

Productivity and fuel efficiency

The productivity increase

1909



Malmö - Stockholm in 1909

Average speed 20 km/h = 3 days!

Payload less than 2 tonnes

Dirt road 700 km

More than 400 litres of fuel

Total of 2 axles

Malmö - Stockholm in 1990

Average speed 80 km/h = 1 day

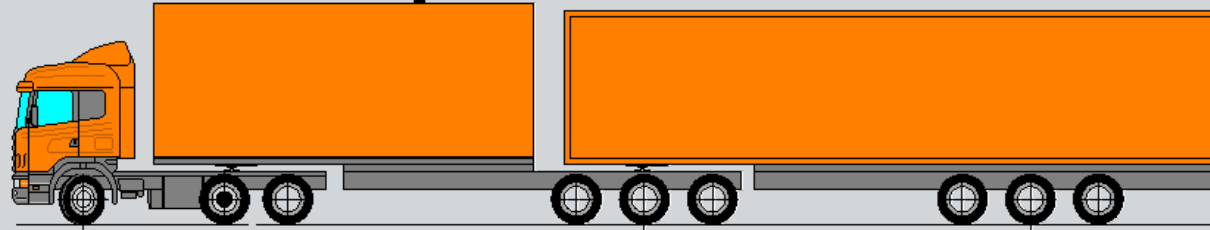
Payload 25 tonnes

600 km mostly four-lane road

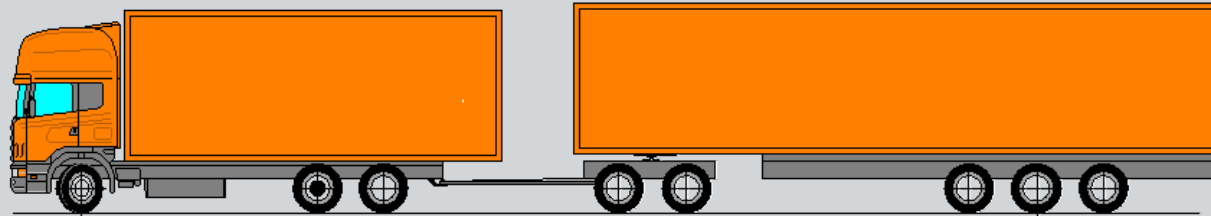
200 litres of fuel

Total of 5 axles

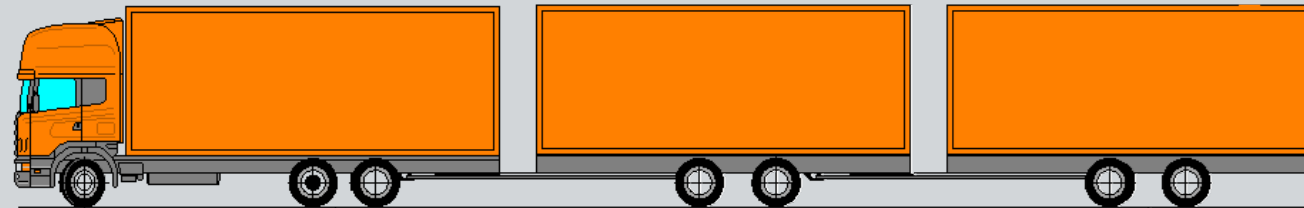
The European Modular Concept



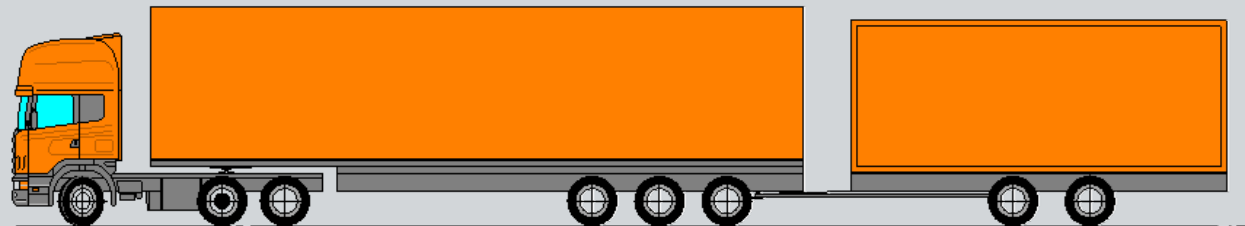
**B-double: GTW Tons, Tractor + short semitrailer with 5th wheel + semitrailer
New-Zealand 23 M (50 Ton's max)- Australia 25 M (68 T)- Sweden-Holland 25 Meter**



