



10 Ways to Improve Fuel Consumption

Alex Stewart

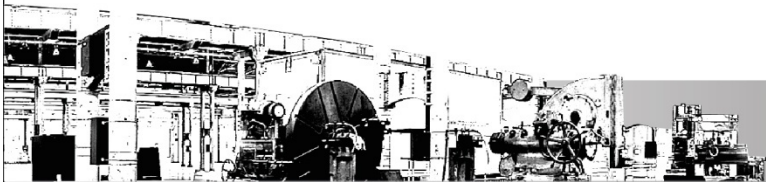
Hino Motor Sales Australia



Factors Affecting Fuel Consumption

The main factors that have a direct effect on fuel consumption are;

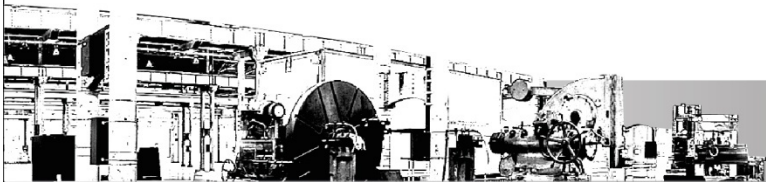
- **Drivers;** are the most influential factor on fuel consumption.
- **The Vehicle;** is second only to the employee.
- **The Load;** total weight is the critical factor.
- **Routes and Traffic Conditions;** congestion and terrain have an effect.
- **Weather and Seasonality;** summer and winter performance and use on ancillary equipment.
- **Understanding your Current costs;** before you can calculate potential benefits you must understand your current costs.



The Vehicle

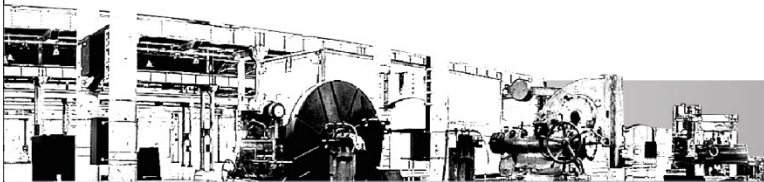
The vehicle has a significant influence on fuel performance in any operation.

- **Vehicle specification**, such as gross weight, size, engine specification, power and torque, gearbox and final drive ratios.
- **Age of vehicle**, the relationship between consumption (km/ltr) and age may vary between different makes and models and engine running in periods.
- **Condition of vehicle**, such as engine, transmission, alignment and tyres.
- **Operational details**, such as dimensional match between tractor and trailer
- **Equipment and Products used**, such as lubricants, telematics, tyres and aerodynamics.



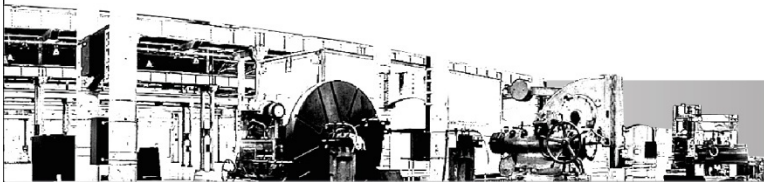
Why Vehicle Specification is Important

- The capital cost of a vehicle may account for less than 50% of its whole of life costs when fuel, maintenance and other **operating expenses** are taken into account.
- Fuel can represent up to 30% of the **operational** costs.
- Clearly this is a significant amount and any reduction in fuel costs or improvements in operational efficiency can improve the bottom line.
- Spending time in developing an **accurate** and **appropriate** vehicle specification will help do this.

