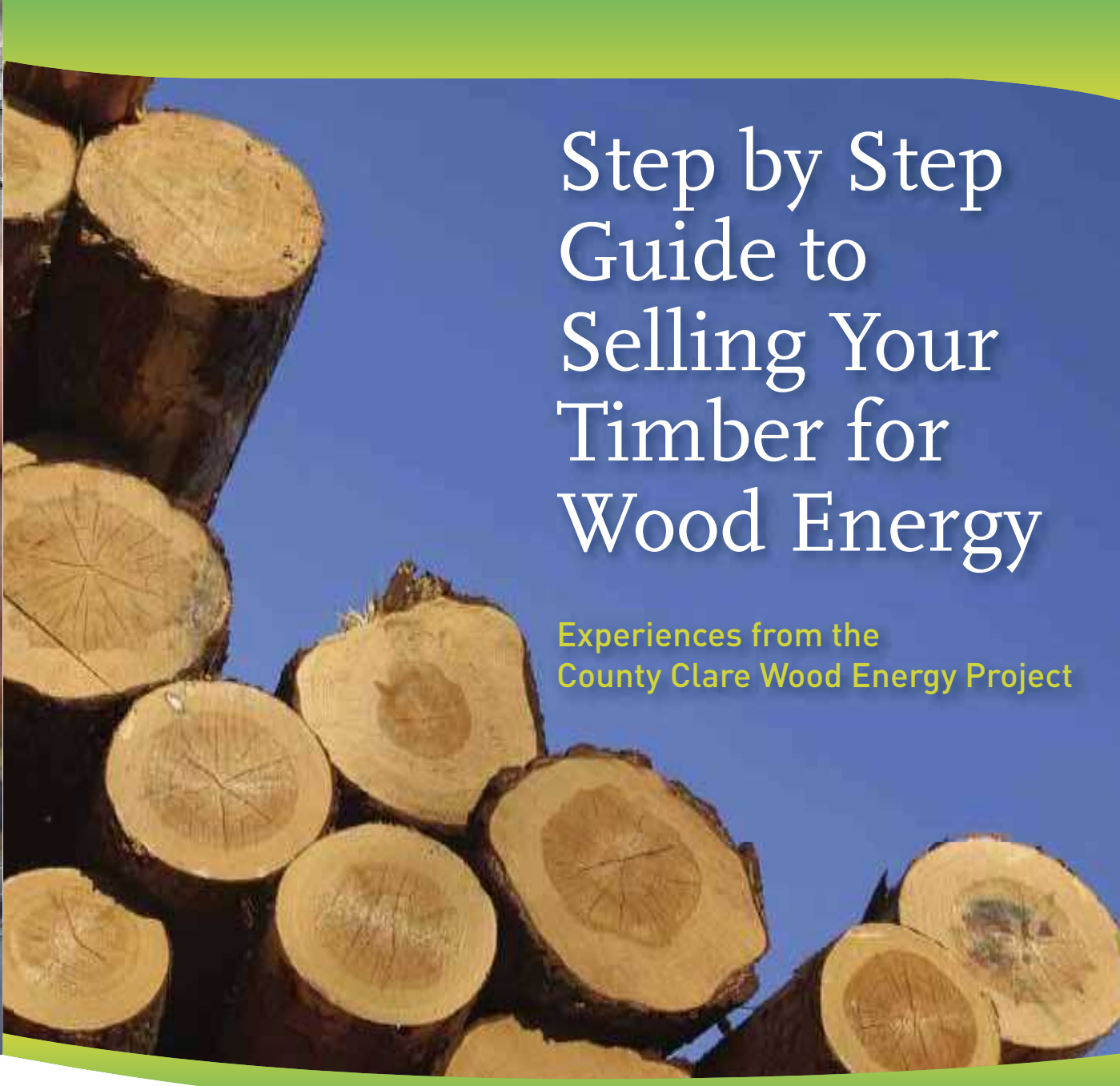




Step by Step Guide to Selling Your Timber for Wood Energy

Experiences from the
County Clare Wood Energy Project



County Clare Wood Energy Project

Produced by Clare Local Development Company and Teagasc Forestry Development Unit

Foreword

This guide was first conceived as a short and simple aid for forest owners but all the experience gained by the County Clare Wood Energy Project (CCWEP) in recent years led us to this more extensive but hopefully useful publication.

This Step by Step guide gives forest owners practical information on selling their thinnings into the wood energy market. The good news is that, unlike most other markets which farmers produce for, the wood energy market is local. This means fewer middlemen, lower transport costs and more local jobs created.

CCWEP's role is to provide advice and information to forest owners on how to access the wood energy market, and to help make connections with potential buyers, which are profitable for both. Forest owners still need to ensure that they get professional advice on assessing their forest inventory and managing their plantation to full maturity, where the financial rewards are greatest.

CCWEP can guide forest owners through roading, harvesting and timber sales on a group basis through local forest owner clusters, where they can avail of mentoring support on accessing the wood energy market from CCWEP and Teagasc.

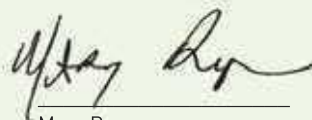
Developing a new commercial market is never a simple matter but in Co. Clare we have all the resources we need to make this a commercially viable venture for forest owners and heat users alike.

Sincere thanks are due to Gloria Callinan for all her hard work and diligence in compiling this publication. The contributions of Paddy Donovan and Áine O'Callaghan are also greatly appreciated.

We are hopeful that this guide will encourage growers in Co. Clare to look more closely at the wood energy market and that the lessons learned by CCWEP will give growers the practical support and information they need to benefit from this new opportunity.



Dóirín Graham
CEO
Clare Local Development Company



Mary Ryan
Forestry Specialist
Teagasc



contents

Setting the Scene	2
CCWEP - Background	3
CCWEP - The Project	4
New Timber Markets in Co. Clare	5
Potential	9
Heat Entrepreneurs	10
Thinning Clusters	11
THE STEPS	
Step 1: Inspection Paths	13
Step 2: Inventory	14
Step 3: Forest Roads	16
Step 4: Felling Licences	17
Step 5: Thinning Clusters	18
Step 6: Thinning & Harvesting	22
Step 7: Timber Marketing & Sales	29
Step 8: Drying And Stacking Timber For Wood Energy	36
Where to from here for Clare growers?	37

