

***Forest-based biomass resource
availability and supply 2025 – 2040***

A presentation to the SEAI biomass event

17 September 2025

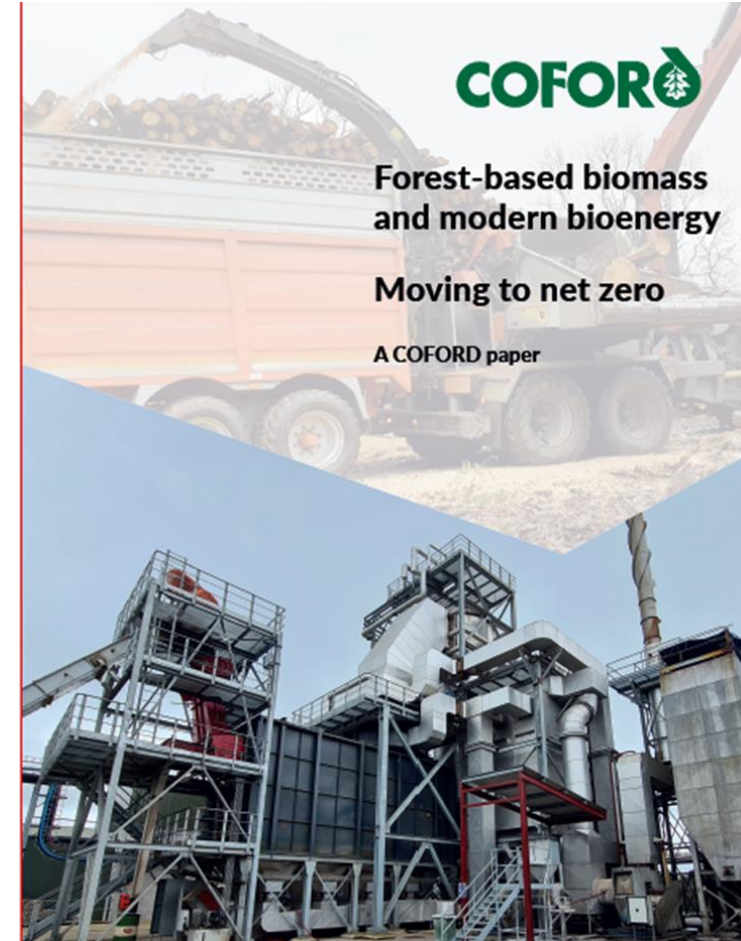
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Context - COFORD *Forest-based bioenergy (FBB) and modern bioenergy*

www.coford.ie

- modern bioenergy defined as efficient and low particulate emission biomass combustion ... based on sustainable supply chains, leading to quantifiable reductions in carbon dioxide emissions compared to fossil sources ...
- shows the necessity to mobilise solid biomass resources to address renewable energy and achieve climate change mitigation targets at national level
- sets out the solid biomass resource potential and in particular forest-based biomass, and its role in renewable heat and decarbonising the economy, and
- includes recommendations around strategy and policies and measures

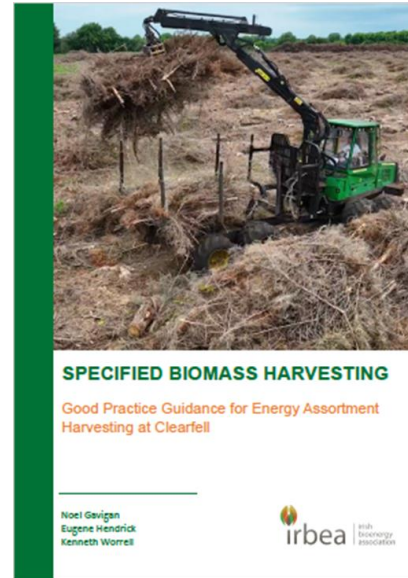


Presentation outline

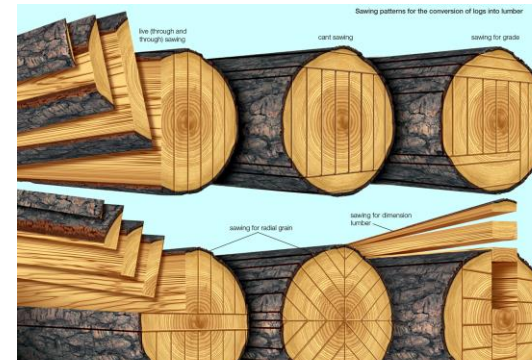
- 1. Types/assortments of FBB**
- 2. How much FBB is out there**
- 3. How is the amount determined**
- 4. How accurate are forecasts**
- 5. Is FBB environmentally sustainable (site productivity, GHG savings)**
- 6. Quality assurance**
- 7. Supply chains**
- 8. Further information**

