

Red Diesel
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Timber Transport Forum response to HM Treasury **Red diesel: call for evidence** 20 March 2017 <https://www.gov.uk/government/consultations/red-diesel-call-for-evidence>

This response is sent on behalf of the Timber Transport Forum, a voluntary partnership that supports forestry by ensuring that the timber industry can access our forests and take timber to market in a sustainable way. At the same time we seek to minimise the impact of timber transport on the public road network, on local communities and on the environment.

The Forum is made up of representatives from eleven regional timber transport groups from across Scotland and North England, as well as the Convention of Scottish Local Authorities, the forest industry associations (Confederation of Forest Industries, UK Forest Products Association and Forestry Contracting Association), Scottish Forest & Timber Technologies, Forestry Commission England, Forestry Commission Scotland, Rail Freight Group, the Road Haulage Association and the Society for Chief Officers of Transportation in Scotland.

1. The UK Forestry Sector

The UK is one of the largest importers of softwood timber in the world importing two thirds of what we use. We produce one third of our requirements from softwood plantations in UK. The domestic forest and timber industries are worth £2bn GVA and create 79,000 jobs across the UK. Forestry covers 13% of the UK land area.

The UK forest industry uses red diesel in forest road construction, ground preparation, planting, drainage, harvesting, extraction and handling of, currently, 10.8 million tonnes of timber each year from UK forests.

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Registered in Scotland as Confederation of Forest Industries UK (Ltd). No. SC34467

Forestry in the UK is an expanding industry. Forests planted in the 1960s, 70s and 80s are maturing (harvested on a 30 – 50 year cycle) and the forecast is for harvesting and production to continue to increase to over 12m tonnes/yr by 2035 dropping thereafter to a lower sustained output. Forest policy across UK is aiming to increase planting to maintain higher levels of softwood production into the future.

The ownership of forestry has changed in recent decades with a larger proportion of forested land now held by the private sector rather than the public sector e.g. The Forestry Commission.

The graph below, from Forest Research, shows forecast output over 50 years by country and ownership.

