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Expert Working Group
for the Wood Panel Industry

Policy & Baseline Report
Third Edition
2021

Foreword by Selaine Saxby MP

Along with many of my Parliamentary colleagues, I am fortunate to represent a constituency which is home to a wood panel manufacturing plant — Norbord at South Molton. The domestic wood panel manufacturing sector is critical to the delivery of the UK Government's Net Zero by 2050 objective and sustaining British jobs to assist the green recovery following the Covid-19 crisis.

With this in mind, creating an environment where this domestic industry can flourish is important. Wood is too important a resource to burn. That is the basic contention of those of us who are calling on the UK Government not to re-introduce any form of revenue subsidy — similar to that of the Renewable Heat Incentive (RHI) within the forthcoming Biomass Strategy (2022). This is critical to rebalancing the supply of and demand for finite forestry resources. The closure of RHI is welcomed by industry and parliamentarians supporting a prosperous domestic panelling sector in the UK.

Even the name of the Incentive suggests some questions. How 'renewable' is wood? How environmentally friendly is it to burn timber in industrial quantities? How much heat is generated and carbon reduction achieved, relative to the costs of subsidy?

All these questions should be addressed before any further policy in this area is developed. The history of the RHI is not particularly encouraging, most spectacularly in Northern Ireland. It was driven by EU targets which the UK Government felt obliged to accept but without sufficient attention to the means of achieving them.

One of these targets, set in 2008, was for the share of heat generated from renewables to reach 12% by 2020. This was described in a National Audit Office report as "very challenging" because of the extremely low starting point — 1.5% — compared to most other EU countries.

Wood biomass became the biggest and most obvious source of "renewable heat", heavily encouraged by subsidy through both domestic and industrial RHIs. Little or no consideration was given, however, to how this would impact upon the existing demand for timber grown in the UK.

That is the question which is now becoming urgent, with thousands of jobs at stake. In the wood panel industry alone, on which the construction industry depends, there are 7,500 jobs in locations from Inverness down to North Devon. The wider impacts on employment and the local economies are far greater.

The rationale for the location of these manufacturing plants is that they are close to the supply of UK forestry, with 90% of the wood supply for South Molton coming from within 100 miles. If the industry becomes dependent on imports because there is not enough indigenous wood available, then that logic disappears and future investment will undoubtedly go elsewhere.

The All Party Parliamentary Group (APPG) for the Wood Panel Industry is pitching a reasonable case to the Government. By pointing out the dangers of continued subsidy — at a cost of £817.4 million in 2018-2019 — to a particular form of wood use, the industry is aiming to prevent a problem turning into a crisis for the sector and those who depend on it.

Apart from the issue of subsidy through an incentivisation scheme, there are other potential measures that could be introduced alongside. The industry needs a hierarchy of wood use, whereby wood types facing competition — roundwood, sawlogs, sawmill products and clean wood waste — would not be eligible for subsidy. These are the essentials for the industry.

In the longer term, as a forestry dependent sector the answer does lie in planting more trees. The UK (England), Scottish and Welsh Governments are committed to doing so and that is welcome, with the England Trees Action Plan (2021 to 2024) setting a realistic medium term target of 30,000 hectares per annum by the end of this Parliament for the UK. However, it offers no prospect of early relief — the benefits of planting over the next few years will not be realised until the period 2040-60 by which time businesses would be long gone.

Forestry planting has been in decline in the UK since the 1970s and that is the legacy the industry is now living with. Inevitably, therefore, the biomass sector is currently — and for the next 20 years — relying on planting which took place with other purposes in mind, long before incentive-based subsidies existed.

The UK will reach 'peak wood' in the early 2030s and thereafter there will be a sharp decline in domestic supply. There are therefore clear choices to be made and the decision over the next year on what, if anything, replaces the RHI scheme is the appropriate time to make them, with consequences which will be felt in our communities for many years to come.

It does not seem right to carry on in the certain knowledge that continuing to subsidise the indiscriminate burning of wood will have the certain consequence of halting investment in a successful, productive industry on which thousands of jobs and the whole construction industry depend.

Selaine Saxby MP

Conservative Member of Parliament for North Devon
Chair of the APPG for the Wood Panel Industry

Executive Summary

This policy paper explores the challenges facing the wood panel industry and their consumers in the furniture making, construction and house building industries. This paper presents an updated set of policy recommendations for consideration by Ministers in the Department for Business, Energy and Industrial Strategy (BEIS) as they deliberate on what, if anything, will replace the Renewable Heat Incentive (RHI) scheme.

Wood security within the UK is under considerable threat, a problem which has been exacerbated by UK Government renewable energy subsidies for wood burning technologies in recent years. This paper builds upon the appended Baseline Report which details the evidence base and articulates the policy challenge facing the wood panel industry as the UK approaches 'peak wood' availability within the next decade. Upon review of evidence, the Expert Group developed two immediate policy solutions in preference order, to be combined with a further commitment to increase forestry planting, in order to ensure that the UK industry is able to meet domestic demand.

The Expert Group recommends that following the careful review of evidence submitted to *the Future Support for Low Carbon Heat* consultation and *Role of Biomass in Achieving Net Zero: Call for Evidence*, BEIS should not reintroduce a new tranche of tariff-based subsidies for biomass. Moreover, any future subsidy regime covering biomass must be predicated on the completion of a comprehensive and robust assessment of subsidy impact upon wood supply.

The paper concludes with a core message: the wood panel industry wishes to thrive and contribute to a flourishing manufacturing base post-Covid-19 and post-Brexit. However, in order to make this a reality the UK Government must recognise the finite domestic wood supply basket and commit to working with the Wood Panel Industries Federation (WPIF) in order to improve wood security prospects and enable this industry to prosper in the coming years.

Contents

Profile of the Industry and the Wood Panel Industries Federation	6
Wood Panel Industry Products	7
Environmental Benefits of the Industry	8–9
WPIF Members	10–11
Wood Panel Manufacturing Plants in the UK	12
The APPG for the Wood Panel Industry	13
The Expert Working Group for the Wood Panel Industry	14
The Expert Working Group Members	15
Policy Challenge	16
Current Policy Approach	17–20
Immediate, Demand-Based Options	20
Longer-Term, Supply-Based Options	20–21
Conclusion	21
Baseline Report	22–29

Profile of the Industry and the Wood Panel Industries Federation

Established in 1995, the Wood Panel Industries Federation (WPIF) is a representative organisation giving voice to the industrial manufacturers in the United Kingdom and Ireland of Chipboard, Oriented Strand Board (OSB) and Medium Density Fibreboard (MDF).

The world's first commercial wood fibreboard plant opened in 1898 in Sunbury-on-Thames but the industry present today has roots going back to the mid–60s. With six manufacturing sites owned by three companies, the UK manufacturers of wood panel products make a vital contribution to the economy. They add significant value to the wholesale and retail markets within the UK, supplying essential materials to a wide range of industries, including construction, furniture, packaging and transport, amongst many others.

The contribution of the wood panel industry to the wider economy is considerable*:

Industry Scale

- The UK industry consists primarily of six plants across the UK, which supply 65% of UK demand for wood panel products (which are: Chipboard, Oriented Strand Board and Medium Density Fibreboard).
- The wood panel manufacturing sector uses over 25% of the 11 million tonnes of wood delivered from UK forestry every year in total and is leading the way in driving the UK industry towards net-zero emissions.

Member Companies

- Turnover for the sector, across the six UK plants, was in excess of **£900 million** in 2018.
- Operating profit for the sector reached **£74.8 million** in 2018.
- The UK corporation tax on profits for the year across the sector was **£12.4 million**.
- The VAT levels paid by the three main wood panel manufacturers in 2018 amounted to **£44.5 million**.

Employees

- The average number of monthly directly employed persons was **2,125** in 2018. The total number of jobs dependent on the industry, direct and indirect, is approximately **7,500**.
- The aggregate payroll costs for wages and salaries was over **£77 million**.
- The average salary of those employed in the industry was **£36,235** in 2018.
- The average length of tenure of those employed in the industry is 12 years.
- The total tax paid by employee and employer per job in 2018/19 based on average salary was **£12,050.44,** with a pension contribution of approximately **£1,674.11**.
- The total tax on 2,125 employees at £36,000 is **£25.6 million**.