1. FBB - 3 main supply streams

- early thinnings – small diameter logs, not sawlog sized
- clearfelling residues, carbon harvested, nutrients left on site



- sawmilling residues – chips and sawdust additional to kiln drying and board mill requirements



2. FBB supply 2021-2040

Base data from the All Ireland Roundwood Production Forecast 2021-2040, at a national and county level:

<http://www.coford.ie/media/coford/content/CofordAllIrelandRoundwoodBookREVISED150721.pdf>

with a bespoke forecast tool at:

<https://publicapps.agriculture.gov.ie/gispublic/rpfms/pages/workspace/public.jsp>

and a 2024 sensitivity analysis of the forest-based biomass forecast, covers 3 supply sources:

<http://www.coford.ie/media/coford/content/publications/COFORDsensitivityanalysiswoodfibre240425.pdf>

2 & 3 & 4 Forest-based biomass supply in a nutshell and how the amounts are determined

- Current use ca 1.5 M green t (10 PJ (SEAI))
- 2035 potential ca 2.5 M green t (16 PJ)
- Material from existing forests – no assumption of future afforestation – know where the resource is and when it will come on stream
- Excludes material for board-mill supply
- Real world supply assumptions – realisable forecast, bottom up from each forest parcel, and aggregated to county and national levels
- Conservative approach – excludes smaller sized forest parcels and areas with difficult access etc.
- Updated on 5-year cycle – based on DAFM and Coillte data

Table 12. Summary of Biomass and Energy Potential

Year	Green Tonnes ('000)						Total	Energy (PJ) Table 4+Table 11
	Roundwood 7-13cm	Downgrade+Wood Residues	SBH	Harvest 50% SBH (60t/ha)	20% Thinning Increase	20% Whole Tree Thinning		
2023	198	1,003	112	76	51	77	1,517	9.6
2024	175	1,018	86	77	55	82	1,493	9.5
2025	207	1,047	95	77	54	82	1,562	9.9
2026	244	1,035	145	80	57	86	1,647	10.4
2027	246	1,122	164	80	48	72	1,731	11.0
2028	213	1,125	153	83	39	59	1,673	10.6
2029	255	1,235	145	77	35	53	1,800	11.4
2030	317	1,404	146	63	31	46	2,007	12.7
2031	355	1,555	91	93	32	47	2,173	14.0
2032	441	1,666	98	88	31	46	2,369	15.5
2033	346	1,669	86	82	26	38	2,248	14.5
2034	443	1,631	96	98	27	40	2,335	15.1
2035	378	1,897	96	89	27	41	2,528	16.3
2036	244	1,765	55	126	29	44	2,263	14.7
2037	221	1,796	47	130	32	48	2,274	14.7
2038	177	1,768	32	63	27	41	2,128	13.7
2039	160	1,794	35	75	31	46	2,142	13.8
2040	151	1,790	45	69	37	55	2,147	13.9
Totals	4,772	28,389	1,727	1,524	689	1,003	36,084	231.4

Potential to increase FBB supply sustainably increase intensity and extent of thinning

And supplement through short rotation coppice

- Annual 2,100 ha short rotation coppice programme to 2040
- Combined with FBB could deliver c 20 PJ by 2040
- Say 3-4% of total energy supply
- Modest overall contribution but important at the margin when considering GHG reduction targets and difficulties in decarbonising all levels of heating

Table 3. Forecasted (forest-based biomass from Table 2) and potential (willow coppice) woody biomass availability 2024-2040, (willow coppice data are from the SEAI, 2022⁽¹⁰⁾).

