

# Encouraging ecodriving

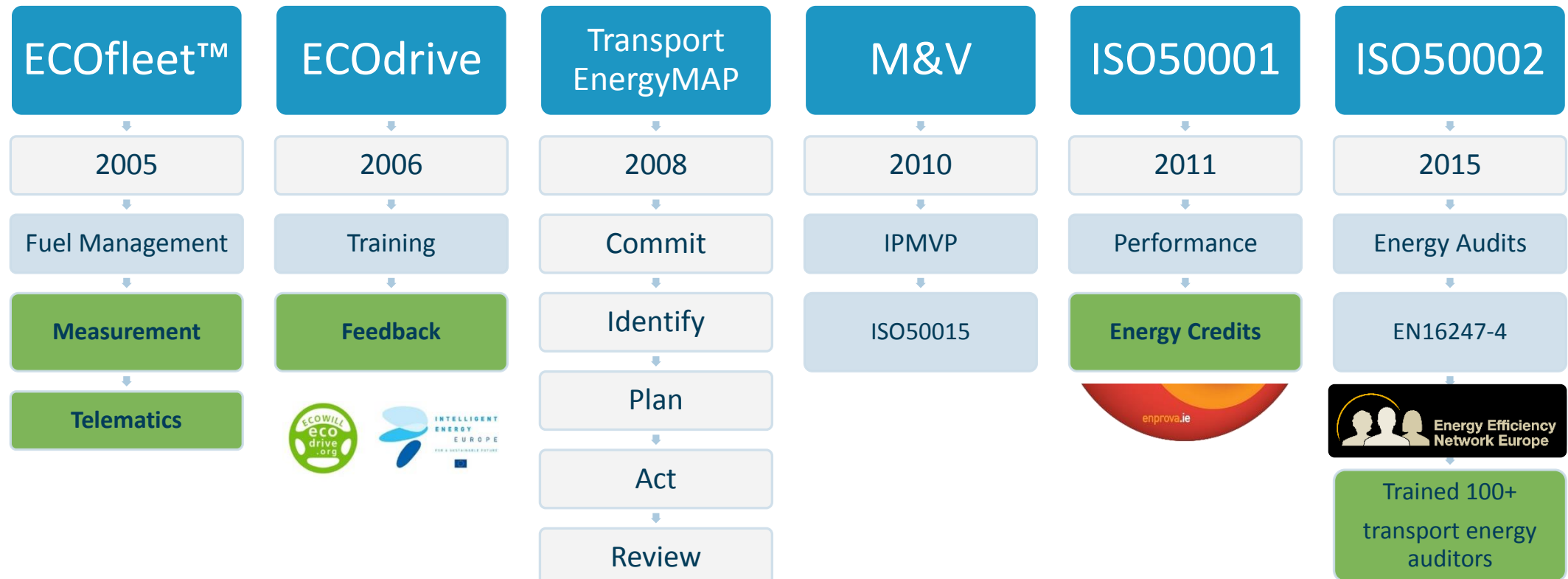
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CONOR MOLLOY, ENERGY AUDITOR & TRAINER

