

ENERGYMISER®

Reduce energy bills, emissions and maintenance. Improve on-time arrivals.

Energymiser® provides real-time driver advice with online reports to reduce energy bills and emissions by up to 23%, improve on-time arrivals and train pacing, and reduce maintenance costs.

Precisely advises drivers when to power, hold, coast or brake. Maximises coasting and minimises braking, while factoring in target arrival times.

Tracks current train position, speed, target times and the remaining route; with look-ahead to anticipate speed limits, TSRs, elevation, curves, and track-side features.

Patented solution automatically adapts to actual conditions throughout each trip, re-calculating the remaining trip in real-time (unlike "golden run" products).

Reinforces good driver behaviour with information to consistently make accurate control decisions and provides richer route information. Very effective tool that complements programs to improve driver behaviour.

Reduces energy bills and emissions by up to 23%, improves on-time arrivals and pacing of trains, and reduces maintenance by smoothing train operation.

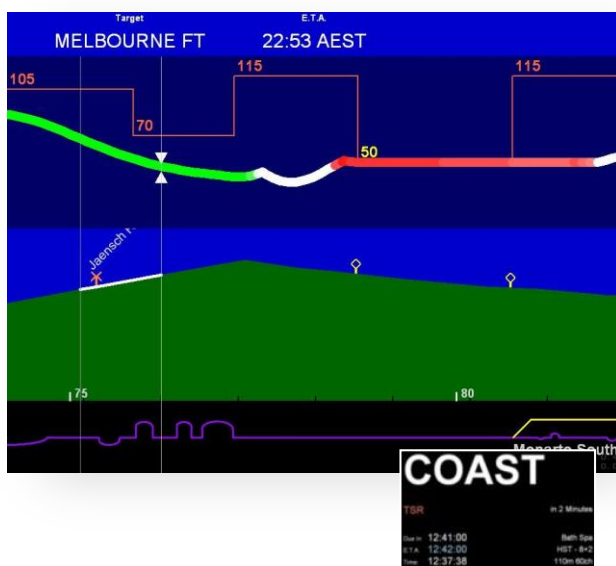
Affordable with quick, high and ongoing return.

Retrofits to any type of freight, passenger or heavy haul train; providing all drivers and managers standard user-interfaces; with integrated and standalone SmartDisplay® options, GPS and standard mobile data communication.

Open shore-based components interface with train management and Business Intelligence systems for a fully connected Command & Control solution (CDAS).

Web-based reporting and administration make it easy to measure, benchmark and monitor performance through time; with on-site and hosted options.

Follows 16 years R&D with top universities then safety validation. Proven in the U.K., Australia, India and Africa operations, for example. Services and expertise of TTG Transportation Technology. Our core business is rail energy, schedule and network optimisation.



Next destination and estimated arrival time.

Speed restrictions, Energymiser speed profile and actual train speed, with look-ahead.

Elevation profile, trackside features and train position.

Track curvature and crossing loops.

Custom display.

Energy consumption can account for 50% of costs in the lifecycle of a locomotive or power vehicle, and the cost of energy is increasing.

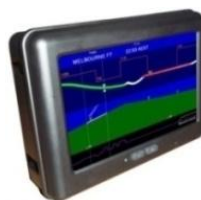
Every 1% reduction in energy consumption can cut bills by A\$10,000 per year, per vehicle*, and cut carbon emissions by 35 tons.

Even a 10% reduction for 20 vehicles can save A\$2,000,000 per year.

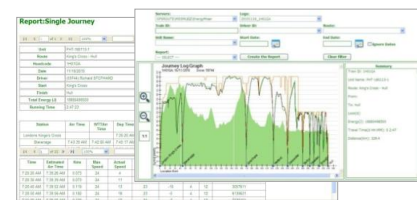
Energymiser® has achieved reductions of up to 23% for freight, passenger and heavy haul rail in the U.K., Australia, India and Africa, for example.

Energymiser® also improves on-time arrivals and pacing of trains, and reduces maintenance costs.

Contact TTG Transportation Technology today.



Energymiser® real-time driver advice with SmartDisplay option.



Energymiser® web-based admin, monitoring and management of energy performance.

Theory behind the display

For a single steep uphill section, the control should be changed to power at some point p before the section and then change to hold at some point q beyond the section.



The optimal switching points give the ideal trade-off between time taken and energy use.

$$J = \psi(v) \left[t_q - t_p - \frac{q-p}{V} \right] + \int_p^q [r(v) - r(V)] dx$$

* Estimates based on average Class 1 mainline locomotive, assume A\$1 per litre for diesel, and vary with factors such as driver compliance and terrain.



TTG Transportation Technology

Sustainable Technologies for Rail

TTG Transportation Technology are Leaders in

- Sustainable solutions to rail industry in Australia, U.K. and internationally, with over 23 years experience.
- TTG Transportation operates from its head office in Sydney (Australia), regional office in London, and through a network of Associates and Agents.
- Our core business is software and engineering to support daily railway operations and maintenance activities.

Our Expertise

TTG Transportation Technology combines strong software development and engineering skills with domain expertise in all facets of the rail industry. We strive to use this combined experience to develop products and solutions that meet the changing needs of our customers and the rail industry.

Our Solutions Solve Your Problems

TTG software products can be used as advanced planning tools for railway operations where optimal advice is required to support investment in new assets, and as real time decision support tools for daily planning and replanning of network operations and individual train trips.

Benefits of TTG products are state of the art optimisation that can reduce the cost of delays by optimising network capacity, and reduce the energy used by individual trains by optimising the driving tactics for the overall trip.

TTG optimisation products, SCHEDULEMISER® and ENERGYSISER®, can be linked to TTG's suite of timetable development and production software, or to third party software, for a complete operational support system.

TTG is ISO9001 certified and complies with standards such as EN50155.



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