Year	Forest-based biomass	Willow coppice	Total
	PJ		
2024	9.5	0.1	9.5
2025	9.9	0.1	10.0
2026	10.4	0.1	10.5
2027	11.0	0.2	11.2
2028	10.6	0.3	10.9
2029	11.4	0.4	11.9
2030	12.7	0.6	13.3
2031	14.0	0.8	14.9
2032	15.5	1.1	16.6
2033	14.5	1.5	16.0
2034	15.1	2.0	17.0
2035	16.3	2.5	18.8
2036	14.7	3.0	17.8
2037	14.7	3.7	18.3
2038	13.7	4.4	18.1
2039	13.8	5.1	18.9
2040	13.9	5.9	19.8

5. FBB supply – origin and sustainability

Over 90% of woodfuel used in Ireland arises on the island (SEAI)

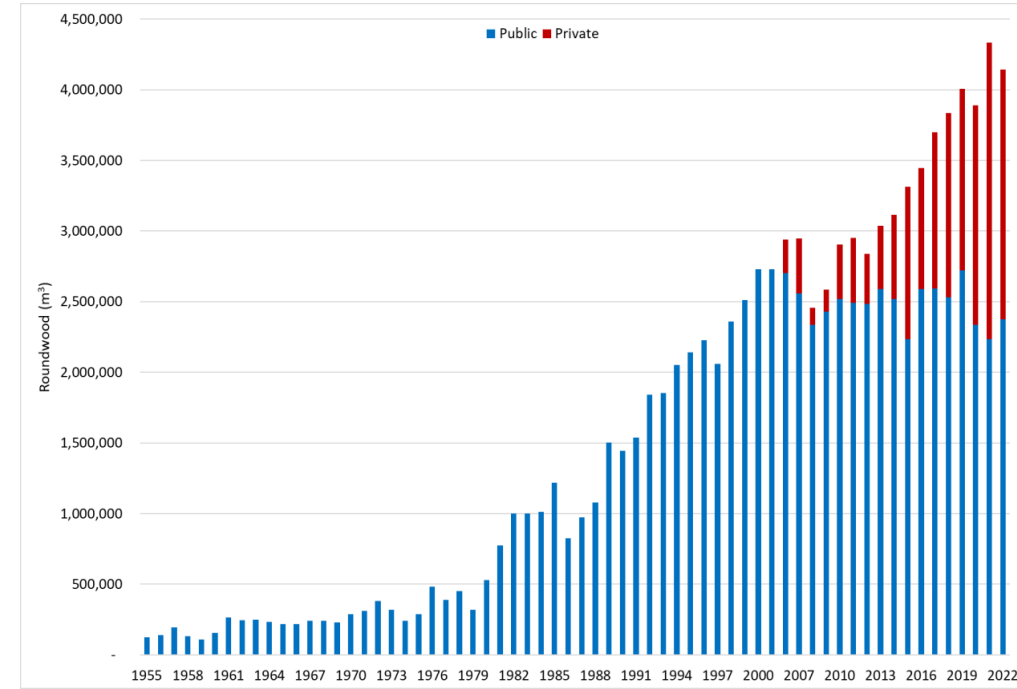
All fellings in RoI are licensed by DAFM and conform to national and EU Renewable Energy Directive sustainability requirements and forests are sustainably managed

Harvest residues are covered under the IrBEA *Specified Biomass Harvest* protocol, designed to produce quality woodfuel, maintain site productivity and enable forest regeneration

Annual harvest 2017-2022 averaged c 4.0 million cubic metres, annual increment averaged 10.0 million cubic metres, so about 41% of increment harvested (source National Forest Inventory - main findings 2022 DAFM)

A key indicator of sustainable forest management is to maintain harvest below increment over extended periods

Upstream emissions from FBB harvest are typically no more than 3-5% of final energy delivery



Roundwood harvest 1955-2022 (source Forest Statistics Ireland, 2024 DAFM)

5. GHG savings and fossil counterfactual (*Wood as a Fuel 202*), where wood combustion GHG emissions are accounted

Initial reduction in carbon stock but recapture and regeneration over time through forest management with displacement of fossil CO₂ emissions results in net reduction of CO₂ atmospheric load

