

**SUNART COMMUNITY COMPANY**

**PHASE 1 - FEASIBILITY STUDY**

**FOR**

**Longrigg Woodland Purchase**



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## 1. Executive Summary

This report presents the findings of Phase 1 of the project. This feasibility study looks at the potential of the woodland to provide community, economic and environmental benefits and investigates the use of the woodland for various activities including timber production, woodlotting, woodland crofts, woodfuel production and non-timber forest products such as housing, recreation and tourism development.

With respect to the timber and woodland management elements there are three options presented - option 1, short term felling and restocking of the woodland to focus on timber returns, option 2, medium term sensitive restructuring to provide community-based diversification opportunities and option 3, longer term restructuring following initial felling of the spruce elements.

Key constraints and risks in the future management of the woodland have been presented and these include, but are not limited to, wind blow, pests and diseases and ability to transform the woodland into other uses such as development land.

It is our belief that the best option of the community to achieve the stated community benefits is either option 2 or option 3 and we have gone on to develop the business case based on these options.

Option 3 would appear to offer the least complex development approach, focusing on generating cash surpluses from commercial timber in the short term that can then be reinvested in community projects in later years to maximise socio-economic benefits.

## 2. Introduction and Background

In November 2018 the present consultants were commissioned by the Sunart Community Company to investigate the feasibility and viability of the purchase of Longrigg Woodland (87ha) in Strontian which had been earmarked for disposal by Forestry and Land Scotland.

The brief for the study focussed on the following tasks, split into 2 phases (see appendix 6 for the full project brief).

### **Phase 1 Feasibility Study**

- To explore the potential of the woodland for community benefit.
- To investigate use of the woodland for:
  - a. Recreation (e.g. walks and trails),
  - b. Affordable housing (subject to planning),
  - c. Woodland crofts and woodlots,
  - d. Tourism (e.g. glamping, hutting, dark skies initiatives, wildlife watching, artists cabins etc.),
  - e. Training and apprenticeships,
  - f. Wood fuel and other timber products,

- g. Other renewables.
- Determine the value of the Timber Resource.
- Identify the minimum area necessary for replanting and determine what area remains for wider community benefit.
- Investigate access options.
- Advise on alternative extraction methods and costings for options.
- Assess and evaluate future management options in terms of:
  - a. financial (initial capital expenditure, ongoing revenue costs for projects and activities and potential income that such activities may generate),
  - b. funding opportunities,
  - c. community benefits,
  - d. employment opportunities,
  - e. legislative (e.g. planning),
  - f. timescales,
  - g. and other criteria as judged by the consultants to be worth considering.
- Carry out Consultation with agencies and members of the community throughout the process.

#### **Phase 2 Business Plan**

- Completion of a business plan including 25-year cash flow projection.
- Highlight funding sources and likely income generation.
- Deliver a final presentation to SCC board and other interested parties.

The analysis was split into two phases; the first included an assessment of the resource, and potential future management options. The community were engaged throughout this phase to guide and agree on the management options that would be detailed in the business plan.

This report has been prepared on the basis of research conducted between December 2018 and October 2019 to meet the above objectives.

The first phase of this study provides an overview of the study including the methodology used to complete the research and a summary of key findings (Phase 1).

The second phase (the business plan) examines the financial viability of purchase of the woodland and discusses the main development roles the community may adopt (Phase 2).

This includes:

- Cash flow analysis for timber harvesting and sale.
- Potential projections for the other main business options agreed by the community.
- Employment opportunities.
- Possible funding sources to help support a bid to SLF stage 2.
- Possible funding sources to support business development.
- Potential legal structures for community ownership.
- An assessment of associated risks.
- Other benefits for the community.

## 2.1 Overview of the woodland

The area of woodland known as Longrigg, currently under ownership of Forestry and Land Scotland, is situated to the north of the A861 at Ardnastang, Sunart. Its total area is 87 hectares with a perimeter of approximately 3,890 meters. Map 1 below shows the boundaries of the woodland.



Map 1 – Longrigg Woodland Boundaries.

Not to scale. For scale version see appendix 5.

The woodland is accessed via Longrigg Road, which is mostly paved. Access to the woodland was gained from NGR NM805621. The woodland is surrounded by post and wire fencing, some of which needs replacing and/or upgrading. The woodland is also situated within a strategic deer fence.

Map 2 below identifies the main constraints and services associated with the woodland.



Map 2 – Constraints and Services.

Not to scale. For scale version see appendix 5.

The average annual climatic conditions for the area are a max mean temperature of 12.4 degrees C and a min mean of 6.3 degrees C with approximately 30 days of air frost. There is 1700mm of rainfall annually. The underlying geology of Longrigg is igneous bedrock, rich in silica known as Loch Sunart Facies and the soil types are peaty gleys and blanket peats. It is accessed occasionally by the community, in particular those living along the Longrigg road.

## 2.2 Methodology

The research underpinning the analysis contained in this report was conducted using a combination of methods. These methods included:

### 2.2.1 Phase 1

**Desk-based analysis** of relevant documents including, but not limited to:

- Cadispa community appraisal<sup>1</sup>.
- Key points from the community action plan.
- Sunart visioning report<sup>2</sup>.
- Final prioritisation results 2014<sup>3</sup>.

<sup>1</sup> Sunart Community Appraisal – Prioritising Result, The Capsida Trust, May 2014

<sup>2</sup> A 'Vision' for Sunart!

<sup>3</sup> Final Prioritisation Results 2014, July 2014

- Vision and mission: Sunart Visioning Workshop 28th July 2016<sup>4</sup>.
- Sunart Woodland Tourism Strategy 2001<sup>5</sup>.
- A Masterplan for Strontian<sup>6</sup>.
- FCS Felling Sequence Map<sup>7</sup>.
- FCS Stock Map<sup>8</sup>.
- Aerial photos produced by drone in 2017.

**Primary data analysis** regarding findings from:

- Stakeholder consultation meetings, one to one interviews and telephone interviews with directors and community company project manager.
- Community consultation meetings, interviews telephone interviews and surveys to present findings and gain feedback on development proposals and associated issues relating to the feasibility studies objectives.
- Wider stakeholder consultation with a range of statutory and other agencies.
- Site visits.
- Longrigg Woodland site survey.

### **Production of an Interim Report**

An Interim Report was submitted to the client, containing a Site Survey Report (Appendix 2), a Community Consultation Report (Appendix 1) and a Management Options Appraisal. A further meeting was held with the client to gather views and prioritise management options.

#### 2.2.2 Phase 2

### **Production of the Business Plan**

Phase 2 sets out the business plan for taking options 2 and 3 forward and presents further information on these.

## 3. Phase 1 Key Findings from the feasibility study

The following key findings have emerged from the study in relation to its objectives.

### 3.1 Community and wider stakeholder consultation

Please see Appendix 1 for the community consultation report.

Key points made by the community throughout the consultation:

- Ownership of woodland could fulfil a number of the aspirations the community has included in its vision and community action plan. The woodland could be used as a vehicle to deliver the community development elements of the community action plan.

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<sup>4</sup> Sunart Visioning Workshop, 28th July 2016

<sup>5</sup> SUNART WOODLAND TOURISM STRATEGY, Final Report – December 2001, Prepared by Aigas Associates: Amanda Bryan, Issie MacPhail for the Sunart Oakwoods Steering Group

<sup>6</sup> Public Information Session Rural Design Architects 2016

<sup>7</sup> Forestry Commission Scotland Design Plan for Longrigg Forest 2003

<sup>8</sup> As above

- The community would become better informed about the opportunities available to take woodland and other open space into community ownership and maintain control of local assets.
- Strontian is geographically small, with a small resident population. Developments under community ownership need to be focused, proportionate and incremental to deliver any economic, social, environmental and cultural benefits without overstressing community capacity to manage them.
- Members of the community that attended the consultation events, interview or survey, were generally supportive of the acquisition. However, not all members of the community were engaged in the process. There was some scepticism within the community as to the desirability of a community buyout and whether this wood was the appropriate wood to buy.
- Reservations were related to financial liability, access and community capacity to take on the purchase and management of a forest.
- There was some concern expressed with respect to volunteer fatigue. This is often more evident where populations are small. It can be difficult to get members of the community to actively participate in the management and governance of community organisations and it may be left to the 'usual suspects' to drive things forward. This can also be an issue in terms of succession planning.
- Access to the woodland for harvesting and extraction operations were investigated. Some residents along Longrigg Road voiced concerns over the use of Longrigg Road for extraction, but at the same time were aware that this could be managed more sensitively if the community were in control as opposed to a private company purchasing the woodland. They were also concerned about the current risk of no action and windblow along the woodland edge adjoining gardens and in close proximity to housing. Other options for possible extraction routes over Ardnastang and Ranachan grazings were also examined. The Ardnastang grazings committee did not agree to any access being developed over the grazings. A final access option that entailed using the initial 300m of Longrigg Road was investigated and a report produced.

