

Tyres



Cutting motoring waste



An etyres e-Report

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www.etyres.co.uk



Foreword:

Few people consider paying attention to their tyres, and yet this excellent and timely e-Report shows only too clearly that we are allowing a shocking national waste to go un-noticed.

Almost £3.5 billion is being wasted each year by motorists, on top of unnecessary releases of 5.5 million tonnes of carbon, yet they have every financial incentive to put an end to this loss of resources.

We need to change attitudes – and fast!

e-Report on Tyres

This e-report shows how environmentally aware motorists could significantly reduce their carbon footprint – and save money - by thinking about tyres.

Can you drive a car **and** show environmental sensitivity? To make **big** reductions in your carbon footprint, as well as **big** financial savings, the green motorist should first focus on tyres.

There are three areas in our checklist where major waste occurs and addressing all three would mean a **huge** payback, both for the individual and for the country as a whole.

The Green Tyre Checklist

1 Do you regularly check that your tyres are correctly inflated?

Tyres wear is largely a function of road mileage and braking, but tyres also become prematurely worn when they have not been inflated to the correct pressure. The law concentrates on tread wear on the area of the tyre that has primary contact with the road - when a tyre is under-inflated, wear in this area is accelerated and so it will need to be replaced much sooner. This is **unnecessarily wasteful**.

Having the wrong tyre pressure is also **dangerous**. One in eight drivers is risking tyre failure due to the stress and heat build-up from sidewall bending due to under-inflation. And under-inflation greatly increases stopping distances – by up to three times in wet conditions.

2 Do you buy your tyres from the right place?

Motorists are often ripped off at tyre depots by staff anxious to hit their monthly sales target. Instead of advising a customer to come back when tyres have reached the end of their safe life, the poor motorist is frequently encouraged to believe that their part worn tyres should be replaced immediately. So the visit to a tyre depot to check on the status of two tyres frequently results in an unwarranted purchase of four tyres.

Trawling round the tyre depots to compare prices is also wasteful. Save your pocket – and help the planet – by buying online. And buy from an ethical retailer like etyres, which will **only replace tyres when they are needed**.

3 Do you buy the right tyres?

Wider, low profile, tyres may look attractive and ‘racy’, but are they really appropriate for **your** car? With their faster wear characteristics, and higher rolling resistance, you are going to be **buying more tyres** over the life of your car – **and wasting fuel**.

Energy saving tyres are now available that greatly reduce rolling resistance. In fleet tests, these tyres covered 25% more miles and cut fuel consumption by up to 8%.

The Waste Report

So paying attention to your tyres could bring big savings. But do you?

The reality is that most people pay no attention at all to their tyres, but they should. The fact is that we are squandering a **horrifying** amount of resource – a staggering **£3.4 billion a year** and an unnecessary release of **5.5 million tonnes of CO²** into the atmosphere, on top of emissions released during the unnecessary manufacture and transport of tyres.

Take a look at the numbers to see where **you** could make a contribution towards reducing the tyre waste mountain.

4 Tyres are driven under-inflated

- The great majority of motorists run their cars on under-inflated tyres. Around one half lose 20.7% of their tyre life, or 9 months motoring, as a result of under-inflation - in total, 25.9% of tyre life is wasted as a result of under-inflation¹. Tyre pressures should be set when the tyre is cold.
- This equates to 8,672,071 tyres unnecessarily purchased or **£434 million** of wasted expenditure nationally each year.
- Under-inflated tyres have a higher rolling resistance, causing more fuel to be consumed for each mile travelled. The average vehicle consumes 1.5% more fuel than necessary because of under-inflation².
- This equates to £15.88 per car of unnecessary expenditure on fuel or **£472 million** of wasted expenditure nationally each year.
- The wasted fuel is releasing an extra **1.1 million tonnes of CO²** into the atmosphere, on top of emissions released during the unnecessary manufacture and transport of tyres.
- **Total** waste from under-inflation of tyres is **£0.9 billion per annum**.

5 Tyres are purchased at the wrong place

- The practice of premature replacement of part worn tyres is endemic within fast fit depots. We have conservatively estimated that, on the average, a tyre is replaced too early by a factor of some 2,500 miles, but the practice is probably worse.
- On this basis, therefore, some 3.06 million new tyres are purchased needlessly each year, or a wasted expenditure of **£153 million** nationally each year.

¹ Bridgestone European Technical Centre Research

² ditto

6 The wrong sort of tyres are purchased

- Energy saving tyres really **do** work and tests over a range of car fleets have demonstrated impressive results. When Bayer UK tested the Michelin Energy Tyre³ on their fleet of Nissan Primera and Volvo V40s, they found that tyre life increased by 25%, and fuel economy improved by between 4 and 8%. Based on these numbers, if the entire UK car and van fleet switched to energy saving tyres, each vehicle would save £11.35 a year from savings on tyres - or a saving to the country as a whole of **£386 million** – and a further £63.84 per vehicle from savings on fuel, a national saving of **£1.896 billion**.
- The wasted fuel is releasing an extra **4.4 million tonnes of CO²** into the atmosphere, on top of emissions released during the unnecessary manufacture and transport of tyres.
- **Total** waste from not switching to energy saving tyres is **£2.3 billion per annum**.

7 So what can we do to avoid all of this waste?

We've set out the basic checklist for the motorist – buy a decent pressure gauge and check your tyres regularly (preferably every other week), making sure that the tyres are **cold**; buy from an ethical retailer who will not rip you off with unnecessary replacement tyres; and consider switching to energy saving tyres.