*The figures quoted above are taken from the Full Accounts (2018) published by EGGER (UK) Limited, Norbord Europe Limited and Kronospan Limited on Companies House.

Wood Panel Industry Products

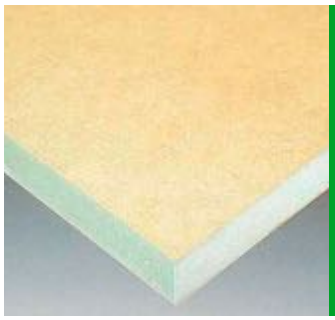
The wood-based panel products manufactured within the UK include wood in the form of chips, strands or fibres. The categories usually recognised within this group of panel materials are:

- **Chipboard**
- **Oriented strand board (OSB)**
- **Medium density fibreboard (MDF)**

In addition to the rawboards, a multitude of overlaid and value added variants are produced. The consumption of these wood panel types in the UK is now almost 5 million cubic metres per annum, with UK production comprising a substantial portion of this figure. The wood panel industry is vital to everyday life, at home and in the workplace. Manufactured products can be found in virtually every home, office and shop, either as a component within the building fabric or within the furniture.

Chipboard
The major markets for chipboard products are in construction and furniture. In construction, chipboard has dominated as a floor decking material in both domestic and non–domestic construction. In furniture, chipboard is most usually overlaid with either decorative papers, foils or veneers, and although unseen, it is the base for a majority of kitchen and bedroom cabinets as well as featuring extensively in commercial office furniture. Often hidden by other materials, chipboard is used within other manufactured items such as doors or in shop fittings.

Oriented Strand Board (OSB)
With strength as a key attribute, a majority of OSB is used in load bearing construction applications. Common applications for OSB include flooring, wall sheathing and roof decking. Increasingly OSB is used as a component making up factory manufactured SIPS panels and floor cassettes. Available in a variety of grades, OSB can fulfil other roles such as in, packaging and furniture.



Medium Density Fibreboard (MDF)
With a fine dense structure, MDF is uniquely suited to applications where surface finish and profiling is important, consequently MDF is widely used in furniture and in applications where it forms the basis of the visual elements in construction, shop fitting, commercial interiors and in DIY. MDF is available in a wide variety of variants which gives it versatility in a multitude of applications.

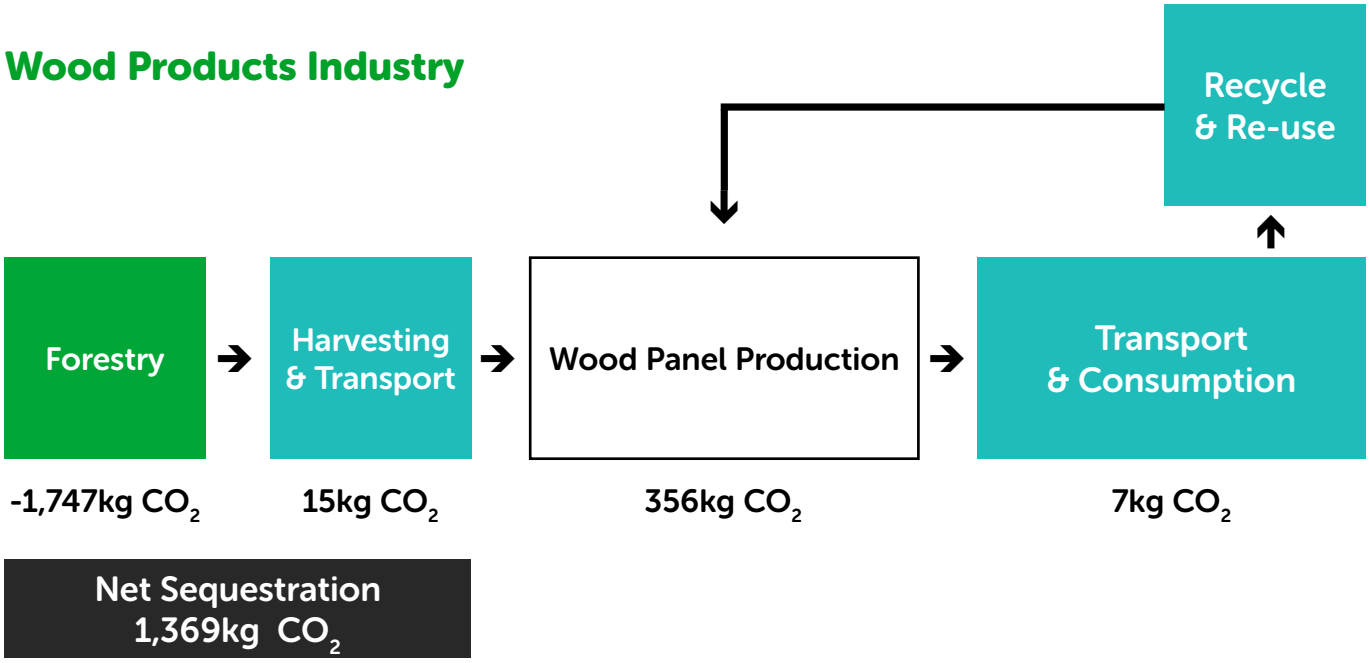
Environmental Benefits of the Industry

Wood panel manufacturers across the UK are playing a key role in supporting the UK Government's Net Zero by 2050 ambition, with carbon sequestration benefits considerable when compared to bioenergy. The diagram below taken from the Carbon River Report (2010), which was commissioned by the Wood Panel Industries Federation, compares the processes in the supply chains for both the wood panel industry and that of biomass. This clearly demonstrates that the processing of timber to manufacture wood panel products "acts as a carbon sink" (p.15).

CO_2 per tonne timber consumed

Based on domestically sourced virgin fibre

Wood Products Industry



Bioenergy

The Carbon River Report (2010) concluded that in the event that the UK biomass industry were to displace the UK wood panel industry in wood use at approximately 4 million tonnes of UK timber per annum, the overall net CO_2 emissions would rise by 6 million tonnes. When the calculation is extrapolated out to the Forest Facts and Figures (2019) usage of green tonnes delivered to the market for wood processing and wood fuel, we can conclude that in the UK in 2019:-

Table 1: Annualised Environmental Effects[1]

Wood Usage (Green Tonnes)	Net Sequestration/ Emissions
Wood Panel Processing = 1,211,000t	1,642,800,000kg CO_2 (Net Sequestration)
Wood Fuel = 2,600,000t	410,800,000kg CO_2 (Net Emissions)

The projections outlined by this study reinforce the need for the UK Government to deliver upon proposals and shift away from woody biomass focused generation towards lower carbon alternatives. This would also reduce the level of demand upon the finite resource and enable growth within the wood panel industry as part of a green economy. Overall, in terms of environmental benefits, the wood panel industry's case is compelling and supports the delivery of the UK Government's Net Zero by 2050 target.

WPIF Members

Egger, Hexham

Kronospan, Chirk

Norbord, Cowie

EGGER

In the UK, EGGER has two chipboard manufacturing sites which in total produce approx. 1.1 million m^3 of chipboard each year and employs over 720 people. EGGER in Hexham is Northumberland's largest manufacturing company and EGGER in Auchinleck is one of Ayrshire's largest manufacturing companies. Both UK sites produce chipboard and at Hexham it is further upgraded (Melamine Faced Chipboard) into products for the furniture and interior design markets and tongue and groove flooring for the construction industry. The company has invested approx. £250m in its UK operations since 2006, to ensure it remains at the forefront of chipboard production in Europe.

Kronospan

With over 120 years experience, Kronospan is the leading manufacturer of wood-based panels worldwide: Medium Density Fibreboard (MDF), Particleboard (PB), Laminate flooring and Oriented Strand Board (OSB) in Europe. Production also includes: melamine– faced panels, speciality and decorative paper, worktops, wall panels, compact boards, high pressure laminates (HPL), UF, MUF and MF resins and others. Currently, Kronospan consumes 1.5m tonnes of timber per year, all UK sourced. Globally, Kronospan has more than 40 sites and employs over 14,000 people.