CONVENER EN16247-4 TRANSPORT ENERGY AUDIT STANDARD



# Our journey



# Transport in context

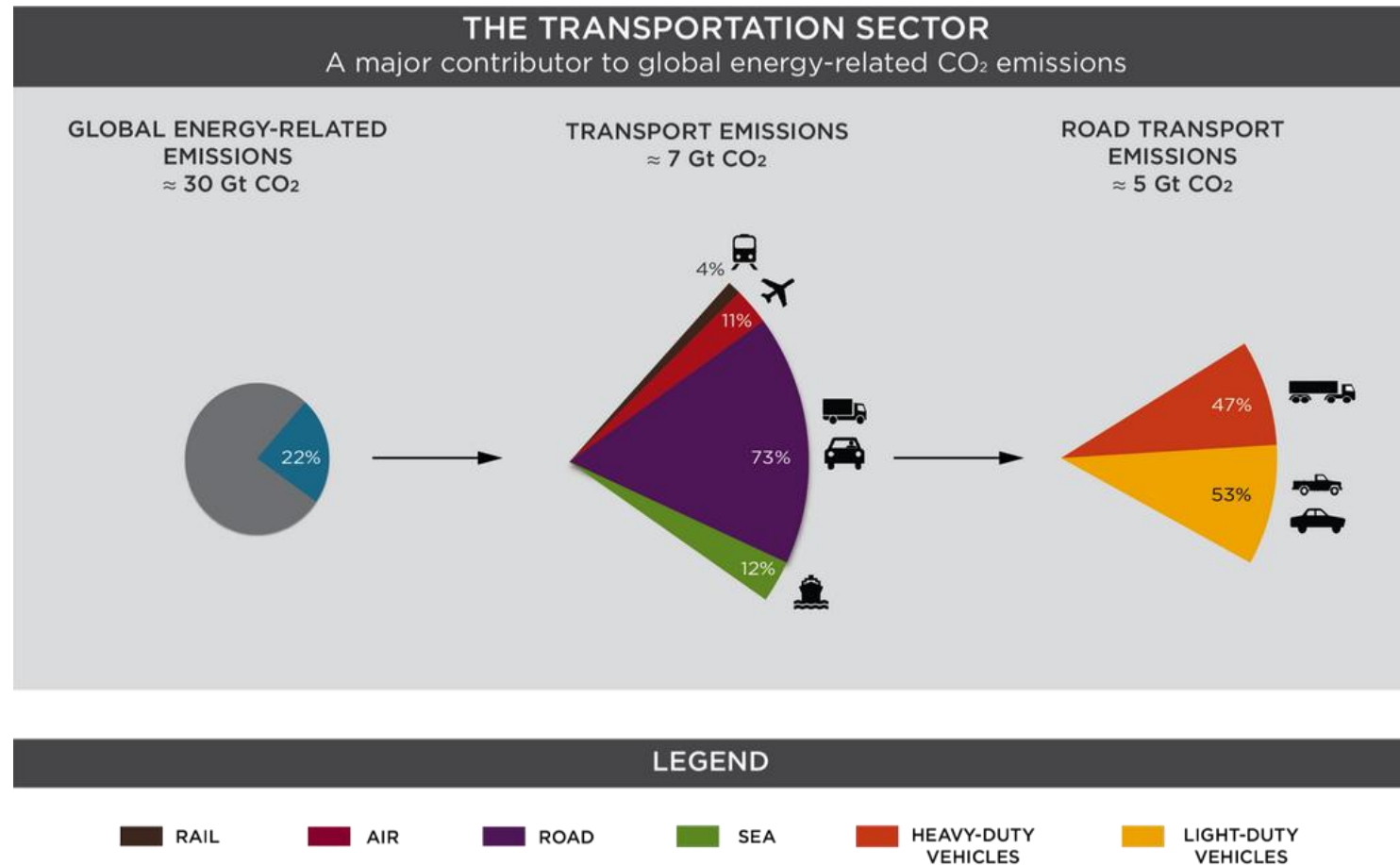
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VERY WIDE RANGE OF VEHICLES, ENVIRONMENTS, VARIABLES

# Transport GHG

What is the fastest growing greenhouse gas emitter?

Where can your business save energy?