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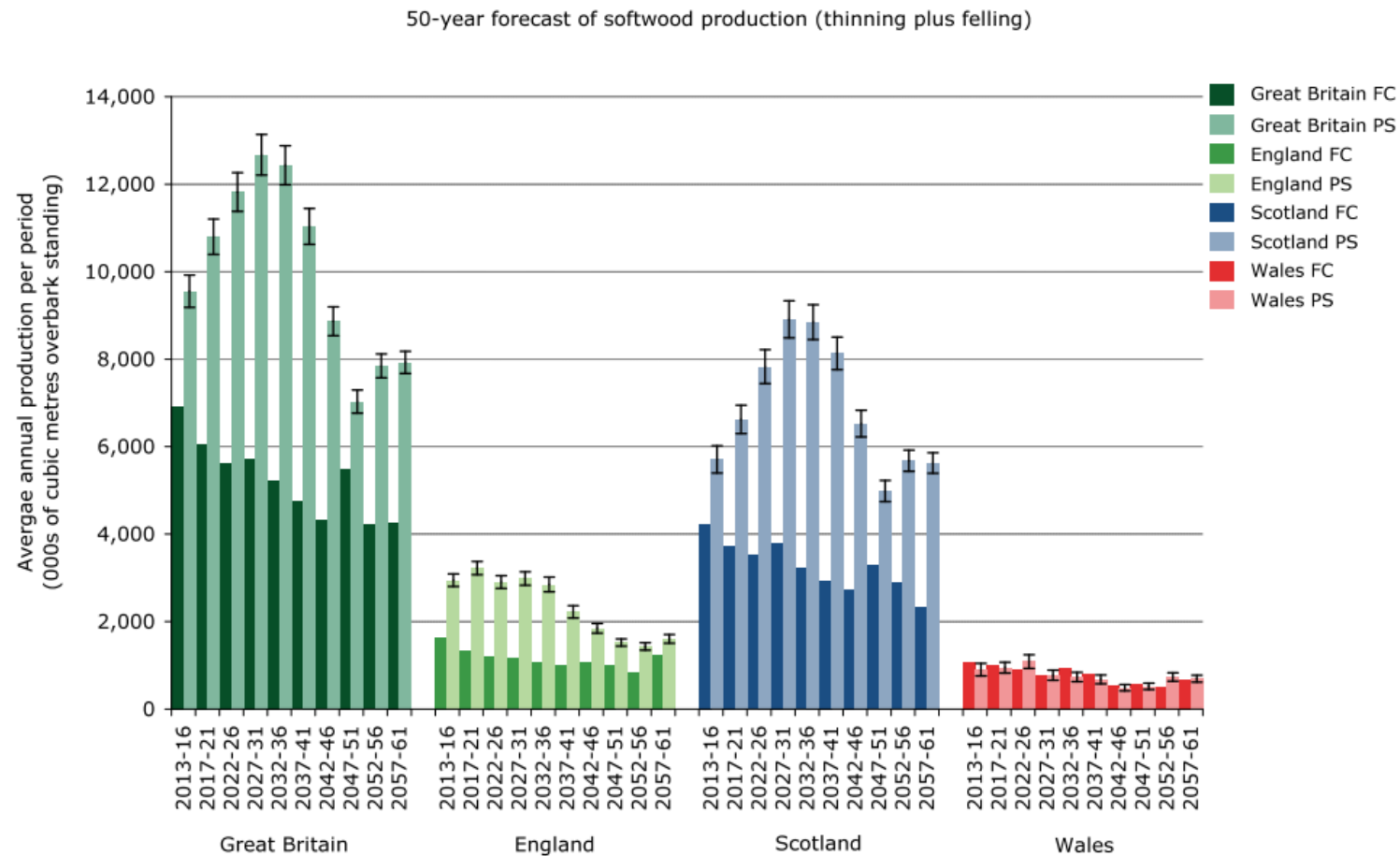


Figure 1 Forecast timber output from GB forests over 50 years by country and ownership (private - PS or public - FC). Note; 1 cubic metre is roughly equivalent to 1 tonne of harvested timber. Graph from Forest Research

