



The March to Cleaner Engines Continues Posted on July 01, 2009 at 6:53 AM [Click here](#) to view [recent posts](#)

During a Deere media event last week - for machines you can learn more about after Aug. 20 - the company offered up a quick rundown on the options ahead for meeting more stringent emissions rules set by the U.S. Environmental Protection Agency. We've covered some of these in past Farmer Iron columns but some bears repeating. Companies are dealing with essentially two standards that go into effect pretty closely.

First is interim Tier 4, then there's full Tier 4. Interim Tier 4 - or IT4 as Deere calls it - impacts engines with 175 and higher horsepower starting with models sold in 2011. Full tier 4 starts impacting the industry by 2014 - in very quick succession given the time it takes to meet the challenges. And there are two approaches you should understand for interim Tier 4 implementation, because you'll start seeing those engines soon.

One is the cooled exhaust gas recirculation and the other is selective catalytic reduction. With EGR, a portion of the exhaust gas is recirculated through the combustion chamber a second time - on the way it is cooled to reduce the combustion temperature. This helps reduce emissions of nitrous oxide, and burning the exhaust gas twice helps get rid of another culprit - particulate matter. This cooled EGR solution involves changes to the engine, plus the addition of an after-treatment filter. This big filter catches particulates, and using a passive system keeps itself clean to keep maintenance low.

The second approach is SCR, which involves little change to the engine, but involves adding an after-treatment system that injects diesel exhaust fluid (water and urea) into the exhaust stream. This addition combined with a catalytic converter can significantly clean up emissions. However, some argue this is more complicated, requiring you to get DEF and add it along with diesel. DEF goes in its own tank.

Essentially, farmers get a choice - which in a free market is a good thing. Whether one is better than the other depends on the farmer, and the equipment maker. Understanding the two approaches, however, is important. You need to know what each offers your operation.