



RAILPOWER
Technologies Corp.

ARB's Rail Symposium

**Hybrid Locomotives:
*Better Economics, Better Environment***

April 25th, 2006

Better Economics, Better Environment



Company Overview

- Publicly traded on Toronto Stock Exchange.
- Strong worldwide investor interest.
- \$60MM in Equity for Product Development and Growth.
- Over \$200 MM market capitalization.
- Experienced leadership with over 700 years collective experience.



Product Development History

- Early 2002, prototype Green Goat GG20B completed
- Late 2004, first production unit in service at CSX in Jacksonville, FL
- May 2006, first RP20BD unit built
- June 2006, first RP20BH unit built
- More than 160 Locomotives on order, over 30 Delivered



The Hybrid Locomotive: *A Success Story*

- Low emissions and noise
 - PM, NOx and ROG emissions drastically reduced
 - No idle = no noise, no fuel, no emissions
- SAFER operation due to increased visibility
- Performance
 - Increased Tractive Effort
 - Out performed GP-9, 2 SW-1200s, pulled 8,000 trailing tons
- Low operating Cost
 - Fuel savings 40 – 60 % on average.



Start with This.....

**GP 9 core
locomotive**

- Complete teardown and overhaul
- Replacement with new components





End with This.....

GG20B

1 diesel engine

+

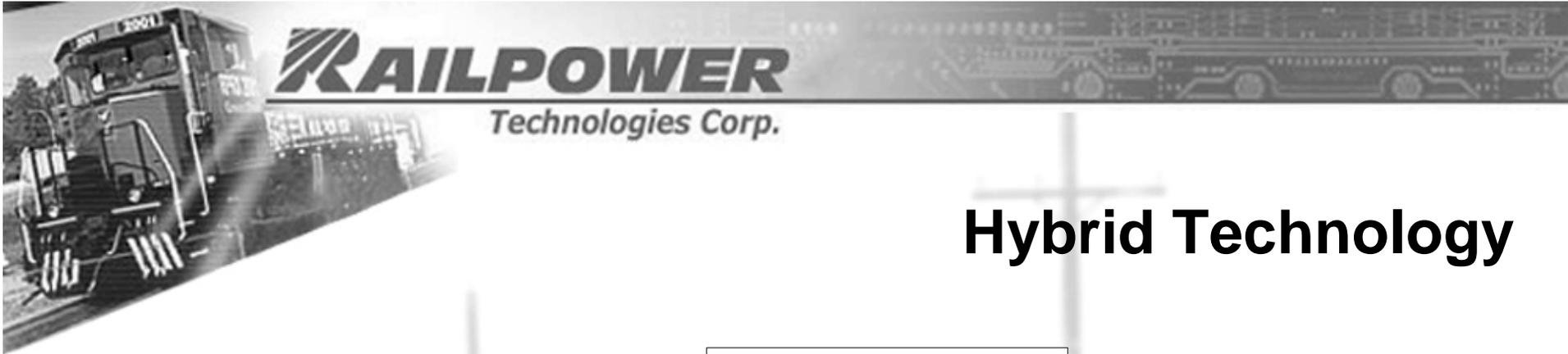
Battery Pack

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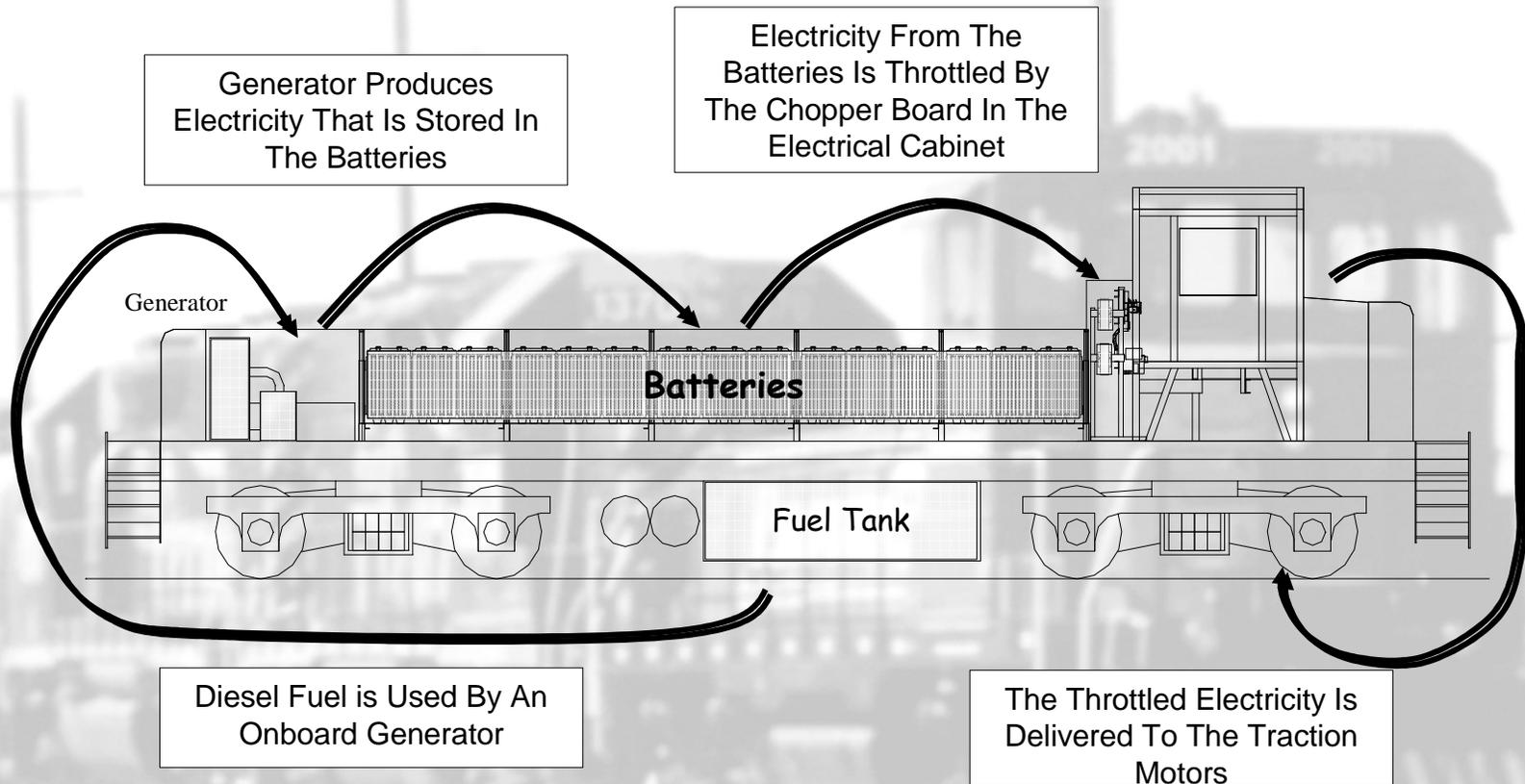
~2000 HP

(equivalent)