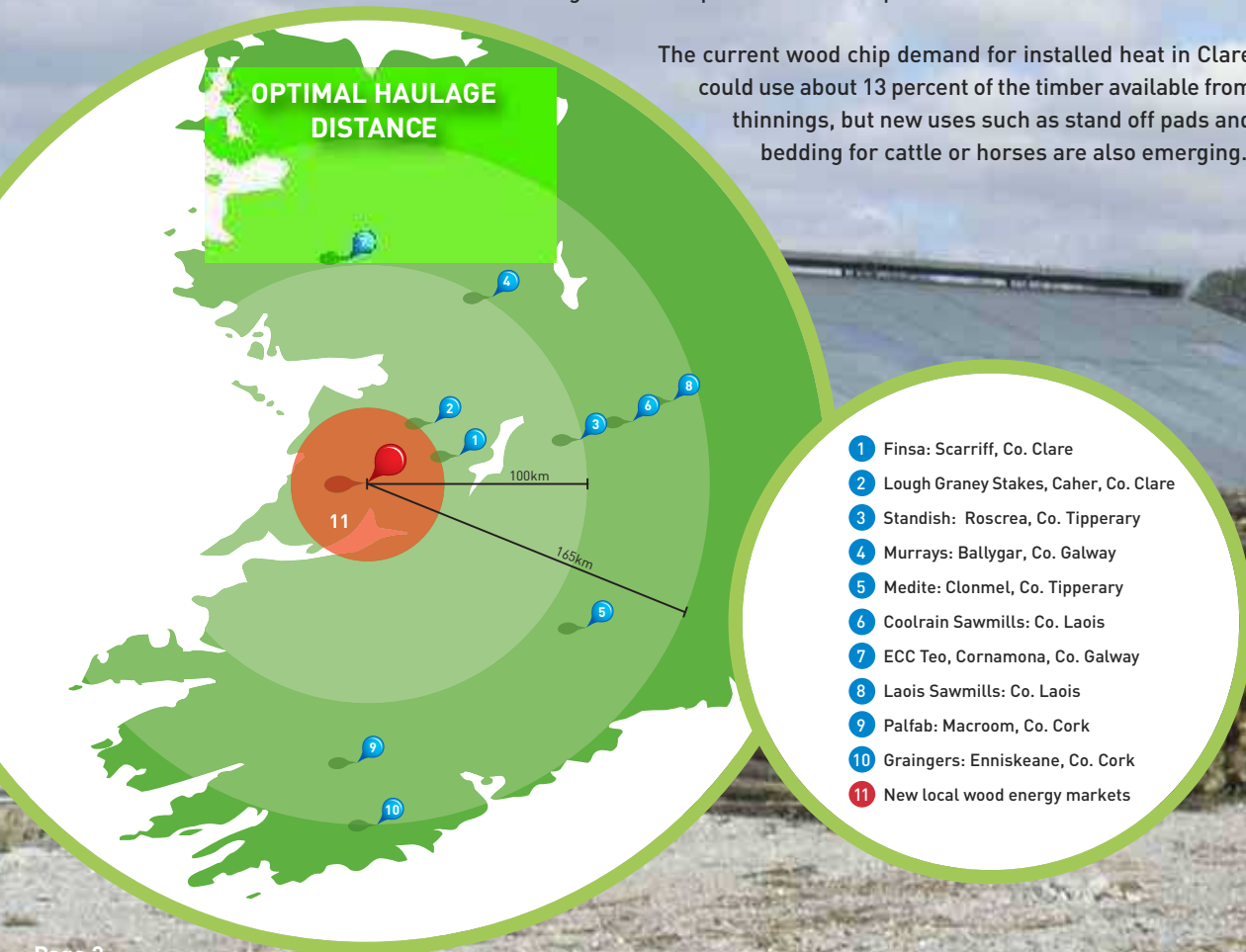
Setting the Scene

Almost 16% or over 50,500ha of County Clare is under forests, making Clare the third most afforested county in the country, after Wicklow and Leitrim. Of this 49,000ha, 53% is owned by farmers.

As in most other counties, planting rates were highest around 1990, 1995 and 2001. Around fifteen to twenty years after planting, many of these plantations are ready for thinning.

There are a number of markets for timber from thinnings. Apart from the larger timber processors, there are many other smaller saw millers, who consume quantities of small diameter logs. However, as can be seen from the map below, most of these are outside the 30 mile (50km) limit which makes haulage of small diameter timber uneconomic. The only major local processor is Finsa Forest Products, in Scariff, which produces a range of timber products from chipboard to MDF.

The current wood chip demand for installed heat in Clare could use about 13 percent of the timber available from thinnings, but new uses such as stand off pads and bedding for cattle or horses are also emerging.



Co. Clare Wood Energy Project – where did it come from?

In 2004, Rural Resource Development (RRD) published '*A Study of the County Clare Farm Forestry Market*'. The project was undertaken as a joint effort between RRD and Teagasc and other local farm and forest interests in Clare.

The need for the study had been growing as farmer growers voiced their concern about the lack of a first thinnings market; at the same time, the state sector also became concerned at the prospect of farmers not thinning their forest crop. The likely impact of not thinning on the quality and value of the mature forest resource was highlighted as an immediate risk affecting future viability and growth of the farm forestry sector.

The report forecasted that forest owner groups, facilitated by professional foresters, could evolve to supply new and existing timber markets. This led to the establishment of the County Clare Wood Energy Project (CCWEP).



CCWEP - the Project



In 2005, with funding from the Forest Service, RRD (now the Clare Local Development Company) and Teagasc established the Co. Clare Wood Energy Project (CCWEP). Its purpose was to support the establishment of a commercially viable wood energy sector in the county, based on wood chip from local farm forest thinnings. This project aimed to develop the demand for wood energy and establish a local wood chip supply chain from farm forests.

Partners include local forest owners, the Irish Forestry Contractors Association, Forest Service of the Department of Agriculture Fisheries & Food, Limerick Institute of Technology, the Limerick Clare Energy Agency, Sustainable Energy Ireland, Renewable Energy Skills, Shannon Development, Coillte, Finsa Forest Products, Clare IFA and local private growers.

The CCWEP commenced its work with the appointment of two part-time experts in the roles of Wood Energy Co-ordinator (Steve Luker) and Forestry Supply Co-ordinator (Paddy Donovan). Steve's role involved creating the demand for wood energy in Clare through the installation of commercial scale wood biomass boilers. Paddy's role was to help the development of the wood chip supply chain by working with farmers and forestry contractors in conjunction with local Teagasc Forestry Development Officer Áine O'Callaghan.

Essentially, the demand and supply elements of the wood energy market were addressed together for the first time.



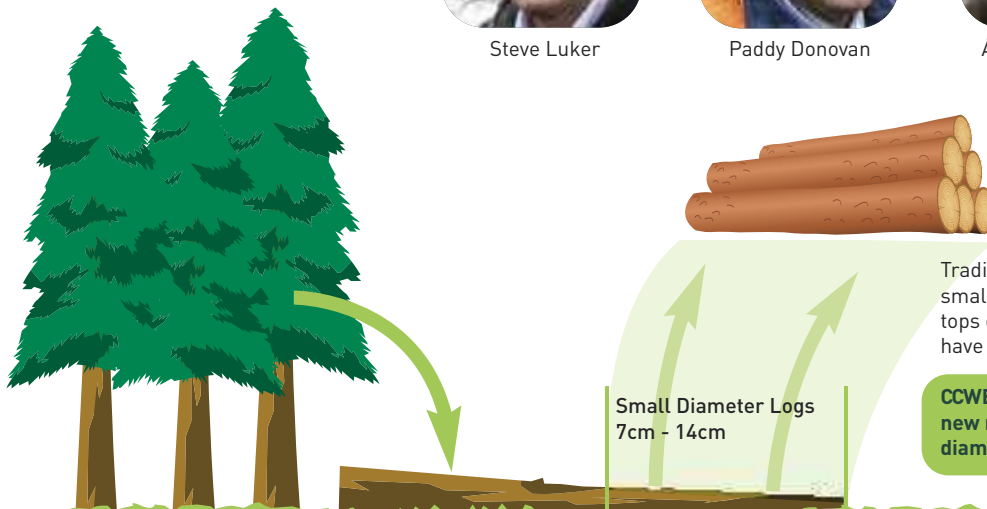
Steve Luker



Paddy Donovan



Áine O'Callaghan



Traditionally the sale of these small diameter logs (from the tops of thinned trees) may have been unprofitable.

CCWEP is working to create new markets for small diameter logs



Clare County Council

The following are the requirements of Clare County Council's wood chip boiler:



Annual Requirement of Conditioned (dry) Wood Chips

tonnes
380



Paul Collins of Olympus shows his wood chip boiler to a site visitor from Enterprise Ireland.

Olympus

The system installed at the Olympus GMBH factory outside Tulla is a 220 KW Kob Pyrot biomass boiler, burning woodchips. Olympus, who employ over 270 people locally, have their own forest and so the decision to convert to wood chip was a logical one. The wood chip is stored in a 85m³ fuel silo, which automatically feeds into the boiler via a fuel transfer auger. The system supplements two pre existing oil boilers, rated at 587kW each. One of the existing boilers was retained and is used as a secondary back up heat supply. As the boiler will only operate during the heating season, the consumption of woodchips is 120 tonnes per annum at an average moisture content of 30% and **annually saves the plant 60% on its previous heating bill.**

The following are the requirements of the Olympus wood chip boiler:



Annual Harvest
area assuming
20m³ - 25m³ per ha
(expected pulpwood
from 1st thinning)

ha
7 - 9



== Annual Pulpwood
Requirement

m³
180



== Annual Requirement of
Conditioned(dry)
Wood Chips

tonnes
120



Gerard O'Halloran, Maintenance Manager
Cahercalla.

Cahercalla Hospital

A 300 kW Kob Pyrot biomass boiler was installed in 2008 in Cahercalla Community Hospital and Nursing Home in Ennis. The woodchip is stored in a 143 m³ woodchip silo, which is automatically fed into the boiler via a fuel transfer auger. The system supplements two 350 kW Buderus oil boilers and is the primary source of heat supply for space heating. The existing boilers are retained and are used as a secondary backup heat supply. The new 300 kW KOB boiler displaced over 60, 000 litres of oil per annum.