Norbord

Norbord Inc is the largest manufacturer of OSB in the world and is one of Europe's leading manufacturers of engineered wood–based panel products. Norbord products are used extensively in the construction, DIY and furniture sectors with success coming from their pursuit of excellence in all areas. Norbord Europe Ltd has three mills in the UK where all three wood panel groups are produced — SterlingOSB Zero at Inverness, CaberWood MDF at Cowie, Stirling and CaberBoard also at Cowie and South Molton, Devon.

Wood Panel Manufacturing Plants in the UK

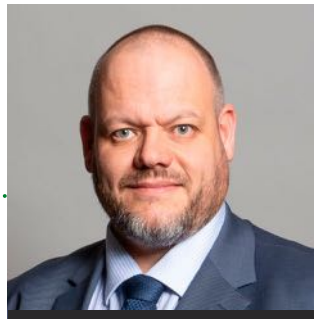
The APPG on the Wood Panel Industry

During the last Parliament, the All Party Parliamentary Group (APPG) for the Wood Panel Industry worked to promote the wood panel industry by raising issues of concern within Parliament and to provide Parliamentarians with accurate information about matters relating to the industry. The APPG for the Wood Panel Industry was re-established through a virtual meeting on Wednesday 15th July 2020.

The APPG's renewed objective is to highlight the vital contribution that wood panel manufacturers make to regional and national economies within the UK and to ensure growth for this domestic industry by addressing concerns in terms of the impact of energy policy upon wood security.

Selaine Saxby MP
(Con, North Devon)
Chair

Neil Parish MP
(Con, Tiverton & Honiton)
Vice-Chair



Mark Jenkinson MP
(Con, Workington)
Vice-Chair

Fay Jones MP
(Con, Brecon & Radnorshire)
Vice-Chair

Ian Murray MP
(Lab, Edinburgh South)
Vice-Chair

Alan Brown MP
(SNP, Kilmarnock & Loudoun)
Vice-Chair

Baron Wallace of Tankerness
(Lib Dem)
Vice-Chair

Ben Lake MP
(Plaid Cymru, Ceredigion)
Vice-Chair

Jim Shannon MP
(DUP, Strangford)
Vice–Chair

The Expert Working Group for the Wood Panel Industry

In order to ensure the sustainability of this industry, the All Party Parliamentary Group (APPG) for the Wood Panel Industry mandated the Expert Working Group to refresh their recommendations for delivery to UK Government Ministers.

The Expert Group are looking to:

1. Assess supply and demand issues facing the wood industries sector;
2. Assess policy options which are available to address these issues.

The Expert Working Group's assessment is outlined within this policy paper. The policy paper is the product of two rounds of discussions over three month periods. The Expert Working Group first met in August 2018 at Norbord, Cowie (as pictured below), chaired by the then Conservative MP for Stirling, Stephen Kerr. The Group was joined by WPIF members Steve Roebuck — Director (Environment, Health and Safety) Norbord, and John Paterson — Manager, EGGER Group UK. The Expert Working Group presented the first edition of this report to the then Minister of State for Energy and Clean Growth, the Rt Hon Claire Perry at the House of Commons in November 2018.

The Expert Working Group's recommendations have since been updated, as detailed within this Third Edition, to take account of the changing UK political and policy landscape. The Expert Working Group was mandated to reform at the APPG for the Wood Panel Industry Inaugural Meeting in July 2020. The Expert Working Group published their Second Edition at their September 2020 meeting and have since made further adjustments in a Third Edition in July 2021. The Expert Working Group was mandated to reform at the APPG for the Wood Panel Industry Inaugural Meeting in July 2020. The Expert Working Group published this Report in draft at their September 2020 meeting and finalised it for the consideration of the Minister for Business, Energy and Clean Growth.

From left to right:

From left to right: The Rt Hon Brian Wilson, George McRobbie, Alastair Kerr, Stephen Kerr, Steve Roebuck, Ian Ross and John Paterson.

The Expert Working Group members include:

Stephen Kerr MSP

Chair of the Expert Working Group for the Wood Panel Industry.

Stephen Kerr MSP was the Conservative MP for Stirling from June 2017 until December 2019, having previously contested the 2005 and 2015 elections for this seat. Stephen Kerr was a member of the Business, Energy and Industrial Strategy Committee from September 2017 until the last UK Parliament was dissolved in November 2019. Stephen has since been elected as a Member of the Scottish Parliament for Central Scotland in May 2021. Stephen was the Chair of the APPG for the Panel Industry in the last Parliament.

Alastair Kerr

Secretary of the Expert Working Group for the Wood Panel Industry.

Alastair Kerr has been the Director General of the Wood Panel Industries Federation (WPIF) since 1999. Alastair Kerr has over thirty years experience in the timber industry, having held a range of technical positions before taking up his positions with WPIF.

The Rt Hon Brian Wilson

The Rt Hon Brian Wilson is a former UK Energy Minister, serving at the Department for Trade and Industry from 2001 until 2003. He also previously served at the Department for Trade and Industry from 1998–1999. The Rt Hon Brian Wilson was the MP for Cunninghame North between 1987 and 2005. He is now Chairman of Harris Tweed Hebrides, a Director of Celtic Football Club and Visiting Professor at the University of Strathclyde. He is a former member of the UK Board of Trade.

George McRobbie

George McRobbie was a Director at BSW Timber, retiring in September 2020, and prior to that held the position of Managing Director of Tilhill Forestry.

George was formerly the Chairman of the UK Forest Industries Sustainability Strategy Group, which sought to improve the sustainability of the forestry industry.

Ian Ross

Ian Ross is currently the Independent Chair of the Caithness and North Sutherland Regeneration Partnership (CNSRP), the Chair at High Life Highland and a Board Member at Scotland's Rural College (SRUC). Ian is a former Chairman of Scottish Natural Heritage and was a past chair of Planning and Development on Highland Council and is a Chartered Forester.

Policy Challenge

The wood panel manufacturing industry depends upon the current and future domestic softwood supply. The industry lies central to delivering upon two central objectives of the UK Government as outlined in the December 2019 Queen's Speech:

1. **Achieving Net Zero by 2050**[2] (p.13). Wood panel manufacturers across the UK are playing a key role in supporting the UK Government's Net Zero by 2050 ambition, with the carbon sequestration credentials outlined on Page 8 of this Report.

2. **Delivering Homes**[3] (p.48). The UK Government is committed to constructing in excess of 1 million homes before the end of this Parliamentary term in 2024. Without improving wood security, the needs of panel manufacturers' consumers in the house building and construction industries will not be met. This has the potential to have a considerable impact upon the house building industry given that 50% of wood panel manufacturing products generated on an annual basis are used in construction and house building.

Wood panel manufacturers supplying these vital industries account for around 25% of the total 11 million green tonnes supply delivered to the market (Baseline Report p. 24). The domestic virgin roundwood supply is forecast to decline rapidly over the period from 2035 onwards, which will reduce the wood materials available for domestic manufacturing and the domestic sawmill industry. The decline in supply is particularly concerning given that the UK already has a lower than average woodland coverage of 13% relative to the EU average of approximately 37%. The challenge is exacerbated further by wood fuel subsidies, which are leading to shortages within the market (Baseline Report p.26–27). Overall, the decline in domestic wood availability combined with rising demand has two implications: short-term and long-term.

Firstly, as the availability of domestic supply declines in the short-term (Baseline Report p.26), manufacturers are being forced to resort to importing raw materials. This solution is not sustainable as it undermines the ability of manufacturers to produce wood panels at a competitive price and increases the likelihood that the final panel product will be imported from elsewhere. Secondly, with the forecasted availability diminishing rapidly within the next decade, there is real investment uncertainty for wood panel manufacturers, construction, and house building industries.

With the policy challenge facing the wood panel manufacturing industry outlined, the Expert Working Group accepts current demand for wood fuel but wishes to see an end to the artificial stimulation of demand moving forward. The Expert Group also wishes to see the long–term prospects of delivering domestically grown wood to the market enhanced further.

The combination of immediate policy change with longer–term policy action will improve the domestic demand and generate jobs both directly within the wood panel industry and indirectly across the building and construction trades. This declining forestry coverage will also see a deterioration in the public benefits afforded by forestry, which take the form of community development, recreational access and carbon and wind mitigation.

