

# Different access points to safety



**IRTENZ**

Dom Kalasih, Z Energy, Rotorua 2013

**Innovative & High Productivity Vehicles**

Performance, Infrastructure & Safety

A large trailer with a detailed advertisement for wood processing and exporting. The ad shows a worker in a hard hat and various wood products. The text on the trailer includes 'PROCESSING & EXPORTING WOOD' and 'PRODUCTS TO THE MARKET'.

# Outline



- What I want to leave you with
- Z Logistics Activity
- Reflections and Learnings
- How NZ is tracking: HV freight and fuel intensity
- Other access points to safety
  - Delivery Forecasting Tool
  - Cost model
  - Delivery optimisation
- Conclusion
- Questions

# What I want to leave you with



Insights on future possibilities and opportunities for the wider engineering transport fraternity to serve the industry



# Z Energy logistics activity



- 40 prime movers
- 11 terminals
- 100 drivers/15 management
- 7m kms
- Volume 1.8b ltrs
- 60,000 trips ex gantry
- 850 del points



(Est. 0.3% of NZ HV freight activity)

# Z Energy logistics (secondary distribution)



# Reflections



- Premise:
  - Improving safety and environment best served by efficiency gains
- Increasing delivery challenges
  - Local body regulations (delivery windows reducing)
  - Bulk storage reducing (fire protection)
  - Increasing off-take to storage capacity (existing infrastructure) so small delivery window
- Land transport regulatory focus:
  - Vehicle size and weight
  - Vehicle equipment (safety and emissions)
  - People (HV Driver licensing and operator ORS)

# Learnings



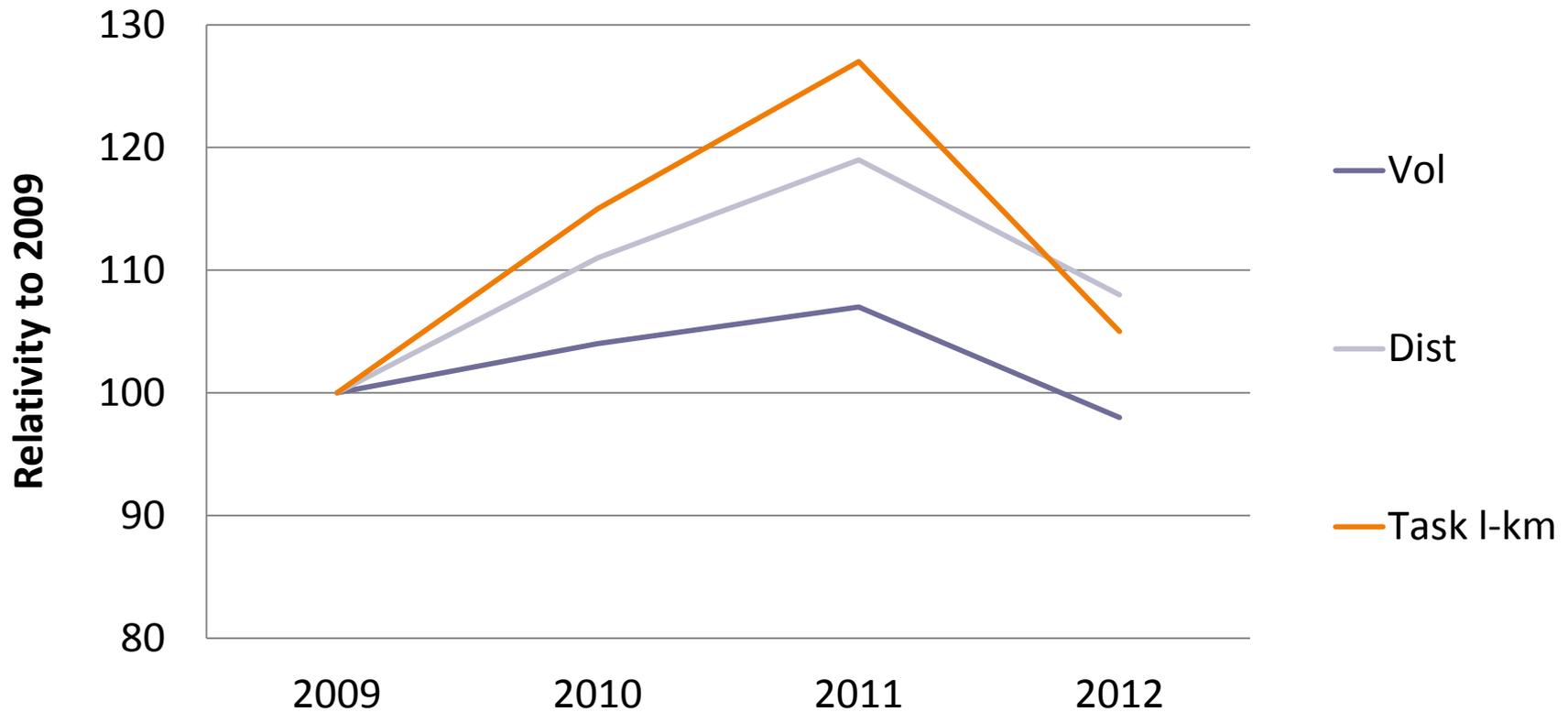
- Relatively slow uptake of HPV
  - Inherent with large fleet
  - 50 tonne Jet A1 B-train
  - VDM2002 4 quads
    - (reducing delivery distance by approx 1% of potential 8%)
- Access issues for larger/longer vehicles plus diversity of truck trailers