The following are the requirements of the Cahercalla wood chip boiler:



Annual Harvest
area assuming
20m³ - 25m³ per ha
(expected pulpwood
from 1st thinning)

ha
22 - 27



== Annual Pulpwood
Requirement

m³
550



== Annual Requirement of
Conditioned(dry)
Wood Chips

tonnes
365

Case Studies Case Studies Case Studies Case Studies Case

Display boards have been erected in the boiler houses at Clare County Council, Olympus and Cahercalla, to inform visitors about the technical specifications and fuel supply to the boiler.

Other Boilers have also been installed at Dromoland Castle Hotel in Newmarket on Fergus and at Torpey Wood Products in Sixmilebridge.

			
Total Installed Capacity of Wood Chip Boilers in Co. Clare	Total Annual Requirement of Conditioned (dry) Wood Chips in Co. Clare	Annual Pulpwood Requirement	Hectares of first thinning required each year
2.1MW	tonne 1800 - 2000	m ³ 2700 - 3000	ha 135ha - 150ha

These markets are currently being supplied with wood chip by newly developed businesses.



Future Potential

The average potential production of pulpwood from the private sector in Clare for 2009, 2010, and 2011 is 45,000m³, (this excludes palletwood and sawlog). The current annual demand of 2000 tonnes of conditioned (dry) wood chips at 30% moisture content equates to 3,000m³ which is only 13% of the potential supply of pulpwood in County Clare.



The time input required to generate 2,000 tonnes of woodchips is set out below.

To Supply 2000 Tonnes of woodchips at 30% Moisture Content

	GROWERS: Harvesting of 175ha of thinnings provides:	HARVESTING AND HAULAGE CONTRACTOR:	HEAT ENTREPRENEURS:
	• 2000 Tonnes at 30% MC pulpwood 3000 m³ • other Timber products 5250 m³	• Harvesting 70m³ per day - 43 days (pulpwood only) • Extracting 100m³ per day - 30 days (pulpwood only) • Haulage Contractor 150 additional loads - 45 days	• Chipping 12.5 days • Delivery 305 loads at 6.5 tonnes per load to suit silo • Average 3.5hrs per load - 133 days
ADDITIONAL DAYS WORK IN THE SUPPLY CHAIN:	Growers 3 - 5 days extra	Harvesting and Haulage 118 days extra	Heat entrepreneurs 145 days extra
			TOTAL DAYS - 268



Why is wood energy the key to opening up the private forest sector?

Wood energy is a locally based initiative and the timber used as wood fuel is produced and consumed locally; generally within 30 kms of its source. By establishing a locally focused market, the cost of road haulage is reduced and this saving is passed back to the grower and indeed to the wood chip boiler installer.

Furthermore, wood energy can pay higher prices for raw materials and because we all need heat and demand is steady, year on year, this enables confidence and trust to be built up. This in turn provides sound foundations for long term supply contracts, thereby stabilising timber prices.

Heat Entrepreneurs

What is a Heat Entrepreneur?

A heat entrepreneur is someone who buys timbers from forest owners, stacks it, dries it and in time, chips it and sells it to a customer either by the tonne or by the kilowatt hour at a profit.

The CCWEP Forestry Co-ordinator has advised individuals on becoming chipping or heat entrepreneurs. Services include:

- one-to-one mentoring
- on-going business set up advice
- heat entrepreneurship and boiler maintenance training by a team of Finnish experts
- and networking meetings

As a result, at least four strong players have emerged in the market in Clare who have purchased different types of chippers and become involved in the supply of heat or wood chips.

Heat entrepreneurs based in West, East and Mid Clare are proceeding with further investment in drying yards and storage sheds. Some have received LEADER grant aid in setting up and expanding their businesses. Pat Moloney, of Clare Wood Chip Ltd., based in Flagmount, pictured above, is currently supplying heat to both Clare County Council and Cahercalla boilers. He also delivers woodchip to Dromoland Castle Hotel and provides a chipping service to Olympus.

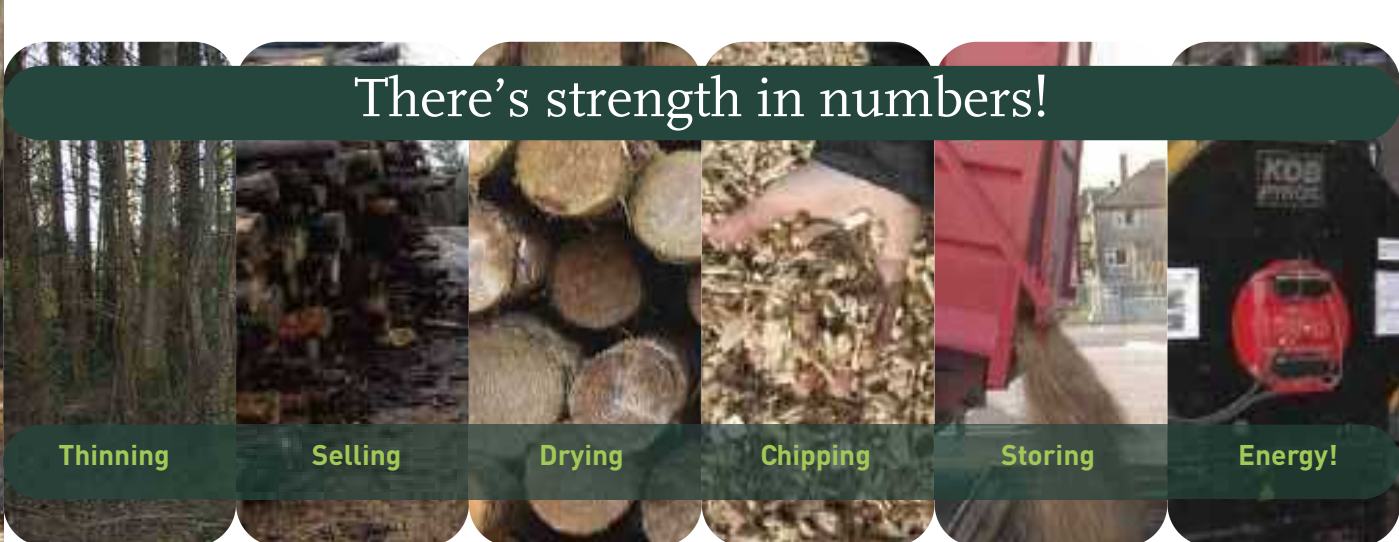
For a full and up to date listing of suppliers in Clare see www.ccwep.ie

For more information on LEADER grants see www.cldc.ie



The key to profitability for the heat entrepreneur is to be able to source sufficient quantities of timber locally.

There's strength in numbers!



Thinning

Selling

Drying

Chipping

Storing

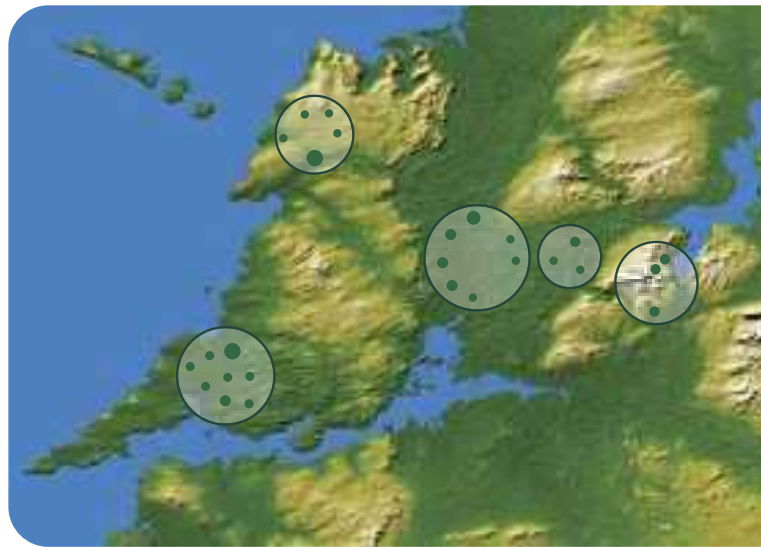
Energy!

Thinning Clusters - What are they?

Many plantation owners feel that they are operating in isolation, even though they may have neighbours who also own plantations and are experiencing some or all of the same concerns. Surveys have shown that some owners do not have management contracts to oversee routine forest tasks; and so do not have sufficient information to plan harvesting, nor have they the 'know how' to go about selling their timber.