### 3.2 Woodland site survey

Please see Appendix 2 for the full woodland site survey.

Key points:

- Access options to the woodland for any large harvesting and extraction operations are extremely limited, particularly with access over the Ardnastang Common Grazing's being eliminated. Details and costs with respect to the Longrigg Road option are included in the business plan and the full report from the Roads consultant can be found in Appendix 3.
- Even though the total standing timber estimates are greater than the original valuation of the forest, given the access constraints within and to the woodland, it is unlikely these prices would be realised by any future owner. The cost of improving access to and within the woodland would need to be considered and also the cost

of restocking, protection and aftercare. The extensive windblow throughout the woodland would also increase management and harvesting costs.

- The cash flow projections with option 1 showed a loss over the first 5-year period, as well as the issues described in the point above. Option 2 illustrates a more viable approach. Option 2 also provides more opportunity to fulfil a broad range of community aspirations.
- The cost of production of a forest plan is included but the site would need to be managed. A project manager, preferably with forestry experience, would potentially be required to manage the forest operations. This cost has been included in the overall cash flows for option 2, assuming the manager would oversee forest management and also business and project development.

### 3.3 Assessment of Potential Business Products and Services

Part of the remit throughout the community consultation was to establish the range of business products and services that the purchase of the woodland could enable and that the community would like to develop. This was assessed throughout the community consultation process through meetings, the workshop, survey and interviews.

The key business products and services that the community expressed interest in further developed through the study are summarised in the table below and evaluated in the community consultation report in Appendix 1. The table is comprised of comments and concerns made directly by members of the community and responses to community members questions, as well as findings from the woodland survey and assessment of these.

	<b>Product</b>	<b>Features and issues</b>	<b>Benefits &amp; Constraints</b>
<b>P1</b>	Production of saw logs	<ul style="list-style-type: none"> <li>• 15% of woodland is of saw log quality. The cash flow forecast lists the commercial value of saw logs. The value will be reduced once the following factors have been considered: <ul style="list-style-type: none"> <li>○ There are parts of the woodland with significant windblow, (cost to manage/extract) and areas of boggy ground.</li> <li>○ Access is currently difficult for extraction (concerns over unsuitability of the road, power lines etc.) Cost of installing suitable access to and through the wood.</li> <li>○ Cost of restocking following any commercial harvesting.</li> <li>○ Cost of deer and stock fencing prior to restocking.</li> <li>○ Cost of aftercare.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Changes in grant support for forestry</li> <li>• There are some productive areas which could be harvested to generate income.</li> <li>• Potential to diversify species mix and age classes when restocking felled areas.</li> <li>• Potential to produce timber for local use – rough sawn and woodfuel.</li> </ul>

<b>P2</b>	Production of Wood fuel	<ul style="list-style-type: none"> <li>● Concern over use of Longrigg road for getting logs out, how accessible the wood is and how cost effective it is to get the logs out.</li> <li>● Also, a question was raised as to whether there are the skills and interest in the area to manage a wood fuel business.</li> <li>● Potential funding.</li> <li>● Concern about potential conflict with other current suppliers.</li> <li>● Changes in legislation (increasing costs for production).</li> </ul>	<ul style="list-style-type: none"> <li>● Provide a local and sustainable fuel resource in the face of increasing fossil fuel prices.</li> <li>● Reduce fuel poverty in a community through the provision of local woodfuel.</li> <li>● The consultation has shown that the majority do use wood as a form of heating. It was seen as a sustainable employment opportunity, and a main use of the forest, reducing transport costs.</li> <li>● The only local firewood supplier has recently retired.</li> <li>● An opportunity for long term local supply of firewood.</li> <li>● An opportunity to develop other future schemes e.g. district heating, kiln drying for timber and firewood.</li> <li>● An opportunity to encourage more of the local community to move from fossil fuels and open fires to a more sustainable resource.</li> </ul>
<b>P3</b>	Production of Wood chip	<ul style="list-style-type: none"> <li>● Potential availability of funding for capital cost of equipment.</li> <li>● Need to research local market for wood chip.</li> <li>● Commercial activity would bring more traffic to Longrigg Road unless alternative access is sourced.</li> </ul>	<ul style="list-style-type: none"> <li>● This could be part of a basket of products.</li> <li>● Local contractors available to produce chip.</li> </ul>
<b>P4</b>	Production of milled timber	<ul style="list-style-type: none"> <li>● There were concerns raised over large lorries using Longrigg road.</li> <li>● The main timber in the forest that could be milled is spruce. There is strong demand for Scottish Spruce as a building material, albeit there are challenges for smaller mills in drying, and grading. Market analysis would need to be carried out to assess the market for fencing materials.</li> </ul>	<ul style="list-style-type: none"> <li>● This was seen as a source of employment locally.</li> <li>● Limited number of existing local mills.</li> <li>● Add (and/or retain within the local economy) more value to timber &amp; woodland products through local processing.</li> </ul>

	<b>Services</b>	<b>Features and issues</b>	<b>Benefits</b>
<b>S1</b>	Provision of Woodlots	<ul style="list-style-type: none"> <li>Concerns over conflict of use for access - extraction of timber vs community woodlot access. Additional access routes within the forest may need to be created.</li> <li>Significant wind blow would need to be removed to make this a viable and safe option.</li> </ul>	<p>To the community:</p> <ul style="list-style-type: none"> <li>The Right to Buy is not relevant – the Woodlot Licence is a contract-type tenure agreement.</li> <li>Professional, intensive management taken on by local individuals with appropriate skills.</li> <li>Woodlot Licence holder manages health &amp; safety, public liability and all forest operations.</li> <li>Annual 'rent' through an agreed payment from the Woodlot Licence Holder.</li> <li>Supported and regulated by a nationwide Co-operative of forestry people.</li> <li>Woodlot Licences can bring small blocks of unmanaged woodland back into management.</li> </ul>
<b>S2</b>	Provision of Woodland Crofts	<ul style="list-style-type: none"> <li>Concerns over conflict of use for access - extraction of timber vs community and wood croft access. Access routes within the forest would need to be created.</li> <li>Significant wind blow would need to be removed to make this a viable option.</li> </ul>	<ul style="list-style-type: none"> <li>Deliver local economic benefits from more intensive management of the woodland.</li> <li>Reduce timber transport costs, especially in remote areas with poor infrastructure.</li> <li>Encourage the production and marketing of non-timber forest products.</li> <li>Stimulate local economic activity through the provision of sites for homes and businesses.</li> <li>Provide an economically viable management solution where access to woodlands is restricted.</li> <li>Provide the foundation for a community-based social enterprise.</li> <li>Provide opportunities for involvement for members of the community, to build social networks, confidence and new skills.</li> </ul>

			<ul style="list-style-type: none"> <li>• Provide sites for housing &amp; extend communities in areas where sites are in short supply.</li> <li>• Provide sites for housing out with the mainstream property market, controlled by the community.</li> <li>• Retain young families in a community, helping to support schools and maintain essential services.</li> </ul>
<b>S3</b>	Provision of public access	<ul style="list-style-type: none"> <li>• Dog walking is an activity that people like to do close to where they live.</li> <li>• There is already a good walking resource close to the village.</li> <li>• Walking and cycling within the woodland can only be created once the main forestry operations have been completed.</li> <li>• Any new paths or tracks would have to be managed along with the current access resource.</li> <li>• Insurance for mountain biking routes was raised.</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing mental &amp; physical wellbeing.</li> <li>• Tie into the current access network.</li> </ul>

Table 1 - Assessment of potential management options

A further meeting of stakeholders added further potential business options, prioritised these and assigned timescales. This is illustrated in table 2 below. The last column in the table refers to the section in this report that looks at the options in more detail.

