Cummins Waste Heat Recovery

DoE Contract DE-FC26-05NT42419
Chris Nelson – Cummins - Principle Investigator
Roland Gravel – DoE HQ - Technical Manager
Ralph Nine – DoE NETL – Contract Manager

Project Goals are:
- 10% Fuel Efficiency Improvement
- Reduce or eliminate the need for increased heat rejection capacity

Project Concept:
Application of a Rankine Cycle to extract waste Heat energy from the Cummins ISX EGR and Exhaust Gas streams. Provide recovered energy as electricity to a Flywheel Motor Generator (FMG) and supplement engine power
Cummins Waste Heat Recovery

Extracts Waste EGR Heat
Takes in Waste Exhaust Heat when off-peak

R245fa working fluid

~8% efficiency benefit across the drive cycle.

>8% improvement at cruise

‘More Electric’ Accessories will add 2% benefit