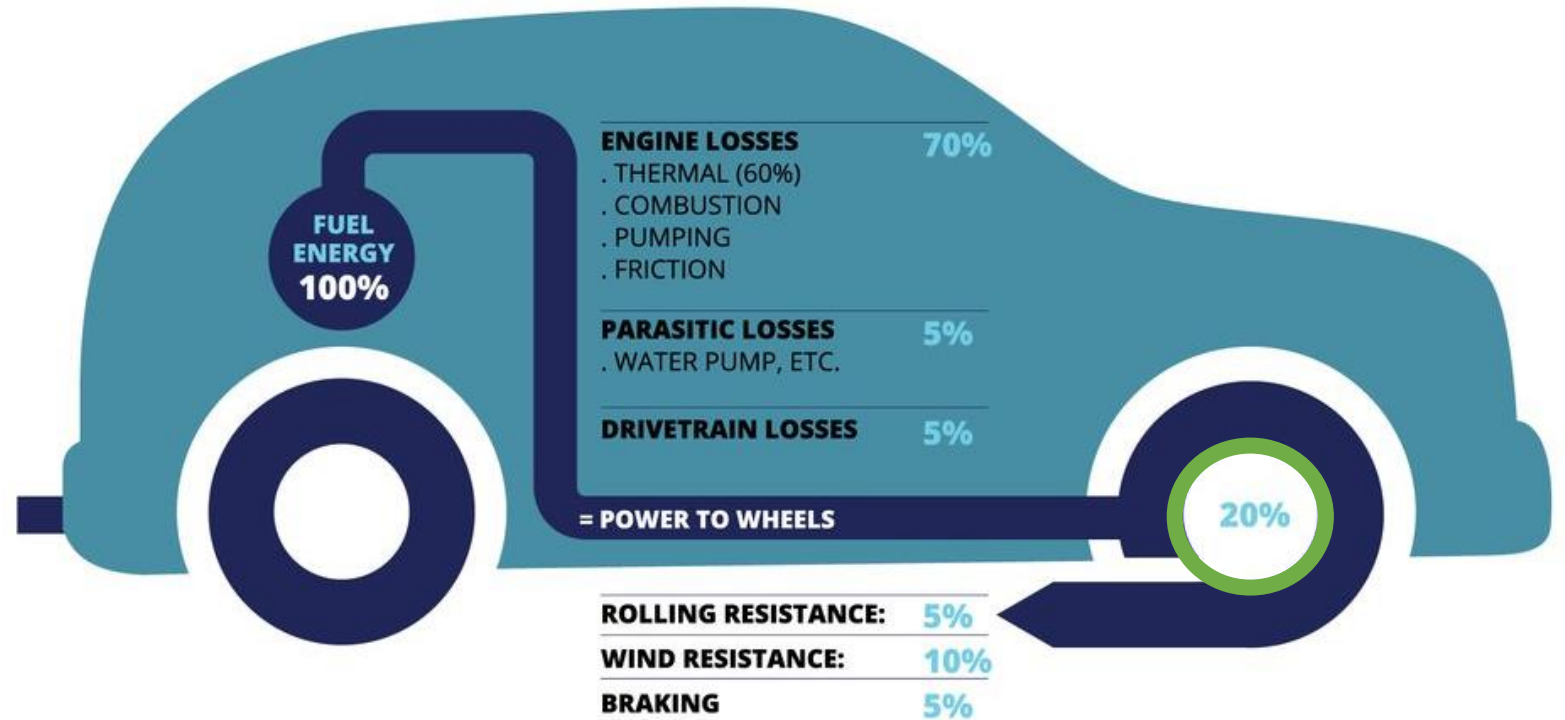


Sources:  
ICCT (2014). Global Transportation Roadmap Model. Version 2.0. More information available at <http://www.theicct.org/global-transportation-roadmap-model>.  
IEA (2012). CO<sub>2</sub> Emissions from Fuel Combustion: Highlights. 2012 edition. Retrieved from <https://www.iea.org/co2highlights/co2highlights.pdf>.

# 1 Billion cars globally

*Driving style can account for 30% difference in fuel performance*

*Life of vehicle can be 3 years on a fleet, to 10 years in total*



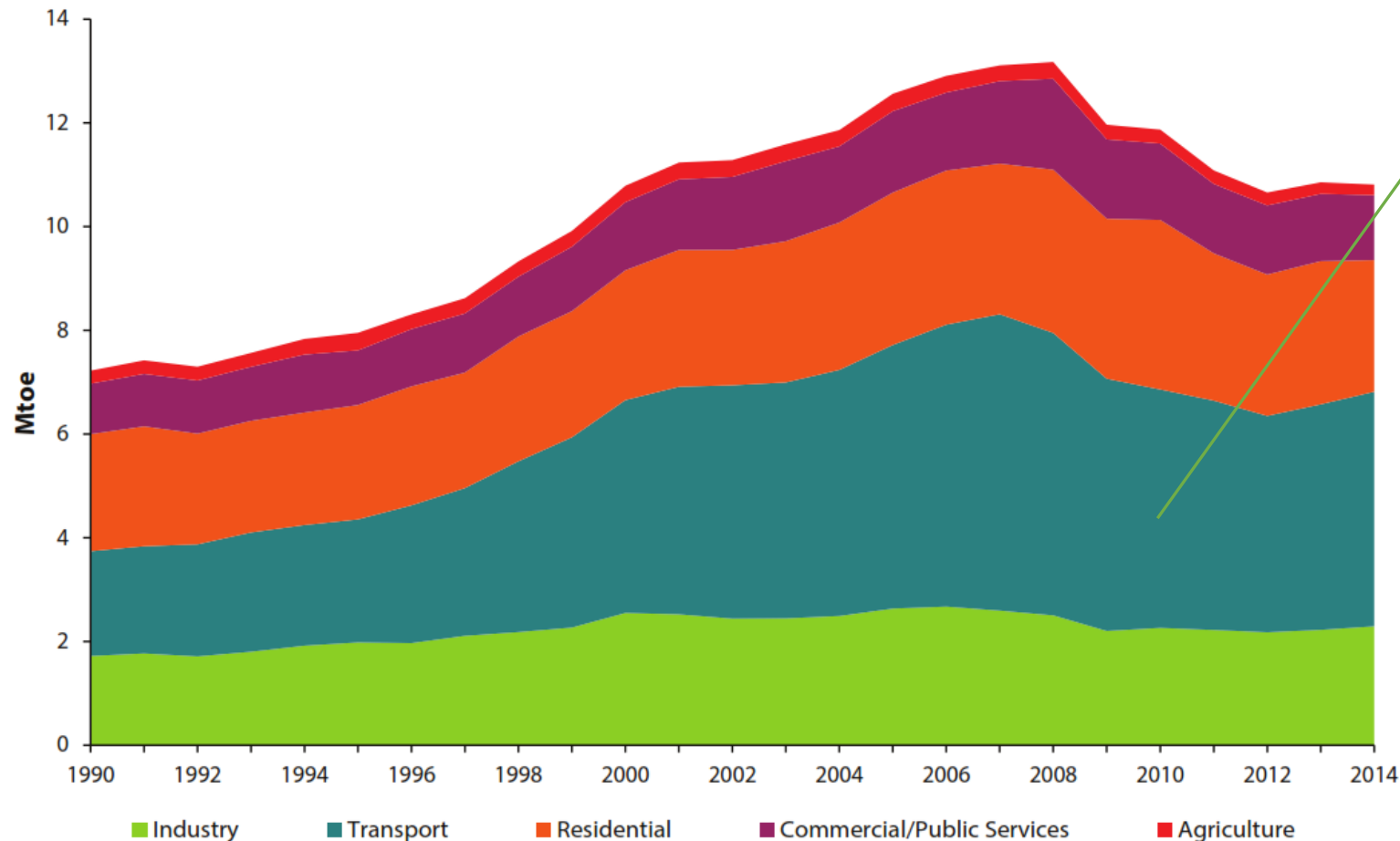
(1) The drivetrain of a motor vehicle is the group of components that deliver power to the driving wheels. This includes the transmission, the axles and the wheels.

