

A CLEANER FUTURE BUILT AROUND YOU

OUR EMISSIONS COMPLIANCE TECHNOLOGIES



BUILT AROUND YOU



THE ENVIRONMENT AND YOU: WE UNDERSTAND

Climate change and air quality are at the top of the agenda for governments and cities around the world. Emissions standards focus on regulating the pollutants released by vehicle engines and industry.

Emissions regulations, introduced in 1996 by the United States Environmental Protection Agency (EPA), have been introduced in stages, setting increasingly stringent targets.

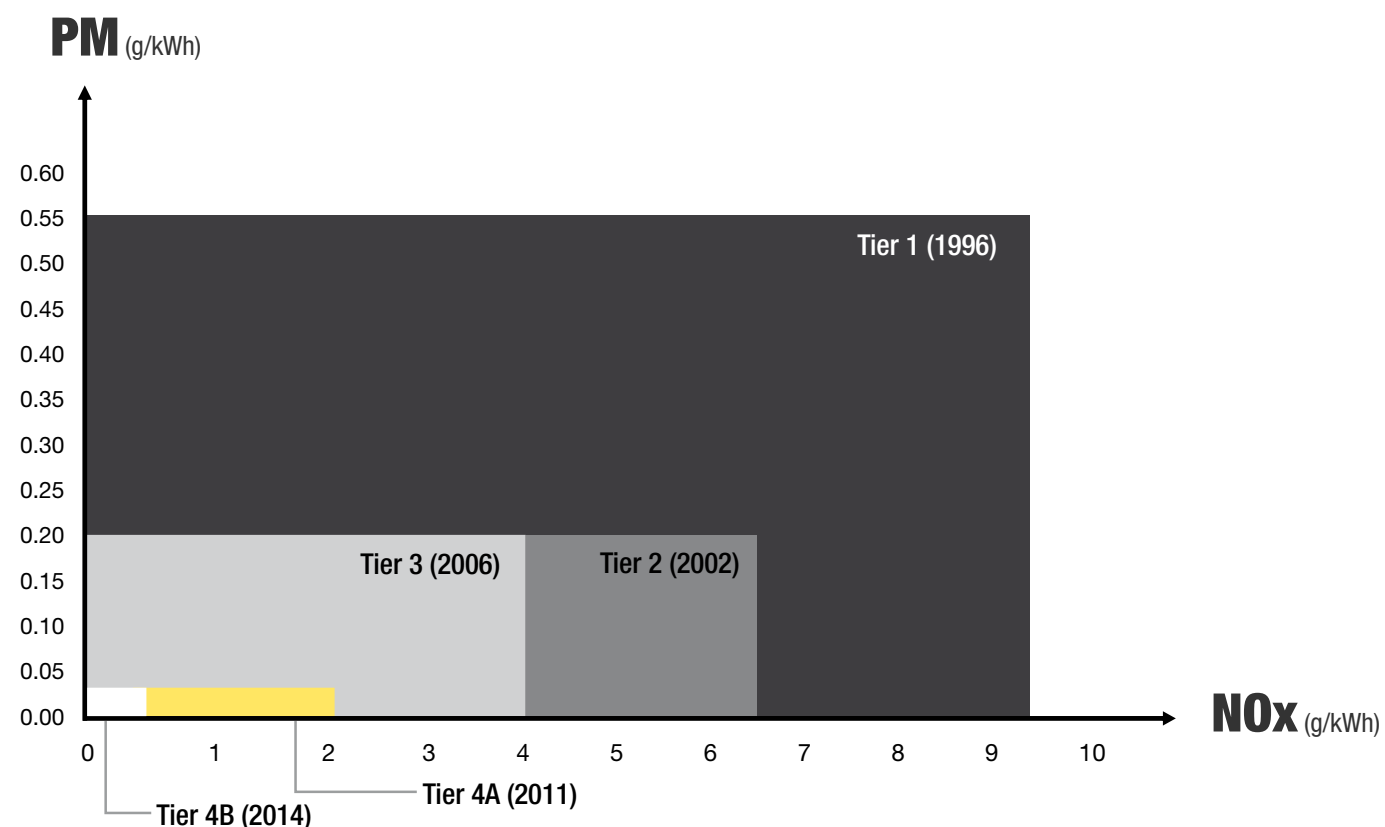
The emissions standards focus on reducing levels of the main pollutants resulting from the combustion of fossil fuel in diesel engines: nitrogen oxides (NOx) and particulate matter (PM).

The biggest step towards near-zero emissions

Levels of NOx and PM have been reduced by approximately 60 percent since the introduction of emissions standards in 1996. The biggest reduction in emissions will come with EPA Tier 4 interim and final standards, which mandate a 90-percent drop in PM and NOx.