(2) UK Government (2019): Queen's Speech December 2019: Background Briefing Notes

(3) Ibid

Current Policy Approach

There have been two drivers of UK energy policy since the Labour party came to power in 1997: European and domestic, which are described further within this section.

European Driver

From the European side, the European Community Climate change targets, as set out in the Renewable Energy Directive (REDI), placed greater emphasis upon the need to stimulate renewable technologies across the continent in a bid to move away from reliance upon fossil fuels. Looking forward, the revision of the Renewable Energy Directive (REDII) for the period 2020 to 2030 will commit to increasing the EU's renewable energy production as a total share of production by a further 7%, from 20% to 27%[4]. The role of biomass and particularly woody biomass has increased significantly over the period, which has caused supply and demand pressures in regions across the EU. These pressures are starting to be recognised and in the output text from the trialogue process to the revision of the EU Renewable Energy Directive (REDII) it was noted that financial incentives can distort the marketplace.

Domestic Driver

From the domestic side, the UK Government sought to promote a diverse range of energy sources within the UK market from the late 1990s onwards leading to the introduction of the Renewables Obligation Certificate (ROC).

The power of this drive has been sustained through to the present day Government, with share of UK energy being generated by renewables increasing from 1% in 1997 to 11.3% in 2017[5]. With the policy direction remaining consistent from Labour, through Coalition and to Conservative, the Department for BEIS now operates five renewable subsidy mechanisms which include provision for technologies consuming wood as fuel: the ROC; Feed-In Tariff (FIT); Domestic and Non-Domestic Renewable Heat Incentive (RHI); Contract for Difference (CfD) as illustrated in Table 1. ROC supports large-scale renewable electricity projects, FIT supports micro combined heat and power (CHP), Domestic RHI supports biomass renewable heating systems, Non-Domestic RHI supports solid biomass boilers and CHP systems using biomass.

Table 2: Renewable Energy Subsidy Regimes

Timeline	Subsidy Status Description
1 April 2002	Renewables Obligation (RO) introduced to English, Welsh and Scottish markets.
1 April 2010	FiT (Feed-in Tariffs) scheme introduced.
1 April 2014	Domestic and Non-Domestic RHI opened to applications.
1 October 2014	Contract for Difference (CfD) first round initiated.
31 March 2017	Renewables Obligation (RO) closed to all new generating capacity applications.
3 April 2017	Contract for Difference (CfD) second round initiated.
1 April 2019	FiT (Feed-in Tariffs) scheme closed to new applicants.
31 March 2021	Non-Domestic RHI closed to new applicants.
31 March 2022	Proposed Domestic RHI closure to new applicants.
1 April 2029	FiT (Feed-in Tariffs) agreements end and no further tariffs are provided beyond this date.
31 March 2037	Renewable Obligation (RO) ceases to operate. No further certificates are issued beyond this date.

(4) European Commission: Renewable Energy Directive

(5) Carbon Brief (2018): Six Charts Show Mixed Progress for UK Renewables

Renewable Obligation Certificate

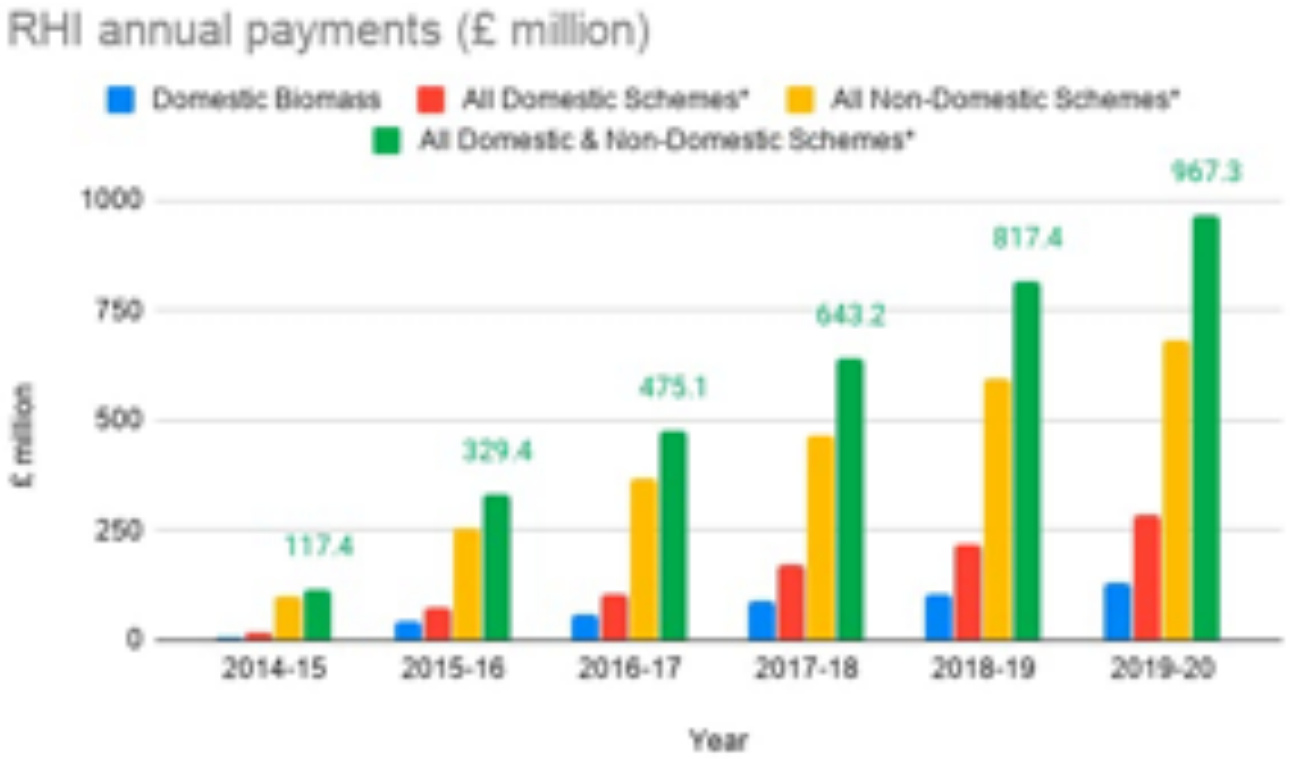
The Renewable Obligation Certificate (ROC) originated in 2002 as a result of powers incorporated within the Utility Act 2000. When the Utilities Act was first debated the Government positioned the scheme to "ensure the energy sector contributes to [environmental] objectives"[6]. A consultation was undertaken before the launch of the ROC, but it did not directly explore the anticipated wood fuel impact. The limited consultation on the impact of subsidy on wood fuel consumption also characterised the Renewable Heat Incentive (RHI). Similar to ROC, RHI emerged out of political pressure to meet renewable targets and was first detailed in the Energy Act 2008.

The Renewable Heat Incentive

The Renewable Heat Incentive (RHI), first introduced in 2011, is the only renewable taxpayer funded energy subsidy mechanism to have survived the 2015 Energy Policy Reset. Alongside the impact of the Renewable Heat Incentive (RHI) in terms of increasing demand upon the wood resource basket, the total cumulative committed spend from 2011-2012 to the end of 2019-2020 was £3.34 billion.

The cost to the taxpayer has been estimated at £1.15 billion[8] per year in 2021, over 2.5 times the original committed spend (Figures 1 and 2).