Hybrid Technology





Railpower Locomotive Models

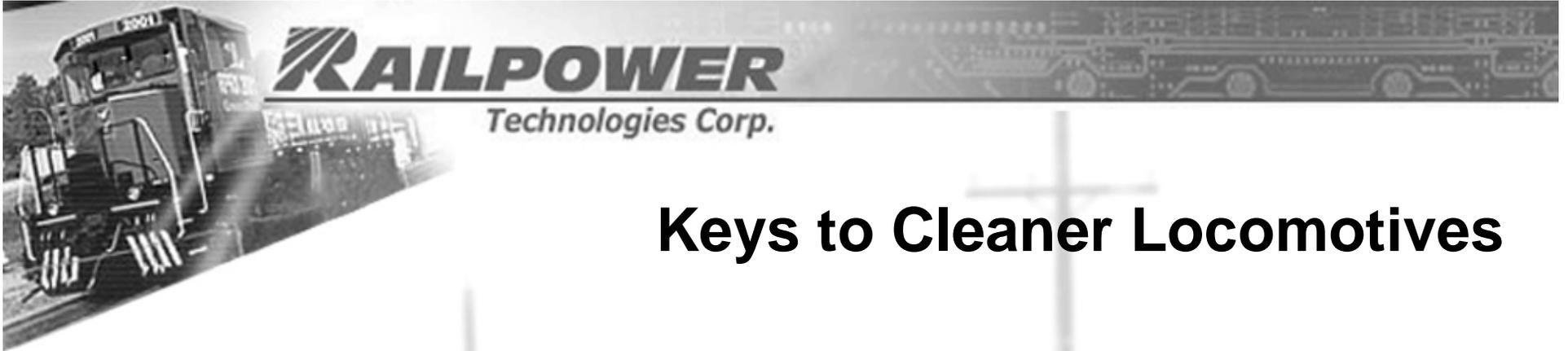
<u>Model</u>	<u>HP</u>	<u>Service</u>	<u>Engines/HP</u>
GG20B	2,000	Yard	1 @ 290 + Battery
RP20BH	2,000	Local / Yard	2 @ 1300 + Battery
RP20BD	2,000	Local / Yard	3 @ 2000 (Battery)



Hybrid/Multiengine Switchers are Cleaner

Switcher Locomotives (g/bhp-hr)

	Uncontrolled	Tier 0	Tier 2	Hybrid / Multi-Engine
NOx	15.660	11.340	6.570	2.320
PM	0.396	0.396	0.189	0.088
HC	0.990	0.990	0.510	0.120