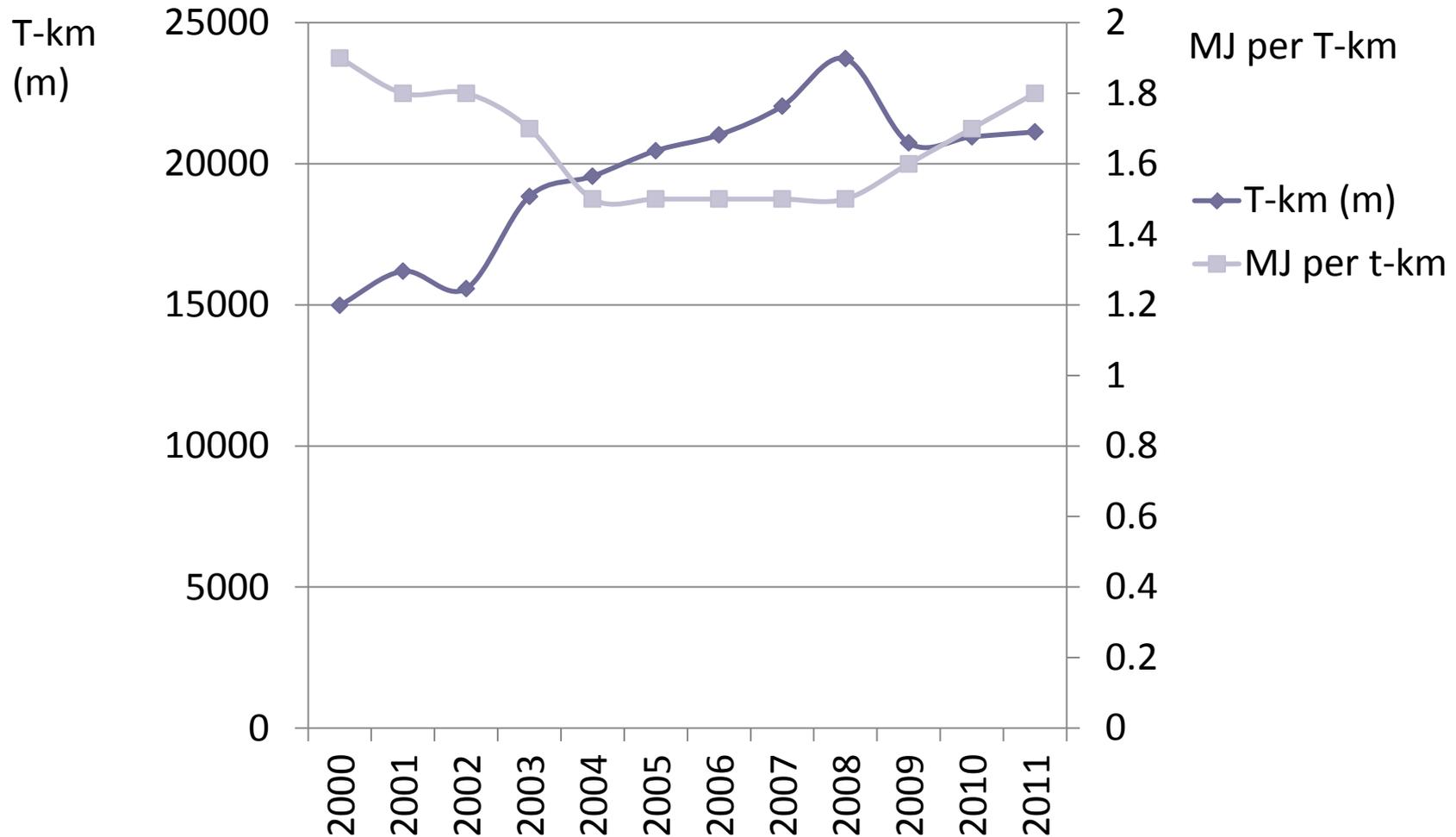
# Z logistics trends relative to 2009 levels



