TATA TECHNOLOGIES

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Case Study | On-Highway

HYBRID DRIVE FOR ENERGY RECOVERY SYSTEM

THE CUSTOMER WANTED A PARTNER WHO COULD HELP THEM CREATE A NEW CONCEPT FOR HYDROMECHANICAL TRANSMISSIONS TO BE USED IN REFUSE TRUCKS, DELIVERY VEHICLES AND PUBLIC BUSES.

THE CHALLENGE

- Recovering brake energy while decoupling and storing it to be used later.
- Improving vehicle efficiency.
- Reducing fuel consumption.
- Increasing vehicle uptime.

THE COMPANY

A leading manufacturer of motion and control technologies and systems, headquartered in the North America.

THE SOLUTION

Phase 1 – Quick Start

- Performed in-depth studies and designed new three- speed gearbox. The first two gears are hydrostatic and the third gear is mechanical. The recovery of brake energy is achieved in all three speeds and the gearbox has three power take-offs (PTOs).

Phase 2 – Design

- Designed hydraulic installation to store brake energy.
- Created a new design for the hydraulic installation cooling system.

Phase 3 – Advanced

- Collaborated with the client, creating several design concepts, for the integration of the hydrostatic transmission into a preproduction refuse truck. This involved several design changes to the truck's original ground clearance, gearbox position, hydraulic fluid tank and oil tank. The gearbox was rotated by 180 degrees in the final production model to ensure better serviceability.

THE RESULT

50%

Approximately in fuel savings reported

Decreased vehicle noise and increased dependability

Significantly reduced the wear on truck brakes

Our innovative gearbox was patented

ABOUT US

Tata Technologies is a global engineering and product development IT services company that is focused on fulfilling its mission of helping the world drive, fly, build and farm by enabling manufacturing companies across the automotive, aerospace and industrial heavy machinery verticals realize better products and drive efficiencies in their businesses. There are two components to our value proposition – managing and delivering outsourced engineering services and products for our manufacturing clients, and helping them identify and deploy technologies that are used to conceptualize, design, validate, build, test, benchmark and realize better products. For more information, visit **www.tatatechnologies.com**.

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