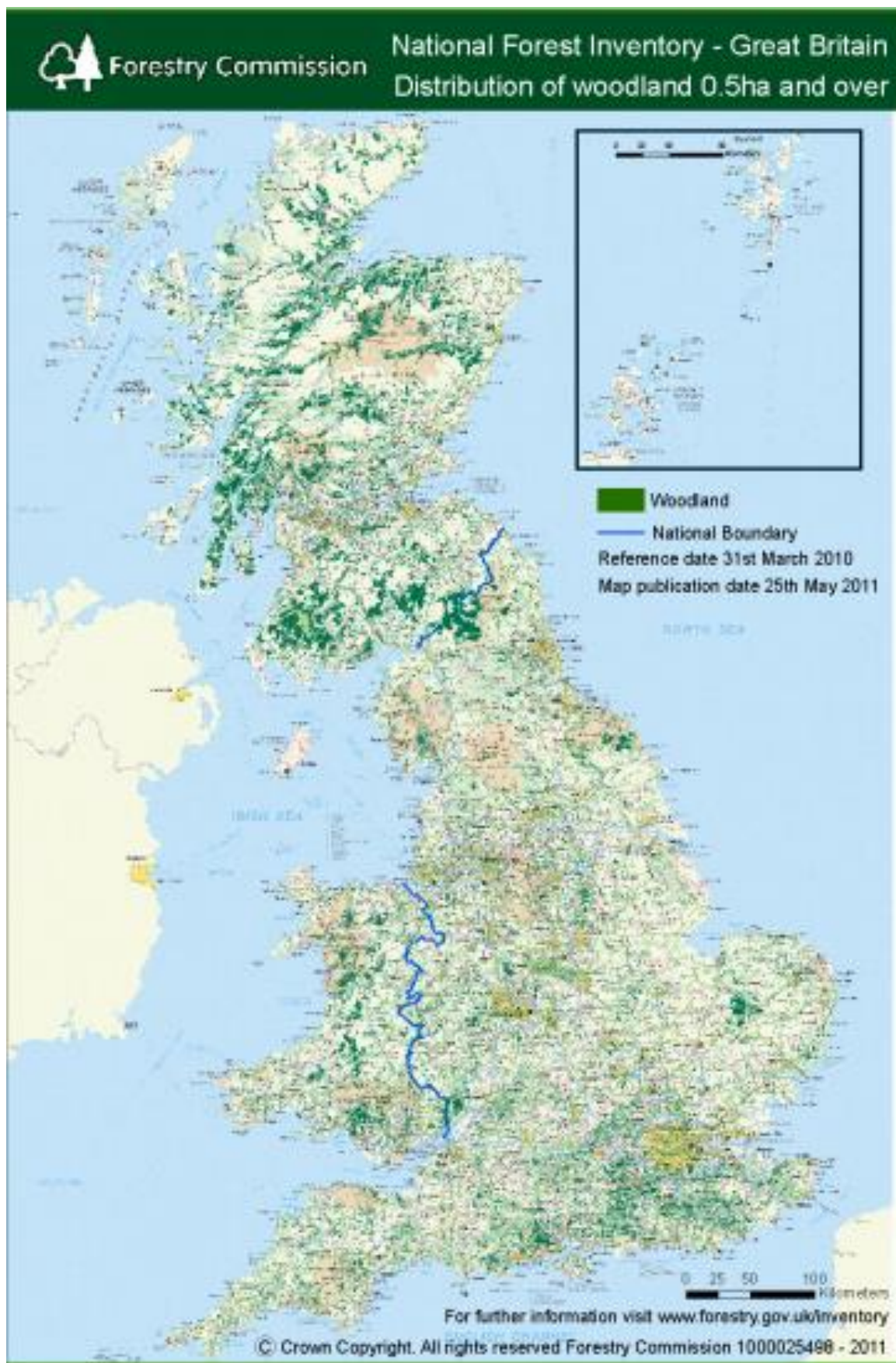


Figure 2 Map showing distribution of forests across GB

2. Location of Red Diesel Use

The [map](#) above shows the general distribution of forestry across Great Britain. The Forestry Commission's National Forest Inventory may be able to provide a more deliberate analysis of the distribution of the forest resource.

Forestry operations are very largely taking place in rural and remote rural parts of the UK, often far from diesel depots, so major timber sites normally have their own temporary, secure and self-contained storage and supply facilities. In Scotland, for example, Timber Transport Forum data suggests forest harvest over the next 15 years will be coming onto the public road network at around 3000 sites dispersed across the country.

3. What is Red Diesel used for?

Red Diesel is used in the following operations:

3.1. Site Preparation

Site preparation involves ditching, scarifying and mounding of planting sites using tractors and excavators.

Across UK, 5,600 ha of new forests were planted in 2016. This is increasing. Scotland has planting targets of 10,000ha/yr rising to 15,000ha/yr by 2025 under the climate change plan.



Figure 3 An excavator mounding a site for new planting of forest, Photo Simon Oldham Scottish Woodlands Ltd

On restocking sites, where harvested forest is being replanted, site preparation also involves the movement of harvested brash and in some cases stumps. 17100ha of forest were restocked in 2015 (plus private sector restocking in Scotland, say another 6,900ha).



*Figure 4 An excavator creating planting sites for restocking a harvested plantation,
Photo Forestry Commission Crown Copyright*



Figure 5 A scarifier is towed behind a tractor and scrapes planting sites

3.2. Fencing

Erection of stock and deer fencing including moving of materials across rough terrain using tractors and excavators (occasionally helicopters).



