



***WHICH PATH
WILL YOU TAKE?***

2010 Emissions Facts



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Choice in 2010: “Simplicity” or “Complexity”

Emissions standards for diesel-powered commercial trucks will change again in 2010. But your purchase criteria will remain the same then as today. You will want trucks that perform with every turn of the key. So, you'll continue to look for performance, reliability, durability, low cost of ownership, and ease of maintenance. And, once again, you need not look any further than International® trucks powered by MaxxForce™ engines.

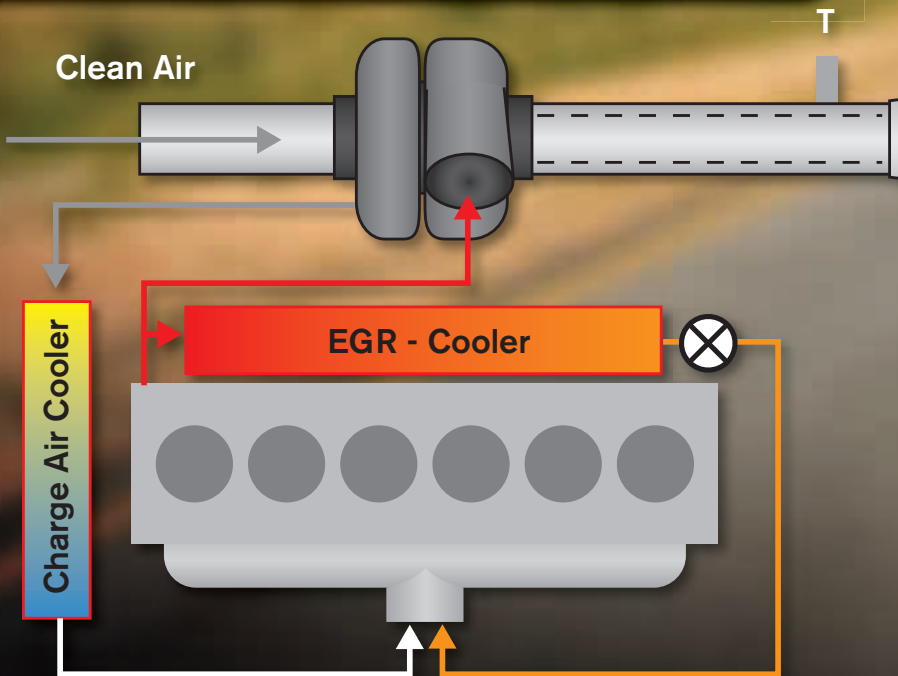
For 2010, Navistar will meet new EPA standards with advanced engine and vehicle systems featuring EGR. Some truck makers will offer emissions systems that incorporate SCR (Selective Catalytic Reduction) an after-treatment approach versus a proven in-cylinder solution. EGR is the customer preferred solution.

Here are the facts:

- EGR allows business as usual after 2010 for International truck owners with MaxxForce engines.

- EGR is a simple and proven technology.
- EGR is simpler to maintain and operate.
- There are no radical hardware additions with Advanced EGR.
- No Urea tanks, no additional catalysts, sensors, gauges or electronics with EGR systems.
- No additional fluids are required for vehicle operation with EGR.
- There are no worries about availability of Urea with EGR.
- Service technicians understand and know how to service EGR based products.
- TEM's do not have to re-engineer bodies and functional components to accommodate new hardware and packaging.

As an integrated truck and engine OEM, our collaborative engineering teams will deliver International customers the best total ownership experience and cost structure for your business.



