

GE Transportation

Driving toward lower emissions



**Semi-Annual Public Meeting to Discuss Future
Locomotive Emission Control Measures**

July 13, 2006



Discussion Topics

- ❖ **Who we are**
- ❖ **Where we were**
- ❖ **Where we are**
- ❖ **Where we are going**

GE Transportation

- **A technology leader . . . *Locomotives, Signaling, service & optimization solutions***
- **A worldwide customer base . . . *Over 1,200 customers in over 80 countries***
- **Ecomagination . . . *GE's initiative to help solve customers' most pressing environmental issues***
- **Investing in & differentiate with technology**

From one of the lowest emitting diesel-electric locomotives ever designed . . .



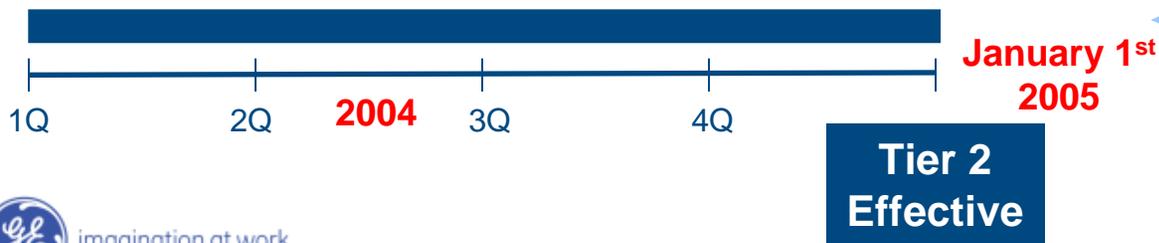
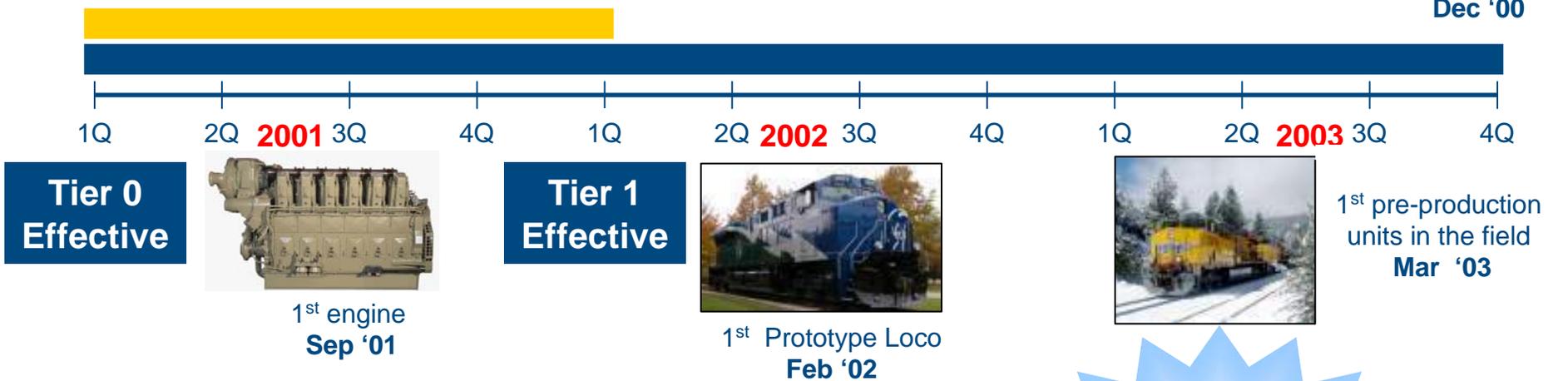
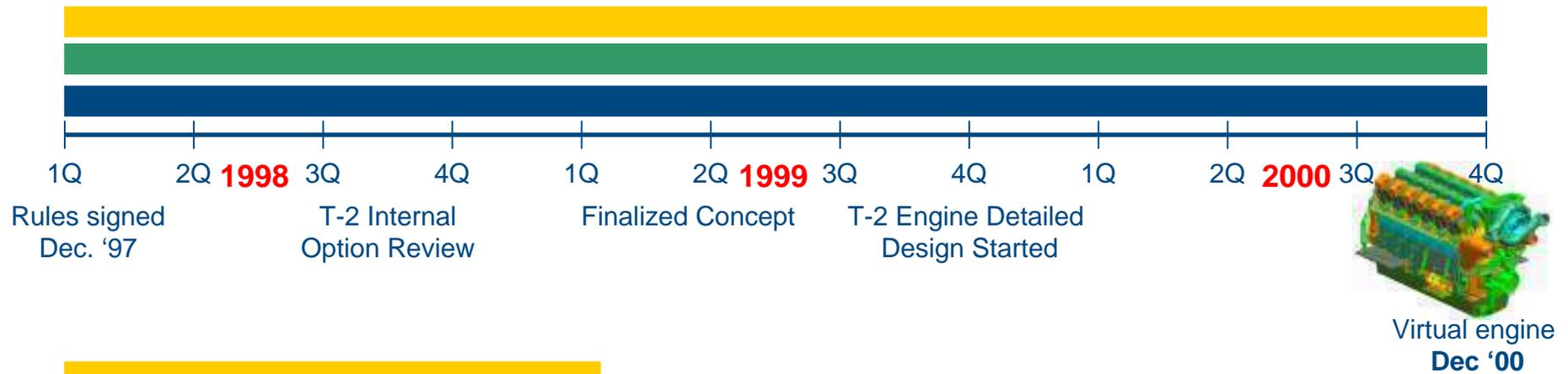
To improving the safety
and increasing the
productivity of
railroad
infrastructure . . .