Adapted from: <https://www.fueleconomy.gov/feg/atv.shtml>



# Ireland's transport challenge

Figure 7 *Total Final Energy Consumption by Sector*



41.7% of final  
energy use

4,522 kToe  
primary energy

95% of exports go  
by road

We drive 30% more  
than EU average




# Transport challenges

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Large population of vehicles with 10 year life cycles

Large energy losses are clearly visible

Fastest growing emitter of GHG

Operated by humans 



# ECODriving

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IMMEDIATE WIN FOR DRIVER & PLANET





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## Golden Rules

*Source: EU  
Ecodriven project  
2005-2012*

### Anticipate traffic flow

- Look ahead as far as possible and anticipate surrounding traffic

### Maintain a **steady speed** at low rpm

- Drive smoothly, using the highest possible gear at low RPM

### Shift up early

- Shift up between 1,500 (diesel) and 2,000 (petrol/gas) revolutions

### Check tyre pressures frequently

- At least once a month and before driving at high speed

### Consider any extra energy

- Take-off roof racks/boxes, air conditioning, loads



# The importance of feedback

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*"When performance is measured, performance improves.*

*When performance is measured and reported back, the rate of improvement accelerates."* - Pearson's law

**Without feedback:** 80+% of the training benefits i.e. the fuel savings, are **lost within 6 months**

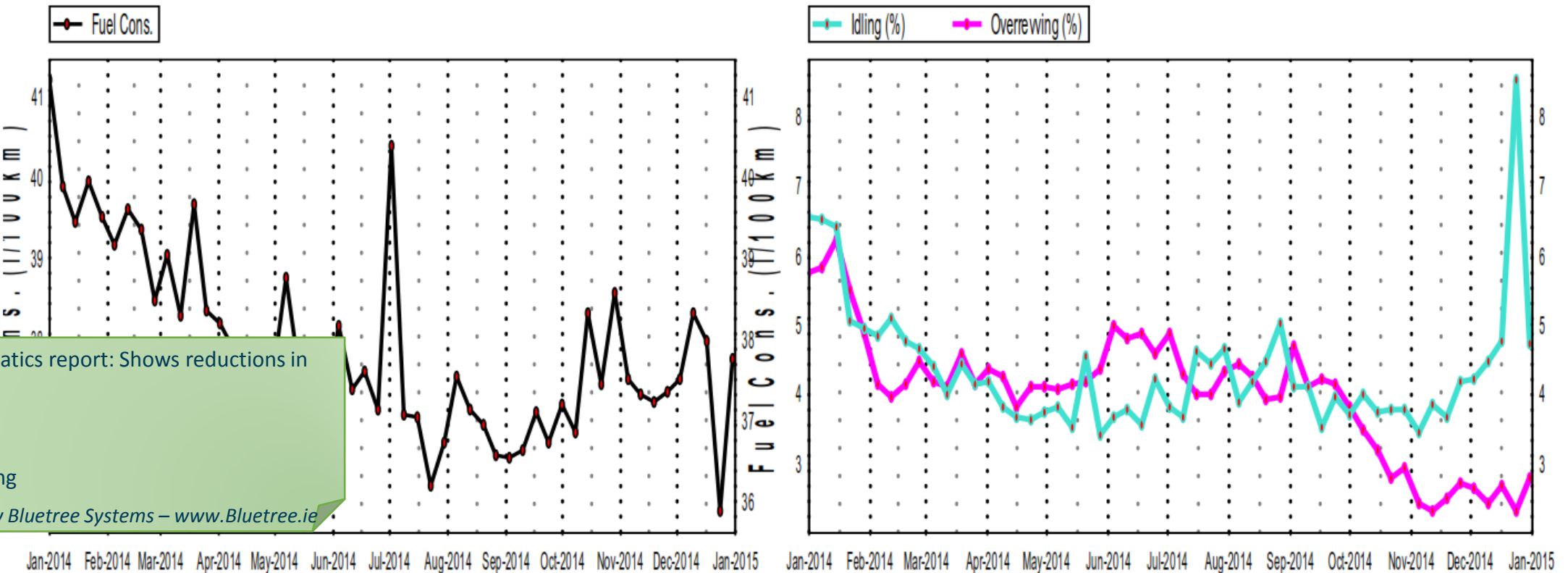
# Telematics = measurement = feedback

## Fleet Summary

Engine On Time	Moving Duration	Distance	Avg. Speed	Harsh Brake	CC Off (%)	Overspeed Pt1	Overspeed Pt2	Overrevving (%)	Idling (%)	Fuel Used	CO2 (kg)	Fuel Cons.	Details
82707:41	79181:06	4,713,084.6	60	629	52.7	1.04:37:56	12:03:46	3.9	4.3	1,770,069.6	4,655,283.0	37.92	Details...

