



SCOPING OF A WOODFUEL PROJECT FOR THE EAST OF ENGLAND

PREPARED ON BEHALF OF
THE FORESTRY COMMISSION BY
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Summary

The England Woodfuel Strategy (Forestry Commission 2007) calls for a significant increase in the uptake of wood fuel and describes the many environmental, social and economic benefits to doing so. Meeting the targets outlined in the strategy will require not only a significant increase in the number of woodfuel installations in the East of England Region, a trend which is already discernible due to the increased cost of fossil fuels, but a step change in the wood fuel production and processing supply chain. This applies not only to a quantitative increase in timber harvesting volumes (100% by 2020) but also a fundamental reorientation of the sectors approach to issues such as training, quality standards and technical specifications. There is also universal agreement that if this is to be achieved there will need to be additional and sustained awareness raising amongst potential users of the benefits of woodfuel.

The policy context is extremely supportive of woodfuel, with both national and regional instruments such as the East of England Plan, the Rural Development Plan for England and the Regional Woodland Strategy all recognising the benefits of woodfuel use and calling for increased capacity.

The East of England Region currently has a large amount of unmanaged woodland which could supply the fuel stocks for the number of installations envisaged. This would bring benefits to the woodlands concerned, in terms of biodiversity and access, to the owners of such woodlands through diversified income streams and sustainable markets, to supply chain businesses which would see new opportunities opening up, and to local communities which would benefit from increased rural employment, reduced heavy vehicle movements and reduced leakage of wealth to distant areas.

In order to achieve this increased capacity investment will be required in improved access for management, harvesting and processing machinery, storage and drying facilities. The estimated total spend in order to achieve an additional annual harvest of 110,000 tonnes (an indicative target set for 2013 in the England Woodfuel Strategy) and its processing into woodfuel is in the region of £6.1m. Much of the initial harvesting in previously unmanaged woodlands will be at a net cost and this is estimated at £1.4m p.a. for a period of 8 – 10 years.

It is recognised that a wide ranging and authoritative programme of awareness raising, promotion and facilitation is introduced. This should work in partnership with existing providers and seek to build sustainable capacity within the sector. The annual cost of this activity is estimated to be £157k.

It is recommended that in order to oversee this investment in the sector, and to draw together the awareness raising and promotional activities required, a woodfuel specific and time bounded project is created. Whilst the final structure of this will depend on funding issues yet to be determined, a basic structure which can be altered to suit potential hosting arrangements is outlined. It is vital that this project has the full support of, and engagement with, the forestry and woodfuel sectors and recommendations are made as to its governance in pursuit of this. Transparency, responsiveness and expertise are identified as the core issues in this respect. The set-up costs of such a project are in the region of £31k with annual ongoing revenue cost of £250k.

1.0 Introduction

Aims & Objectives

- 1.1 This study has been commissioned by the Forestry Commission East of England Region in order to scope a project that will facilitate a significant increase in the uptake of woodfuel installations and build capacity in the associated supply chain within the region.
- 1.2 The outline objectives of the project are described as addressing the whole supply chain and demand structures required to support an increase in the amount of biomass made available from existing woodlands of approximately 110,000 tonnes¹ by 2013. This is an increase of 50% on current wood production from the region. The recently published England Woodfuel Strategy (see 1.7) makes a case for this to grow to a target of in the region of 200,000 tonnes by 2020.
- 1.3 Achieving such an increase in timber supply would, assuming average conditions, lead to the savings of 40,000 tonnes of carbon emissions per year and be equivalent to supplying 25,000 homes with energy (by 2020).
- 1.4 The outputs for the scoping study were defined as: -
 - Report providing rationale for project proposed
 - A draft project structure to cover both supply and demand
 - An indication of the organisations or agencies who would be involved and their areas of responsibility. This should include both the public and private sectors
 - Indicative costs for each element of the project
 - Identification of potential sources of existing funding
 - Identification of, and justification for, new funding streams with indications of potential sources
 - A database of existing and proposed wood fuelled boilers in the region
- 1.5 The study has been compiled following an extensive programme of interviews with stakeholders and supply chain members, meetings, desk top research and field visits.

Policy Context

- 1.6 The need for the project has arisen as a result of the Government's response to the Biomass Task Force Report², which recommended to Government a number of actions to support and stimulate the biomass sector and supply chain in England. One of the recommendations (no. 30), which the Government subsequently accepted in its response³ (see 1.7), was '... as a first step the Forestry Commission should urgently undertake and publish a full assessment of, and set out a strategic plan for, the development and use of short rotation forestry, forestry waste, farm and other woodlands, local authority trees and commercial forestry'.