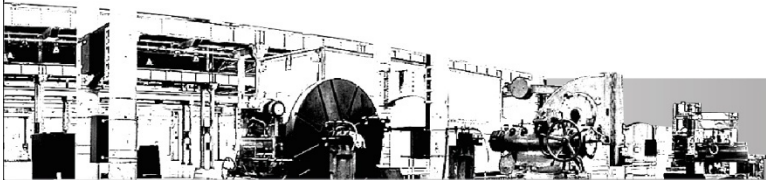
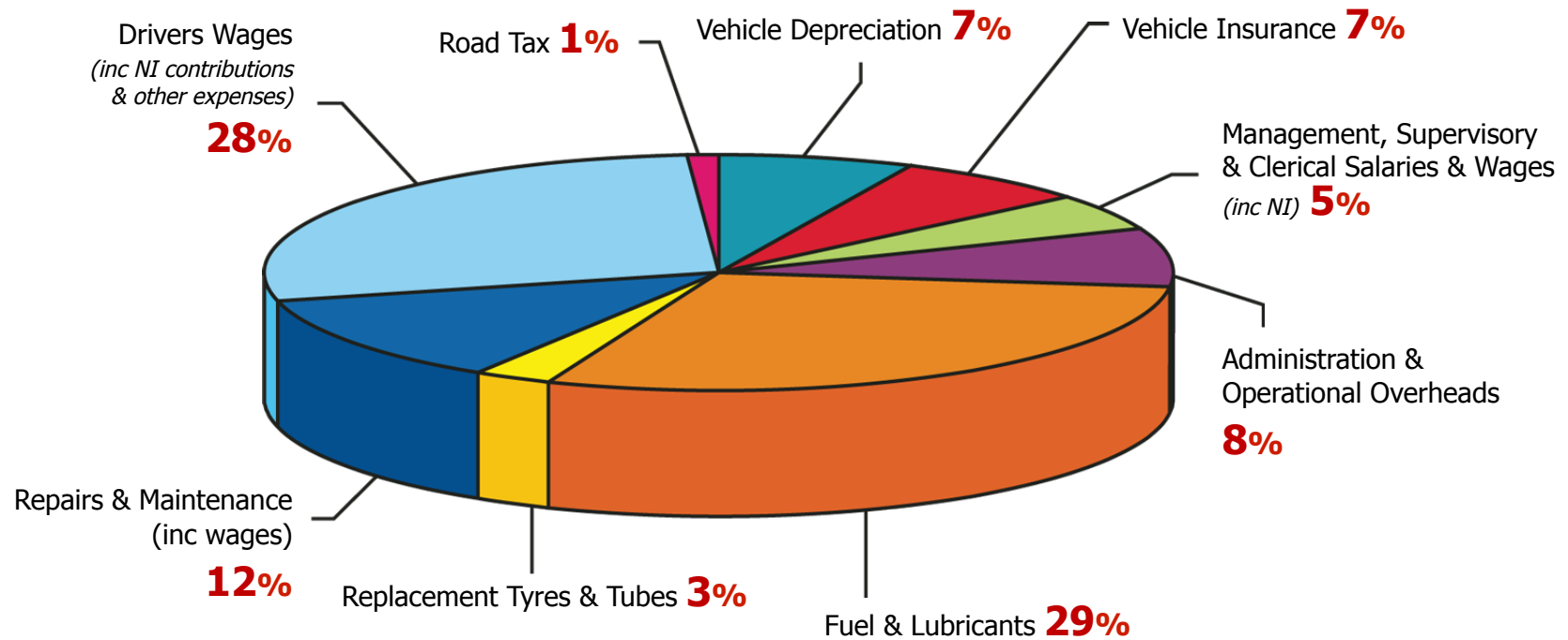


Why Vehicle Specification is Important

- Ensuring vehicles are closely matched to the tasks they are expected to perform will **improve** both **fuel** and overall **operational efficiency**.
- This can lead to cost **savings**, increased **profitability** and reduced environmental impact.
- Vehicles specifications that are inappropriate or cheaper in terms of initial investment may become more expensive to operate when fuel consumption and maintenance costs are taken into account.

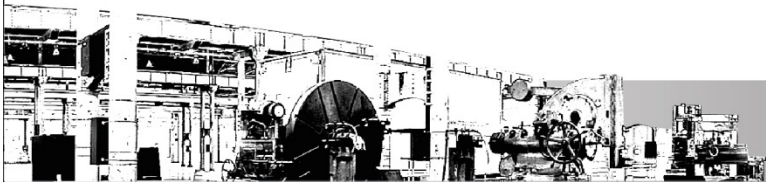


Typical Operating Costs



10 Key Specification Areas

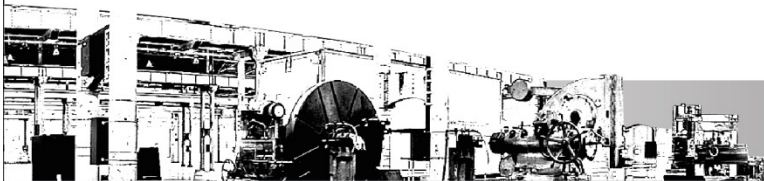
1. Engine
2. Transmission / Driveline
3. Axles / Alignment
4. Tyres / Wheels
5. Suspension
6. Chassis
7. Cabin
8. Fuel Tanks and Fuel used
9. Body and Trailer
10. Auxiliary Power source