## Fleet Summary (Depot)

Depot	Engine On Time	Moving Duration	Distance	Avg. Speed	Harsh Brake	CC Off (%)	Overspeed Pt1	Overspeed Pt2	Overrevving (%)	Idling (%)	Fuel Used	CO2 (kg)	Fuel Cons.
Trucks	82707:41	79181:06	4,713,084.6	60	629	52.7	1.04:37:56	12:03:46	3.9	4.3	1,770,069.6	4,655,283.0	37.92



## Fleet Summary (Weekly)

Week	Engine On Time	Moving Duration	Distance	Avg. Speed	Harsh Brake	CC Off (%)	Overspeed Pt1	Overspeed Pt2	Overrevving (%)	Idling Time	Idling (%)	Fuel Used	CO2 (kg)	Fuel Cons.	Details
07/06/2016															

# ECODrive training in Ireland

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## DELIVERED IN

- 🚗 Cars
- 🚌 Buses
- 🚚 Heavy Goods
- 🚢 Tug boats
- Straddle carriers



## TRAINING FEATURES

**Measure** fuel & activity first

Manage, develop **feedback tools**

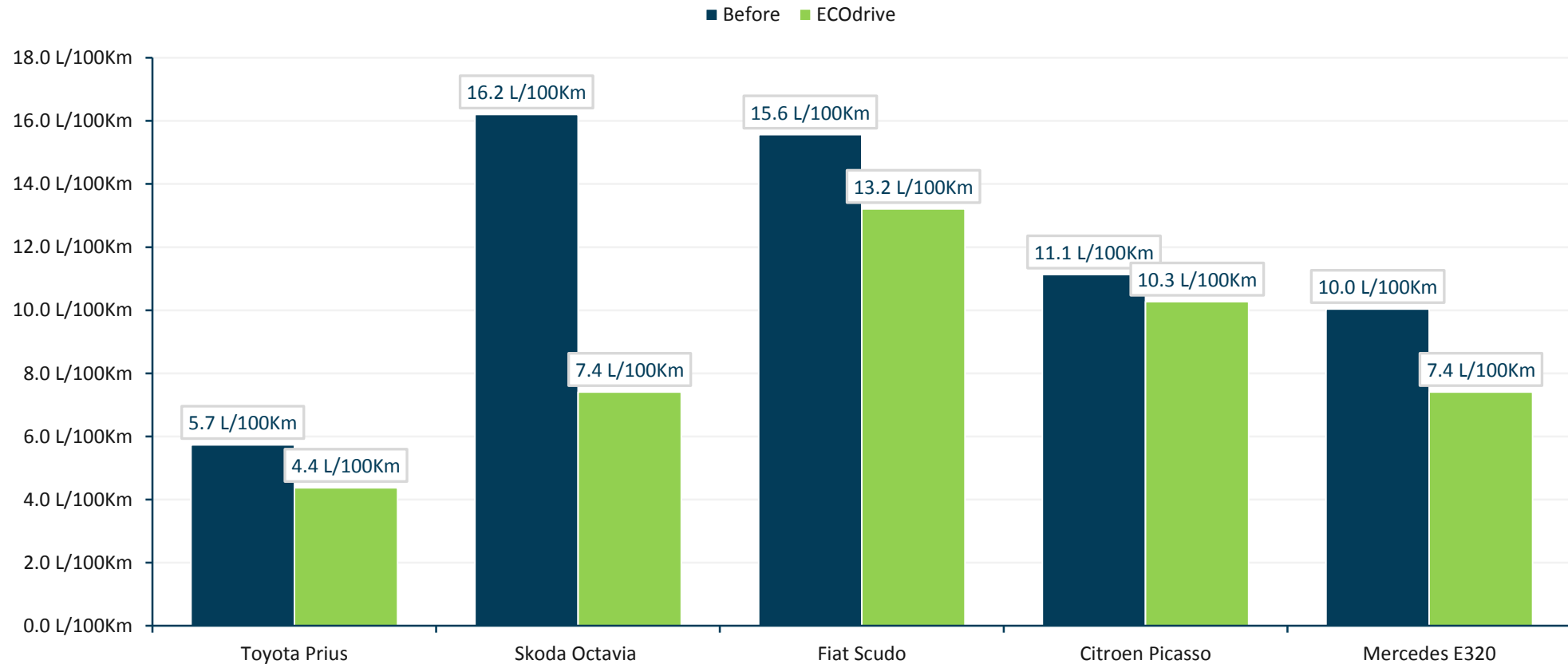
**Train in regular vehicle on-road**

- One-on-one training for Drivers
- Trainer as in-house driving coach