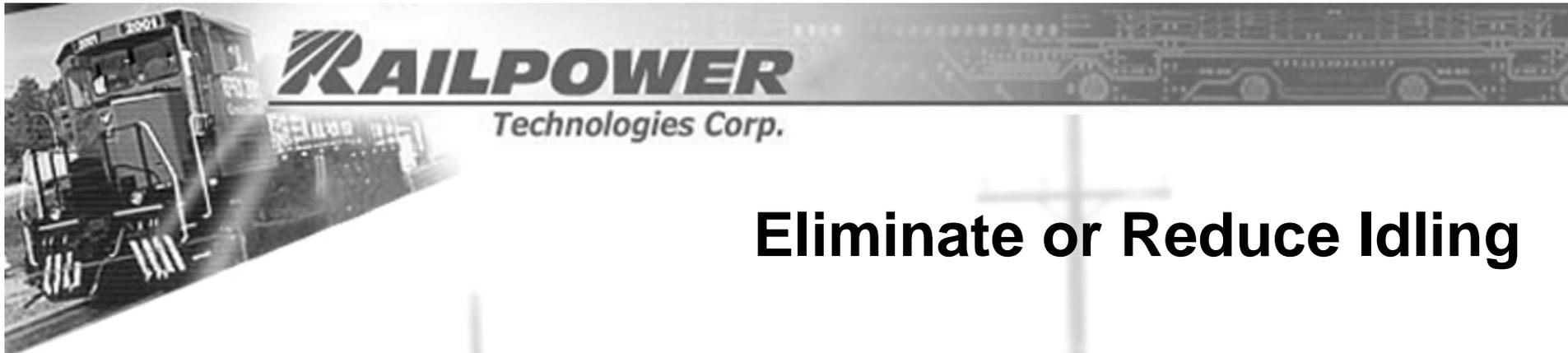
Keys to Cleaner Locomotives

- Cleaner operating engines
- Eliminating or reducing idling



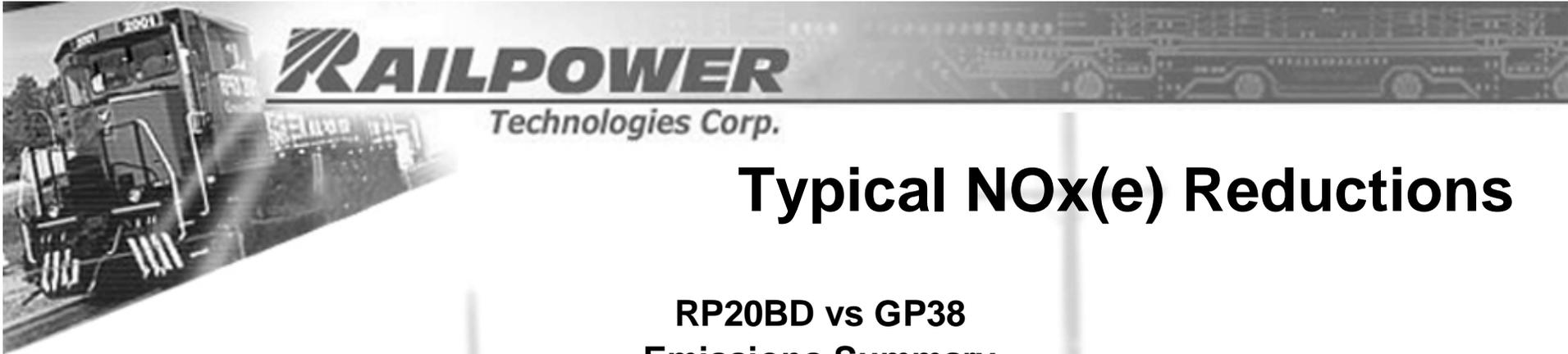
Cleaner Operating Engines

Locomotive vs Nonroad Engine Standards (g/bhp-hr)			
	Tier 2 Locomotives	Tier 3 nonroad engines	Tier 4 nonroad engines
NOx	6.570	2.32	0.26
PM	0.189	0.088	0.008
HC	0.510	0.12	0.06



