

# **Progress Update: Creating Mobile Emission Reduction Credits**

Presenter:  
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**Emission Reduction Specialists**



**Emission Credit Brokers**

# Emission Reduction Specialists

- Three years ago, Emission Credit Brokers formed a new company called Emission Reduction Specialists (ERS) to service the Emission Credit needs of our customers.
- ERS is completely focused on developing projects that create Mobile Emission Credits.
- ERS has strategic alliances with companies that have technologies that reduce Mobile Source Emissions and Emissions from stationary generators.

# Mobile Source Emissions

- In most cities, mobile source emissions make up more than half of the total NO<sub>x</sub> emissions.
- Even though Mobile Emissions make up the majority of the pollution in a city, it has been cost prohibitive to abate them in older vehicles/equipment due to the high cost of retrofit technology.
- Technologies like SCR/SNCR technology have now made it cost effective to create emissions credits.

# Readily Available Retrofit Technology

- Exhaust Gas Recirculation (EGR)
- SCR/SNCR with DOC or PM Trap
- Hydrocarbon Selective Catalytic Reduction (HC- SCR) & Lean NOx Catalyst (LNC)
- Air Separation Membranes

# Pros & Cons of EGR

- Pros
  - Once retrofit is complete no ongoing need for reducing agent like urea or ammonia
  - Little or no fuel penalty
- Cons
  - Requires time-intensive engine rebuild
  - Reduces performance of engine and shortens engine life
  - High cost to achieve a 30% - 50% reduction

# Pros & Cons SCR

- Pros
  - Post Combustion Technology
  - No fuel penalty
  - 90% + reduction in NO<sub>x</sub>
  - Extremely cost effective
- Cons
  - Ongoing replacement of reductant (urea or ammonia)

# Pros & Cons (HC- SCR) & Lean NOx Catalyst (LNC)

- Pros
  - Post Combustion Technology
  - No ongoing need for reductant
- Cons
  - 5%-12% fuel penalty
  - High cost to achieve a 30% - 50% reduction in NOx

# Pros & Cons Air Separation Membranes

- Pros
  - One time installation and no ongoing maintenance
  - No ongoing need for reductant
  - 40% reduction of NO<sub>x</sub>
- Cons
  - Upstream Application – Fits on engine before air intake and manifold.
  - 1-3% fuel penalty
  - High cost to achieve a 40% reduction in NO<sub>x</sub>

# ERS chose ADEC SCR retrofit system by Extengine

- SCR created greatest amount of emission reductions/credits for the least amount of money
- Extengine was only company that was close to having CARB verification – (Can't create credits unless verified)
- ERS clients were also less resistant to SCR – No out of pocket expense, no chance of damage to engine, no fuel penalties)
- SCR has a wide range of applications

# Current projects with ADEC II SCR system

- ERS has retrofitted 24 refuse trucks with system and have commitments to retrofit 371 additional trucks.
- City of Houston is retrofitting every piece of Diesel equipment that qualifies for funding under Texas Emission Reduction Plan.
- ERS is currently doing pilot projects on Heavy Duty Caterpillar equipment. Plan is to retrofit a D9 Dozer, 836 Compactor and A35 Off-Highway Truck.
- ERS is also doing a pilot project on a 350 HP Stationary Diesel engine

# Benefit to Fleet and/or Equipment Owner

- Free Fleet modernization
- Hedge risk of future legislation (new emission standards, use restrictions) that requires business owner to come out-of-pocket to clean up dirty equipment
- Not restricted from bidding on government contracts in certain cities
- Public Relations benefits of cleaning up the environment

# Summary of Refuse truck project

- Retrofitted 24 trucks with ADEC II SCR system
- Total cost of project – \$826,413
- Project costs also included cost of ammonia for 7 years, and emission testing.
- Total ton of NOx created life of project – 168 tons
- Average cost per ton over 7 years - \$4,919.12

# Summary

- Currently the demand for Emission Credits exceeds the supply.
- By using cost effective technologies like ADEC II SCR, it is now economically feasible to create Mobile Source Emission Credits.
- By creating credits you mitigate risk by not being subject to price spikes in the market. (July 2000 NOx RTC credits traded at \$124,000 a ton)
- Compared to stationary source reductions, mobile source credits cost much less to create

# Conclusion

- Creating Mobile Emission Credits is a feasible and cost effective when utilizing a cost-effective technology like SCR.
- Emission Reduction Specialists can help companies develop, implement and finance Mobile Emission Reduction Projects in any area that has an emission credit trading program in place or grant program like Texas's TERP program.

# Contact Information

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