Management Option	Priority	Short-term, 0-5 years	Medium-term, 5-10 years	Long-term, 10 years +	Stakeholder Comments	Feasibility report section
Commercial Extraction	1					3.4
Re-stocking	1					3.4
Firewood	1					3.5.1
Access Development (paths)	2					3.6
Woodchip	2				Local chipping	3.5.1

					contractor may be interested.	
Timber Milling	2				On a sub-contract basis.	3.5.2
Woodlots	2					3.5.3
Woodland crofts	2					3.5.4
Tree Nursery	3					3.5.5
Education/skills development	3				On an ad-hoc basis.	3.6.1
Bothy/camping pods	3					3.7
Keeping Pigs, bees, cattle sheep	3				Wood crofts and existing crofters.	3.6.2
Furniture Making	3				Long-term replant, consider coppicing.	3.5.6
Forest farming/gardening	3					3.6.2
Wildlife/biodiversity	3				Integral to forest plan.	3.6.3
Community space	3				Integral to forest plan.	3.6.1

Table 2 – prioritised management options

From this we can see that in the short term (years 1 -5) stakeholders felt that top priority management options are **commercial extraction of timber and the production of wood fuel**.

They also felt that in the same time period the second priority management options should be **wood chip production, access development, timber milling, establishment of wood lots and woodland crofts**.

The third priority options would follow in the medium to long term and included the **tree nursery, bothy/camping pods, furniture making, education and training, agroforestry (keeping pigs, bees, cattle and sheep), forest farming and gardening, wildlife/biodiversity and community space**.

These options are further evaluated below.

### 3.4 Forestry

See Appendix 2 for the full woodland survey report.

The woodland is dominated by 3 species: Lodgepole pine, Sitka spruce and Japanese larch. There has been extensive windblow, particularly through the middle section of the woodland, leaving approximately 58% standing trees. Map 3 in Appendix 5 identifies the species components and main extent of the windblown areas.

Longrigg - species and windblow



Map 3 – species components and windblow.

Not to scale. For scale version see appendix 5.

### 3.4.1 Forestry Management Options

Before extraction and any other activity can take place access to and within the woodland for people, machinery and timber wagons would need to be confirmed. The main access to the wood along Longrigg Road is currently not suitable for use for heavy vehicles due to its construction. Timber transport will cause damage to the route which must be repaired. Alternative routes to the wood from the A861 through Ardnastang common grazings or across Ranachan were suggested. With respect to the Ardnastang common grazings this has been ruled out by those who utilise the grazings for their livestock. The owners of Ranachan have also ruled out a route from the west.

The Longrigg Forest Access Report produced by Arvikaconsult Ltd. provides an analysis of cost to construct a new forest road linked to the public road close to the junction with the A861 which now represents the most likely access to the woodland.

Other significant harvesting constraints and cost considerations could include negotiating the overhead power lines, clearance of windblown areas, restocking felled areas and protecting the woodland from deer and livestock.

Before any activity takes place, a project manager should be employed to oversee the further development and management of the forest. For example, the manager could commission a long-term forest plan, apply for felling permissions and employ a forestry company to undertake the felling and extraction of timber and plan and cost re-stocking, or they could produce the management plan and manage contractors and activity in the forest. They could also be responsible for delivering all other actions in the business plan.

Future management would be best directed by producing a detailed long-term forest plan and meeting the requirements of the United Kingdom Forestry Standard which would set out the management objectives for a 10-year period and ensure the woodland was managed sustainably and in line with government guidelines and best practice.

Once the plan was approved by Scottish Forestry, a felling permission can be secured under which the woodland would be managed, so simplifying the procedures involved. As shown in Table 4 funding from the Forestry Grant Scheme (FGS)<sup>9</sup> can be sought to help pay for the production of long-term forest plans. The grants are paid at £25 per ha so a grant of approximately £2,200 could be applied for.

The Forest Plan should determine access to and within the forest and consider future access requirements for extraction and processing of wood fuel, woodlots, woodland crofts, community spaces and access infrastructure.

Presented below are three options for the restructuring and silvicultural transformation of the woodland in order for it to be more conducive to community ownership and use.

### **Option 1 Short Term Transformation with a focus on Timber Production – Clear Fell and Restock**

We set out here the option of restructuring the woodland over three 5-year felling cycles. The spruce element would be felled in year 1, the larch element in year 5 and the pine element in year 10.

The woodland has been created as a commercial plantation and would suit being managed as such in that the uniform conifer crops could be clearfelled and restocked as would perhaps traditionally be done in such plantations, all constraints being duly considered. The species present; pine, spruce and larch, are suited to the geology and soils typical for that area. That said, as there has been extensive windblow, particularly through the middle section of the

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<sup>9</sup> <https://forestry.gov.scot/support-regulations/forestry-grants>

woodland, and combined with boggy ground, the commercial harvesting of the woodland would be challenging.

If timber harvesting were an objective then access to and within the woodland for machinery and timber wagons would need to be confirmed. Small scale machines with lighter footprints and small timber wagons such as rigids and wagon and drags would be more suitable due to the considerable access constraints. Access by such vehicles would need to be consulted on with both local residents and the local authority before commencing. Other significant harvesting constraints and cost considerations would be negotiating the overhead power lines, clearance of windblown areas, restocking felled areas and protecting the woodland from deer and livestock. The overhead power lines can be managed by suitably experienced and qualified foresters and timber merchants by the use of 'goal posts' and following the latest FISA guidelines<sup>10</sup>.

The most productive areas would be the spruce compartments, and these could be felled to generate income but would need to be restocked. Costs for restocking would depend on the specification selected. This could either be replacing like with like, favouring natural regeneration, planting broadleaves or a combination of all three. We do not think that planting like with like, i.e. replanting spruce at high stocking densities would necessarily be the best option for long term community use. It should be noted that the adjacency rule may come into play when applying for the felling licence to carry out the felling sequence. The United Kingdom Forestry Standard requirement is that even-aged plantations are restructured over time, however, one of the UKFS guidelines associated with this requirement states that young crops i.e. restocked areas, should reach two meters tall before adjacent areas are felled. This may impact the ability to fell off the larch in year 5. The production of the Long-Term Forest Plan and consultation and approvals process with Scottish Forestry should refine the felling sequence based on UKFS guidelines.

In addition to the adjacency rule, there is a risk that the larch will become infected with *Phytophthora ramorum*. This is a notifiable disease and if larch stands become infected then a statutory plant health notification will be issued on the woodland which requires the infected stand and any adjacent stands to be felled off. If this happens at Longrigg it will have a bearing on the future management of the woodland.

The areas of pine present more of a challenge in terms of the extent of windblow. That said, the remaining standing trees could and should be harvested with the resulting income realised. Rather than restock these areas, they may be best left to natural regeneration which in time would create a more windfirm and diverse woodland. Bearing in mind UKFS requirements, the pine would need to be left until the adjacent compartments have reached 2 meters in height. If the larch is not felled until year 5 under this proposal, then it may not be until year 10 that the pine is worked.

Benefits of this option are that significant income generating potential can be realised in the short term, the woodland will undergo more rapid transformation and the second rotation of trees will be established more quickly.

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<sup>10</sup> <https://www.ukfisa.com/safety-information/safety-library/fisa-safety-guides.html?start=32>

The dis-benefits of this option are that there will be significant change and disruption in the short term, the restocking costs are high and the use of Longrigg Road for timber extraction will be greater. There may be UKFS adjacency issues which may make it difficult to restructure the woodland in this way.

### **Option 2 Medium term transformation with a focus on diversifying the woodland – silvicultural transformation**

As mentioned in the existing Forestry and Land Scotland Forest District Plan, there are opportunities to re-shape and transform the woodland, particularly along the southern edge, and it would seem sensible to consider the introduction of a more diverse species mix including native and non-native broadleaves. These could be planted in combination with natural regeneration and some areas of spruce and or pine for shorter term productivity.