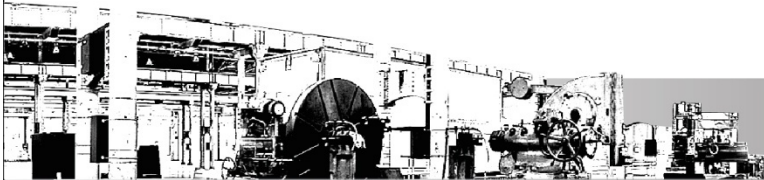
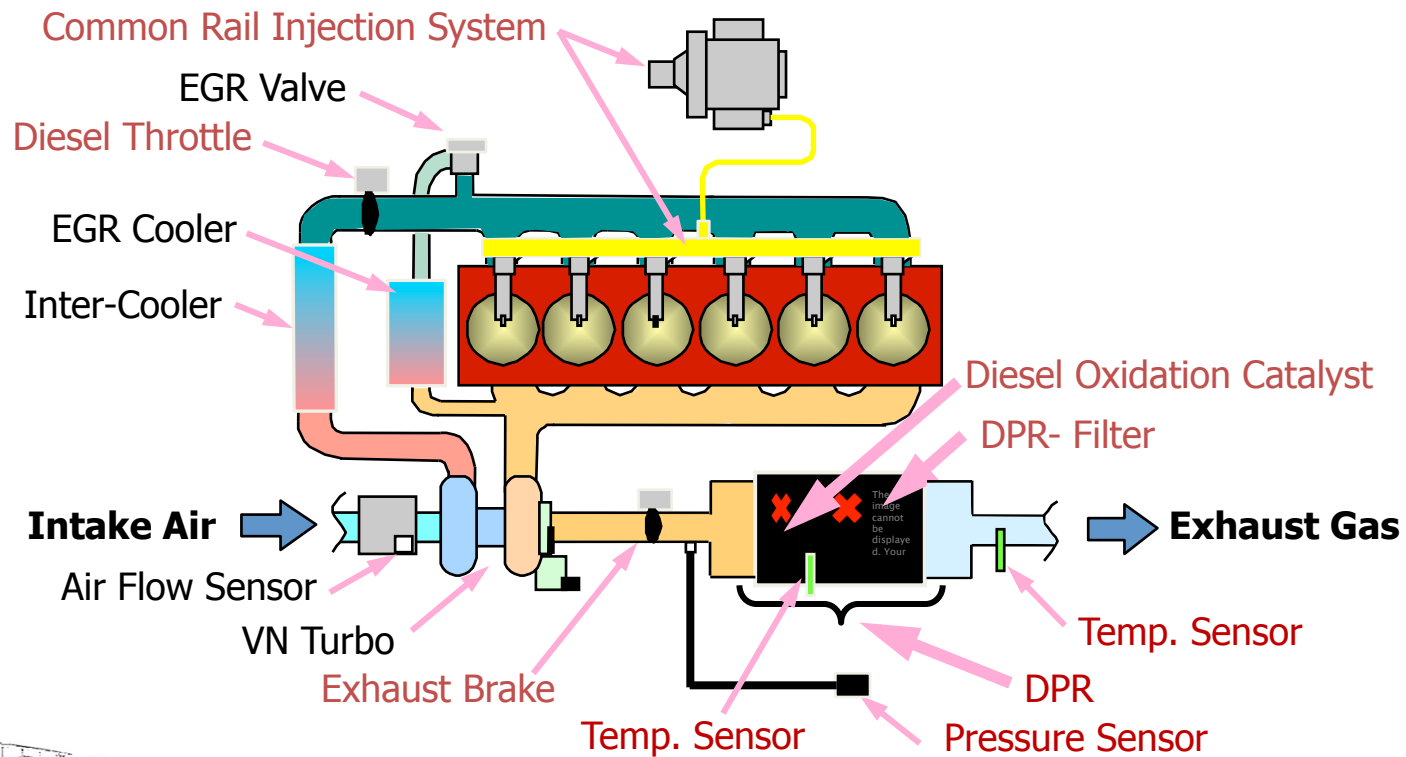
10 Examples of Modern Technology