# Training Results

Consistent 20km route, urban & dual carriageway, measured at pump



# Drivers' Comments (99% positive)

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- *'I enjoyed that, that was good'*
- *'Didn't want to go home'*
- *'Will try it on the way home'*
- *'I learnt a lot'*
- *'Since the day of my driving test, very rare to have **my driving viewed in a positive way**'*



# Outcomes

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ENERGY MANAGEMENT & ECODRIVING FUEL SAVINGS

# Fleets: Environment Profit

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Energy is 20-40+% of operational costs

- Fuel management is the operators' day job

**20-40%**  
of transport costs

Typical return measured from ecodriving →

- i.e. € 50,000 saving on a €1m fuel bill = profit

**5+** % saving per year

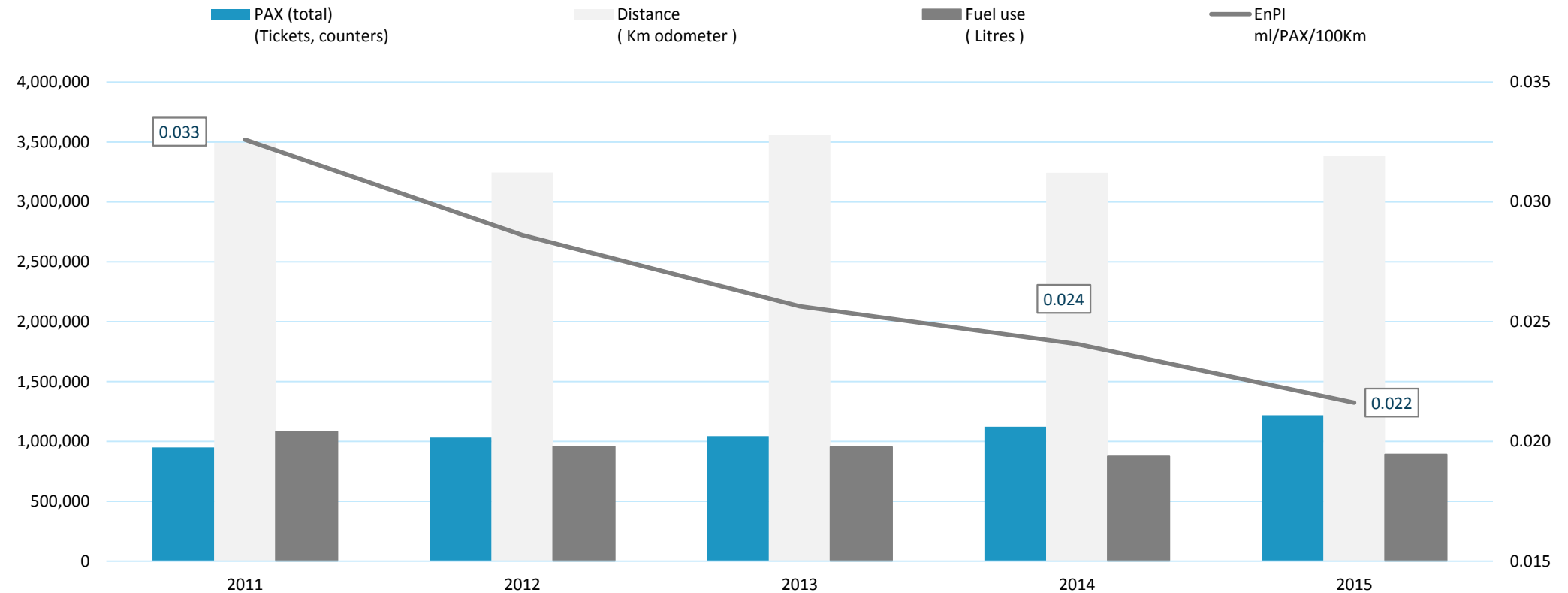
**0.5%** profit

*“Manage energy for profit”* - ECOfleet 2006



# ISO50001 sustains savings

www.matthews.ie  
(passenger services)