HOW WILL THE NEW STANDARDS AFFECT YOUR BUSINESS?

New Holland Construction helps make the most of all opportunities by putting our advanced engine technologies to work for you. At the same time, we will offer equipment that complies with the most stringent emissions standards, enhancing health and safety on your jobsite while providing the top performance, high productivity and low operating costs you have come to expect from us.



WHAT ARE THE MAIN POLLUTANTS IN EMISSIONS?

Toxic substances are produced during the combustion process due to the impurity of fossil fuel. The main pollutants released by diesel engines are:

Nitrogen oxides (NOx): formed during combustion at high temperatures (usually above 2900°F or 1600°C) when molecular nitrogen and oxygen disassociate into their atomic states and react.

Particulate matter (PM): composed of tiny carbon particles and other toxic substances that result from an incomplete fuel burning process, for example during combustion at low temperatures.

THE ENVIRONMENT AND YOU: WE RESPECT



PERFORMANCE WITH COMPLIANCE

The emissions challenge: the simultaneous reduction of NOx and PM.

Why is this a challenge? Because NOx occurs at high combustion temperatures while PM occurs at low combustion temperatures. Reducing one increases the other.

If the engine is tuned for maximum efficiency, combustion temperatures will be high, resulting in low PM and high NOx levels. These can be broken down in an after-treatment system using a diesel exhaust fluid (DEF) additive combined with a catalyst.

Alternatively, if the engine is tuned to reduce NOx at the source, combustion temperatures will be lower, resulting in higher PM levels. These can be lowered with an after-treatment exhaust filter system.

THE NEW HOLLAND SOLUTION

To ensure the best performance from each model in our product line together with compliance to emissions regulations, two technologies will be used – cooled exhaust gas recirculation (CEGR) and selective catalytic reduction (SCR), depending on each model's engineering characteristics, application requirements and lowest operating costs.

Powering through a seamless transition

We offer you the best choice of technology for every model in our product line, ensuring an easy transition through the biggest step in the process of emissions reduction mandated by U.S. authorities.

Powering clean technologies

In developing the New Holland solution, we benefited from being part of the Fiat Group. This gives us access to the considerable expertise and research and development resources of Fiat Powertrain Technologies (FPT), with its consolidated experience in low emissions systems. FPT's expansive expertise is derived in part from automotive Tier 2 and Tier 3 applications developed for engines powering more than 100,000 trucks and commercial vehicles sold since 2006.

Powered around you

As emissions standards have tightened over the years, moving from Tier 1 through to Tier 3, New Holland has always stayed ahead of the industry, providing equipment with emissions and noise levels well below regulatory levels, introducing advanced solutions such as common-rail engine technology or the exclusive InDR noise and dust reduction system. For the next step, New Holland's "Built Around You" innovative engine technology delivers the best solution to make the biggest cut in emissions using SCR and CEGR technologies where they can achieve the most.

Powering a cleaner future

New Holland and FPT maintain high investment levels in R&D on all engine technology options. We take a long-term approach to stay ahead of the industry. We continue to provide our customers with the best technologies to minimize the environmental impact of our equipment, enhance health and safety on the jobsite, and comply with the increasingly stringent regulations, with best-in-class performance, productivity and reliability.

THE ENVIRONMENT AND YOU: WE DELIVER



WHAT DOES COOLED EXHAUST GAS RECIRCULATION (CEGR) TECHNOLOGY MEAN FOR YOU?

Evolutionary innovation: This solution is an extension of our Tier 3 technology.

User friendly: There is no change in the way you operate your equipment.

No additives: CEGR requires no special measures or additives.

WHAT DOES SELECTIVE CATALYTIC REDUCTION (SCR) TECHNOLOGY MEAN FOR YOU?

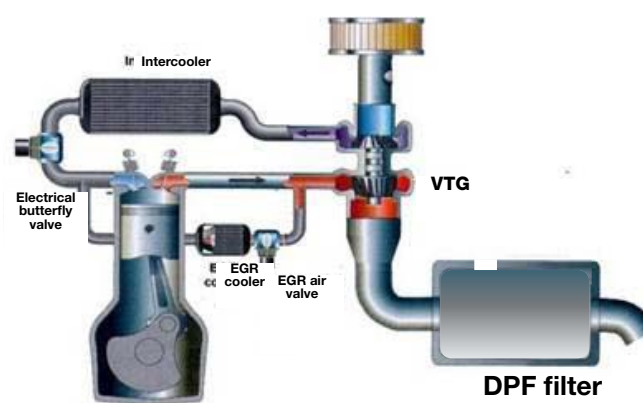
Low fuel consumption: The combustion process is optimized for maximum efficiency, so less fuel is consumed.