Figure 1: Annual Cost to the Taxpayer

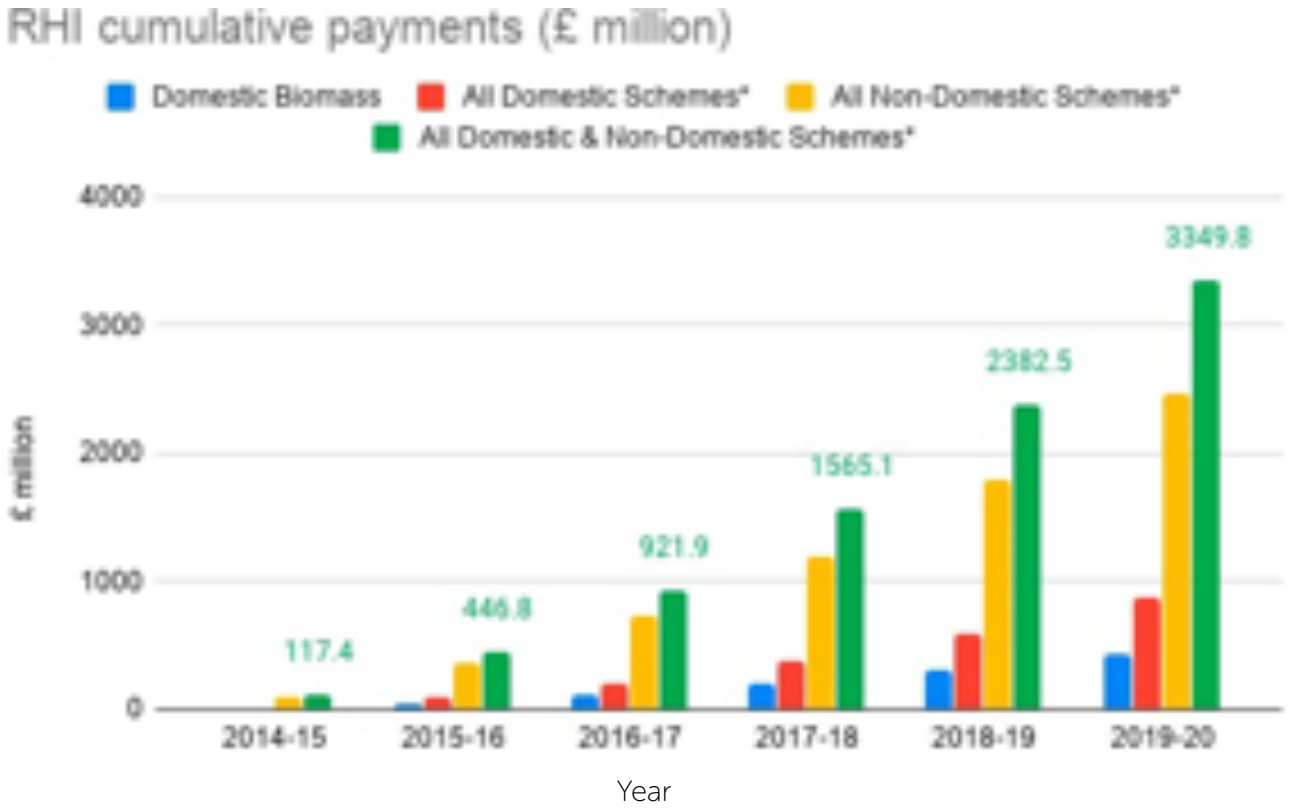


(6) UK Government Legislation (2000): Utilities Act (2000)

(7) UK Government (2019): BEIS Annual Report and Accounts 2018 to 2019

(8) UK Government Consultation (2020): Non-domestic Renewable Heat Incentive: ensuring a sustainable scheme

Figure 2: Cumulative Cost to the Taxpayer



Figures 1 and 2 clearly demonstrate the growth of the Renewable Heat Incentive payments over the past six years in both domestic and non-domestic scheme subsidy for woody biomass.

Figures 1 and 2 illustrate the earlier concerns raised by the National Audit Office (2018)[9] and Public Accounts Committee (2018)[10] regarding the RHI programme's cost effectiveness. The National Audit Office performed sensitivity analysis, and identified that based upon the Government's own assumptions, cost-effectiveness estimates were likely to be over-optimistic. The National Audit Office found that it costs the taxpayer £142 for every tonne of carbon dioxide saved, £86 more than the Department projected (p.33). The National Audit Office indicated that while the scheme was operating within the proposed budget at present, there is uncertainty and concern about its longer-term costs due to rising inflation or non-domestic use for which payment is based upon meter readings.

The Public Accounts Committee reported that 'the actual cost-effectiveness of the RHI is likely to be significantly worse than is currently estimated by the Department' (p. 6). Similarly, the National Audit Office remarked that 'the Department has not achieved value for money. It does not have a reliable estimate of the amount it has overpaid to participants that have not complied with the regulations, nor the impact of participants gaming them, which could accumulate to reduce the scheme's value significantly' (p.12). The independent assessments by the National Audit Office and Public Accounts Committee, combined with the House of Commons Library data, presented in Figures 1 and 2 emphasise the need to stop the clock. This will allow the UK Government, over the 20 year period of Non-Domestic RHI payments, to make annualised savings to the taxpayer in a similar magnitude to those incurred thus far and promote a competitive marketplace for users of wood materials.

Strengthening the Evidence Baseline

While renewable energy subsidies were intended to provide much needed stimulation to the market, conducting a robust wood fuel assessment is long overdue. While the accuracy of data available for wood fuel use under each of these regimes remains questionable, with the exception of ROC and future projections by a private consultancy on Non-Domestic RHI (Baseline Report, p.28), there is a collective understanding among the experts that wood fuel use is heightened by subsidised rates. In order to better inform future discussion on this issue, the Expert Group has asked for further clarification on the quantity of wood used under each of the subsidy mechanisms from Ofgem. Alongside this is a request for data relating to both the destination of domestic wood (virgin and waste) delivered to the UK market every year and the forecasted delivery of stock to the market in the

future. A prerequisite to articulating the exact workings of the policy solutions (i.e. reforming tariff rates, specifying deployment caps) is the need for stronger baseline data on wood fuel and wood security.

Overall, there is unquestionably an unsustainable demand for wood which cannot be met within the UK due to the policy context. The Expert Working Group wishes to improve the level of wood security within the UK by contributing to a new policy direction. At an EU level, the trialogue process to the revision of the EU Renewable Energy Directive (REDII) identified the detrimental impact of subsidies upon the marketplace. At a UK level, the UK Government recently consulted on the Future Support for Low Carbon Heat, which proposed support for biomethane injection technology, heat pumps and only in certain circumstances biomass where a heat pump cannot be installed in a building. The critical shift involves the transition away from tariff based payments to upfront capital grants. The Expert Working Group is encouraged by these proposals and supports their adoption as UK Government policy.

The Expert Working Group offers immediate and long-term policy solutions. Firstly, the immediate solutions are directed for the attention of BEIS. Given that renewable subsidies are currently being considered for renewal beyond 2020, this is a critical point for BEIS to understand the operational efficiency and impact of these mechanisms over the last sixteen years. Secondly, the longer term solution is envisaged to improve the future wood supply prospects towards and beyond 'peak wood'. The objective of the policy solutions is to limit the demand placed upon current wood supply, which will in turn enhance the sustainability of domestic manufacturing.

Immediate, Demand-Based Options

The Expert Working Group outlines two immediate policy options for consideration, each of which works to limit wood fuel consumption from increasing beyond current levels. These solutions flow from the understanding that wood security is under threat and while this requires longer term strategies in order to resolve, increasing wood fuel demand is exacerbating the immediate challenge facing the wood panel manufacturing industry. The policy choices detailed below should be considered with respect to the future of subsidies while honouring the commitments made to recipients before review.

The Expert Working Group requests that before any policy choice is exercised by the UK Government, BEIS should undertake a robust and comprehensive assessment of the impact that previous policies and subsidy regimes have had on both the energy economy and wider UK economy to date. The Expert Working Group recognises the important role that biomass subsidy played in establishing a diverse renewables sector in the early 2000s but believes that BEIS should reassess all subsidy mechanisms in order to ensure that they are justified for the current climate.

Upon reviewing the evidence baseline, the Expert Working Group recommends BEIS consider the following policy recommendations to be adopted:

1. **Deliver upon the transition away from tariff-based subsidies to grant based subsidies for biomass in limited circumstances** where there is an indigenous requirement for the heat, as outlined within the *Future Support for Low Carbon Heat*[11] policy proposals, and create a competitive, free market for all wood users competing for a finite resource base. Equalisation of the market would be most desirable for wood-panel manufacturers and place all wood users on a level playing field

2. **Any new scheme must be evidence-based and detail a restriction of the total quantity of wood materials to ensure sustainability for all wood users.** This solution has a dual benefit - carbon and economic. By restricting the wood materials which can be consumed as energy, the period that carbon is locked up for can be extended for decades and the economic value generated enhanced.