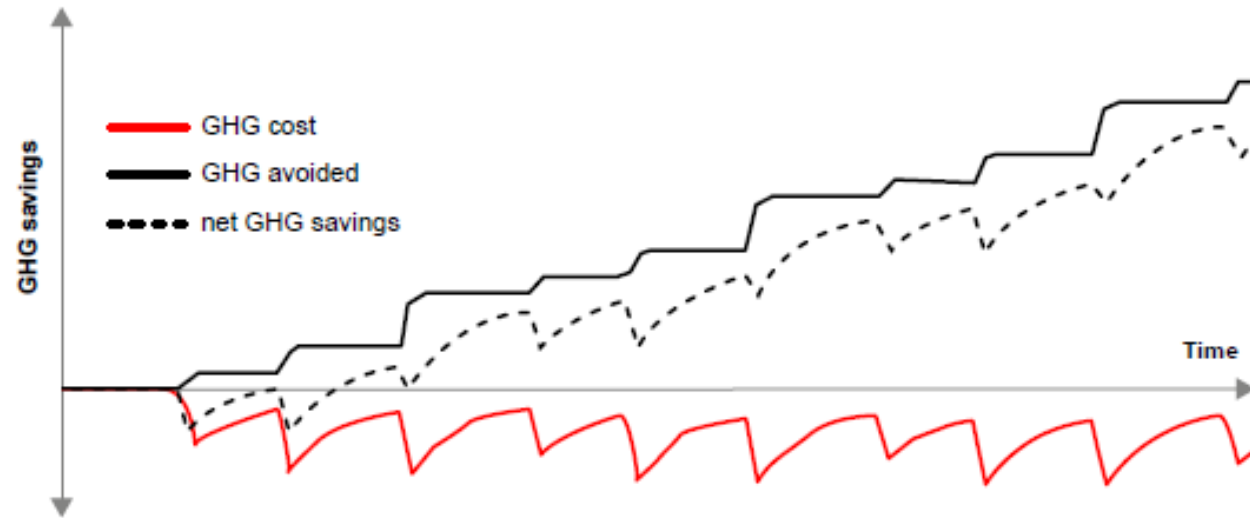


Figure 27: *Accumulating greenhouse gas emissions savings under successive bioenergy (and other harvest) from an individual stand as biomass is removed from the forest to substitute for fossil fuel.*

FBB is accounted as a zero emission in combustion as emission is already accounted in the forest sector part of the GHG inventory

6. Quality assurance

The Wood Fuel Quality Assurance (WFQA) scheme is an all island scheme established to increase consumer confidence in wood fuel products sold in Ireland

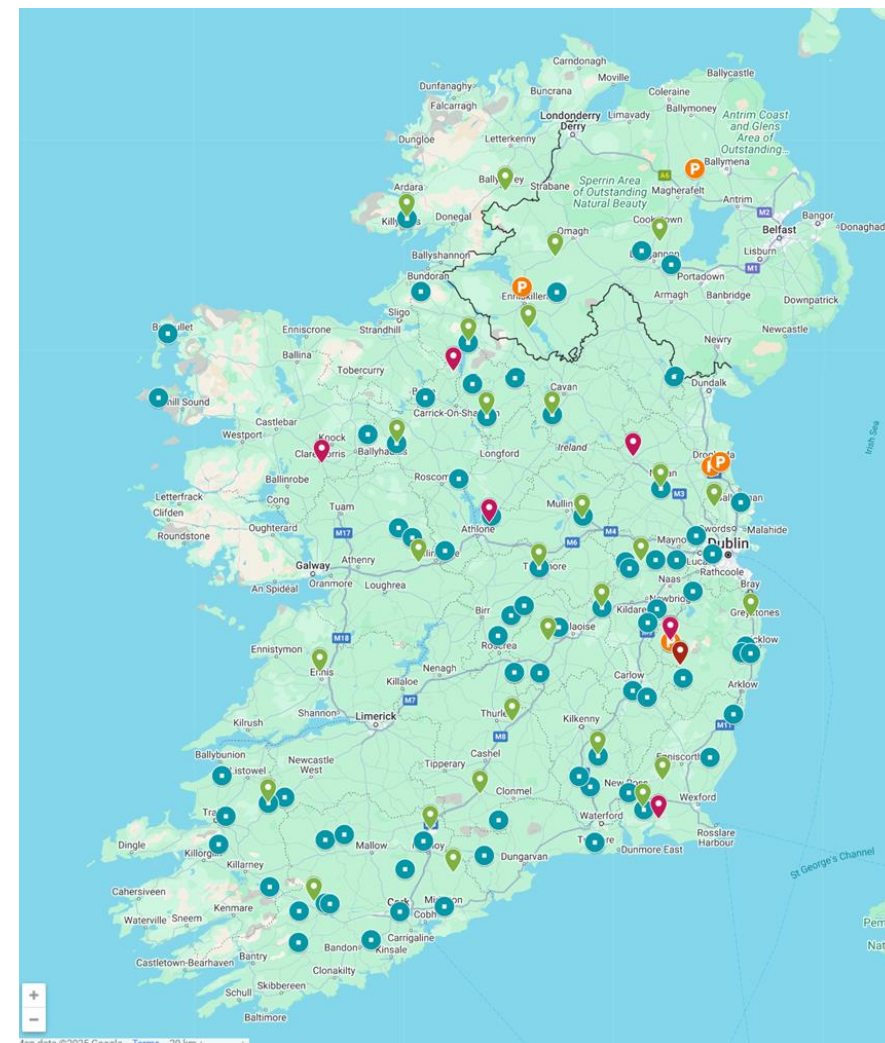
Certifies woodfuel quality to *I.S. EN ISO 17225 Solid biofuels — Fuel specifications and classes* and covers woodchip, pellets, [briquettes and firewood]