Figure 6 A tractor being used for installing deer fencing Photos Forestry Commission Crown Copyright

3.3. Harvesting and Extraction

This involves **harvesters/processors** which grab, fell, de-limb and cross-cut trees, and **forwarders** which pick up and move cut logs to a stacking area for transfer to road transport. Excavators are used to create and improve access for machinery and manage water run-off. In a few sites stumps are being extracted and brash (tree branches) gathered and bundled for use as biomass fuel.



Figure 7 A timber harvester can process (fell, de-limb and cross cut) 200 tonnes of timber per day and typically costs £400,000 Photo Confor



Figure 8 A forwarder collects cut logs and takes them to a stack on a forest road. Photo Confor

3.4. Chipping for biomass fuel

In some circumstances smaller harvested logs are chipped on site prior to being transported out of the forest. Mobile chippers will use red diesel. There are also scenarios where timber is harvested and transported short distances to local processing centres for chipping for biomass fuel.

The Timber Transport Forum has liaised with HMRC previously to help clarify [where and in what circumstances red diesel can be used for local transport](#) - often using tractors and trailers.



Figure 9 Mobile chipper processing logs for biomass fuel, Photo Confor



Figure 10 This chipper uses 3000 litres of red diesel a week to chip 800-1000 tonnes of timber
Photo Mulholland Media

3.5. Forest Roads

This involves the construction and maintenance of forest roads, stacking areas and associated borrow pits and water run-off management using excavators, tractors, dump trucks, rollers and graders.

We don't have good statistics on the scale of forest road construction. Forest Enterprise Scotland (FES) which manages the public sector forest in Scotland (and 26% of the conifer plantation resource in the UK), has a road network of 9700km and an annual construction programme of 70km of new road and 100km of road upgrading. In addition they maintain (grade, roll, ditch etc) something in the region of 1000km of road each year.

Forest roads are not normally constructed until forests are ready for harvest and much of the private sector forestry now becoming mature is requiring new roading.

The UK road construction programme may therefore be between 2 and 4 times the FES programme.

A study into the [carbon footprint of timber production](#) looked at the diesel input to forest roads. Estimates are as follows:

- New forest road construction uses about 6,400 litres/km of road (including stone production)
- Road re-grading, every year, uses 106 litres/km
- Resurfacing every 3-40 years needs 2,000 litres/km (including stone production)
- Upgrading/reconstruction every 20-80 years around 4,000 litres/km



Figure 11 Forest road construction Photo Confor



Figure 12 Grader used to maintain forest roads Photo Confor

3.6. In-Forest Haulage

In larger areas of forest, harvested timber can be several miles from a public road and logs may be transported on in-forest vehicles using red diesel as far as the public road or, in a few instances, to floating pier sites for onward shipping.



Figure 13 In-forest haulage, photo Adam Howie



Figure 14 In-forest haulage, photo Adam Howie



Figure 15 This 8 axle in-forest haulage vehicle can carry a 50t payload of timber Photo JST Services Ltd

3.7. Loading and Handling Equipment

A variety of cranes are used in forestry loading timber onto boats, trains and lorries.



Figure 16 This crane is used to load timber onto boats Photo JST Services

Mobile cranes are used for stacking timber and loading timber onto in-forest haulage vehicles or onto public road-going lorries. The mobile cranes use red diesel.



Figure 17 This independent mobile crane runs on red diesel and is used to load road-going lorries with timber, Photo Peter McKerral



Figure 18 This independent mobile crane runs on red diesel and is used to load road-going lorries with timber, Photo Peter McKerral

Some timber is loaded onto public road-going lorries using the lorry's on board crane. All road-going lorries and their on-board cranes run on white diesel.