Longer-Term, Supply Based Option

The Expert Working Group outlines one policy option which, directed towards DEFRA and the Scottish and Welsh Governments, is vital as a long-term correction given that 'peak wood' is coming within the next decade. In the UK, there has been a steady decline in the amount of planting since the 1970s. New planting rates have further fallen from the late 1980s, decreasing by 82% between 1988 and 2010[12].

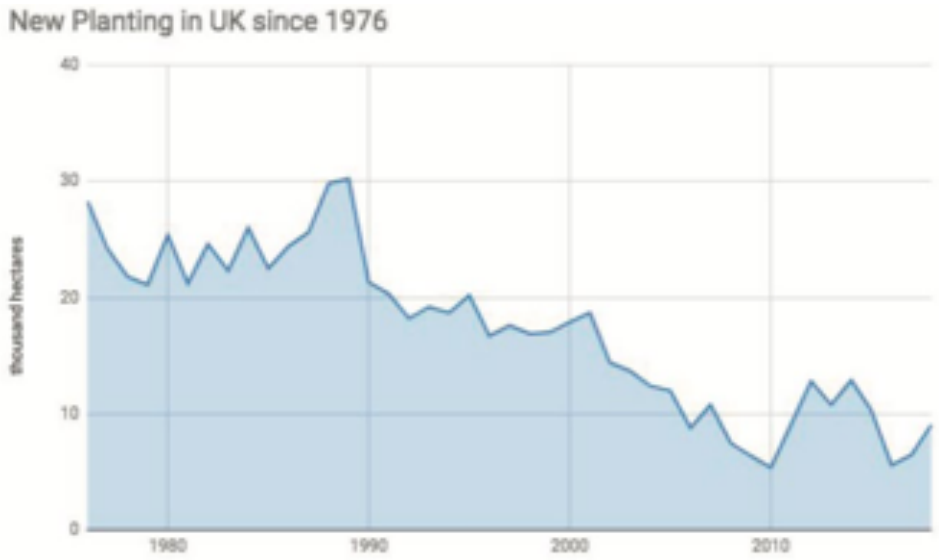
(9) National Audit Office (2018): Department for Business, Energy & Industrial Strategy, Low-carbon heating of homes and businesses and the Renewable Heat Incentive

(10) House of Commons Committee of Public Accounts (2018): Renewable Heat Incentive in Great Britain, Fortieth Report of Session 2017–19

(11) UK Government (2020): Future Support for Low Carbon Heat

(12) John Clegg & Co, Tilhill Forestry (2018): The UK Forest Market Report

Figure 3: New Planting in the UK since 1976' Source: Forestry Statistics 2018



The Expert Working Group recognises the progress that has been made in planting across the UK since 2010. Over 1.5 million trees were planted in 2017-18 in England as part of the UK Government's commitment towards further planting[13]. The UK Government extended their ambitions in the England Trees Action Plan 2021-2024 where they committed to increase tree planting rates to 30,000 hectares per year by the end of this Parliamentary term[14]. This will be supported by the Scottish Government's drive to plant 18,000 hectares in Scotland per year by 2024-25 alone[15]. The Expert Group advances that the UK, Scottish and Welsh Governments embrace these targets and support efforts to achieve the Committee on Climate Change ambition set out to reach 50,000 hectares of tree planting between 2035 and 2050[16]. With this in mind, the Expert Group recommends that the UK, Scottish and Welsh Governments:

1. **Work with WPIF in recognising the historically low annual supply and woodland coverage across the UK, and commit to aligning policy across the UK with a focus upon improving long-term wood security through increased planting.** This commitment should be developed into a sustainable forestry strategy detailing key planting targets for each nation across the coming twenty years.

Conclusion

This policy paper has provided an account of the policy challenge facing wood panel manufacturers dependent upon UK domestic wood supply, which is detailed further within the Baseline Report. With this challenge outlined, the paper then surveyed the current policy position and identified three policy recommendations for DEFRA and BEIS. The immediate and longer-term solutions, pursued in conjunction with each other, will aid wood panel manufacturers in their efforts to co-exist with other wood users in a sustainable way moving forward. If the UK Government wants to see this sector sustain itself and flourish to meet 100% of UK demand, domestic wood security must be improved. This paper has outlined a series of policy options each developed with the objective of shaping the UK Government's direction at the forthcoming energy policy review.

(13) Forest Commission England (2018): Government Supported New Planting of Trees in England, Report for 2018 - 19

(14) UK Government (2021): England Trees Action Plan

(15) Scottish Government (2018): Programme for Government 2018/19: Rural Commitments

(16) Committee on Climate Change (2020): Sector Summary Agriculture and Land Use, Land Use Change and Forestry

Baseline Report

This report outlines the empirical baseline upon which policy recommendations have been developed by the Expert Working Group for presentation within the main policy report. This paper seeks to provide clarity over wood security and demand in the UK, addressing a number of key questions across two broad categories. Attention is dedicated towards the current evidence–based on domestic wood security. Secondly, it provides an assessment of wood fuel evidence available at present and where omissions in the publicly available data are.

How is wood supply measured and reported?

Supply is measured, and subsequently reported, by the Forestry Commission on an annual basis, with their overarching research methodology and analysis compliant with National Statistics standards and requirements. The Forestry Commission publish UK Wood Production and Trade provisional figures in May every year, followed by a final, robust publication in September. The Forestry Commission (2017)[13] state that UK generated supply can be accurately measured and monitored by assessing green tonnes of UK grown round wood, and for the purposes of the APPG, these deliveries can be approximately traced to the wood panel industry manufacturers. All statistics related to the delivery of UK round wood and other sources to wood panel manufacturers are provided by the Wood Panel Industries Federation (WPIF) for the purposes of the Commission's annual reports. Beyond UK supply, import statistics are provided to the Forestry Commission by HM Revenue and Customs who collaborate trade declarations and Intrastat reporting for intra-EU trade and present a succinct version.

Wood Security

What is the quantified state of the wood supply basket within the UK? How has this supply changed over the last five years? What is the direct/ indirect delivery flow to wood-based panel manufacturers on an annual basis?

The security of domestic wood supply (and in particular softwood) is essential to manufacturers within the wood panel industry and a baseline understanding of this supply basket needs to be agreed upon. The wood panel industry is reliant on UK softwood delivery. According to the Forestry Commission (2018), the delivery of UK grown roundwood provides a useful benchmark for assessing direct supply (and reciprocated demand) on an annual basis and tracking changes across time [(15)]. Change in roundwood (softwood) being delivered directly is outlined in Table 3.

Table 3: Direct UK-Grown Roundwood (Softwood) Delivery Basket (Thousand Green Tonnes)				
Year	Thousand Green Tonnes of Roundwood (Softwood) to Wood Processors	% Change from Previous Year	Thousand Green Tonnes of Roundwood (Softwood) Directly to Wood Panel Manufacturers	% Change from Previous Year
2018 [17]	10,741	(+2.5%) from 2017	1,210	(+12.4%) from 2017
2017 [18]	10,478	(+0.5%) from 2016	1,059	(-15.1%) from 2016
2016 [19]	10,419	(+1.5%) from 2015	1,248	(-6.4%) from 2015
2015 [20]	10,265	(-5.8%) from 2014	1,334	(+3.9%) from 2014
2014 [21]	10,903	(+3.3%) from 2013	1,283	(+1.6%) from 2013
2013 [22]	10,547	(+7.2%) from 2012	1,263	(+0.5%) from 2012

Nevertheless, the Forestry Commission (2018)'s direct delivery figures provide only a surface understanding of the supply to wood-based panel manufacturers, as this industry relies upon other supply sources beyond UK–grown roundwood being supplied directly as detailed in Table 4.