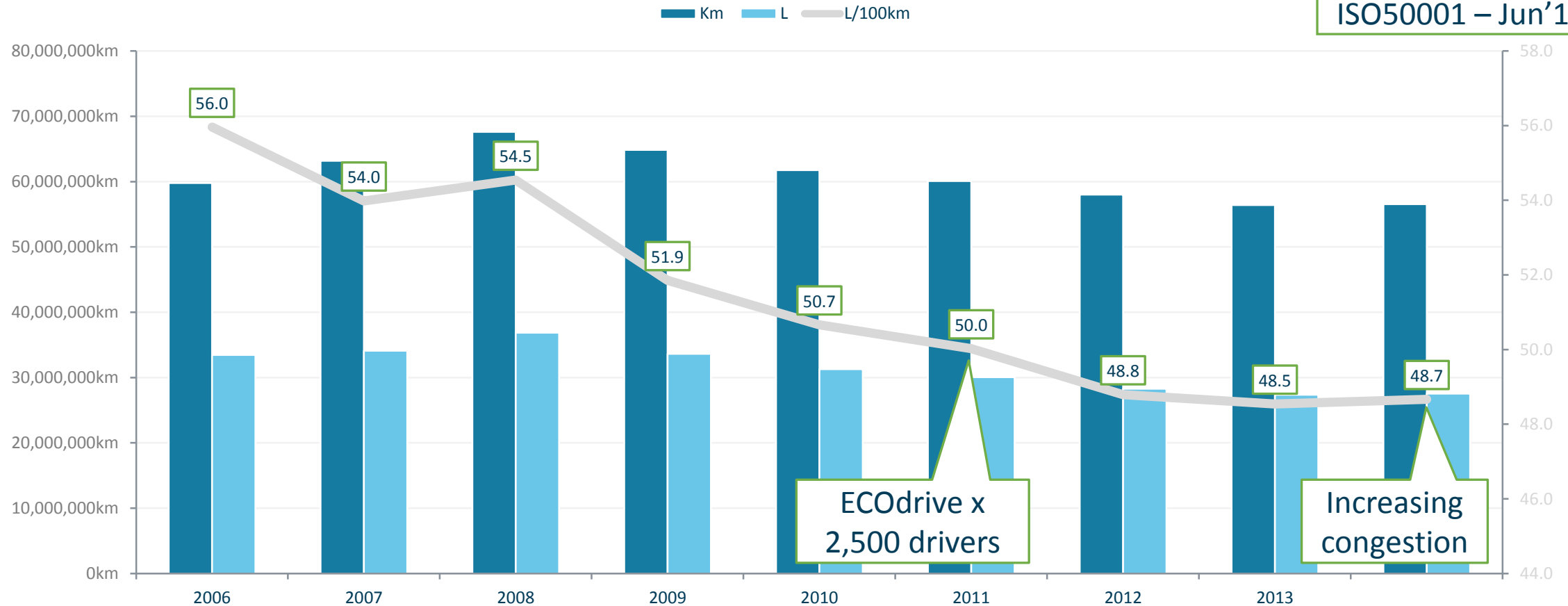
Action	Telematics		ISO50001			ECOdriving	
L/100km	31.0	29.5	26.8	27.0	26.3		
MPG	9.1	9.6	10.6	10.5	10.7		



# Results\*: EnergyMAP & ECOdrive



ISO50001 – Jun'16



\* Results taken from / submitted to SEAI Public Sector Monitoring & Reporting – <http://eusew.eu/awards-public-vote>

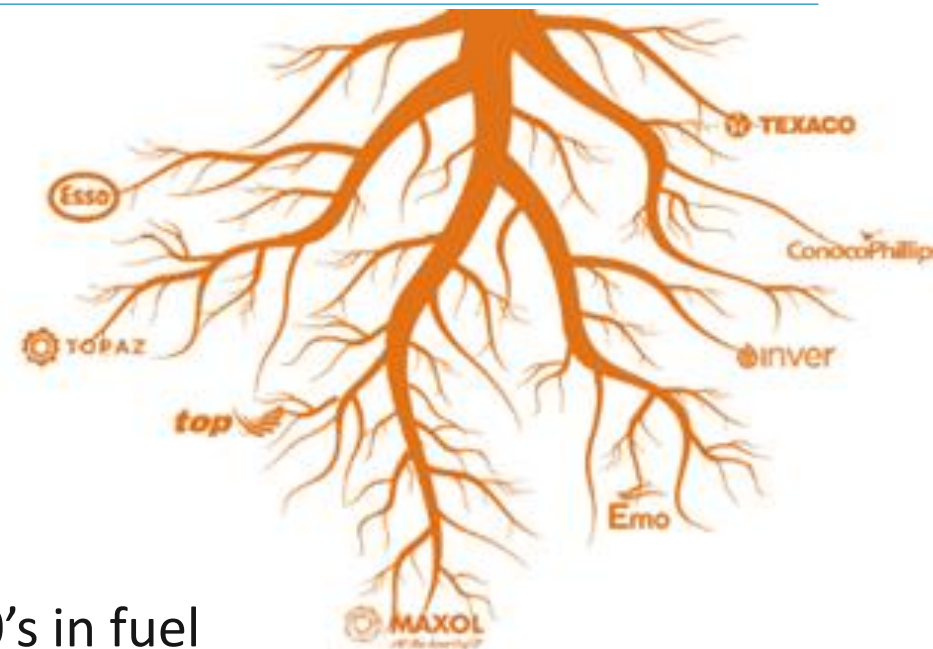
# Oil supplier fund/incentive

## Under Energy Efficiency Directive 2012 Article 7

- Energy supplier obligations – ‘EEOS’ in Ireland
- In the first year; 4,000,000L saved in reduced L/100km
- Avoided 12,060 tonnes in CO<sub>2</sub>e emissions