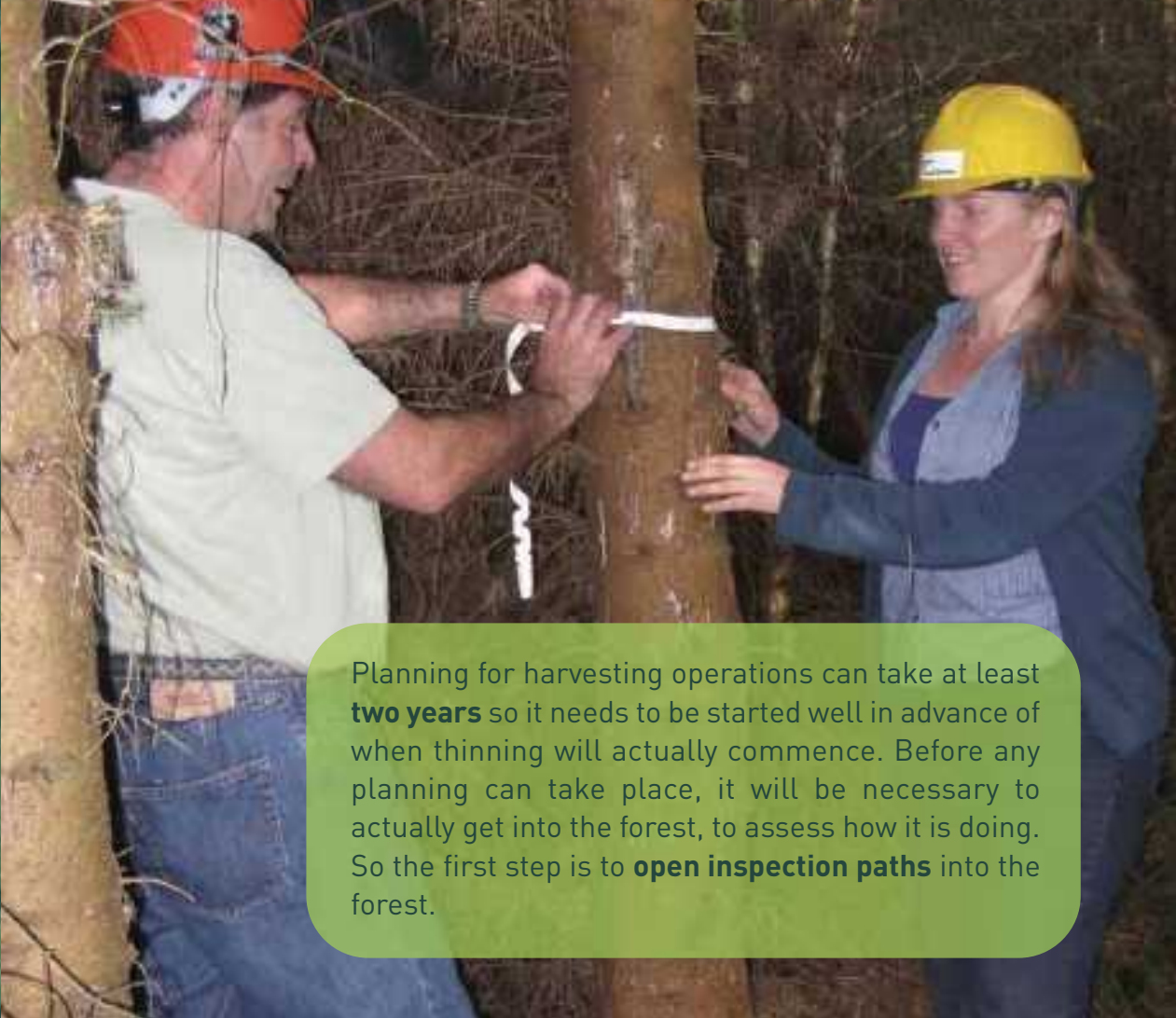
The CCWEP Forest Supply Co-ordinator and Teagasc Forestry Development Officer have held public meetings around the County to inform growers of the projects' existence and to bring like minded farmers/forest owners together. Clusters of growers have emerged as a result - (see map opposite showing existing clusters in County Clare). Aine and Paddy provide support to existing clusters, assist their expansion and help new clusters to get set up.

A series of 8 steps have been set out and are being followed by each forest owner. The following pages outline these steps.



CCWEP does not buy or sell timber but provides support to growers and groups of growers

Aine and Paddy take you through the steps to sell your timber for wood energy

A man wearing a red hard hat and a light blue shirt is measuring the diameter of a tree trunk with a white measuring tape. A woman wearing a yellow hard hat and a blue jacket is standing next to him, looking at the tree. They are in a forest with many trees in the background.

Planning for harvesting operations can take at least **two years** so it needs to be started well in advance of when thinning will actually commence. Before any planning can take place, it will be necessary to actually get into the forest, to assess how it is doing. So the first step is to **open inspection paths** into the forest.

“I had no idea that the trees were not doing so well in the back of the site, until we opened up the paths - you couldn’t possibly get in that far without the paths.... It’s not a big job really, but I hadn’t the time to do it myself so I got in a contractor - it was money well spent!”

John Torpey, Sixmilebridge

STEP 1

INSPECTION PATHS

Inspection or brash paths are necessary to access the plantation once the trees have closed in. Branches are removed to head height on either side of a row of trees. It is not necessary to remove any full trees. In larger plantations, paths should be cut every 100 metres and should link up to ensure access to all parts of the plantation as shown below. The paths allow crop measurements to be taken which will determine the productivity of the site, the expected age of first thinning and the best location for a forest road.



Red lines indicate inspection paths



Area not accessible without inspection paths



Inspection paths opened - easy to walk through now!



Inspection paths typically cost in the range 40 – 50 cent/metre, Expenditure on inspection paths at this stage will save time and money in the long run.

STEP 2

INVENTORY

Using the inspection paths, the site is walked and divided into blocks, depending on species and growth rate.

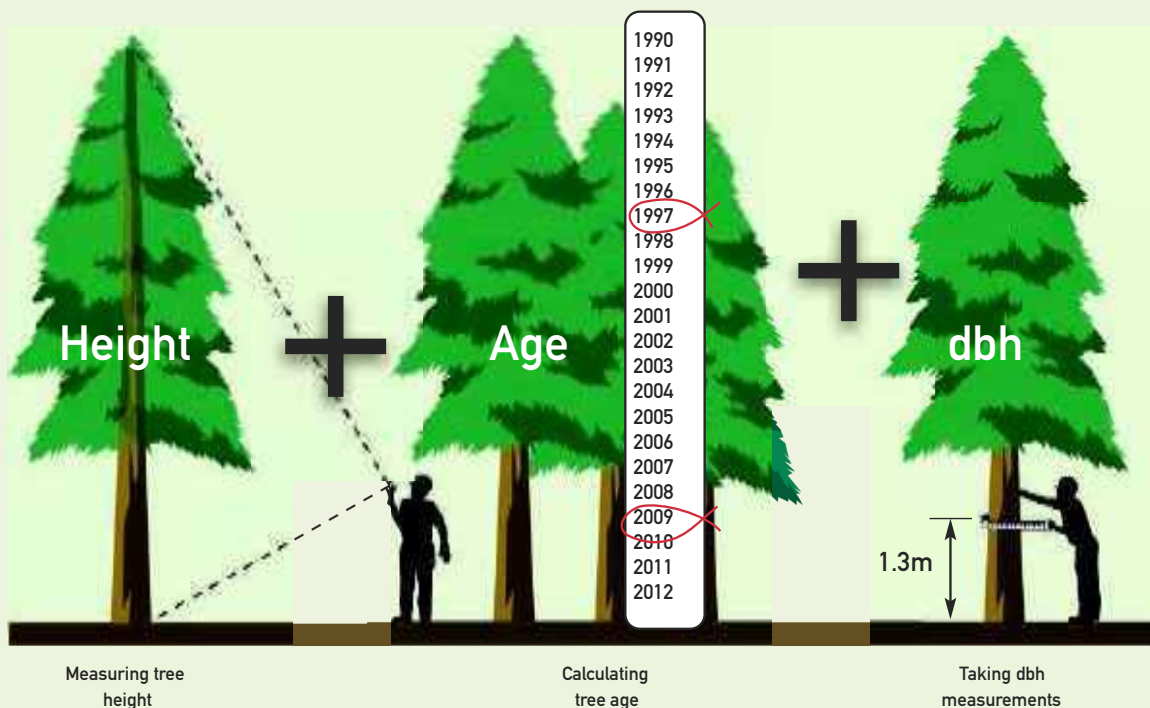
Data are collected in each plot on:

- Tree height
- Age
- Diameter at breast height (dbh), using a forestry dbh tape (see below)
- Stocking (number of trees per hectare)

An inventory is usually carried out when the crop is about 12 to 15 years of age and completed by a professional forester.



