Development of a Waste Heat Recovery System for Light Duty Diesel Engines

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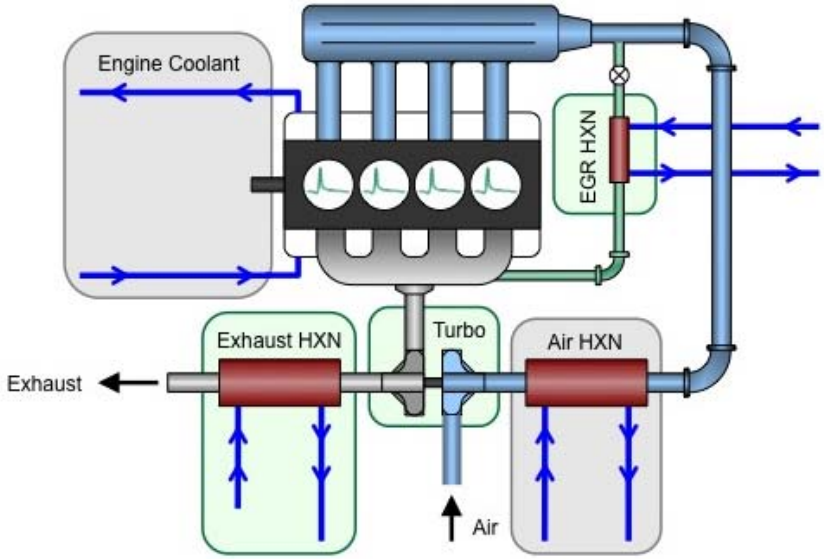
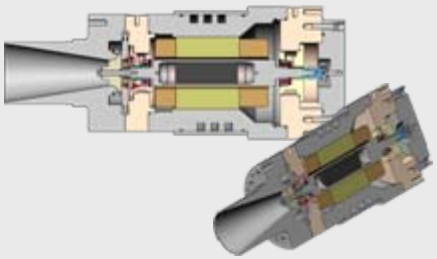
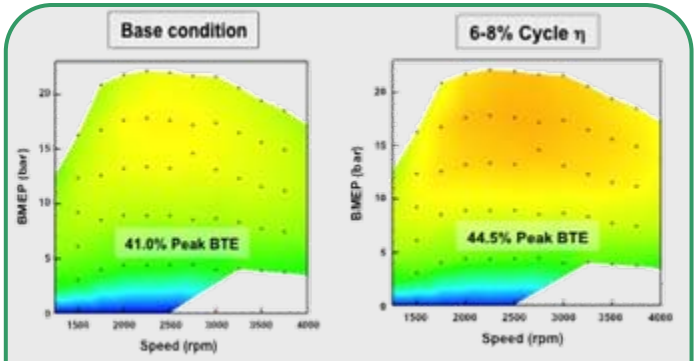
Objective: **To increase the efficiency of a light duty diesel engine through the development of a Rankine cycle waste heat recovery system**

Substantial increases in engine efficiency require utilization of the waste energy found in the coolant, EGR, and exhaust streams.





Radial inflow turbine with integrated generator developed by Barber-Nichols



Thermodynamic modeling indicates a significant improvement in fuel efficiency can be achieved over much of the engine map.

Predicted performance at peak brake efficiency point is 12.8% cycle efficiency, and 5.8 net hp. The combined engine + WHR system efficiency is predicted to be 44+%