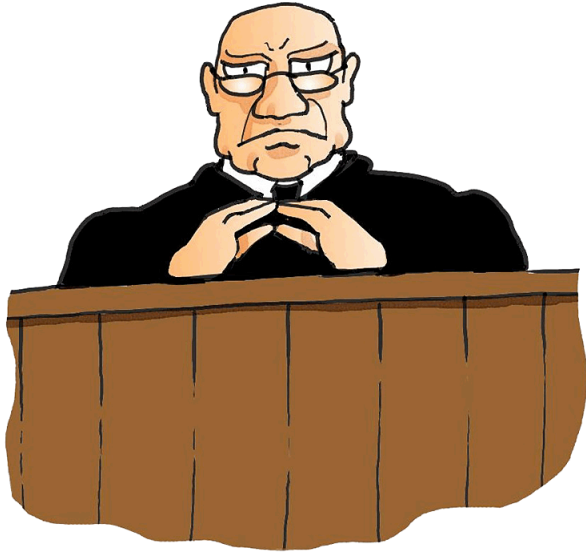
Building operations
flexibility

but

poor guidance

Worst offenders: ~~Fixed or TOU prices~~ LMP + price elasticity
~~Site Source efficiency~~
3rd world emission metrics

Self-inflicted wounds?



DO NOT:

Mess with comfort or security!

Turn building into black box!

Overwhelm BAS bandwidth!

DO:

Work with real building and real operating engineer.

Develop low cost, high fidelity building energy models.

Thank you

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