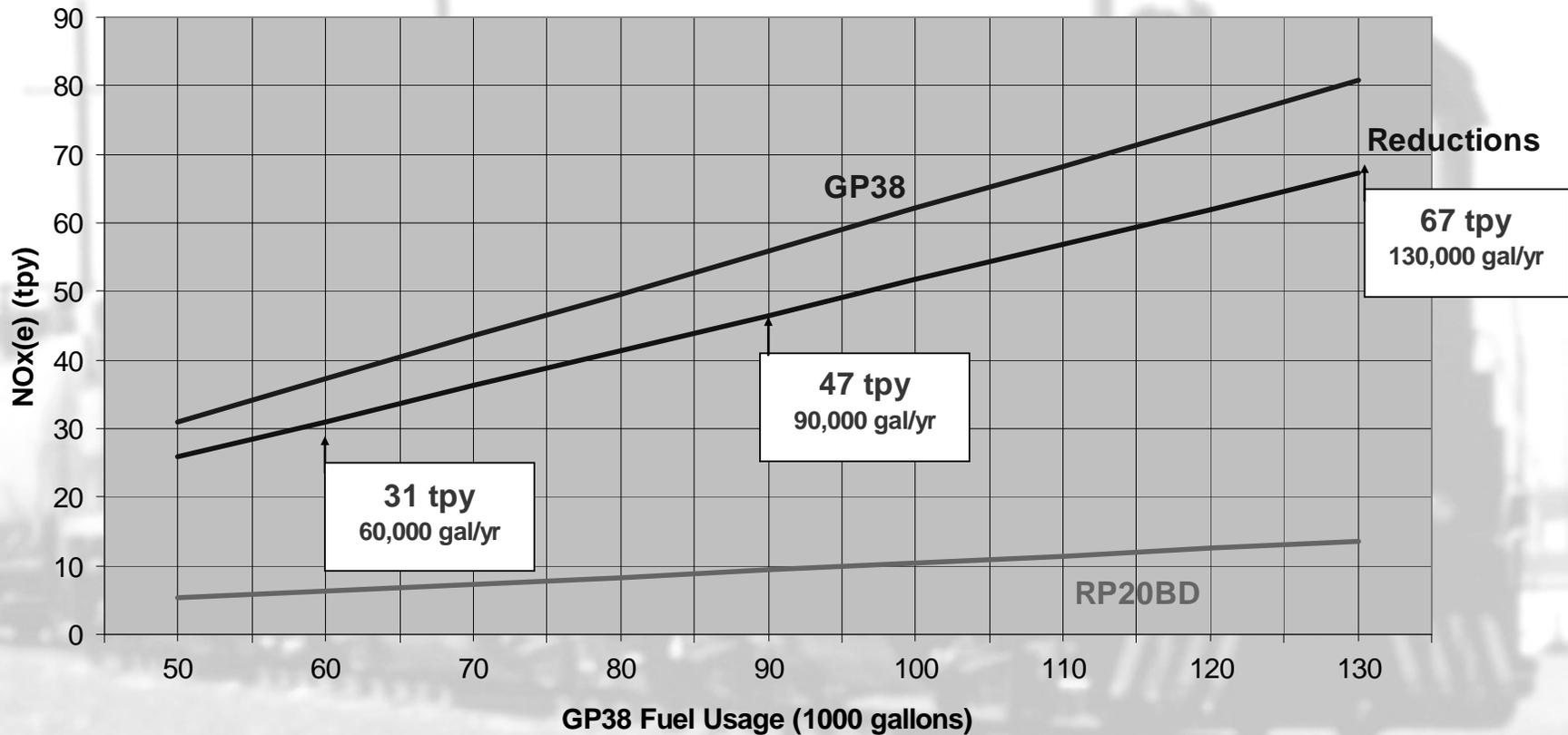
Eliminate or Reduce Idling

- Hybrids prevent ALL idling
 - ◆ Batteries provide power to auxiliary systems
- Non-hybrid locomotives sometimes idle to
 - ◆ provide power to the cab for heat, lights and other needs
 - ◆ provide power to the air compressor to maintain the air brake.
 - ◆ keep the engine block warm if temperatures dip below 40 degrees