Truck "rigid" + dolly + semitrailer 25 M (Scandinavia GTW +/-71Ton's



Truck "rigid"+ two centre-axle trailers



Tractor plus semitrailer + centre-axle trailer

Malmö - Stockholm in 2010

Average speed 80 km/h = 1 day

Payload more than 40 tonnes

600 km four-lane road

160 litres of fuel

Total of 7 or 8 axles

A key performance indicator

	1909	1990	2010	
A speed	20	80	80	(km/h)
B payload	2	25	40	(tonnes)
C fuel	400	200	160	(litres)
AxB/C	0.1	10	20	

A doubling of the road freight efficiency is technically feasible

If compared to New Zealand

	1909	1985	2020	
A speed	20	80	90	(km/h)
B payload	2	19	30	(tonnes)
C fuel	400	375	300	(litres)
AxB/C	0.1	4.0	9.0	

A doubling of the road freight efficiency is technically feasible

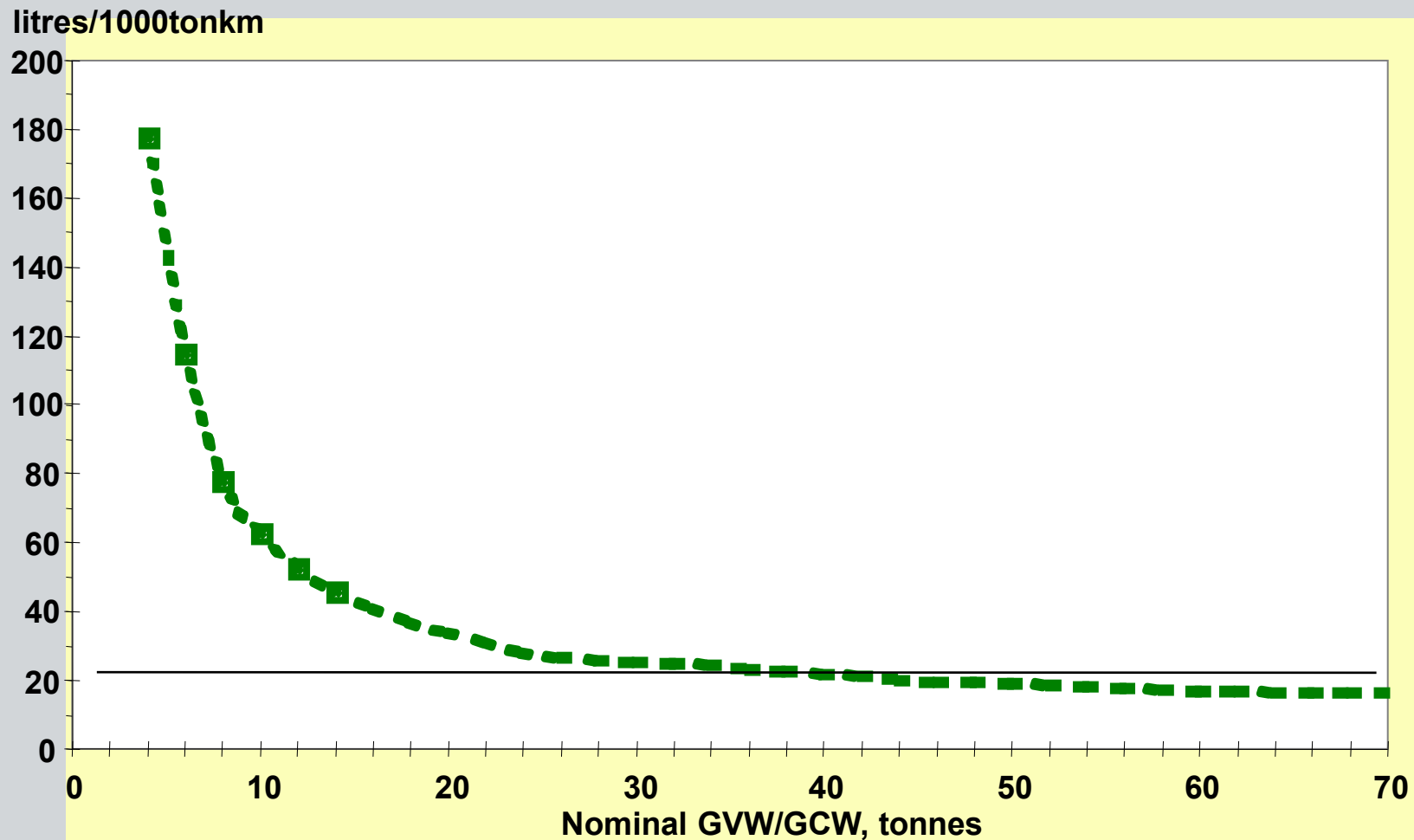
Question is the future productivity steps for New Zealand ?