Scheme is managed by IrBEA guided by scheme rules and a 5-year strategy - over 15 years in existence

Membership is now 120+, with national coverage, supplying certified woodchip, pellets, briquettes and firewood at all scales from industrial to residential

IrBEA is the national supporting body for SURE (Sustainable Resources Verification Scheme) the contact point for information on SURE certification under the Renewable Energy Directive (RED) III

wfqa.org

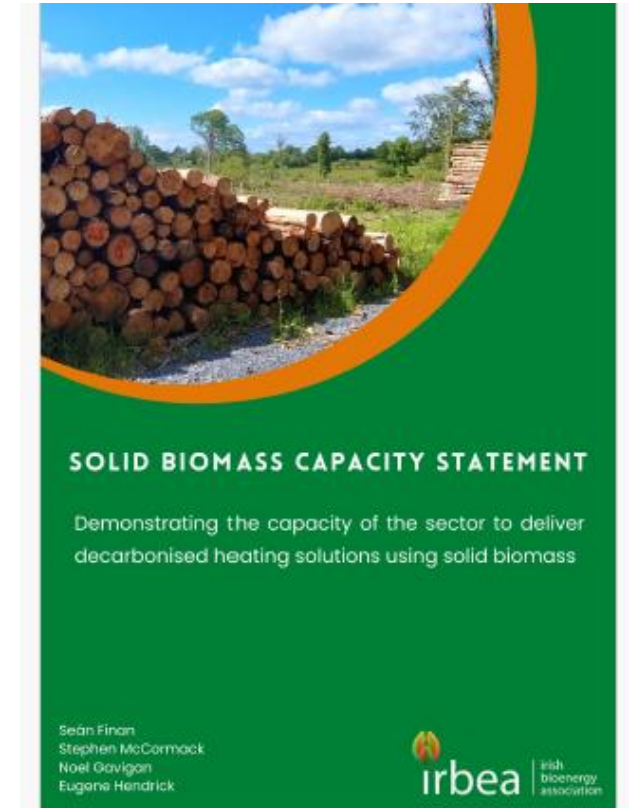


7. FBB capacity and supply chains – IrBEA solid biomass capacity statement

<https://irbea.org/sbc-statement/>

Provides the evidence that

- Supply chain is mature and well developed around harvesting companies and servicing to existing plants and uses
- [Resource is there, increasing, and is fully sustainable (see previous slides)]
- Plant specification, installation and maintenance capacity is well established (IrBEA registers)
- Supply comes from sustainably managed forests
- Contains case studies across all scales



Thank you for your attention

Further information available from the Irish Bioenergy Association and eugene@smartearth.ie