But other agencies could play their part. Forecourt air gauges are notoriously inaccurate – an AA Study in 2004 found 25% of airline gauges to be faulty – and they should be checked more regularly by Trading Standards Officers. And the practice of fast fit depots replacing tyres early should be stamped out.

Even our record on recycling tyres is not good – 80% of waste tyres collected in the UK are not deemed suitable for re-treading; and extracting raw materials from the scrapped carcass is typically seen as uneconomic. So we need to address the problem from the right end first – we should be buying less tyres and saving valuable fuel!

8 Conclusion

The case really should be clear for the environmentally aware motorist – a small effort saves your pocket, and reduces your personal carbon footprint. But, ultimately, we need to do massively more to educate the public.

Britain has a huge tyre waste mountain, and **it is costing the earth**.

³ Michelin/Bayer UK

Our calculations

Tyres are driven under-inflated

Actual average mileage per tyre currently 30,000 [Continental]

Unnecessary wear due to under-inflation is 25.9%⁴ - tyre life should therefore be 40,486 miles.

Currently [ignoring puncture replacements] tyres are lasting 30,000/8445⁵ years = 3.55 years, or an average annual replacement of 1.127 tyres per car pa.

If tyres were correctly inflated [ignoring puncture replacements] tyres would last 40,486/8445⁶ years = 4.79 years, or an average annual replacement of 0.835 tyres per car pa. Wastage is therefore 0.292 tyres per car pa or 8,672,071 tyres or **£780,486,390** pa.

44% of cars use 2.9% more fuel due to over-inflation, 50% use more than 1% more fuel, with the average per car of 1.5% more fuel⁷. Instead of an average 35 mpg, cars should be achieving 35.53mpg. Wastage is therefore 3.6 gallons/16 litres or £15.88 per car pa – for the country as a whole, the waste is **£471,653,283** pa. This equates to an additional **1.1 million tonnes of CO₂** released into the atmosphere – 37.05 kgs CO₂ x car parc = 1.1m tonnes.

Total waste from under-inflation of tyres is **£1.25 billion per annum**.

Tyres are purchased at the wrong place

Our conservative assumption is that, on the average, a tyre is replaced too early by fast fit depots by a factor of some 2,500 miles – instead of lasting the current 30,000 miles, the average tyre should last an additional 2,500 miles, all other things being equal. Instead of an average annual replacement of 1.127 tyres per car pa [see above] the figure should be 1.039 tyres per car pa. Wastage is therefore 0.09 tyres per car, or 3,060,000 tyres or **£275,400,000** pa.

The wrong sort of tyres are purchased

Average mileage per tyre is currently 30,000⁸. Switching to energy saving tyres would give an additional 25% mileage⁹ - tyre life should therefore be extended to 37,500 miles. Currently [ignoring puncture replacements] tyres are lasting 30,000/8445¹⁰ years = 3.55 years, or an average annual replacement of 1.127 tyres per car pa.

If energy saving tyres were fitted, tyres would last 37,500/8445¹¹ years = 4.44 years, or an average annual replacement of 0.90 tyres per car pa. Wastage is therefore 0.227 tyres per car pa or 7,718,000 tyres or **£694,620,000** pa.

Real life tests have shown that fitting energy saving tyres can save 4-8% of fuel – we have based our calculations on the mid-point, 6%, although a higher saving might be possible to achieve. Wastage is therefore 14.48 gallons/64.5 litres or £63.84 per car pa – for the country as a whole, the wasted fuel amounts to **£1.896 billion** pa. This equates to an additional **4.4 million tonnes of CO₂** released into the atmosphere – 149 kgs CO₂ x car parc = 4.42 m tonnes.

Total savings from switching to energy saving tyres is therefore **£2.6 billion** pa.

⁴ Bridgestone European Research Centre

⁵ Tyre life divided by average annual mileage

⁶ Tyre life divided by average annual mileage

⁷ Bridgestone European Research Centre

⁸ Continental

⁹ Michelin/Bayer UK

¹⁰ Tyre life divided by average annual mileage

¹¹ Tyre life divided by average annual mileage

Background notes

Base data:

UK car and van population (2006)	29, 698,874 ¹²
Total UK tyre market for cars and vans	34,000,000 ¹³
Average mileage p.a. for cars and vans	8,445 ¹⁴
Current average tyre life	30,000 miles
Average fuel consumption	35 mpg [4.456 litres]
Average cost of fuel	£0.99p/Litre
CO2 generation	2.31 conversion factor, litres to kgs CO2/10.3 conversion factor, gallons to kgs CO2 ¹⁵
Average Cost of car or van tyre	£50

Based on latest tyre-check data, Bridgestone's European Technical Centre has calculated that 44% of motorists at risk are losing 20.7% of tyre wear life – an average of 10.000 km or 9 months of tyre use (based on an average wear life of 50.000 km and annual mileage of 13.600 km).

The AA has found that 40% of air pressure gauges in filling stations and garages are inaccurate. Tyre pressures must be set when the tyre is cold.

We have quoted fuel consumption in miles per gallon, as this is still common parlance.

etyres is the UK's leading online tyre retailer. We fit the tyres you want, at the lowest prices.

But we don't just stop there. We aim to give you **Total Customer Care**, taking **all** of the hassle out of tyres - that's the etyres' promise. To make your life easy we even fit at your home or at your work -absolutely free. And the price we quote is the price you pay - another promise. Because at etyres, we know that customers **hate** hidden charges.

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¹² Transport Statistics Great Britain 2006

¹³ WRAP

¹⁴ Transport Statistics Great Britain 2006

¹⁵ The National Energy Foundation