A full list of registered foresters is available on www.ccwep.ie



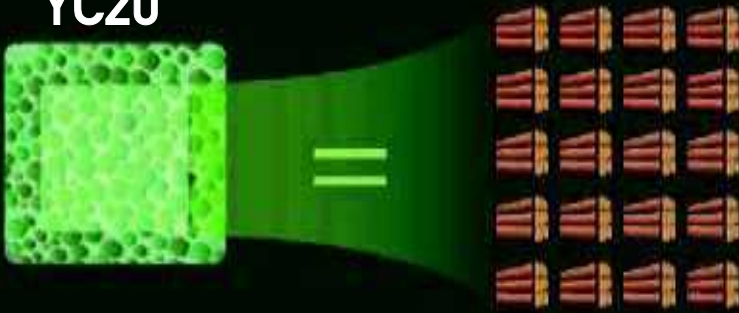
Potential volume production of forest = Yield Class



What is Yield Class (YC)? It is a measure of how fast the timber is growing and establishes how much timber is available for thinning. It measures the average volume of timber produced in cubic metres (m^3) per hectare, per year e.g a YC 20 site will produce on average 20m^3 of timber per hectare, per year.

The higher the Yield Class, the more timber will be produced on the site. The average YC of privately owned sites, ready for thinning is YC 22.

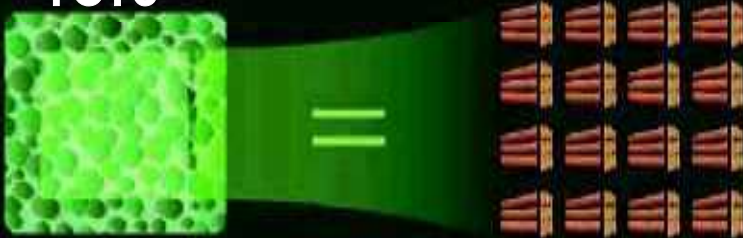
YC20



For example 1 Ha of spruce can grow 20m^3 of timber per year.

20m^3 per Ha per Year

YC16



For example 1 Ha of spruce can grow 16m^3 of timber per year.

16m^3 per Ha per Year

The information derived from the inventory is then used to compile a **management plan** for the forest and to make management decisions, such as whether to thin the plantation.

“When the forester explained Yield Class to me I could see that there was a big difference in growth between the best of the trees which are Yield Class 20 and the section where they are not so good where the Yield Class is only 16.”

Mary Pilkington, Connolly

STEP 3

FOREST ROADS

Bellmouth Entrance

As it is illegal to stack timber on the side of the public road, plantations must have a minimum of a wide bellmouth entrance (see below) to facilitate off-road timber loading. For many smaller sites this will be sufficient and no further roading will be required.

Harvest Road

Larger sites may require the construction of a harvest road which is designed to carry the heavy traffic associated with harvesting and is usually constructed within two years of when thinning is due to take place. The Forest Service may provide grants for road construction.

If the plantation is not going to be thinned, the road should not to be built until just before the forest is clearfelled.

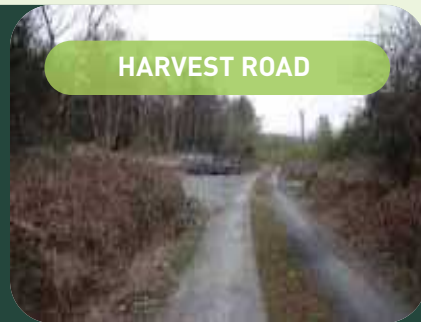
Note:

The Forest Service will refer all Roading grant applications to the Local Authority on issues of road safety. See Forest Service website www.agriculture.ie/forest-service for the most up to date information on grants.

BELLMOUTH ENTRANCE



HARVEST ROAD



Preparation of road and bellmouth entrance enabling safe off road loading of timber. Ensure good sight-line for safe exit



All road grant applications must be completed and submitted by a registered forester.

If a forest is over 20 ha or if the terrain is difficult, it must also be assessed by an engineer. The forester should arrange for an engineer to carry out an inspection and submit the engineers report to the Forest Service along with the road grant application.

For further information see Teagasc leaflet No. 13 “Forest Roads”

STEP 4

FELLING LICENCES

The felling or up-rooting of any tree within the State is subject to the 1946 Forestry Act and may be subject to a legal replanting obligation. The Act is administered by the Forest Service.



“ It is best to assume that all harvesting is subject to the Act and therefore requires a Felling Licence. ”

Kevin Keary, Forest Service Inspector, Co. Clare

The Act provides for two types of Felling Licences;

- General Felling Licence
- Limited Felling Licence

The type of licence required depends on the forest operation being proposed.

Licence Type	Purpose	Duration	Application	Replanting obligation
General Felling Licence	• Clearing Road Lines • Normal forest harvesting operations	At the discretion of Forest Service Inspector	Directly to Forest Service	Replanting obligation following clearfell. Felled site must be replanted
Limited Felling Licence	• Clearfelling • Removal of individual trees on the farm • Site development	2 years	Via local Garda Station	Replanting obligation following clearfell No replanting required on areas less than 0.5ha if being used to construct dwelling for own, or family use Can plant alternative site of same area and quality in lieu of felled trees, subject to FS approval



Insurance – All forest owners should insure their forests. Check your policy to ensure you have cover for fire, windblow, replanting costs & fire brigade charges

STEP 5

Now that you've got this far, the next step is to become part of a thinning cluster...

JOINING A THINNING CLUSTER

A thinning cluster is usually set up within a defined geographical area. The group share information and provide services relating to the plantations and have a joint approach to harvesting and selling their timber.

The main benefits of a thinning cluster is the economy of scale for harvesting operations. In Co. Clare the average plantation is 9 hectares. By grouping small plantations together, they become more attractive to contractors who might not otherwise be prepared to do this work, simply because the volume of work within an area increases.

Based on location and forest age, Aine and Paddy can organise clusters of forest owners who have plantations ready for thinning at around the same time. This will enable bigger lots of timber to be offered for sale and generate more competitive prices.



Aine and Paddy can act as mentors for timber sales, enhancing the skills of individual members.

Wood Energy Shop Window



The CCWEP website now has a web shop window whereby buyers and sellers of thinnings can register their interest on www.ccwep.ie. This establishes contact with the Project and a link between prospective timber buyers and groups of forest owners.

The shop window will map the forest parcels due for thinning to assist the formation of more economic thinning clusters. This facility is managed by Aine O Callaghan of Teagasc and Gloria Callinan of Clare Local Development Company.

Wood energy and timber buyers are invited to bid for the thinnings from the clusters. The County Clare Wood Energy Project can then facilitate the group marketing and harvesting of the timber.



WHAT SHOULD YOU BE DOING?

Get all your information together:

- Register your details on www.ccwep.ie*
- Inspection paths
- Inventory
- Forest roads
- Felling licence

*** No computer or internet?**

Contact Áine O'Callaghan or your Registered Forester who can input your details for you

● Harvesting in a group

Harvesting contractors require a minimum volume of timber before they will consider undertaking a harvesting contract.

This 'minimum' depends on a number of factors:

- distance from the contractor's base
- size of equipment
- the type of harvesting: clearfell or thinnings
- the average tree size
- the volume of timber

Transportation costs for the machines impact most on the cost of harvesting. Using the thinning cluster approach the contractor is offered a group of plantations i.e. 25 ha minimum, within a small area. The harvesting equipment can then be driven between sites without the use of a low loader.

The fact that a group is selling a larger volume of timber makes it more attractive to the timber buyers, which in turn increases the competition among the timber buyers and secures a better price for the group.

Possibly the greatest benefit to the growers is that they share experiences and no longer feel that they are operating alone in a new market situation.