Optimized performance: Torque and power are maximized, as SCR is an after-treatment system that allows the engine to do what it does best – generate power.

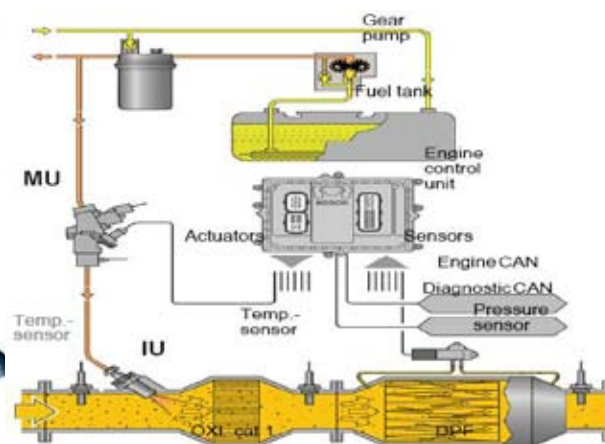
Simple design: You need to refill the diesel exhaust fluid (DEF) tank only when the level indicator flashes.

Easy-to-find: DEF will be readily available from your New Holland dealer.

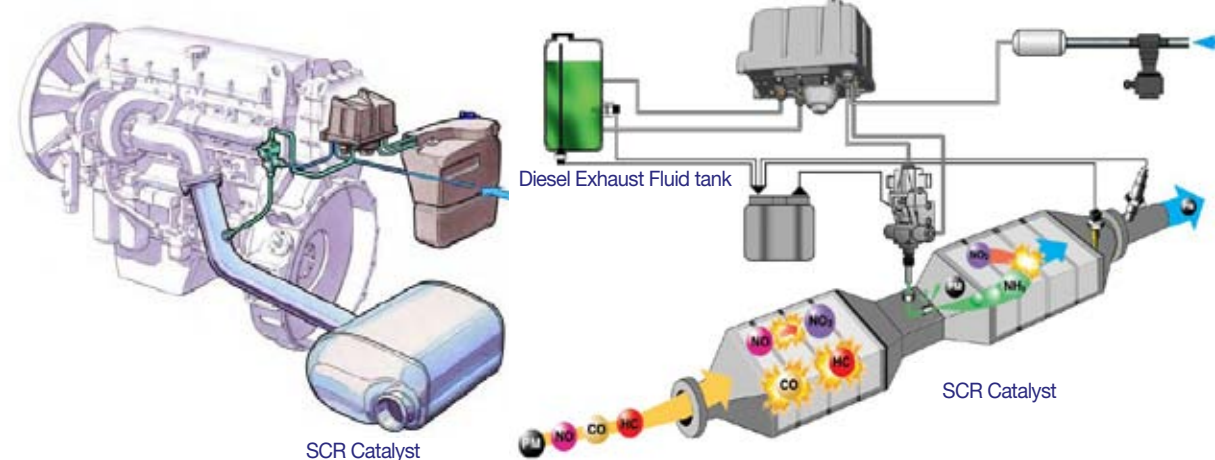
CEGR



DPF



SCR



HOW DOES CEGR WORK?

The CEGR system reduces the production of NOx inside the engine by lowering the combustion temperature with an exhaust gas recirculation system.

PM levels are then reduced by an exhaust filter system, using a diesel particulate filter (DPF).

HOW DOES SCR WORK?

SCR technology is an after-treatment system that transforms the NOx produced during the combustion process into nitrogen and water, which occur naturally in the atmosphere, through a chemical reaction with a diesel exhaust fluid (DEF).

The combustion process is optimized to reduce PM, so no particulate filter is required.

POWERING YOUR SUCCESS



EMISSIONS: THE NEW HOLLAND ADVANTAGE

Safety and operator comfort.

The low emissions and noise levels provided by New Holland equipment result in better air quality at jobsites, with positive impact on health and safety on the jobsite and for equipment operators.

Low operating costs.

With New Holland, you can count on equipment with cutting-edge hydraulic, electronic and engine technologies that deliver emissions compliance and the lowest operating costs in the industry.

Productivity.

We developed our CEGR and SCR technologies to ensure you get the best performance out of your New Holland equipment, applying to each model the engine technology that will guarantee the best results.



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Safety begins with a thorough understanding of the equipment. Always make sure you and your operators read the Operator's Manual before using the equipment. Pay close attention to all safety and operating decals and never operate machinery without all shields, protective devices and structures in place.

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