## Activity trends



# NZ Tracking: freight & fuel intensity



# Other access points to safety



Focus on reducing distance by improving delivery efficiencies

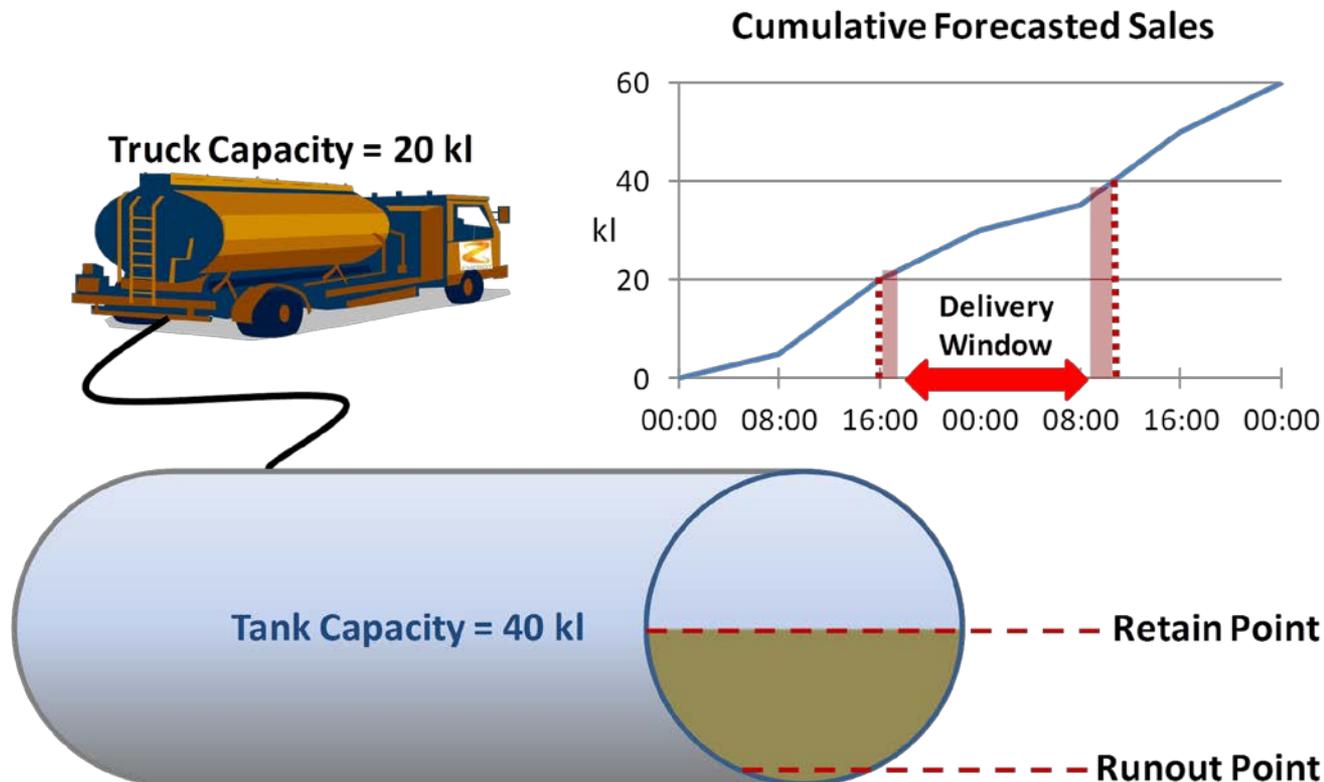
- too many deliveries scheduled too early
- too much fleet resource
- too much day to day variability on fleet demand with little leadtime

Scheduling optimisation: new delivery forecasting tool

# Replenishment Delivery Window



- Need to forecast when a site will run out (*runout point = must go*) and when the site can accept the full load of a truck (*retain point = can go*) to determine delivery window
- Use of advanced forecasting algorithms to account for sales variability based on time of day, day of week, as well as holidays and special events



# Scheduling optimisation



## Transport Resource Optimisation – Load Balancing



# Other access points to safety



- New delivery forecasting tool results
  - reduced unplanned loads (reduced trips by 1.5%)
  - Increased drop size retail sites (reduced trips by 3%)
  - Increased drop size truck stops (reduced trips by 3%)

# Other access points to safety



- Cost model
  - Z schedule deliveries with agreed G2G pricing
- Delivery optimisation
  - Review order to delivery methodology (VMI vs Standing Order vs Ring-in)
  - Review customer storage tank size to offtake fit

# Conclusion



There are many possibilities and opportunities for the wider engineering transport fraternity to help transport sector improve efficiency, safety, environmental management



# Questions