As the woodland is restructured over time, areas felled off could be regenerated through a combination of natural regeneration (pine and spruce regeneration is evident in some areas of the wood and birch, alder and willow seem to be regenerating naturally in the surrounding moor and grazings) and planting. A mix of broadleaved species such as oak, sycamore and hazel on the lower sections and birch, alder and willow on the upper and more wet areas of the wood may be more beneficial to community ownership than the current uniformity in age class and species present.

Diversifying age and species compositions would provide a more diverse habitat, improving the amenity value of the woodland and its potential to produce a range of products that could be processed and used locally such as firewood, biomass chip and sawn products such as posts, rails and beams. The FGS can provide rates of either £300/ha for delivering UKFS compliant woodland or £550/ha to restructure age and species composition at the point of replanting following felling over a three-year period. It should be noted that the FGS is currently open to applications until December 2020. An approved forest plan is a prerequisite for accessing the FGS restructuring grants.

If the concept of Woodlots and Woodland crofts were to be introduced, then the managers of each lot may wish to consider initial restructuring by felling small blocks as an option. This would help to generate a short-term income which could be used to offset initial start-up costs. This option does present a not insignificant risk of further windblow as the woodland has not been thinned or felled previously and it is a risk that the community will need to consider. Ways to manage the risk could be to select areas against wind firm edges (rides, glades, compartment boundaries) where trees may be more wind firm than those that are in more central compartments, avoid felling adjacent to wet areas and areas with standing water and ensure any edge trees are cleared a sufficient distance from properties adjacent to Longrigg Road.

We have presented a cash flow forecast in appendix 4 that shows the felling off of three 2.5ha blocks of the spruce, to tie in with the requirements of the Woodlot licence holders, in year 1. This felling sequence could, for example, be repeated every three years until the spruce area has been fully converted from an even aged single species stand into one that is diverse in terms of age classes and species. This could be extended into the larch areas in alternate years.

As the pine area is so extensively windblown, and is likely to be on peat, we do not think this area provides much opportunity for 'Woodlotting' in the future and have included this for clear-felling and leaving to natural regeneration and or conversion to peatland habitat in year 10.

The benefits of this option are that it may suit community use much better, allowing the woodland to be restructured in a way that suits the long term needs of those community and those that use it creating a more diverse, resilient and multi-purpose woodland.

The dis-benefits are the increased risk of further windblow if small block felling is to be carried out, and there will be a much longer second rotation – i.e. the time taken from felling the existing crop rotation to the time it takes to realise income from the second crop rotation. However, if used as Woodlots, this may not be so much of an issue.

### **Option 3 Alternative medium to longer term transformation with a focus on diversifying the woodland**

Both of the above options involve risk and financial complexity in the facilitation of the felling and associated capital works and therefore a third option could be considered that would be more gradual and over the longer term which minimises ongoing expenditure.

A key aim of this option is to realise the value in the most marketable timber, the spruce compartments, and retain the remainder as a long term resource. The felled spruce compartments would be restocked and or naturally regenerated to meet felling licence and UKFS management plan obligations. Further added value options would be developed in the medium to longer term subject to availability of funds. Such activity would be desirable additional outputs rather than elements essential to the short-term sustainability of the project.

An alternative 5 year cash flow forecast is presented that shows the expected income and expenditure under this alternative longer term option and further discussion is presented in the Phase 2 business plan.

For all of the above options, any restocking must be adequately protected from browsing damage. As the woodland is within the strategic deer fenced area we have not included costs for ensuring the woodland is deer proofed although a budget for ensuring the woodland is stock proofed against the grazings has been included. Both broadleaves and conifers would be planted as 40 to 60cm bare rooted whips with no individual protection so regular monitoring for signs of browsing damage must be carried out and mitigation measures taken as required.

Future management would be best directed by producing a detailed long-term forest plan, meeting the requirements of the United Kingdom Forestry Standard and which would set out the management objectives for a 10-year period and ensure the woodland was managed sustainably and in line with government guidelines and best practice.

Once the plan was approved by Scottish Forestry, a felling permission can be secured under which the woodland would be managed, so simplifying the procedures involved. As shown in

Table 4 funding from the Forestry Grant Scheme (FGS)<sup>11</sup> can be sought to help pay for the production of long-term forest plans. The grants are paid at £25 per ha so a grant of approximately £2,200 could be applied for.

Key considerations for the production of the management plan are the UKFS adjacency rule and how this may impact the restructuring of the woodland, the risk from *P. ramorum* infection and how this can be managed and the peatland habitats on site. Scottish Forestry has guidelines on the management of peatland habitats<sup>12</sup> in a forestry context and any long-term plan will need to consider what the options are for managing these areas. It may be the case that the carbon impact of different management options need to be considered and this may include restoring the peat areas to non-woodland peatland habitats.

Employing an experienced and suitably qualified forestry manager to produce the long-term plan should be one of the first steps the community takes on purchasing the woodland. As well as the key considerations above the plan should assess the status of the soils and extent of the peat. These factors will influence how the restructuring of the woodland takes place and the proportion and extent of planting and natural regeneration.

### 3.4.2 Forestry Access Options

The brief for this study required the following tasks to be undertaken in relation to access to Longrigg Forest:

1. Explore the costs & benefits of constructing **alternative access routes**.
2. An investigation of access options **using Longrigg Road** and assess technical and financial implications.

This section of the feasibility study takes each of these tasks in turn, listing the opportunities, constraints and costs of each, before recommending an option for inclusion on the Business Plan. During the course of the study, as a result of landowner consultations it became evident that Longrigg Road is the only viable option, nevertheless, as part of due diligence all options were considered.

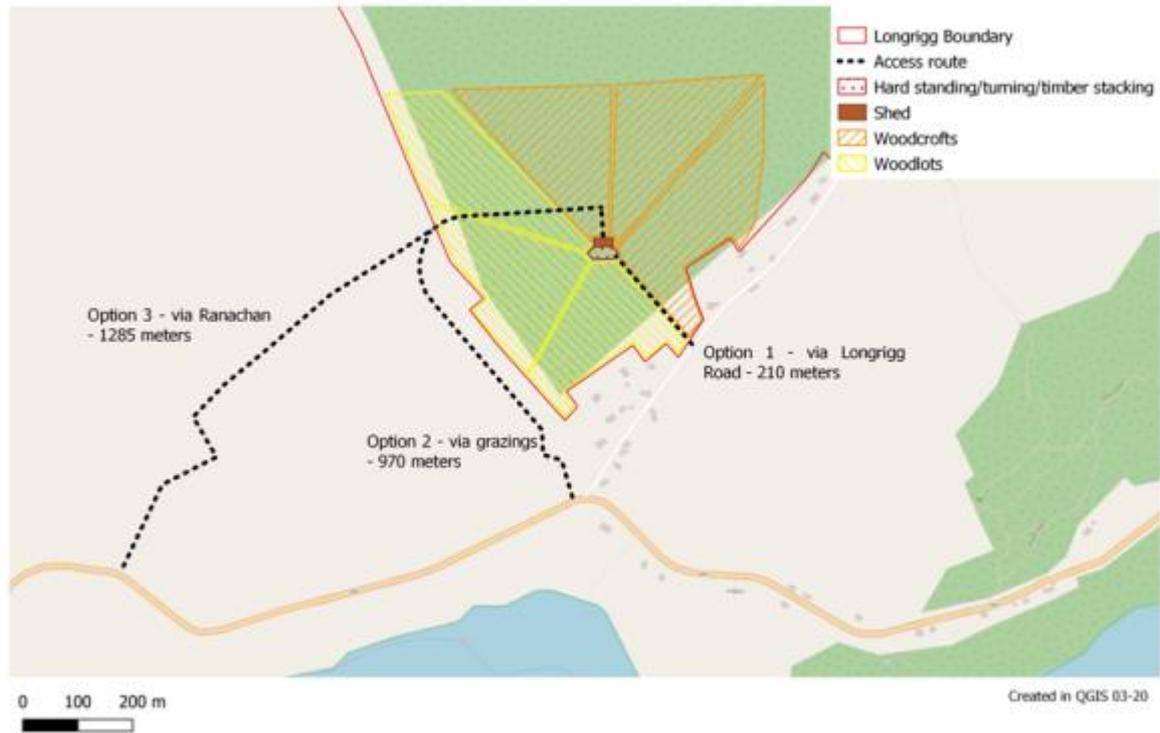
The options for access to the forest that have been investigated can be seen in the map 4 below.