● Roding in a group

Where plantations are adjoining or in close proximity, a joint approach to roding should be considered, as this may improve the access to all plantations and reduce the number of entrances required. By offering a roding contractor a large volume of work, the price should be reduced to reflect this.



● Timber prices

As with any farm product, timber prices depend on a wide range of factors including market demand, distance to market and most importantly, whether timber can be produced at a profit. Until recently the price paid by timber buyers for small sized timber products (pulpwood) meant that forest owners incurred a loss on this material, mainly because of the high transport costs. This loss was offset against the other more valuable timber products.

However in more recent times, new local markets for these low value products have emerged, which enable forest owners to harvest and sell these at a profit, or at worst break even.

New opportunities include woodchip, packaged firewood logs and wood briquettes, as well as animal bedding and stand-off pads for cattle.

STEP 6

THINNING & HARVESTING

Why thin? Thinning removes small, poorly formed, suppressed trees favouring the better quality stems.

How does the remaining crop benefit? The thinning provides additional growing space, reduces root competition and concentrates the growth on fewer trees.

At what age does it commence and how often is thinning carried out? Thinning normally commences between the ages of 15 and 20. Plantations are usually thinned once every five years but this cycle can be increased or decreased depending on growth rates and site conditions.

How does the owner benefit? Thinning provides a regular income stream during the rotation and also improves the value of the final crop.

Are there risks associated with thinning? Yes, there is a risk that by opening up the crop, wind can cause trees to blow over. The key factors that can increase the risk of wind blow are site exposure, soil type, ground conditions, cultivation method and the height and age of the crop.

The risk of windblow increases as the height and age of the crop increases.

Always consult a forester when considering thinning.



THE BIG QUESTION

Thin or No Thin?

The decision to thin or not to thin must take into account a wide variety of factors, which include both the physical attributes of the site and the economic aspects of road construction and harvesting. Each of the factors must be assessed and its potential impact considered. There are no hard and fast rules as to which sites should or should not be thinned.

In some circumstances a 'no thin' policy is a valid option, for example if the cost of roading far exceeds the returns from thinning, then it is best not to thin.

Consult your Registered Forester or Teagasc Forestry Development Officer, who will assess your site and advise you on the most appropriate decision for your plantation.

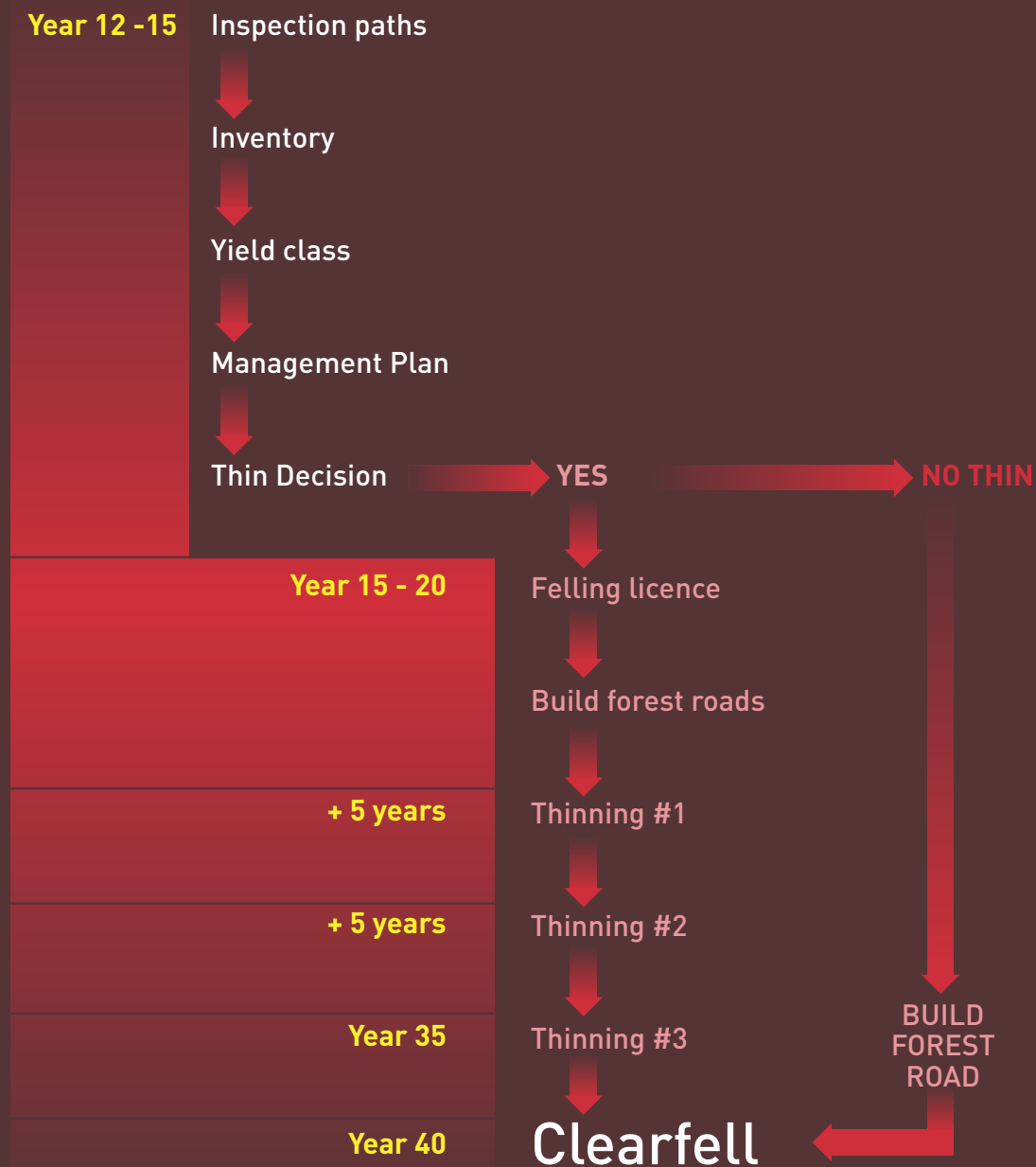


Forest owners should seek professional advice when deciding to thin.

“Part of my site is very wet and when the forester was doing up the management plan for me, we decided not to thin the wet section, in case there would be damage from windblow.”

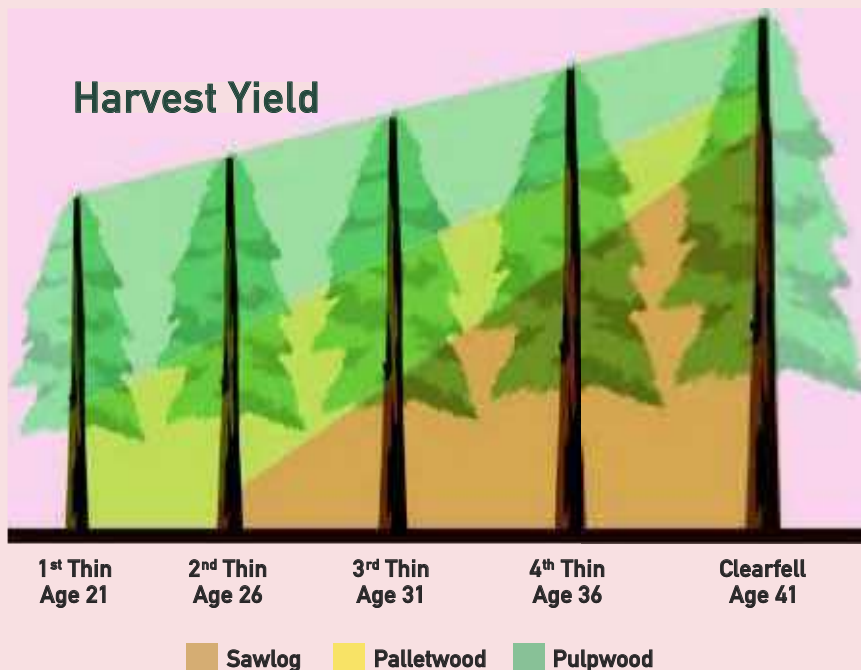
Michael Doherty, Ennistymon

Thin Versus No Thin timeline



TIMBER CATEGORIES/ASSORTMENTS

Timber is divided into categories based on the diameter of the logs produced during harvesting. The quantity of each category produced depends on the species, size and age of the timber being harvested.



