Summary

Results of Energotest 2007 tests to evaluate energy-efficient technologies

EnergoTest 2007

To obtain a copy of the complete report with detailed results, please go to **www.feric.ca/energotest2007-en**.

Introduction

Recent fuel price hikes have sparked a growing interest in technologies that promise to improve the energy efficiency of transport fleets. In 2007, Robert Transport partnered with Cascades Transports to conduct a new series of tests, which took place in October on the track of Transport Canada's motor vehicle test centre in Blainville. Both transport companies asked FPInnovations – Feric, which has been involved in R&D and particularly energy efficiency in the transport sector for over 35 years, to take part in the project. Feric was therefore responsible for managing the tests' scientific component and disseminating results.

Objective

The objective of Energotest 2007 was to evaluate, in an accelerated manner, potentially energy-efficient technologies so as to provide a preliminary overview of viable solutions to achieve higher fuel efficiency and lower greenhouse gas (GHG) emissions in the trucking industry.

Acknowledgments

Robert Transport and Cascades Transport were responsible for initiating the project and put every effort into ensuring it was completed. We also thank the following technology suppliers: Advanced Transit Dynamics, Doggett Entreprises, Dynamic Fuel Systems, Econoco, Freight Wing, Laydon Composites, Meka Form, Michelin North America (Canada), Passing Lane and Transtex Composites. Furthermore, this project would not have been a success without the support of Transport Canada, the Ministère des Transports du Québec and the Agence de l'efficacité énergétique du Québec, and the cooperation of PMG Technologies. Finally, the Canadian Trucking Alliance and the Association du camionnage du Québec have agreed to help disseminate results. A chip trailer for the tests was supplied courtesy of Transport Charette.

Partners:

Robert Transport Depuis 1946

Cascades

FPInnovations FERIC

Transport Canada

Transports Canada

Ministère des Transports Québec

Agence de l'efficacité énergétique Québec

Participants:

- Alliance Canadienne de camionnage
- Association du camionnage du Québec
- Advanced Transit Dynamics
- Doggett Enterprises
- Dynamic Fuel Systems
- Econoco
- Freightwing
- Institut du transport avancé du Québec
- Meka Form
- Michelin
- Norcan
- Passinglane
- Transtex Composites

Test Results

The table below presents, in alphabetical order, the test results for each supplier, followed by tests requested by the Ministère des Transports du Québec and in-house tests by Cascades Transport, Robert Transport and FPInnovations – Feric.

Supplier	Technology	Economy (%)
Advanced Transit Dynamics	TrailerTails™, rear drag reduction device	5.1
Doggett Entreprises	XADO, engine oil additive	-4.2
Dynamic Fuel Systems	Jetstar	-0.2
Econoco	Econoco	3.4
Freight Wing	Trailer skirts	7.2
Laydon Composites	Trailer skirts	6.8
Meka Form	Road tractor fenders	1.4
Michelin North America (Canada)	X-One Tires	9.7
Passing Lane	Liberator muffler, trailer with 48,000 kg load, Cummins ISX engine	-0.7
Passing Lane	Liberator muffler, trailer with 25,000 kg load, Cummins ISX engine	1.1
Passing Lane	Liberator muffler, Caterpilar C12 engine	-0.4
Transtex Composites	BoatTail, rear drag reduction device	2.6
Ministère des Transports du Québec	Impact of tire pressure (85 vs. 100 psi)	-3.1
Cascades Transport, in-house tests	Cab space shield-trailer	-0.3
Cascades Transport, in-house tests	Tank shield	1.0
Cascades Transport, in-house tests	Cab space deflector-MANAC trailer	1.0
Cascades Transport, in-house tests	Decoupled rear differential	0.1
Robert Transport, in-house tests	Road train comparison – 2-axle trailer – 4-axle trailer	31.4 and 8.0
Feric, in-house tests	Chip trailer, impact of open doors on fuel consumption	1.6

Conclusion

The best performance in terms of fuel economy came from the aerodynamic technologies, which showed savings of up to 7%, and from the wide tires, which showed savings of roughly 10%. In general, no significant changes were measured in opacity and pollution levels.