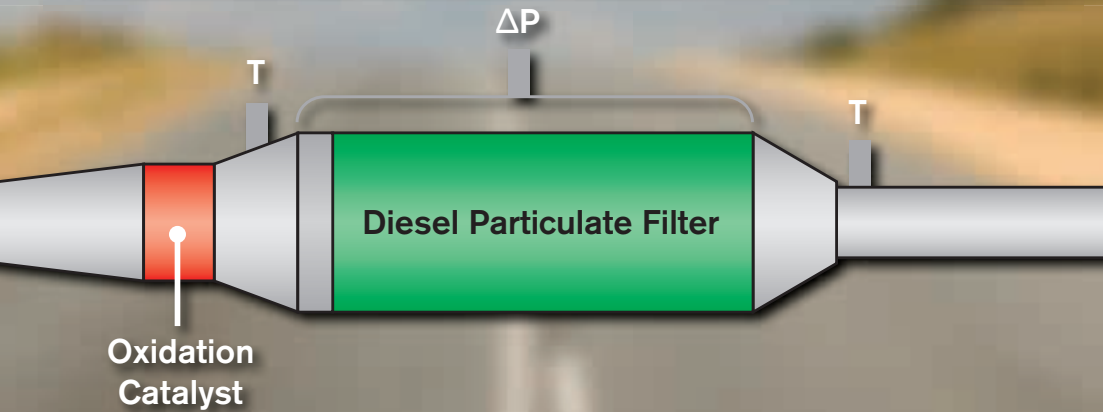
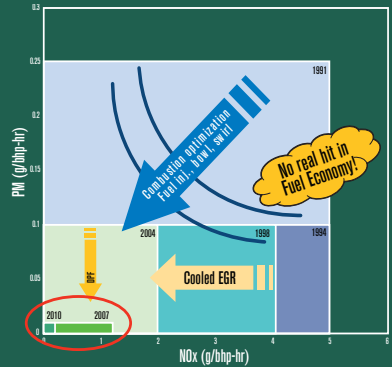
The same confidence customers have in today's products will carry forward in 2010 with a proven EGR solution. This effective technology, that is well understood, is simple to maintain and provides you peace of mind with "Advanced Simplicity".

2010 looks like 2007 with Navistar's "Advanced Simplicity" EGR technology. 2007 saw the introduction of after-treatment into the market with EGR. The conventional wisdom was a decrease in fuel economy. The facts are 2007 MaxxForce engines in International® trucks showed fuel economy gains up to 7-12%

The technologies used include:

- High pressure fuel injection with multiple injections per combustion event
- Cylinder bowl optimization
- Cooled Exhaust Gas Recirculation (EGR) and Diesel Particulate Filter (DPF) after treatment to control Particulate Matter (soot) out of the exhaust to virtually zero [0.01 g/hp-hr].

2010 will see the incremental development of these technologies without the need for additional after-treatment hardware and fluids. That is advanced simplicity for International customers, with full emissions compliance.



SCR Offers More Complexity For Customers

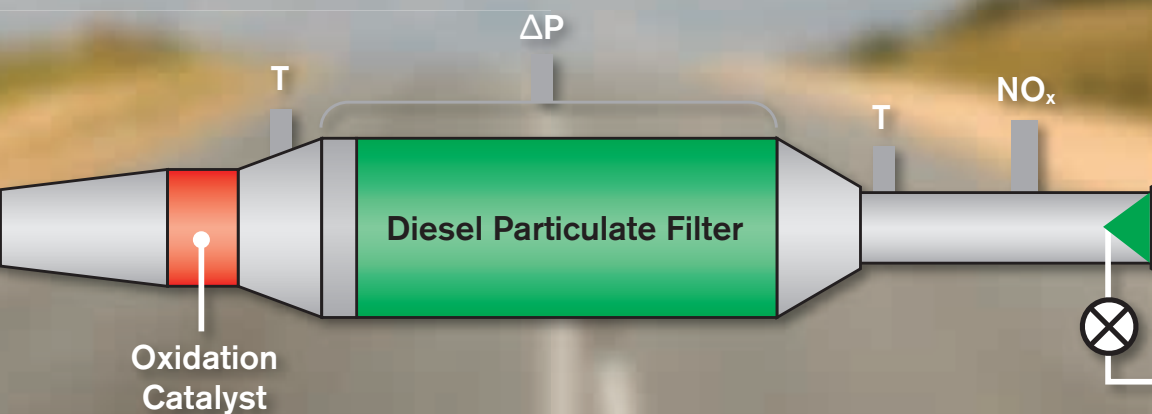
European and some North American-based OEMs are taking the path of “more complexity” with Selective Catalytic Reduction (SCR) after-treatment technology.

SCR is burdensome for customers...

- Emissions compliance is transferred to the customer who must maintain an adequate supply of urea or face operating interruptions.
- SCR requires the use of Urea to be mixed into the exhaust stream and act as a reduction agent to break down NO_x into Nitrogen (N₂) and water.
- SCR technology would add additional hardware to the existing 2007 particulate after treatment hardware shown in the illustration below.