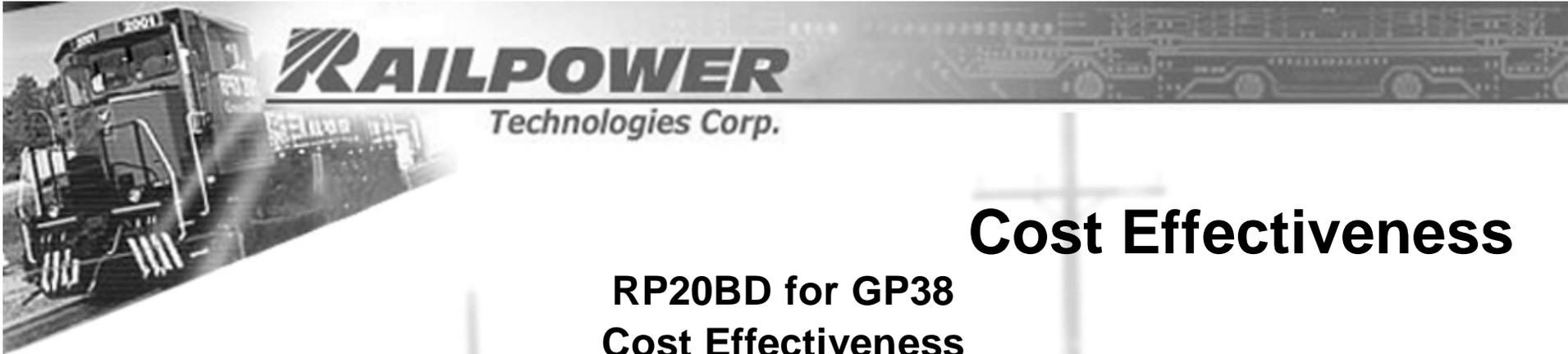


Typical NOx(e) Reductions

RP20BD vs GP38 Emissions Summary

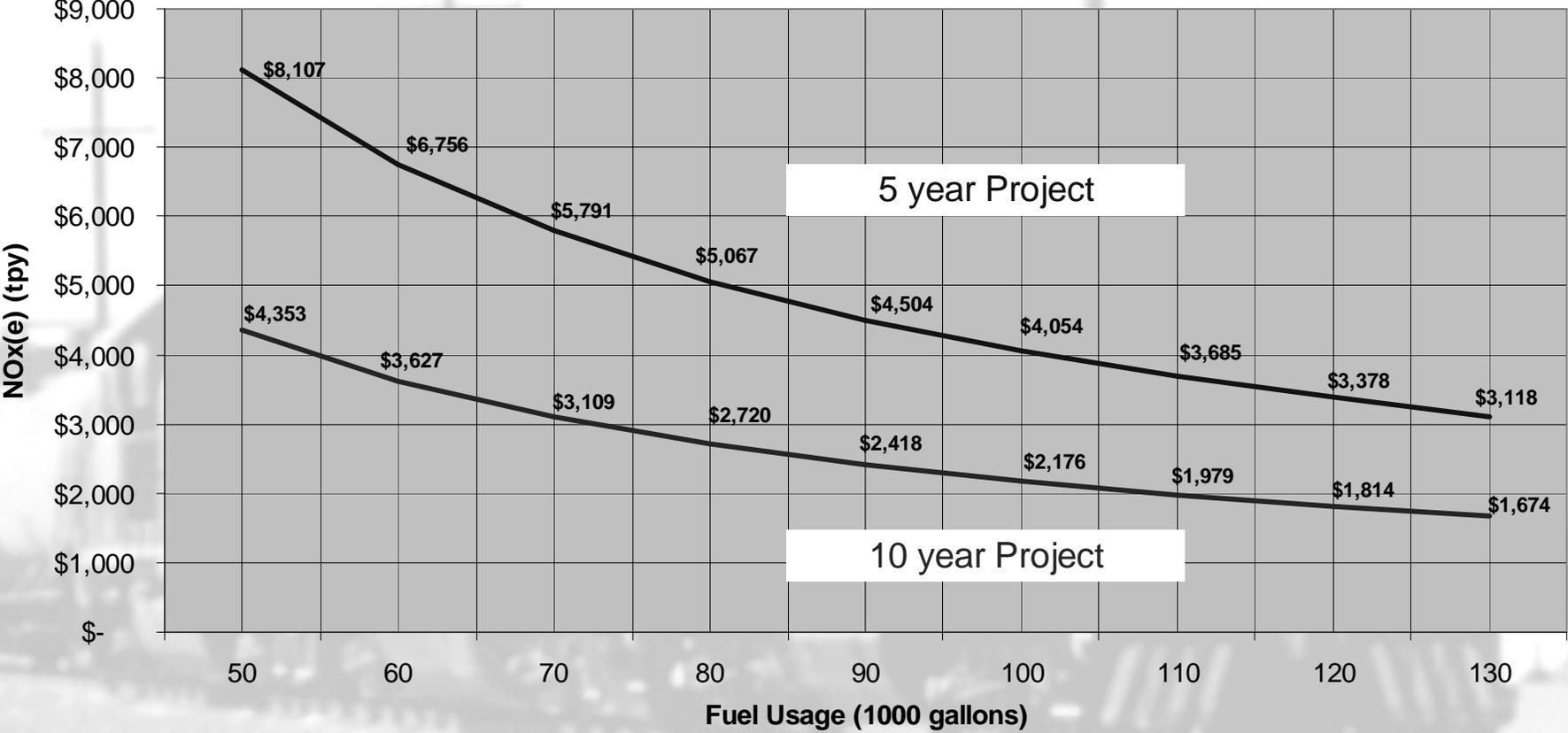


* Based on EPA Switch Duty Cycle and $NOx(e) = NOx + ROG + 20 * PM$



Cost Effectiveness

RP20BD for GP38 Cost Effectiveness



* Based on EPA Switch Duty Cycle and $NOx(e) = NOx + ROG + 20 * PM$



Railpower Technology Advantages

- 90% reduction in NOx and ROG
- 80% reduction in PM (with Tier 3 nonroad engines)
- Hybrids do not idle
- Quieter Operation
- Green House Gas Emission Reductions
- “Future proof”
 - Tier 3 nonroad engines can be replaced with Tier 4
 - Diesel Particulate Filters are more easily added



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