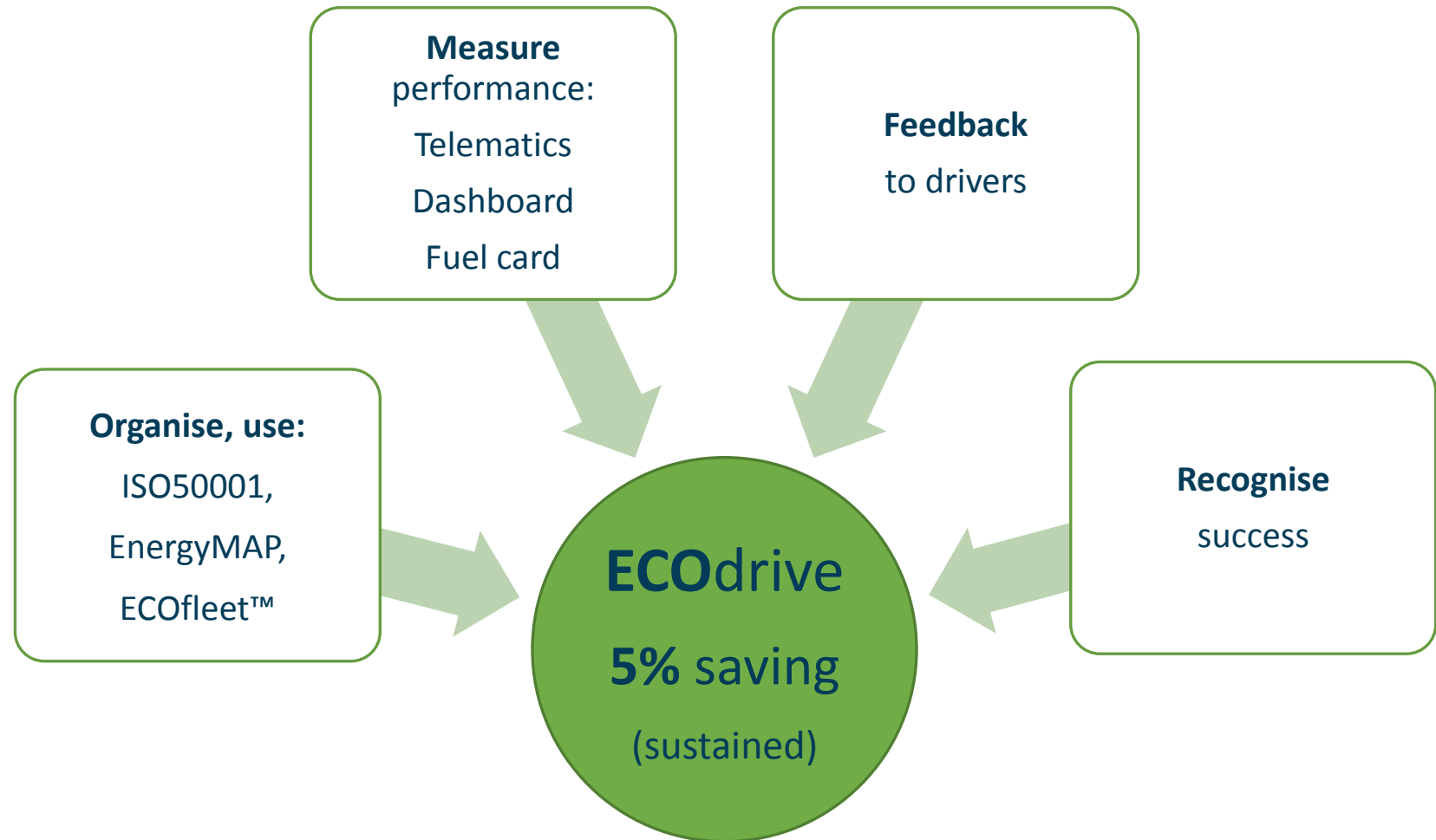
Fleets received € 5 – 35,000 each for saving € 100,000's in fuel

- Savings largely from improved focus on **fuel management** and **ecodriving**
- **Energy Savings Credits = positive feedback for fuel savings**



# Conclusions

***Optimise** use of  
existing vehicles  
now; don't wait  
for new technology  
or EV's.*



# Thank you

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## CONTACT

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## ACKNOWLEDGE OUR SUPPORTERS



# 5

## Golden Rules

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*www.aems.ie*



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Source: EU Ecodriven project 2005-2012