GE Transportation's suite of solutions



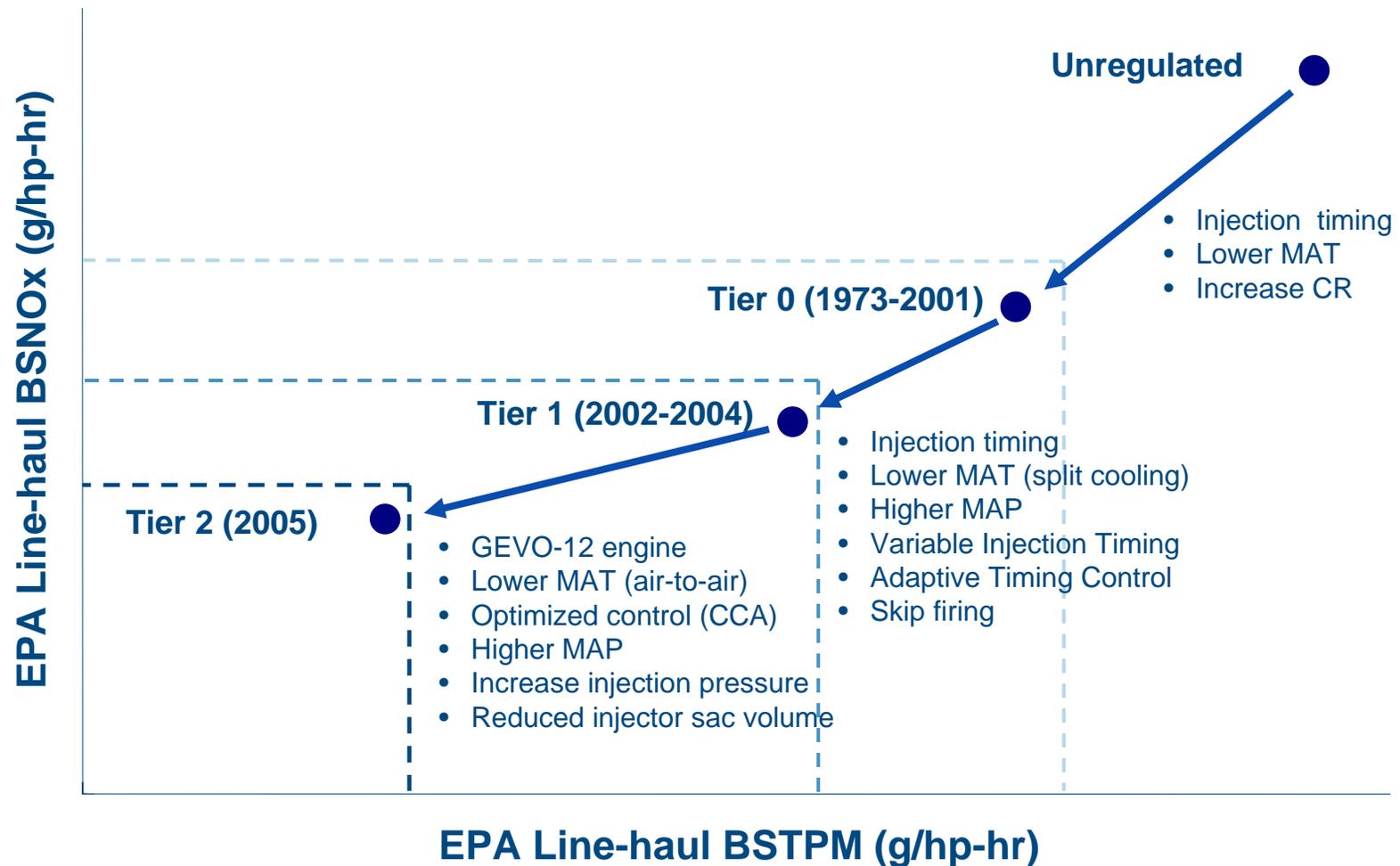
Where we were



**8 years
&
\$300MM**

Where we are

EPA Locomotive Emissions Regulations



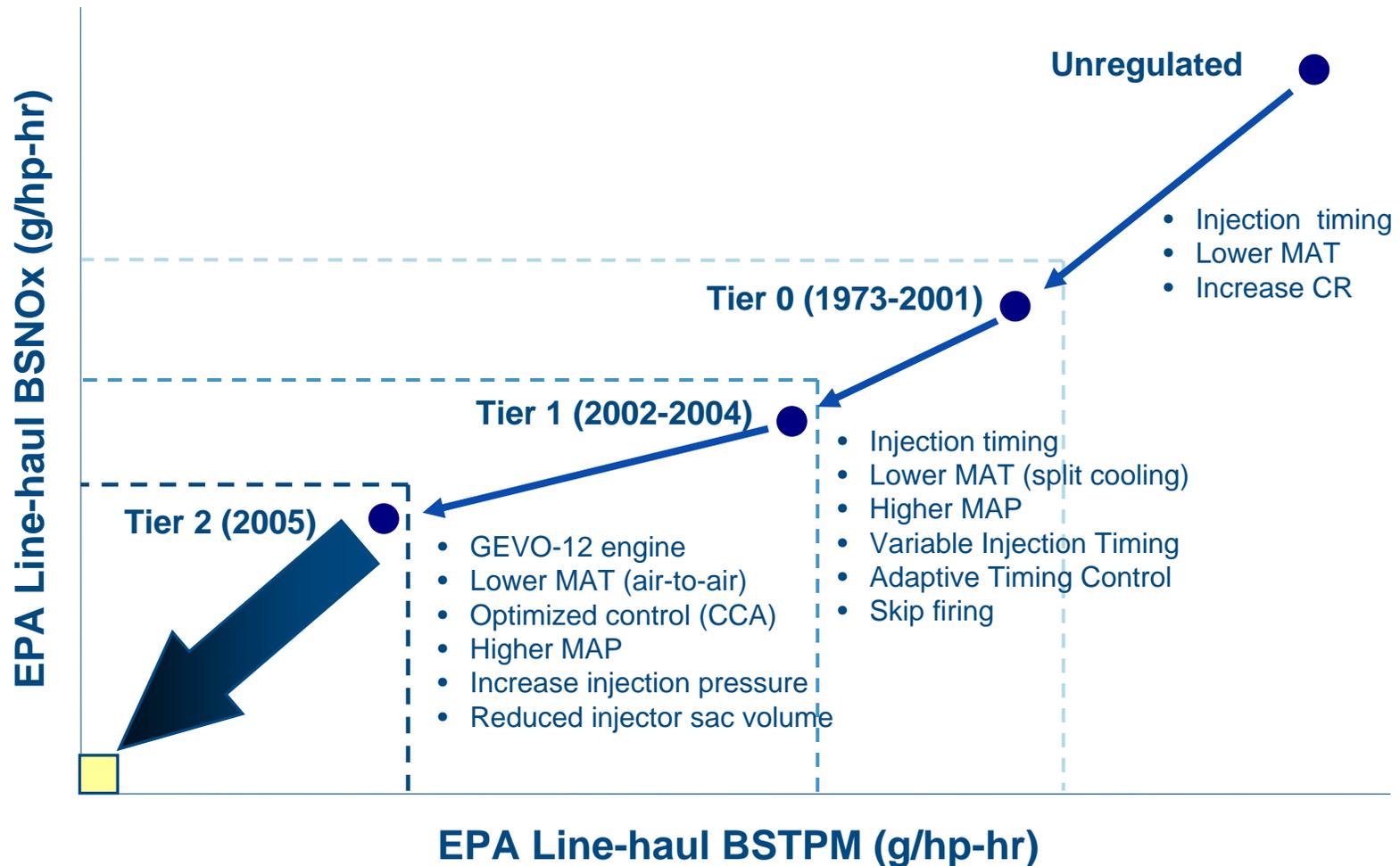
Evolution[®] Series

- **Demonstrated reliability & availability**
- **Lower life cycle cost**