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<sup>11</sup> <https://forestry.gov.scot/support-regulations/forestry-grants>

<sup>12</sup> [https://scotland.forestry.gov.uk/index.php?option=com\\_content&view=article&id=627:peatland-habitats&catid=16:strategy-policy-guidance&Itemid=1061](https://scotland.forestry.gov.uk/index.php?option=com_content&view=article&id=627:peatland-habitats&catid=16:strategy-policy-guidance&Itemid=1061)

## Longrigg Access and Infrastructure



Map 4 – access and infrastructure

Not to scale. For scale version see appendix 5.

### Notes:

1. A hard standing/lorry turning/timber stacking yard is proposed in the SW corner of the forest.
2. The stacking area provides access to potential woodlots/wood crofts and creates a hub for further activities.
3. The access options connect with the timber stacking area.
4. Access options are notional in that full topographical specification surveys have not been carried out.

### Option 1 Using Longrigg Road.

See Option 1 on map 4.

The Highland Council Roads engineer indicated that Longrigg Road is in a poor state of repair. It is on the list for upgrade as and when funds become available. The forest boundary touches on Longrigg Road 300m from the A861 junction. There is a hotel car park south west of the access that could be used to re inflate lorry tyres.

In order to facilitate lorries turning left at the A861 junction, junction widening works will be required. An engineer's report<sup>13</sup> was commissioned to provide a specification and costs for these works along with costs for Longrigg Road improvements.

#### Option evaluation

Criteria	Comments/detail	Costs (EX VAT)
Financial	Improve Junction with A861	£30,000.00
	Improve the Longrigg Road from forest access to junction with A861 (300 metres)	£30,000.00
	Form new access and bell mouth at forest access to Longrigg Road	£10,000.00
	Form New Forest Road (210 metres*)	£25,200.00
	Create turning and stacking area	£15,000.00
	Erect steel frame shed	£20,000.00
<b>Total</b>		<b>£130,000.00</b>
Funding opportunities	Highland Council have no budget to upgrade Longrigg Road. The Strategic Timber Transport Fund (STTF) may provide funding, although the fund is generally oversubscribed. Priorities are generally given to road upgrades connecting to more than one forest. The rate of intervention for one forest could be between 20% - 50%. It is essential that a Long-Term Forest Plan is produced and in the first instance a possible project application form should be submitted. The full STTF application will require input from a consultant – so budget will need to set aside for this.	
Community Benefit	The creation of access into the forest as described is essential if any of the management options are to be realised. The creation of the stackyard and shed provides a facility that can be used for a variety of community activities.	
Employment opportunities	The installation of a track in the forest could provide employment for local contractors.	
Legislative (planning)	HC Planning would require prior notification for any tracks. They have no interest if the existing road is being used to extract. They would require Planning permission for any new access onto the public road and junction improvements.	
Timescales	Dependent on purchase timescale and creation of Long-term Forest Plan.	

\*The length of the forest road can be reduced to 100 meters under option 3 of the woodland management options as set out in section 3.4.1 above. At £120 per meter this would reduce the cost to £12,000. Also, the budget for road improvements works above could potentially be deployed as reinstatement works after use for timber haulage ie the road is used as is for extraction, then repaired.

#### Notes:

<sup>13</sup> Longrigg Forest Access report, 2020, Arvikaconsult Ltd

1. The costs of creating an aggregate forest road are based on the assumption that material will be found for constructing the road from within the forest.
2. These costs include installation of drainage and passing places.
3. A 10% contingency should be added to these costs.

**Option 2 A route from the A861 up through Ardnastang Common Grazing's to the western edge of the forest.**

See Option 2 on map 4.

The route should be designed to Forestry Commission Outline Forest Road Specification. The approximate length of this route is 970m. Note that the route has not been surveyed to provide full specification and is indicative at this stage. Costs outlined below are notional and may increase once a full specification survey is carried out and the project goes out to tender. The Ardnastang Common Grazing's Committee were consulted over the proposed route. The committee rejected the proposal.

Option evaluation

Criteria	Comments/detail	Costs (EX VAT)
	Form new access and bell mouth where track meets A861	£10,000.00
	Form New Forest Road (970 metres)	£116,400.00
	Create turning and stacking area	£15,000.00
	Erect steel frame shed	£20,000.00
<b>Total</b>		<b>£161,400.00</b>
Funding opportunities	STTF funding does not cover this type of forest access.	
Community Benefit	The creation of access into the forest as described is essential if any of the management options are to be realised. The creation of the stackyard and shed provides a facility that can be used for a variety of community activities.	
Employment opportunities	The installation of a track to the forest could provide employment for local contractors.	
Legislative (planning)	HC Planning would require prior notification for any tracks. They would require Planning permission for new access onto public road.	
Timescales	Dependent on purchase timescale and creation of Long-Term Forest Plan.	

Notes:

1. The costs of creating an aggregate forest road are based on the assumption that material will be found for constructing the road from within the forest.
2. These costs include installation of drainage and passing places.
3. A 10% contingency should be added to these costs.

**Option 3 A route from the A861 up through Ranachan estate to the western edge of the forest.**

See Option 3 on map 4.

During the course of preparing this report the owners of Ranachan confirmed that a route across their land was not an option. However, the route had been suggested at the public consultation and was therefore assessed for comparison purposes, and is included here to evidence due diligence.

The route should be designed to Forestry Commission Outline Forest Road Specification. The approximate length of this route is 1285m. Note that the route has not been surveyed to provide full specification and is indicative at this stage. At the time of writing the owners of Ranachan have not agreed to any access over their land. Note that costs outlined below are notional and may increase if a full specification survey is carried out.

**Option evaluation.**

Criteria	Comments/detail	Costs (EX VAT)
	Form new access and bell mouth at track to A861	£10,000.00
	Form New Forest Road (1,285metres)	£154,200.00
	Create turning and stacking area	£15,000.00
	Erect steel frame shed	£20,000.00
<b>Total</b>		<b>£199,200.00</b>
Funding opportunities	STTF funding does not cover this type of forest access.	
Community Benefit	The creation of access into the forest as described is essential if any of the management options are to be realised. The creation of the stackyard and shed provides a facility that can be used for a variety of community activities.	
Employment opportunities	The installation of a track to the forest could provide employment for local contractors.	
Legislative (planning)	HC Planning would require prior notification for any tracks. They would require Planning permission for new access onto public road.	
Timescales	Dependent on purchase timescale and creation of Long-Term Forest Plan.	

**Notes:**

1. The costs of creating an aggregate forest road are based on the assumption that material will be found for constructing the road from within the forest.
2. These costs include installation of drainage and passing places.
3. A 10% contingency should be added to these costs.

**Commentary**

Of the 3 options, Options 2 and 3 do not have landowner and user permission to create access. **The use of Longrigg Road is therefore the only viable option to provide access to the forest.** The only costs that may get funding from the STTF are the junction improvements and upgrade of Longrigg Road. Before any STTF application can be made, a long-term forest plan will need to be produced that provides details of expected volumes and timescales. Smaller volumes and frequency along with the use of wagon and drag lorries with tyre pressure control would assist in maintaining the fabric of the road.

For option 1, the Community Company are considering avoiding the need to improve the junction with the A861 and to haul timber extracted from Longrigg via Acharacle and Lochailort to Fort William. This would add about an estimated additional £2 per tonne<sup>14</sup> to the cost of haulage, up from around £12 per tonne if this timber were to be hauled via Strontian and Clovullin. This could save the cost and disturbance that improvements to the junction would create.

### 3.5 Business Opportunities

An assumption is made that access and a hub area would be created for all options detailed below.

#### 3.5.1 Firewood

Over the last decade a range of consultations have taken place in Strontian and across Sunart. All have illustrated that there is a desire from the community to encourage and promote the use of woodfuel for domestic heating, and that this could potentially be provided through a community owned woodland. At the Sunart community appraisal held in 2014 members of the community were in favour of encouraging the use of woodfuel through community owned woodland. When the actions were sent to a ballot by the community it was in 16th place as a priority action, however, this only had a return rate of 22% (with only 28 votes).

