



# The End Users Perspective

New Technology Research and Development Program  
Environmental Technology Advisory Council



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# User Participation

- A few truck/machine owners will *do the right thing* and install retrofits if the costs are reimbursed
- Most need added “incentives” ...
- All need to be educated on incentive programs or requirements
- All need help determining what technology(ies) are best for their operations

# User Perspective

- Most retrofit technologies add no value to the end user
- Retrofits are one more thing that can go wrong
  - Added maintenance
  - Potential down time
- Added costs likely (labor, fuel, urea...)
  - Costs of learning about programs/requirements and technologies; downtime to do installations
- Most small businesses don't have the resources to make emissions reduction a priority

# Users Needs

- Safety
  - Visibility (mostly a nonroad concern)
  - Won't leave truck stranded on a train track
  - Etc.
- Truck/Equipment up time
  - Reliable systems
  - No/limited operator intervention – may be a union issue
  - Maintenance at scheduled intervals idea
  - Limited downtime for installation
    - Onsite installation for nonroad machines best
- No to minimal power reductions

# User Concerns

- Warranty not affected
  - Usually an educational issue
  - Back pressure must be kept in check
- Weight
  - Extra weight reduces the amount of product a truck can haul.
  - Weight can effect the complexity of installing technologies.
- Withstand Vibration
  - Especially for off-road machines on tracks (e.g., dozers or track loaders)

# Nice to Haves

- Added warranty
  - Repowers
  - OEM Rebuild kits
  - Retrofits to some extent
- Fuel economy improvements
  - Difficult and possibly costly verification but may be possible with some OEM supplied/approved SCR's
  - Idle reduction technologies
- Incentives greater than retrofit costs
- Strong business case

# Summary

- Need incentives that go beyond covering costs
- The technical issues are and will be continue to be addressed by the retrofit providers
- Fleet modernization (and some repowers) will continue to be favored over retrofits
- Education by knowledgeable consultants, dealers and, to a lesser extent, technology companies is needed

# Resources

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