DIESEL ENGINES & EMISSIONS

1. Lower Cubic Capacity Engines
2. High Power Outputs matched to application
3. Flat Torque Curves from low engine RPM
4. Euro 5 and EEV and now Euro 6 engines
5. Cooled Exhaust Gas Recirculation (EGR)
6. Variable Nozzle Turbochargers (VNT)
7. High Pressure Common Rail Injection Systems (HPI)
8. Cast Iron Pistons or Alloy Pistons with Cast Iron Rings
9. Diesel Particulate Filters (DPRF)
10. Selective Catalytic Convertor (SCR) with Diesel Exhaust Fluid (DEF)



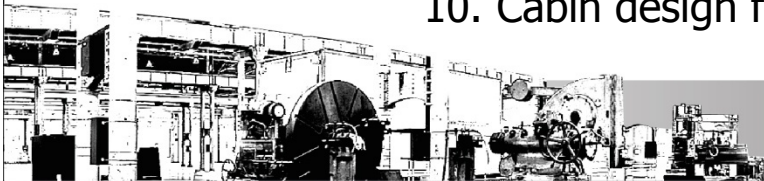
ADR80/03 – Euro 5 and EEV



10 Examples of Modern Technology

DRIVELINE & OTHER

1. Automated Manual Transmission (AMT)
2. Automatic Transmission (AT)
3. Cruise Control
4. Engine Fast Warm Up
5. Matched Driveline Ratios with Engine Power and Torque for correct application and road use
6. Ultra Low Profile Tyres and Low Rolling Resistance Tyres
7. Alloy Wheels
8. Lift Axles and 6X2 instead of 6X4
9. Driver Visual Aids
10. Cabin design for Aerodynamics



Exterior Design & Aerodynamics

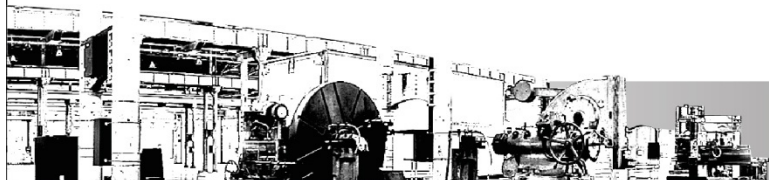
The increased rake of the windshield helps air flow over the cab for better aerodynamic efficiency.

A gentle curve to the corners of the cab for class leading aerodynamic performance.