Figure 19 Figure 11 Road-going lorry with on board crane running on white diesel, Photo Confor



Figure 20 Road-going lorry with on board crane running on white diesel, Photo Confor

3.8. Bespoke Machinery

Forests are often very remote and bespoke haulage and handling equipment is being developed to maximise machinery efficiency and simplify transport between sites.

3.9. Short Haul to Processing

There are a few scenarios where timber is harvested and transported short distances to local processing centres often for chipping for biomass. The Timber Transport Forum has liaised with HMRC previously to help clarify [where, and in what circumstances, red diesel can be used for local transport](#) - often using tractors and trailers.

4. Red Diesel Requirement

The bulk of red diesel use will be in harvesting and forwarding, ground preparation, chipping timber for biomass fuel and in forest road construction and maintenance. The following table assumes 39MJ/litre of red diesel and estimates the approximate scale of operations and red diesel consumption.

Operation	Red Diesel; litres/ha	Ha/yr	Total RD litres/yr
Mounding ¹	200	29,500	5.9m
	litres/tonne of timber	Timber tonne/yr	
Harvesting and forwarding ²	2.2 - 4.6 (2.5)	10.8m	27m
In forest haulage of 10km round trip using red diesel ³	0.16	1.0m	0.16m
Cranes using red diesel (25%) ⁴	0.5	2.7m	1.35m
Biomass Chipping ⁵	3	1.5m	4.5m
	litres/km of road	km/yr	
New Forest Road Construction ⁶	6400	210	1.34m
Upgrading old roads	4000	300	1.2m
Re-grading once a year	106	3000	0.3m
TOTAL			41.7 million Litres/yr

¹ Red Diesel use from [carbon footprint of timber production](#) and UK area from [FC statistics](#) which includes public and grant aided restocking plus guess for private sector (non grant-aided) restocking in Scotland plus new planting.

² Red Diesel use from industry estimates, tonnage from [FC statistics](#)

³ Red Diesel use from [carbon footprint of timber production](#) and guess for tonnage involving in-forest haulage

⁴ Red Diesel use from [carbon footprint of timber production](#) and guess for tonnage using stand alone mobile crane 25%

⁵ Red Diesel use from industry sources and tonnage from [FC statistics](#)

⁶ Red Diesel use from [carbon footprint of timber production](#) and road construction, upgrading and regrading estimates are based on 3 times the annual Forest Enterprise Scotland programme.

At present there is no viable alternative fuel to diesel for this heavy plant and equipment. The UK forest industry, competes on a global market for raw materials, generates marginal returns on forest operations, continues to receive state support for planting and management, and is reliant on red diesel.

5. Excepted Vehicles

The current list of “excepted vehicles” (listed in Annex A to the call for evidence) could be reviewed to be more specific about forestry machinery, taking account of the scale of the industry and the modern machinery in use. Because forest operations are dispersed across the country and contractors are highly mobile there is a pressure for innovative development of machinery to improve fuel and other efficiency of operations. It would be helpful if this machinery could be more easily categorised and identified within the excepted vehicles annex.

6. Environmental impact of Red Diesel use

The paper demonstrates a high demand for red diesel within the forest industry. However, given the rural and remote rural situations where most forest operations are undertaken, the environmental effect (in terms of air pollution) from red diesel use in forestry is considered to be negligible.

With regard to the carbon footprint, the Timber Transport Forum commissioned a [study](#) on the carbon budget of timber harvesting, processing and use. Growing trees fix atmospheric carbon and store it. Processed timber used in construction stores carbon while timber used as fuel displaces fossil fuels. The study showed that the net carbon balance of forestry and timber use is hugely positive with a large net sequestration of carbon or displacement of carbon emissions. This is recognised by government where new higher planting targets are an important element in the climate change plan in Scotland.

7. Further information

The Timber Transport Forum is happy for this response to be publically available and would be willing to discuss the information presented and provide further detail if required.

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Timber Transport Forum 30.6.2017