The question of the potential for local woodfuel as a product from a community owned woodland was again raised as part of this feasibility study at the community consultation held in December 2018. Attendees were also asked whether they used firewood, or other forms of woodfuel to heat their homes. Out of a total of 69 respondents just over 50% used firewood. This was supported through the wider stakeholder and community interviews held. Figure 1 below shows a breakdown of how people heat their homes.

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<sup>14</sup> Pers comm. Scottish Woodlands 27/05/2020.

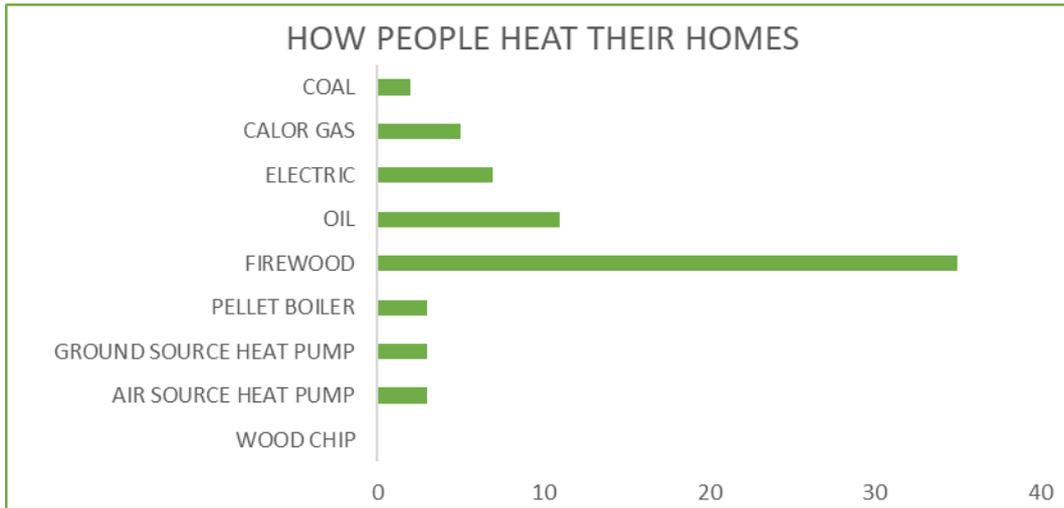


Figure 1 – how people heat their homes

Having a local firewood business was also seen as a sustainable employment opportunity (the only local firewood supplier has recently retired), and a major product from the woodland in the future, affording an opportunity for a long-term local supply of firewood, and reducing transport costs for delivery. It would also present the potential to develop other future schemes e.g. district heating, kiln drying for timber products, firewood and animal bedding. Furthermore, it was seen as a chance to encourage more of the local community to move from fossil fuels and open fires to a more sustainable resource.

**Limitations of the study**

The consultations held have only ever captured the thoughts of less than one fifth of the total population in terms of numbers. There is no way of knowing whether each consultation exercise engaged the same or different members of the population.

**The Market**

Strontian and the immediate locale has a population of just over 400 people (approximately 19% of the population of West Lochaber). The Highland Council 1991 census detailed 713 permanently resident households in West Lochaber, with a range of housing types. Approximately a fifth of these are in Strontian, amounting to approximately 135 households. Strontian also has approximately 18% of its total housing stock listed as a second home (Source: Highland Council – 1991 census)<sup>15</sup>. A woodfuel report for Lochaber carried out in 2015 indicated that approximately 10% of the population of Lochaber might use firewood as a source of fuel<sup>16</sup>. However, the consultation held in December 2018 indicated that this could be higher in Strontian.

Given that:

<sup>15</sup> SUNART WOODLAND TOURISM STRATEGY, Final Report – December 2001, Prepared by Aigas Associates: Amanda Bryan, Issie MacPhail for the Sunart Oakwoods Steering Group

<sup>16</sup> Proposals to increase access to wood fuel in Lochaber. Final report By Donaldson Environmental Consultancy Ltd & Gordon Gray Stephens. November 2015

- Approximately 17% of the population attended the consultation day, and that 50% of those used firewood.
- The area is isolated with a relatively fragmented population.
- The only very local firewood supplier has retired.
- Costs of other local sources of fuel for heating are high.

We have assumed in this report that the possible market for firewood would be 10% of households. Assuming the market would be West Lochaber this amounts to approximately 70 households.

With the assumption that most of the supply would be for wood burning stoves and that an average household would use approximately 5m<sup>3</sup> of dried softwood firewood per annum. For a total of 70 households this would amount to 350m<sup>3</sup> per annum. With an average price for collected firewood of £60/m<sup>3</sup> this gives a value of £21,000/annum. With a dedicated staff and ample timber resources, the potential is there to extend further the market for firewood sales over a 10 year development time frame and to take advantage of the carbon neutral benefits of heating with woodfuel and the acceleration of UK and Scottish Government net zero policies over time. The firewood would require seasoning so essentially would not be available for sale for at least 12 months and the market would have to be built. This is reflected in the cash flow.

An assumption would be that there would be an increase in demand, and consequently price which would be accepted once there is a stable good quality supply. This has been shown by other community woodfuel supply initiatives, for example Knoydart Forest Trust now have a proven track record for supply of quality firewood they are able to set a good price<sup>17</sup>.

## **SWOT analysis for firewood production**

### **STRENGTHS**

- The raw material would be available from harvesting activity in Longrigg.
- The community has registered interest over a number of consultations in some sort of community driven enterprise to improve the supply of wood fuel locally.
- Control over the quality of the woodfuel by the community.
- Provides a business opportunity to help support other activities within the woodland in the longer term.
- Potentially provides local employment.

### **WEAKNESSES**

- Set up costs – yard, inside storage, equipment.
- Limited number of customers due to geography.
- Finding employees from a limited population.

### **OPPORTUNITIES**

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<sup>17</sup> Proposals to increase access to wood fuel in Lochaber. Final report By Donaldson Environmental Consultancy Ltd & Gordon Gray Stephens. November 2015

- An opportunity to promote and use woodfuel as a renewable source of energy in the community.
- An opportunity to promote best practice in wood fuel use to help meet potential future legislative requirements (air quality regulations and the use of woodfuel at less than 20% moisture content).
- Reducing the potential of firewood users buying imported firewood. Keeping our UK producer costs as low as possible is critical not only to support rural enterprise but to reduce imports of kiln dried firewood which have biosecurity risks (e.g. Emerald Ash Borer in US caused the total decline of ash and imports were thought to be the main cause). There is also anecdotal evidence that imports from some countries may also have potential issues with respect to sustainability and legality with raw material being imported across borders from high risk countries.

### **THREATS**

- Limited ability to increase customer base due to geography.
- Competition with other firewood suppliers.
- Imports of kiln dried firewood.

### **Examples of other community woodfuel initiatives**

#### **Dunnet Forestry Trust**

- A community woodland group.
- They have volunteer based woodfuel production and sales.
- Monthly woodfuel sales held on first Saturday of every month.
- <http://www.dunnetforest.org/logsales.html>.