€€€€€€ **Sawlog /Light sawlog** – This is cut from the lower section of the stem and is cut to a small end diameter of 20cm. It is used to produce timber for the construction industry. In general, first and second thinnings would not contain timber large enough to fall into this category.

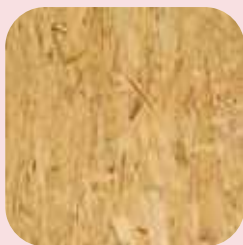
€€€€ **Palletwood** – This is cut from the mid section of the log, which has a large end diameter of 20cm and a small end diameter down to 14cm. It is used as the name suggests in the packaging industry, manufacture of garden furniture and fencing.

€€ **Small diameter timber** – This is generally the top section of the tree and has a diameter between 7 and 14 cm and is generally divided into three further categories:

Pulpwood

Stakewood

Energy Wood



Pulpwood

This is cut from the top section of the tree and also includes large crooked and forked logs. The majority of pulpwood is sold as raw material to boardmills such as Finsa, Smartply in Waterford and Willamette in Clonmel. Pulpwood generally accounts for up to 50% of timber from first thinnings and decreases as the crop gets older.

Because of the high harvesting costs associated with small plantations and greater haulage distances resulting in higher transportations costs, the delivered price for pulpwood may not cover the harvesting and transport costs.

Stakewood

Straight lengths of timber from thinnings can command a higher price if sold as stakewood to supply the fencing market. Because of the short lengths involved, the cost of harvesting is increased. However, the price paid for the material is more than sufficient to cover additional costs.



Energy Wood

The market for energy wood is a new and emerging market in Ireland. In Europe it is long-established and currently 90% of the heat supplied by biomass comes from woodchips. A substantial portion of this is derived from privately owned plantations and sold to small-scale, heat entrepreneurs. This market is locally based in that the chips tend to be sourced and supplied within a 30km radius.

The wood energy market is based on a network of forest owners who jointly plan and carry out all forest operations. This gives sufficient scale to the operations to make it attractive for contractors to undertake routine forest tasks such as harvesting, roading and the sale of timber products.

Because energy-wood is sold locally, the haulage cost is minimised and therefore it is more profitable for the growers. Furthermore, it fosters a culture of forest management because the owners co-operate and share experiences, the local economy benefits and a large portion of 'the spend' is retained within the local community.

OPTIONS FOR GETTING THE WORK DONE

Option 1 Employ a Registered Forester

Most farmers choose to employ a Registered Forester to manage and supervise the thinning and harvesting operations for an agreed fee. The Forester markets and sells the timber and oversees the thinning and harvesting. A first thinning should break even or bring in a small profit, whereas subsequent thinnings should bring in greater profits as larger timber is being harvested. This option is popular with farm forest owners as the Forester is in charge of ensuring that a good job is done thus giving peace of mind to the owner



A Full list of Registered Foresters is available on www.ccwep.ie

Option 2 DIY

Some forest owners opt to deal directly with the sawmills, heat entrepreneurs or timber buyers. However good knowledge and experience of thinning and harvesting forest crops is desirable if not essential, and for this reason not many forest owners choose this option.

Option 3 Partnership

Some Forestry Companies offer a management partnership whereby they will organise and supervise not just the first thinning but also the subsequent thinnings and the clearfell operation. In this case, the timber profits are generally shared between the owner and the Forestry Company.



Delayed thinning or thinning in very exposed sites with poor drainage can lead to windblow.

Regardless of which option is chosen, the most important feature of thinning and harvesting, is to co-ordinate with your neighbours in much the same way as threshing was co-ordinated years ago. In this way, many of the costs associated with harvesting are reduced and profits may be increased.



Register your details on www.ccwep.ie for more information on who is thinning and harvesting in your area.

HOW HARVESTING COSTS CAN BE REDUCED BY HARVESTING IN GROUPS:

To maximise the 'stumpage price' to the grower, efforts must be made to minimise all of the costs associated with harvesting.

1. **Haulage costs** - Minimise the delivery distance particularly for the lowest value products e.g. pulpwood.
2. **Planned road layout and harvesting** - Plan and construct the forest road so that it serves the most productive areas of the plantation. This will reduce the cost of harvesting across all thinnings to be carried out.
3. **Joint Thinning** - Reductions in harvesting costs can be achieved by carrying out joint thinnings i.e. ensuring there is sufficient timber to be harvested within an area so that economies of scale are achieved.
4. **Be Prepared** - Being ready for thinning in advance may also allow growers to avail of high prices or to defer thinning for a year or two to avoid low timber prices.

For further information see Teagasc leaflet No. 12 "Timber Harvesting in Farm Forestry"



A Thinned section of forest

STEP 7

TIMBER MARKETING AND SALES

Timber should be put on the market before harvesting to ensure that the timber is harvested and cut to the lengths required by the market. It is best to notify timber buyers well in advance (2 months) of upcoming timber sales; this will give them ample opportunity to inspect the site and assess the timber quality and consider harvesting options.

Buyers should reply quoting a price per m³ or tonne for each of the timber categories and indicating how they would prefer to purchase; standing, forest roadside or delivered to the mill.

The grower also needs to establish which log categories buyers require and in what quantity they will take the logs (a couple of loads a week or monthly etc.)

Start with local processors to keep the haulage cost to a minimum.

"I didn't have any experience of forestry so I got my Registered Forester to organise and supervise the whole operation. We agreed a price in advance and he took care of everything. We were very happy with the price received for our first thinnings.

Mary & Seamus O'Dwyer, Caher

Timber Price

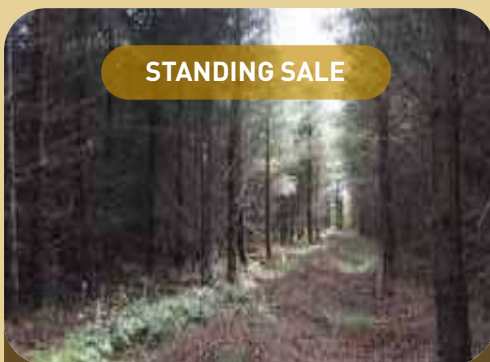
Timber is a globally traded commodity and in Ireland, home-produced products compete with imported products. The net result is that the value of Irish timber is set by overseas markets, and prices for round logs increase and decrease rapidly in response to world prices. Despite these fluctuations, there has been a strong upward trend in timber prices over the last 30 years.

Timber buyers pay a delivered price for raw material. From this price all haulage and harvesting costs are deducted, leaving the grower with what is called a “residual or stumpage price”.

Selling Timber

There are three basic methods of selling timber;

STANDING SALE



Forest owner sells timber as it stands at a price agreed in advance. Buyer responsible for thinning and harvesting.

Timber sold by volume i.e. m^3

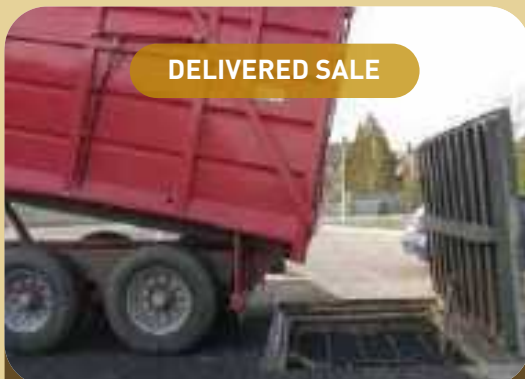
ROADSIDE SALE



Timber is sold to a buyer on the forest road. The harvesting contractor is paid by the forest owner.

Timber sold by volume i.e. m^3

DELIVERED SALE



As for roadside sale but forest owner also delivers timber. This option may be chosen by heat entrepreneurs who deliver chips directly to the boiler.

Timber sold by weight (tonne) and/or moisture content



Check the CCWEP 'Wood Energy Shop Window' on www.ccwep.ie for information on who is buying and selling timber in Co. Clare

Checklist

Issues which should be agreed with timber buyers in advance:

- Public liability insurance
- VAT - what level?
- Scheduling of payments
- Harvesting is best done during dry weather when soil damage can be kept to a minimum, normally the best time to harvest is late spring and summer.
- Liability for damage to roads, drains etc.
- Timber being sold by volume - m³ (standing sale) or weight - tonnes over weighbridge (roadside/delivered sale)
- Recording of timber loads leaving site.