Table 4: Direct and Indirect Supply to Wood Panel Manufacturers					
Year	UK Grown Green Tonnes of Roundwood (Direct to Wood Panel Manufacturers)	Green Tonnes of Sawmill Products (Indirect to Wood Panel Manufacturers)	Tonnes of Recycled Wood Fibre	Green Tonnes of Imports (Hard and Soft Wood)	Wood based panel Production Mm^3
2019 [23]	1.3 million	1.5 million	0.9 million	12,100	3.29
2018 [24]	1.2 million	1.5 million	0.9 million	10,400	3.16
2017 [25]	1.1 million	1.7 million	0.9 million	22,000	3.17
2016 [26]	1.2 million	1.7 million	0.8 million	39,000	3.03
2015 [27]	1.3 million	1.7 million	0.9 million	17,000	3.08
2014 [28]	1.3 million	1.8 million	0.8 million	0	3.06
2013 [29]	1.3 million	1.7 million	0.9 million	0	3.03

[17] Forest Research (2018): 2018 Provisional Figures

[18] Forest Research (2020): UK Wood Production and Trade: Provisional Figures

[19] Forest Research (2017): Forestry Statistics 2017

[20] Forest Research (2016): Forestry Statistics 2016

[21] Forest Research (2020): Forestry Statistics and Forestry Facts & Figures

[22] Ibid

Given the flow of UK–grown round wood delivery indirectly to wood–panel based manufacturers, the supply of UK-grown green tonnes of roundwood, both directly to manufacturers and indirectly via sawmills, can be approximated and tracked over a five year period.

In 2017, of the 11 million green tonnes of roundwood (softwood and hardwood) being delivered to the UK market, approximately 25% was consumed by wood panel manufacturers. This is 1% less than in 2016, whereby approximately 26% of UK-grown green tonnes of roundwood (softwood and hardwood) were consumed by the panel industry; 3% less than in 2015 where approximately 28% of UK-grown green tonnes of roundwood (softwood and hardwood) were consumed by panel manufacturers; 1% less than in 2014 where approximately 26% of UK–grown green tonnes of roundwood (softwood and hardwood) were consumed by manufacturers; 2% less than in 2013 where approximately 27% of UK–grown green tonnes of roundwood (softwood and hardwood) were consumed by the wood panel industry. Overall, despite slight fluctuations on an annual basis between 2013 and 2017, the state of the domestic supply basket has remained fairly consistent (between 10.8 and 11.4 million), as has the supply availability to wood panel manufacturers.

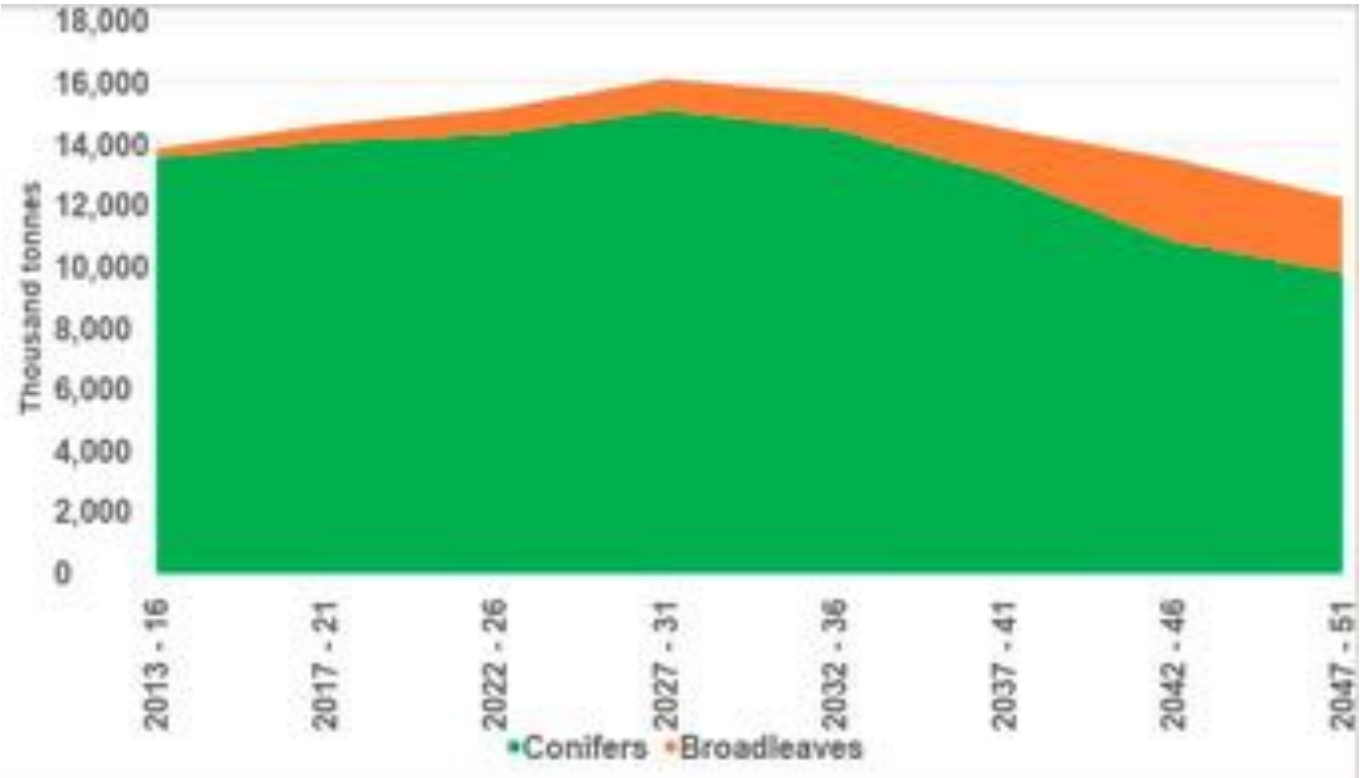
Another input material that is important for the wood panel industry is reclaimed waste wood. Although the data available on waste wood is less than robust, there is an assumed supply of 5 million tonnes per annum. Table 5 below illustrates demand over two years and a forecast of demand in 2021-2022 when demand could outstrip domestic supply.

Table 5: UK Waste Wood Market 2018 and 2019 with WPIF Forecast for 2021-2022

Sector	2018* (000 Tonnes)	2019* (000 Tonnes)	Forecast 2021- 22 (000s Tonnes)
Wood Based Panels	877	984	984
Large Scale Biomass	2100	2390	3371°
Animal Bedding, Surfaces	391	320	391
Export	313	190	313
Small Scale Biomass	72	100	100
Alternative Fuels/Reuse ¥	200	200	00
Total Demand	3953	4184	5559
Long / Short	1047	816	-559

With the supply basket at present, from domestic and imports, clarified, forecasting the future availability of virgin softwood supply is crucial. The softwood forecast is decreasing as a consequence of the impending imbalance between supply and demand. As illustrated in Figure 3, the UK will reach 'peak wood' availability in the early 2030s — forecasted to reach 18.4 million m^3 overbark standing by 2031[25]. It will subsequently face a sustained drop in the potential wood availability from 17.6 million m^3 overbark standing from 2032–2036 to 15.8 million m^3 overbark standing from 2037-2041[26]. This decline is particularly marked for coniferous roundwood, which supplies much of the wood processing sector in the UK.

Figure 4: Forecast Potential Total Annual Average Availability of Virgin Roundwood 2013 - 2051 Showing Proportions of Forecast Coniferous and Broadleaved Roundwood Availability [28]



As the supply/demand headroom restricts, this will have implications for business confidence and in turn continued investment within this industry. Already wood-panel manufacturers are being pressed to import raw materials predominantly from the Baltic States although approaches to take material have been received from Portugal and Brazil. Importing materials is particularly problematic for the wood panel industry given that it adds approximately 40% to the overall cost due to shipping and 50% of the raw material being wet and unusable. This reduces the UK manufactured product competitiveness and boosts opportunity for overseas markets to import the final product. With manufacturers having to rely upon import materials to prevent operations coming to a halt, the industry is concerned about the long-term implications of a growing import on competitiveness and manufacturing sustainability.

With the depletion of wood supply a prominent concern, one solution is to bolster forestry planting across the UK. This is appropriate given that the UK's forestry coverage is lower the EU average (12% of land). The time–scales involved on maturing trees are major considerations for the UK wood processing sector. Given that existing forest areas are becoming notably less productive on a hectorage basis because first generation replanting has to be more diverse, the industry requires a clear, coordinated UK strategy. Such a strategy will provide long term certainty for UK forest industries, in terms of planting levels and to achieve the maximum public benefits for wood fibre use in Britain over the long term. These benefits are extensive, and include: community development, recreational access and carbon and wind mitigation.

Wood Fuel

What percentage of the wood basket is consumed by wood fuel? How do we measure and report usage?