This solution adds cost, packaging challenges and complexity to achieve 2010 emissions reduction with SCR.

But there are other issues that you need consider when using an SCR solution.

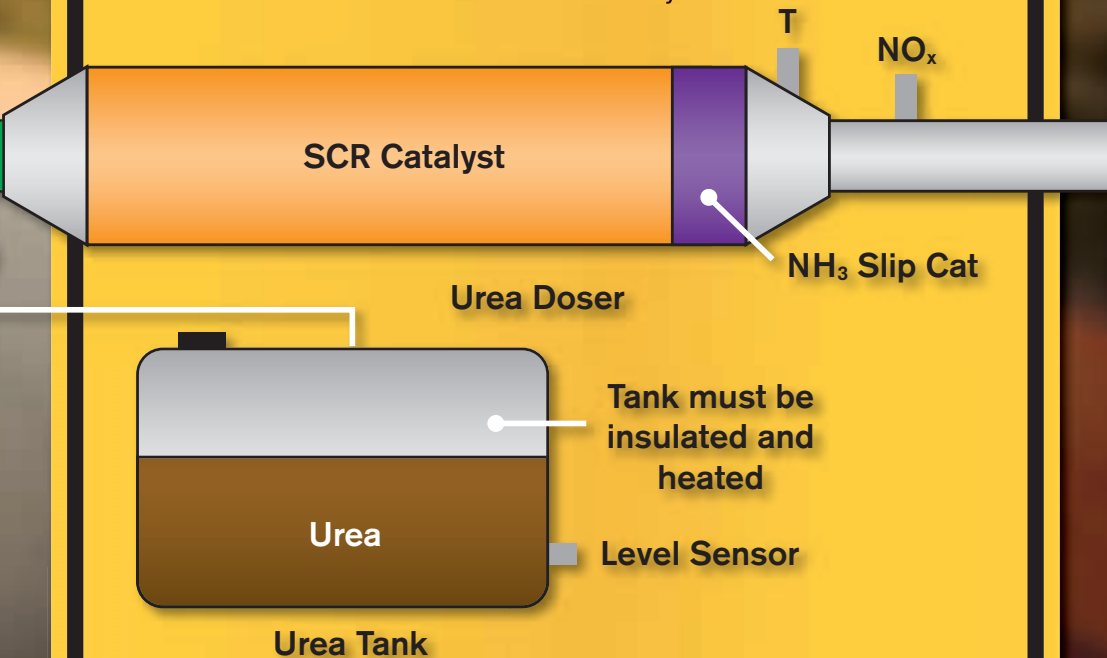


Navistar has announced that it will be fully compliant in 2010 and its core commercial truck applications will NOT use SCR.

This offers customers payload continuity, reduced complexity and service continuity with no extra training and a clean air solution allowing business as usual.

More SCR Facts

- There is no delivery infrastructure in place to support Urea distribution in North America for 2010.
- The need for Urea demands a separate tank on the truck that will add weight and reduce payload.
 - A line haul vehicle may require a 40 gallon tank that would need filling every 12,000 - 24,000 miles based upon fuel use.
 - The Urea tank must be well insulated to prevent decomposing in hot climates and heated to prevent freezing in cold climates.
- Urea is Temperature dependant.
 - If Urea is exposed to $>105^{\circ}\text{F}$ the urea will decompose rapidly.
 - Urea will freeze at $\sim 10^{\circ}\text{F}$. Urea must be thawed very quickly with engine coolant [about 30 min.] or with the use of electric heaters [requiring power consumption]
- A mixer and Urea doser [injector] are required in addition to the SCR catalyst to achieve the NO_x reduction.
- Urea alarms or engine de-rating would be required to assure the use of Urea to achieve emissions goals.
- Urea use will add to diagnostic system requirements.
- SCR Urea must be a high grade and a precise solution to avoid catalyst damage and assure system integrity.
- Urea has varied commercial and agricultural uses: Fertilizers, barbiturate synthesis, urea formaldehyde, plastics and polyurethanes. It is important to select and use the correct grade.
- Urea costs are driven by agricultural demand, automotive purity requirements and infrastructure and distributions requirements.
- Estimated SCR hardware costs are several thousands of dollars per truck in addition to the 2007 after-treatment costs we have today.





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