- **Improved operator environment**
- **Platform for growth**
- **1,100 units in service**
- **1,400 units in backlog**



Where we are going

Aggressive & obtainable

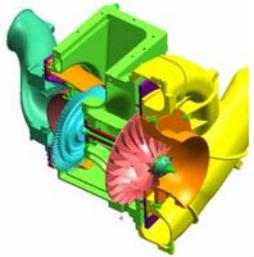


Balancing fuel & emissions

Reducing fuel consumption

- Attacking all areas of opportunity

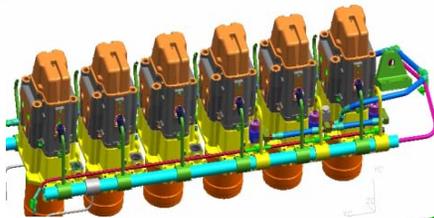
Turbocharger



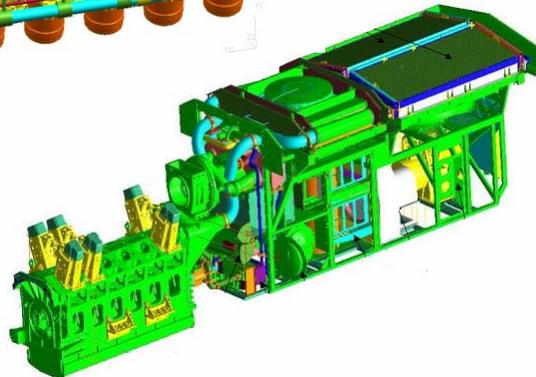
Piston



Fuel system



System optimization

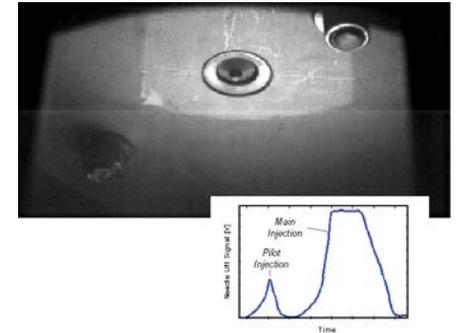


- Multigenerational plan for ongoing improvements → leverage Evolution Series® growth platform