Of the annual UK grown green tonnes of roundwood delivered to the market, the percentage claimed for domestic and non-domestic fuel purposes is illustrated in Table 6. The Forestry Commission (2017) receive data at requested intervals on the quantity of UK–grown supply being used for woodfuel purposes from annual sawmill surveys of round fencing manufacturers and woodfuel suppliers, and the estimates from the Expert Group on Timber and Trade[28]. The data does not provide a specific breakdown on the quantity of wood being used as fuel at each stage of the wood use hierarchy.

Table 6: UK Roundwood Delivered to Wood Fuel [30]

Year	Softwood deliveries (000 green t)	Hardwood Deliveries (000 green t)	Total (000 green t)	% change from previous year	% of all roundwood deliveries (total deliveries 000 green t)
2018	1900	700	2600	+15.4%	22.48% (11,565)
2017	1600	600	2200	+12.8%	19.61% (11,216)
2016	1550	400	1950	-1.5%	17.70% (11,016)
2015	1600	400	2000	+5.2%	18.46% (10,831)
2014	1500	400	1900	+15.1%	16.60% (11,440)

(23) WPIF Wood Consumption Data Submission to Forest Research (2019)

(24) WPIF Wood Consumption Data Submission to Forest Research (2089)

(25) Forest Research (2018): 2018 Provisional Figures

(26) Forest Research (2017): Forestry Statistics 2017

(27) Forest Research (2016): Forestry Statistics 2016

(28) Forest Research (2020): Forestry Statistics and Forestry Facts & Figures

(29) Ibid

(30) John Clegg Consulting (2016): Wood Fibre Availability & Demand in Britain 2013 – 2035

The source of woodfuel has been recorded by the Forestry Commission as illustrated in Table 7, with UK roundwood the principal input for woodfuel[30].

Table 7: UK Sourced Inputs for Wood Fuel, 2013–2018 (Thousand Green Tonnes)

Year/ Source	UK Roundwood	Sawmill Products	Recycled Wood	Total
2013	1,650	302	830	2,782
2014	1,900	439	1,340	3,679
2015	2,000	534	1,450	3,984
2016	1,950	624	1,550	4,124
2017	2,200	705	1,660	4,565

Moving beyond the transfer of supply for wood fuel purposes, the Department for Business, Energy and Industrial Strategy (BEIS) publish a comprehensive source on wood fuel usage in the annual Digest of United Kingdom Energy Statistics. BEIS reported the quantity of wood as a fuel consumption in the generation of heat over the period from 2012–2017 as illustrated in Table 8 (p.186)[31].

Table 8: Quantity of Wood Fuel Used in the Generation of Renewable Heat (Thousand Tonnes of Oil Equivalent)

Bioenergy Source/ Year	2012	2013	2014	2015	2016	2017
Wood	1,518.5	1,787.7	1,698.1	1,908.5	2,054.0	2,039.4
Waste Wood	309.1	315.4	319.1	319.0	319.0	319.1
Total	1,827.6	2,103.1	2,017.2	2,227.5	2,373.0	2,358.5

BEIS reported that for the 2017 year, domestic wood combustion was responsible for 40% of heat generation, a source unmatched by any other renewable used for heat purposes (p.168)[32]. This percentage was confirmed by Ofgem who reported that wood combustion accounted for 58% of renewable heating fuel (p.83)[33]. The Digest of United Kingdom Energy Statistics confirms earlier findings by BEIS, who conducted an extensive survey into UK domestic fuel use and in particular domestic wood combustion and ultimately concluded that government officials have underestimated wood use by three times[33]. They did, however, highlight the complications associated with identifying domestic wood fuel use due to the fact that many sources are informal (p.176). With regards to non–domestic fuel use, from the introduction of the RHI scheme in 2011 until 2016, 9,365 GWh of heat has been

produced by biomass, of which is predominantly underpinned by wood. This equates to 1.5 million oven dried tonnes of wood pellets.

Beyond BEIS' own reporting, Ofgem reported that the total consumption of biomass by dedicated biomass facilities, excluding imports, was 5.73 million tonnes over the 2016-2017 period, which was an increase of 0.37 million tonnes since the 2015-2016 period. Within the 2016-2017 period, 37 dedicated biomass plants existed with an installed capacity of 2.5 MW and processed 6.9% more biomass than the previous year. Virgin wood was the predominant source of these biomass plants (2.28 million tonnes) with recycled wood the second largest (1.63 million tonnes) (p.5)[35]. The total demand by RO supported facilities is estimated to be: (1) virgin wood (2.3 million tonnes in 2016/2017, and projected to increase to 2.77 million tonnes); (2) recycled wood (1.6 million tonnes in 2016/2017) (p.7)[36]. The total demand by RHI supported facilities is estimated to be: (1) virgin wood (1 million tonnes in 2016/2017, and projected to increase to 1.22 million tonnes); (2) recycled wood (0.06 million tonnes in 2016/2017). Despite these indications provided by the UK Dedicated Biomass Statistics 2017, the data is restricted to non-domestic plants. Furthermore, Ofgem did confirm that biomass direct combustion stations in receipt of RO, under 1 MW, burnt 41,149 tonnes of solid biomass. The majority of this was composed of woody-biomass, with waste wood contributing 74.1% towards this total, wood products contributing 12.9% and wood residues contributing 10.7% (p.30–31)[37]. Operations in receipt of RO, greater than 1MW but less than 25MW, consumed 1.8 million tonnes of woody biomass. Of this, 34.4% was waste wood, 18.8% wood residue and 15.8% wood product (p.31).

Renewable Heat Incentive

Tables 9 and 10 detail the baseline data for which Figures 1 and 2 (p.19-20) are based:

Table 9: Renewable Heat Incentive Annual Payments (£ million)

	Domestic Biomass	All Domestic Schemes*	All Non-Domestic Schemes*	All Domestic & Non-Domestic Schemes*
2014-15	9	16.3	101.1	117.4
2015-16	42.40	73.9	255.5	329.4
2016-17	56.60	106.4	368.7	475.1
2017-18	90.00	174.8	468.4	643.2
2018-19	106.00	221.2	596.3	817.4
2019-20	132.6	283.3	684	967.3

* Air source heat pump, ground source heat pump, biomass, solar thermal

Table 10: Renewable Heat Incentive Cumulative Payments (£ million)				
	Domestic Biomass	All Domestic Schemes*	All Non-Domestic Schemes*	All Domestic & Non-Domestic Schemes*
2014-15	9	16.3	101.1	117.4
2015-16	51.40	90.2	356.6	446.8
2016-17	108.00	196.6	725.3	921.9
2017-18	198.00	371.4	1193.7	1565.1
2018-19	304.00	592.5	1790	2382.5
2019-20	436.60	875.8	2474	3349.8

* Air source heat pump, ground source heat pump, biomass, solar thermal

Note: Domestic payments to Jan 2020

Sources: [31]RHI monthly deployment data: March 2020 (Quarterly edition), Department for BEIS; [32] Domestic RHI -public reports and data, Ofgem; [33]Non-domestic RHI -public reports and data, Ofgem.

Concluding Remarks

This paper has provided the empirical baseline upon which the Expert Working Group were able to better understand the wood security situation within the UK market and make policy recommendations, as outlined in the main policy report. After exploring a range of possible sources, the use of the Forestry Commission's delivery statistics, that is the delivery of UK–grown green tonnes of roundwood, combined with UK imports statistics, provides the most comprehensive basis upon which supply can be discussed. Most crucially, it relies upon a range of industry based reportings and complies with the National Statistics' standards. The paper also gives an overview of the proportion of the overall UK–grown green tonnes of roundwood supply which is delivered for wood fuel use, and while it has increased up to 25% in 2016, it has subsequently fallen back towards 2013 levels at 18%. Beyond the Forestry Commission's report, the Department for BEIS DIGEST reports and survey provide baseline indications of wood supply consumption for fuel purposes in the UK. However, the data available at present does not identify the amount of wood that is consumed by technologies under each of the subsidy regimes over a five year period and this requires clarification from Ofgem and BEIS.

(31) UK Government (2020): RHI Monthly Deployment Data: March 2020 (Quarterly Edition)

(32) Ofgem: Public Reports and Data: Domestic RHI

(33) Ofgem: Public Reports and Data

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