#### **Knoydart Forest Trust**

- Wood Knoydart is a community interest company.
- They make a range of wood-based products as well as selling firewood.
- They offer delivery or collection.
- <http://www.knoydartforesttrust.org/wood-knoydart.html>

#### **Kilfinan Community Forest**

- A community woodland group.
- They offer forest product log sales.
- They offer delivery or collection.
- <http://www.kilfinancommunityforest.co.uk/forest-products-logs.php>

#### **Loch Broom Woodfuels**

- A community owned social enterprise.
- They have an online shop and offer delivery.
- They offer work experience, training and employment opportunities.
- <https://www.lochbroomwoodfuels.com/>

### **Key issues to consider**

- Capital costs are high, raw material should be kept for long periods before processing and sale; a lot of money can be tied up in stock, impacting on cash flow particularly for smaller producers. Hence, it would be best to keep capital costs as low as possible initially until a customer base has been established. This could be achieved for example through sharing processors or bringing in contractors for a short period of time.
- Some sort of undercover storage is essential for further drying following processing.
- Lack of understanding and knowledge of managing a firewood business. This could be resolved through training, e.g. An Ignite training course could be run for potential employees and or volunteers.
- Delivery costs can be difficult to cover for a small business. This could be resolved through sales by collection only.
- The firewood business could be managed by the company and employ staff, but this could be an issue with respect to cash flow initially. Using volunteers and community members can have its own problems, setting this precedent would make it difficult to change the business model later. The firewood should always be sold and not gifted; it has a value and should be able to contribute to the overall income for the community company from the woodland. For example, if the model used involves using volunteers to process the firewood, volunteer hours could be given a financial value that could be used to 'purchase' the firewood.
- Available power, initially there would be no power on site in the woodland, this could be expensive and limits certain types of operation (unless a generator is purchased). The type of equipment used should initially be independent of mains supply.
- Kiln drying can increase the speed that firewood can be dried and sold, ensuring consistency of quality and capital tie up (see section below for breakdown of costs and the range of methods for drying).

## **Methods of drying to reduce seasoning times**

### **Passive Solar drying**

Using appropriately located polytunnels to increase the rate of natural seasoning.

Key points:

- Placement of polytunnel. Ventilation and airflow is key to ensure that moisture is driven off, the ambient MC should always be slightly lower.
- The speed of drying by this method may be difficult to manage.

### **Active Solar drying**

This may not be possible if there is no power on the site, or could be set up in combination with PV.

Key points

- The design of the building.
- Placement and number of fans.

### **Kiln Drying**

Home-made vs purpose designed kilns; both are used across the UK.

### Key points

- Capital cost (boilers, kilns), dehumidifier costs, MC monitoring costs (some kilns will include probes that can be situated across the firewood within the kiln, some do not).
- Ongoing costs (this was previously supported by RHI for boilers, and is no longer available).
- Knowledge and understanding (training may be required e.g. the Ignite training course, most existing legitimate users have learnt by experience).
- Information available for firewood producers on kiln drying can be variable in terms of technical information and accuracy.

### Costs:

This depends on size of the operation, potentially between £30,000 and £150,000 plus boiler costs.

Further information on drying options can be found in appendix 7.

### Other cost considerations for firewood production and sales include:

- Staff and all of their associated costs. These could be reduced by using volunteers initially. Overall management of the operation and staff would be the responsibility of the project manager (see cash flow in main business plan). If staff are employed then full regard should be taken with respect to safe working practices. Lone working with a firewood processor is not recommended; hence two part time members of staff, or a member of staff plus a trained volunteer should be present whenever a processor is being used.
- Safety training and certification.
- Personal protective equipment.
- Insurances including appropriate employers' liability and public and product liability cover should be in place.
- A full Health and Safety policy plus risk assessments should be produced and adhered to.

Table 3 below sets out the options for setting up a firewood business. The benefits and constraints of each option are listed.

Option	Business Model	Benefits	Constraints
1	Independent business given to local contractor	<ul style="list-style-type: none"> <li>• Limited capital expenditure.</li> <li>• Limited management capacity needed.</li> </ul>	<ul style="list-style-type: none"> <li>• Little community control and limited income.</li> <li>• Income from the sale of the roundwood and rent of the site only.</li> <li>• No control over the quality or consistency of supply.</li> <li>• Difficult to regain control once given away.</li> </ul>

2	Volunteers used to manage the firewood business	<ul style="list-style-type: none"> <li>• Reduces revenue costs (salaries).</li> <li>• Good activity to bring the community together.</li> </ul>	<ul style="list-style-type: none"> <li>• More capital expenditure required.</li> <li>• More hands-on management and supervision required.</li> <li>• Availability of volunteers may fluctuate which could cause problems of supply and quality.</li> </ul>
3	Community Company managed business	<ul style="list-style-type: none"> <li>• Control over supply and consistency of quality of supply.</li> <li>• Income from firewood sales goes directly to the company.</li> <li>• Provides employment opportunities.</li> <li>• Provides training opportunities for the production of firewood and its use.</li> </ul>	<ul style="list-style-type: none"> <li>• More capital expenditure required.</li> </ul>

Table 3 Options for the firewood business

### 3.5.2 Wood chip

The study indicated that there is currently a limited local market for wood chip for boilers, the quality woodchip supply market is well developed, and local users are being supplied by existing contractors. The production of wood chip from tail end timber could be left to the forest company managing the extraction of saw logs from the wood or potentially sold to a local chip contractor.

Other potential future markets could be a local district heating scheme for the community, animal bedding, or fuel for a potential CHP scheme as an alternative renewable energy source for the community.

Woodchip is a viable alternative to straw bedding for cattle. It also has the potential to reduce greenhouse gas emissions of the manure handling process. The moisture content of the chip would need to be relatively low (<20%) so it would need to be seasoned in the round and stored in a shed following processing. If processed appropriately it is relatively clean and has limited bacterial growth, also there is less risk of mould development and dust than with straw, resulting in fewer respiratory problems. It is also free draining and a good insulator.

Woodchip can also be used for Combined Heat and Power (producing useful heat and electricity) and district heating schemes (heat only generally although a CHP plant can also run a district heat scheme using the excess heat). The capital costs of installation of both CHP plants and district heating schemes are high and there are currently no grants to support these costs. There are some incentives to help mitigate that costs, details can be found at:

<https://www.gov.uk/guidance/combined-heat-and-power-incentives>

The Renewable Heat Incentive is a scheme that guarantees a return on heat used by the applicants over a 20-year period for the non-domestic scheme under which a district heating scheme would sit (<https://www.gov.uk/non-domestic-renewable-heat-incentive>). Again capital would need to be sought. Some banks are willing to provide loans for such schemes if they can see a business case.

Either of the above options would require a detailed study before consideration.

### 3.5.3 Other renewables

Consideration to other renewables has been given with the main options being solar PV on the storage shed roof and wind power. The main limiting factor for these electricity generating technologies would be connectivity to the grid. A small hydro plant already exists in the wood and is likely to be located at the most consistent spot for water flow so further hydro plants may not likely be as viable. Solar PV would be straight forward to install as part of the new storage shed development and could be used to charge batteries that could be used by those utilising the woodland for woodlotting or timber processing. Both new hydro and wind turbines would require additional detailed feasibility work which is beyond the scope of this report. This would include the most appropriate scale and location of turbines on site, an initial assessment of the on-site wind and water flow resource and how the existing woodland cover would affect this and the long term efficiency and viability of a project as well as planning consent and civil engineering and access requirements.

### 3.5.4 Timber milling

The main timber of suitable quality in the wood is spruce, and to a lesser degree, larch saw logs. A key consideration before setting up a milling business is sourcing the market for the product. Larch is in demand for local agricultural construction due to its natural durability. Spruce presents milling and grading challenges for small mills but there is evidence of demand. It is probably best in the short term to provide the space and timber for a local miller to bring a mobile mill to the wood. An average cost to bring in a Woodmizer plus contractor would be in the region of £400/day. To ensure full benefit, product specifications should be decided upon in advance with all the timber ready to mill felled and made easily accessible. The milled timber should also be stored appropriately before use (preferably in a well-ventilated shed). If purchasing second-hand, mills can be picked up at a reasonable cost, with new from £4,000 depending on model.

The major benefit from timber milling on site is the potential to use the products locally for construction and fencing. For example, for housing on woodland crofts or other building projects, such as for affordable housing. This not only supports the local economy, it will cut the carbon footprint of construction. The timber would require air drying after milling, the length of time varies depending on storage and the relative humidity.

### 3.5.5 Woodlots

The creation of woodlots has the potential to get small blocks of unmanaged woodland back into production. The Woodlot Licence holder pays an annual 'rent' and manages health & safety, public liability and all forest operations.

To make this a viable option, access to and within the wood would need to be created and significant sections of wind blow removed.

### 3.5.6 Woodland crofts

Woodland crofts have potential to deliver local economic benefits from more intensive management of the woodland. They can stimulate local economic activity through the provision of sites for homes, businesses and social enterprises. Where access is restricted to a woodland, they can provide an economically viable management solution.