Cd compared to competitor



**Wide Cab
30% BETTER**



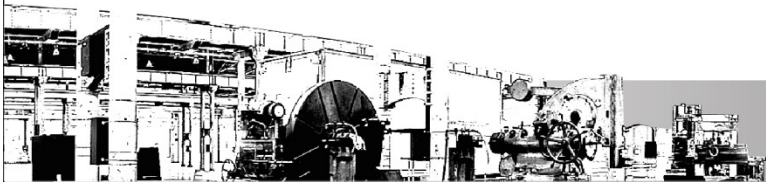
Driver Visual Aids – Eco Driving

On Eco driving, display shown in Green

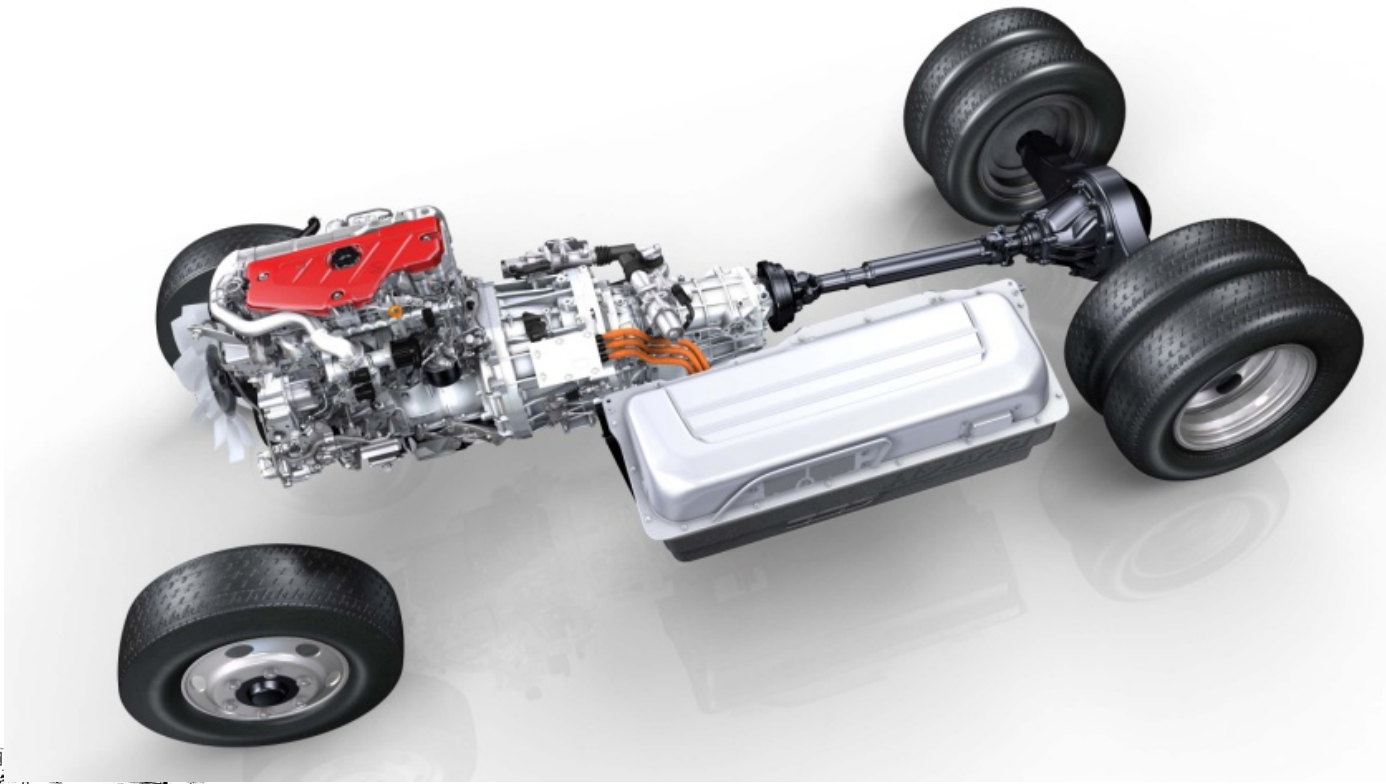


Hino Hybrid Technology

- Hino Motors started developing hybrid trucks and buses in 1991. Now, 20 years and over 10,000 hybrid models later, they hold the enviable position of the most successful hybrid truck and bus manufacturer in the world.
- The new Hino 300 series hybrid features a clean sheet design that capitalizes on the experience and feedback gained from Hino's long and successful history in the world of hybrid technology.
- **The result?** Significantly enhanced fuel economy and effortless driving performance. Simple, robust construction with excellent quality, reliability and durability.

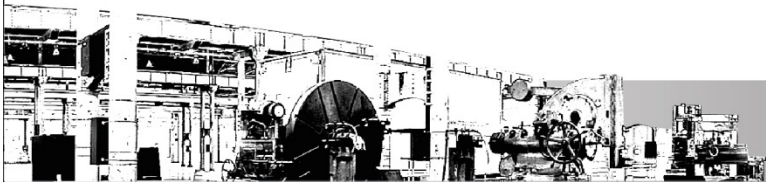


Hino Hybrid Technology



Benefits of the Hino 300 hybrid system

- Suits the needs of those who desire outstanding efficiency that is consistent regardless of route or driver
- Significantly enhanced fuel economy (30% achievable)
- Suits those who wish to relieve their drivers of the burden of shifting and allow them to better focus on the road
- Effortless driving performance, low impact on payload capacity.
- Compact motor, inverter and battery, capable and adequately suited to a light / medium truck application.



Benefits of the Hino 300 hybrid system

- Outstanding driving performance and minimal impact on chassis or body customisation.
- Parallel hybrid system power delivery is designed to complement the high efficiency diesel engine.
- Low impact in CBD operations with reduced noise levels
- Compliance with all applicable emissions regulations with enhanced fuel economy.
- Satisfies “Green” Corporate Reporting