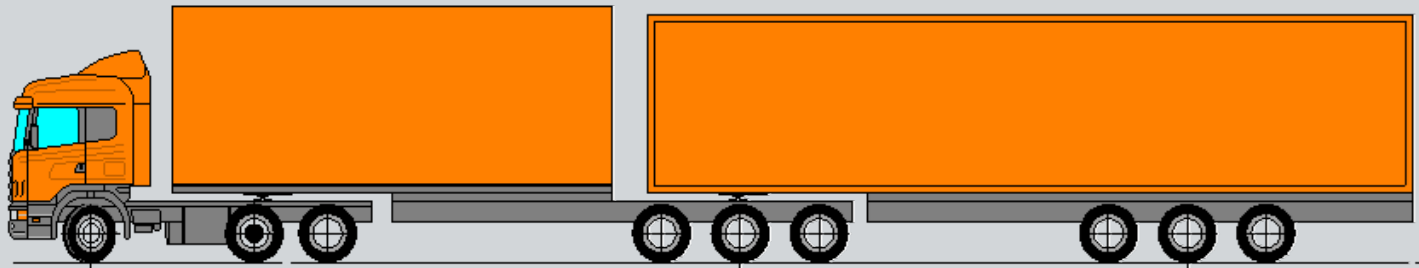
What will they look like ?

	2020	2025	2030		
				<i>Reducing speed limit ?</i>	
A speed	90	90	90	80	(km/h)
B payload	30	35	40	40	(tonnes)
C fuel	300	260	240	230	(litres)
AxB/C +/-	9.0	12.6	18.0	13.9	

Possibly again in the future a doubling of the road freight efficiency is technically feasible if GCW is increased but affected by speed limit introduction.

Longer vehicles
= lower fuel “energy” consumption per tonne-km





What we need to know ?

- We need to know future MOT / NZTA Targets
 - NZ currently is @ 50 Max + HPMV, what are the future freight targets to reduce vehicle density and meeting future freight task in a decarbonizing environment.
 - i.e. Target 60 tons Max ? as general Access When by 2030 ?
- Gross Combination Weight Target for heavy goods vehicles by 2030
- Future Gross Vehicle Weight Target for heavy goods vehicles by 2030
- Front Axle Weight Target ideally 8 ton's> on single steer axle 12 ton's on Dual steer (Electric / Hydrogen)
- Rear Axle Group Weight increase by 1 ton over 2 axles (Electric / Hydrogen)
- Future Axle Masses increase requirement for Electrification now
- Maximum Length / Height / Width changes
 - Increase in length required to accommodate batteries and hydrogen tanks +/- 800 mm >
- Working in a flexible legal frame work – not prescriptive as today
- Authorities to be fully involved ,
- Level Playing field
- SAFETY FIRST “Road & Public”
- Standardized homologated i.e. UN-ECE Regulations & Compliance



Thank You

Q & A