Tips to maximise the returns to the grower

- Use local markets and minimise road haulage costs
- Carry out joint thinnings in clusters – economies of scale
- Ensure the harvesting contractor cuts as many logs as possible into the more valuable categories
- Give yourself time to plan
- Shop around
- Enlist the help of a professional forester
(Full list available on www.ccwep.ie)

For further information see Teagasc Leaflet No. 10 “First thinning in Conifers”

STEP 8

DRYING AND STACKING TIMBER FOR WOOD ENERGY

To produce good quality wood chips it is essential that the timber is handled and stored correctly. There are a few issues which should be taken into account when harvesting and storing timber for wood energy.

Location of the stack; the timber should be stacked in the most exposed location within the plantation or on secure adjoining lands. Such a position will allow the wind to penetrate the stack and promote the drying of the timber. If the stack is in a sheltered position the timber may not dry sufficiently. The stack must be accessible at all times of the year so that it can be moved to a chipping yard when it is required.



Suitable exposed location for drying - no shelter from surrounding trees

Design of the stack; the design of the stack is important because a well designed stack can promote better drying and also keep the logs free from dirt and splashing. A drain in front of a timber stack prevents splashing from vehicles passing and also ensures that the ground under the stack is dry and prevents water lodging.

“The most important thing is to stack the timber in an open area with plenty of space to allow the air to get into the timber to dry it.”

Pat Moloney, Clare Wood Chip



Logs are piled on skids

In the drying yard the logs are piled on skids, which are positioned at right angles to the stacking direction. This keeps the logs off the ground and free of stones and ensures that air can circulate under the pile. The broken stone provides a solid surface which is well drained.

Orientation of the stack; the timber should be piled so that the cut ends face the prevailing wind; south westerly. This allows the wind to blow through the piles which speeds drying.

Covering the stack; the stacks should be covered with a breathable cover, which allows moisture to evaporate through, but prevents rainfall dripping down through the pile. This can shorten the drying time and ensures that the logs stay dry, once they have dried. The photo below shows a stack covered with a reinforced paper cover.



Orienting the stack to make use of prevailing winds



A covered stack allows moisture to breathe through

Drying time; timber when it is freshly felled contains up to 60% water. Before the timber can be used for fuel wood or wood chips the **moisture content** must be reduced to 30% or less. This is known as *seasoning or conditioning*.

The length of time required to dry the wood depends on the target moisture content. Typically a minimum of six months is required to dry timber down to about 45%, which can be suitable for larger boilers. However, if a moisture content of 25 – 30% is required then the timescale increases to 12 to 18 months. Most of the boilers in operation in Clare require a 30% moisture content chip.

To reduce the moisture content of timber a paper cover is used to prevent rainfall from wetting the logs. Drying sheds and artificial drying systems can also be used but add to the cost.

The drying process is monitored using a round log moisture meter; this gives an instant reading of the moisture content of the wood. This information can be used to determine the length of the seasoning and also to determine a fair price for timber which a grower has allowed to season before selling it on to a heat entrepreneur.

If a farm forest owner stacks and dries the timber himself, he should get a higher price for it for energy wood.

Further information on drying timber is available on www.ccwep.ie

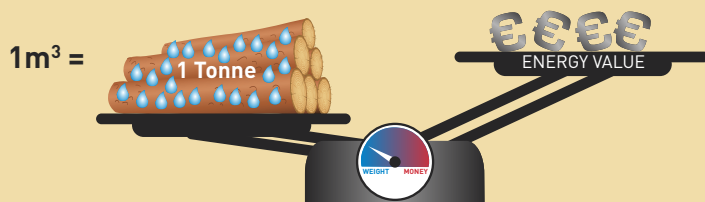


Measuring Moisture Content

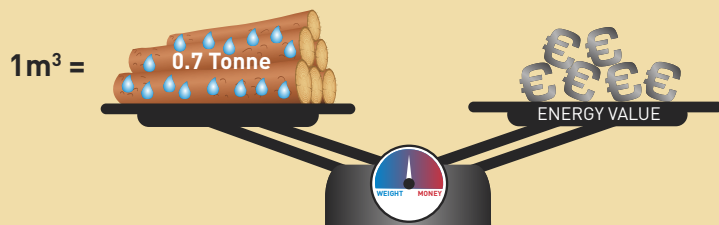
1m³ = 1 tonne of freshly cut timber

The longer the timber is dried, the lighter it gets and the more valuable it becomes

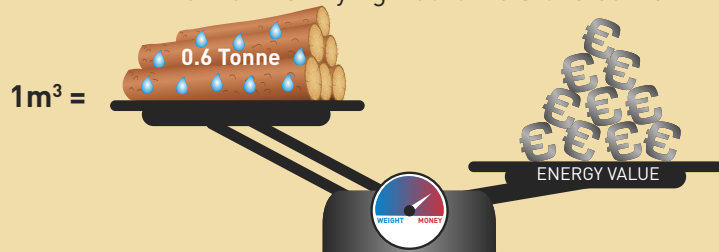
Freshly Felled - **60% Moisture Content**



12 Months Drying - **45% Moisture Content**



12 - 18 Months Drying - **30% Moisture Content**



If you intend drying your own timber you should first speak to a wood energy buyer to ascertain the preferred moisture content. A list of heat entrepreneurs is available on www.ccwep.ie

Where to from here for Clare forest owners?

Supporting Thinning Clusters

Our aim is to help to develop thinning so that farm forests owners are well positioned to engage in the growing wood energy market. Ultimately, we hope that these clusters can become self sufficient in harvesting their plantations, selling their timber at the best possible prices and developing their skill for the future.

Paddy and Áine will mentor the clusters, helping them to organise harvesting and advising them in selling their timber.

The CCWEP website will give forest owners a shop window for selling their timber, giving buyers and sellers direct access to one another.

Information for Forest Owners

The CCWEP website provides up-to-date information on:

- New developments in the wood energy market in Co. Clare
- Contact details for registered foresters
- A list of Teagasc Forestry Publications
- Wood energy events.

Further information on forestry is available on www.teagasc.ie/forestry

Contact us



Áine O'Callaghan

Teagasc Forestry Development Officer

On average over 100 new landowners commit a portion of their holdings to a forestry enterprise every year in Clare, so it is extremely important that there is an independent source of information available for them. Áine O'Callaghan has worked in County Clare as the Teagasc Forestry Development Officer for the past five years and her role is to provide advice to all landowners, free of charge through a variety of services. On-site visits, training courses, demonstrations and phone/office consultations are the core of her work. She deals directly with landowners, some of whom may be thinking of planting, others may be coming close to first thinning and may require information on how to get the job done.

The establishment of a wood energy sector in Clare through the CCWEP has been both an exciting and challenging part of Áine's work since 2005. Forest owners have a new outlet for their produce so it is important to ensure the links are secured for the future. Áine has worked intensively with Paddy Donovan, collecting information from privately owned forests around the County, which has helped to assess the potential production for wood energy in the future.

An ongoing task is to help familiarise forest owners with their investment. It is vital that they are aware that help is at hand. Teagasc continually provide training courses on all aspects of forestry e.g. roads, thinning, high pruning, etc. If there are specific courses which landowners would like to attend, these can be integrated into the yearly program. Just enquire!

Áine can be contacted on 087-2197086 or 091-845200 or by email: Aine.OCallaghan@teagasc.ie



Gloria Callinan

Development Officer, Clare Local Development Company

Gloria Callinan, a native of North Clare, has been employed as Development Officer with Clare Local Development Company, formerly Rural Resource Development, since 2002. She has worked mainly on the EU LEADER programme, assisting grant applications from local enterprises, farm families, private promoters and community and voluntary groups. LEADER offers support for capital costs, marketing, training and research.

Since its establishment in 2005, Gloria has been involved in the management of CCWEP, and works closely with colleagues Áine O'Callaghan, Paddy Donovan and Steve Luker.

Gloria works on a number of strands of the Project, including managing the CCWEP website, www.ccwep.ie, updating and maintaining its contents and on the new shop window, where growers can log their details and express interest in making contact with other growers who are at a similar stage in thinning or marketing their timber.

She also manages the CCWEP database of growers and is available by email on info@ccwep.ie and by telephone 065-6866800.



Produced by Clare Local Development Company and Teagasc Forestry Development Unit.
Clare Local Development Company. Tel: 065 6866800, Email: info@cldc.ie, Website: www.cldc.ie
Teagasc Forestry Development Unit: Tel: 091 845200, Website: www.teagasc.ie/forestry