Reducing emissions

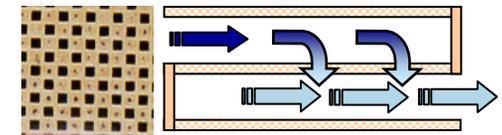
In cylinder solutions

- ✓ Combustion control
- ✓ System optimization



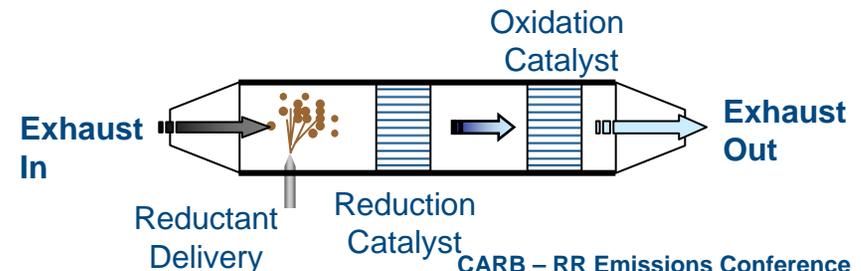
Particulate after treatment

- ✓ Diesel Particulate filter

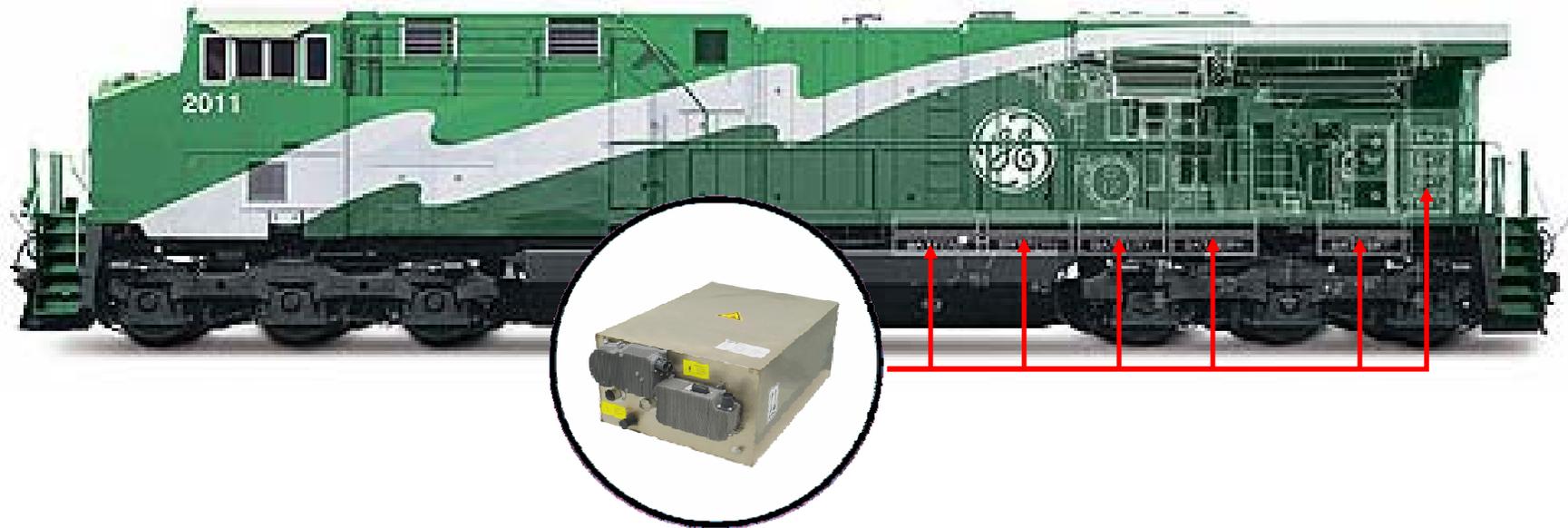


NOx after treatment

- ✓ Selective catalytic reduction



Bringing hybrid to the main line



- **Recover wasted DB energy**
- **Store energy**
- **Redeploy the energy . . .**
 - ✓ Reduce fuel consumption
 - ✓ Reduce emissions
 - ✓ Increase HP

Benefit potential:

- ~10% fuel savings
- ~10% emission reduction
- Additional 1,750 HP
- Bridge to advanced technology . . . fuel cells, etc.

Railroad partnership

- **BNSF & UP aggressively adopting emissions reduction technology . . . *650 locomotives in 18 months, all with AESS***
- **Aggressive research on emission reduction technologies . . . *new locomotives & installed base***
- **Working with EPA on an aggressive & obtainable plan for the next tier of reduction . . . *Technology forcing on both PM & NOx***
- **Ensure ton-mile emissions leadership**





imagination at work