As with wood lots, access to and within the wood would need to be created.

The main benefit of both of the above options is that they present an opportunity to support overall management of the woodland, reducing the area of woodland to be managed as a whole. The main issue is that care needs to be taken with respect to windblow. The activities of the woodlot holders and crofters would be guided by the objectives the community places on future forest management.

Map 4 provides one possible example whereby three 5ha woodlots and three 5ha Woodland crofts are created with access running from a central hub where a forestry shed, and hardstanding are located. A new forest road would lead from Longrigg Road to the hub so servicing the woodlots. Firewood processing equipment could be based at the hub and the use of the hub and equipment could be shared by the licence holders. Both are dependent on the provision of access and hard standing.

A full options appraisal for woodland crofts and or woodlots would be required before committing to this course of action.

### 3.5.7 Tree Nursery

Although the community felt that the tree nursery was not a high priority, the infrastructure and capital expenditure for this fits well with other higher priority business opportunities. Demand can only increase given the climate emergency and Scottish Government planting targets. The development of both a nursery and firewood business would benefit from a polytunnel, area of hard standing and shed. If the community decides to grow trees from local seed collection the lead-in from developing a nursery area would fit well with ongoing planting following woodland restructuring. It should be noted that the prevalence of pests and diseases could be a limiting factor and indeed risk in the development of a nursery and further advice and guidance from experienced tree nursery managers should be sought.

### 3.5.8 Furniture and Artisan products

The woodland in its current state provides a limited range of timber traditionally used to make many higher value products. However, there is potential for innovation. Restructuring of the woodland will also give the chance to plant species that would provide material for a much broader range of products in the future.

## 3.6 Other Benefits

### 3.6.1 Community space, education and skills training

The provision of community space and a network of tracks and paths through the woodland following restructure provide an opportunity for a broad range of activities. This could include forest schools and practical skills training e.g. chainsaw courses and green woodworking. These should be seen as longer term options once the woodland has undergone restructuring and income from such activities has been included in the cash flow from year 10.

### 3.6.2 Agroforestry

We have included a range of activities under this heading including keeping of cattle, sheep, bees, forest gardening and forest farming. This could be a potential option to help support local crofters and build a connection between the woodland and the crofting community as well as providing the community with space to engage in community assisted agroforestry. There may be concerns over the ability of agroforestry systems to fit into UKFS guidelines for woodland management and this should be investigated further during the long term forest plan production process.

### 3.6.3 Biodiversity and Environment

Careful and thoughtful restructuring of the woodland will provide a chance to dramatically improve the biodiversity of the woodland, link to existing habitat networks and contribute towards ecosystem services, including soil and water protection and carbon sequestration. The neighbouring Phemie's Walk (former 'policy' woodland, now interspersed with some commercial conifer) is highly valued and well used by the community. In time, parts of Longrigg Woodland could therefore provide a welcome extension to this valuable asset. Taking time, working with and involving the community and neighbouring land owners at every stage are all key to the development of a new forest plan.

## 3.7 Housing

The site offers some potential for housing with a range of options. Plots could be sold on the open market, the community could act as a developer and build the housing, or the community could work with a housing association. The Valuation Report<sup>18</sup> does not include any caveat with

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<sup>18</sup> Valuation Report for Longrigg Woodland. DVS. 2018.

respect to reclamation of funding if plots were sold. However, a full discussion with the Scottish Land Fund (SLF) should be held prior to any studies being commissioned to ensure that if the SLF do provide funding for the purchase of the woodland and housing plots were sold that no reimbursement of funds would be required

Woodland crofts also provide an opportunity to build a house on the site. In addition other community woodlands, for example Kilfinan, are currently selling fully serviced plots for £30,000 for self-builds.

It is likely that significant investment would be required for any type of housing scheme. We would recommend that an independent feasibility study be commissioned, which would assess the viability of the range of options.

Housing associations such as The Highlands Small Communities Housing Trust<sup>19</sup> can offer a huge range of support for housing development:

- Surveying for evidence of need.
- Feasibility studies.
- Work in partnership for project development.
- Manage the project to house build stage or to serviced plot stage.
- Contract and build management.
- Production of minutes of agreement for rural housing burden on plots.
- They can purchase the land and sell them as self-build plots.
- Provide support with funding applications (e.g. Rural Housing Fund, SLF).

If areas of the woodland were to be developed as dwellings or small industrial units as part of Woodlotting and Woodland crofting, or as workshops for other rural business, then full planning permission for development and land use change would be required from the planning authority. Highland Council planning often look more favourably if the plans include affordable housing and that there is evidence of need.

Scottish Forestry would be a consultee for this and, as part of the planning application process, would likely require a full Environmental Impact Assessment of the change of forestry use to development land. It may be a requirement of any planning permission if deforestation has taken place that areas for compensatory planting are found.

### 3.8 Recreation and Tourism

Longrigg is currently extremely limited in amenity value. It has very poor access with many of the racks within the woodland dangerous to walk because of the significant amounts of windblow.

There is potential in the future to link in with existing path networks and if a hub area is created this would offer an opportunity to be a start point and parking area for a network of footpaths through the woodland.

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<sup>19</sup> <https://www.hscht.co.uk/>

These would be developed in the new forest plan in consultation with the community, local footpath and other user groups.

Restructuring of the woodland would in the long term be an additional asset for the community to help support local tourism business. Care would need to be taken to ensure there was no displacement activity with other local providers if it was decided, for example, to include facilities for camping or a bothy.

Another potential option would be to have huts in the woodland or sell hutting sites. Huts can be community owned and shared by the community, offer spaces for forest school and other activities, rented out for short or long periods or can be sold on a hutting site within the woodland. They provide a space for relaxation and peace. The 1000 huts campaign provides a raft on information on how to develop hutting sites<sup>20</sup>.

#### 4 Conclusions

This feasibility has been commissioned as part of a proposed application to Forestry & Land Scotland (FLS) and the Scottish Land Fund (SLF) for the purchase of Longrigg woodland. The SLF need to make sure that any investment they support will deliver real benefits and that there are effective plans in place to ensure the project is successful.

The community will need to demonstrate that the purchase of the forest will achieve the following SLF outcomes:

- 1. The community will achieve more sustainable economic, environmental and social development.**
- 2. The community will have a stronger role in their own development.**
- 3. The community will own well-managed, financial sustainable land and buildings.**

This feasibility study has carried out the following tasks prior to assessing the viability of the purchase outlined in the business plan:

- Carried out a survey of the wood to determine the value of the timber resource and risks associated with the purchase and management of the wood.
- Carried out extensive consultation with agencies, stakeholders and members of the community to gather their views on the potential economic, environmental and social benefits to the community.
- Assessed, evaluated and provided costs associated with management options identified by the community.
- Investigated access options and alternative extraction methods.

Under options 2 and 3 as set out in this feasibility study, we believe that the purchase of the wood will bring more environmental, economic and social development to the community in the long term. These options are developed further in Phase 2 – the Business Plan.

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<sup>20</sup> <https://www.thousandhuts.org/>

From the study and further discussions with the community company we have drawn together the list of business products (and options if applicable), and activities for inclusion in the business plan for the purchase of Longrigg. These are shown in table 4 below. We feel that the opportunities included are the most feasible to achieve the above outcomes and to help deliver the broader aims and objectives of the community visioning report and action plan.

<b>Activity</b>	<b>Option if applicable</b>
Timber resource	Medium or Long term transformation with a focus on diversifying the woodland – silvicultural transformation
Forest accessibility	Option 1: Longrigg Road
Woodfuel - Firewood	Option 3: Community Company managed business
Woodlots	
Woodland crofts	
Timber milling and products	
Tree nursery	
Agroforestry	
Affordable housing	
Recreation, Well-being and Tourism	
Education, training and skills development	

Table 4 – business products and services

## Appendices

- Appendix 1 – Community Consultation Report
- Appendix 2 – Woodland Site Survey Report
- Appendix 3 – Access Report
- Appendix 4 – Cash Flow Projections (for phase 2 - the business plan)
- Appendix 5 – Maps
- Appendix 6 – Project Brief
- Appendix 7 – Drying Options
- Appendix 8 – Project Manager Job Description