¹ Unless otherwise stated, figures in this report relating to tonnes of timber refer to 'green tonnes' i.e. material at harvested weight.

² Report to Government, Biomass Task Force (2005) www.defra.gov.uk

³ The Government's Response to the Biomass Task Force Report, DEFRA (2006) www.defra.gov.uk

- 1.7 The action agreed by Government was to task the Forestry Commission (FC), in conjunction with the Regional Development Agencies (RDA's) and the private sector, to prepare a strategy and implementation plan '... in order to increase the amount of biomass made available through the supply chain.'
- 1.8 The resulting strategy, A Woodfuel Strategy for England⁴, was published by the Forestry Commission on 28th March 2007. It contains a national target of bringing to market an additional 2 million tonnes, annually, by 2020. This represents approximately 50% of the currently unharvested sustainable yield in English woodlands and would save 400,000 tonnes of carbon emissions annually.
- 1.9 The strategy broadly recommends actions in three areas '(i) capital investment and support – to accelerate and build a functioning and secure market, (ii) outreach and facilitation – to link and give confidence in the supply chain, and (iii) awareness raising – to bring more woods into productive and sustainable management by engaging with and advising woodland owners, entrepreneurs and communities'.
- 1.10 The strategy recognises different sources of woodfuel including '... existing woodlands, arboricultural arisings, sawmill co-products, woodland creation and recovered wood', but, as directed by government '... concentrates on woodland that is currently under-managed.'
- 1.11 The strategy also ranks the order of priority for the use of wood energy (whilst not ruling out any potential use) as (i) local heat generation, (ii) small to medium combined heat & power (CHP), (iii) dedicated electricity production, and (iv) large scale generation and co-firing.
- 1.12 The strategy is to be followed by an implementation plan, which will '...deliver at regional or sub-regional level, supported by a national core of research & development, advice and advocacy'.
- 1.13 The Regional Woodland Strategy 'Woodland for Life'⁵ also outlines the case for increased use of renewable energy and the role of woodfuel in achieving this – 'RE1 Promote the use of wood for heat generation'. Through the accompanying action plan, three reports⁶ have been undertaken to assess the potential for the development and growth of the wood energy industry in the East of England. These reports comprehensively described the potential for woodfuel, the technical issues involved, and the market opportunities. Whilst woodfuel policy and practice in England has moved relatively far since the publication of these reports, it is not the purpose of this report to revisit these areas in depth.
- 1.14 The East of England Plan (the Regional Spatial Strategy) - is due to be published in summer 2007. The most recent 'draft', the Schedule of the

⁴ A Woodfuel Strategy for England, Forestry Commission (2007) www.forestry.gov.uk/england

⁵ Woodland for Life: The Regional Woodland Strategy for the East of England, East of England Regional Assembly and The Forestry Commission (2003) www.woodlandforlife.net

⁶ (i) Proving of Woodfuel Harvesting in Undermanaged Woodlands in the East of England, Econergy Ltd. (undated), Woodfuel in the East of England: Prospects and Potential, Anglia WoodNet Ltd. (2003), Opportunities for the market Development of Wood Heating in the East of England, Econergy Ltd. (2005) www.woodlandforlife.net

Secretary of States Decisions on the Recommendations by the Examination in Public Panel⁷, supports a 'much stronger emphasis on responding to climate change including a specific requirement for Development Plan Documents (DPDs) to 'encourage the supply of on-site renewable energy sources' (Policy ENG1) and sets targets for renewable energy installed (ENG2).

- 1.15 Renewable energy is encouraged under a number of priorities within the Rural Development Plan for England (RDPE) and the draft East of England Regional Implementation Plan⁸(RIP) includes explicit support to '... increase the uptake of renewable energy' (RIP Theme No 1: Business Efficiency).

⁷ Secretary of State's decisions on the Recommendations by the EiP Panel, www.gos.gov.uk/goeast

⁸ Draft RDPE Regional Implementation Plan (2007), RDPE Regional Steering Group

2.0 Setting the Scene

Woodland Resource

- 2.1 According to the National Inventory of Woodland and Trees⁹, there are 113,094 ha. of woodland (> 2 ha.) within the East of England region. There is a further 26,000 ha of woodland between 0.1 ha. - <2.00 ha. Appendix IV shows the distribution of woodland within the region.
- 2.2 Of woodlands in excess of 2 ha., 23% by area (25702 ha.) is under the management of the FC. The remaining 77% (87392 ha.) is owned by private landowners, local authorities, charitable organisations and commercial institutions.
- 2.3 Of non-FC woodland over 2ha., 44% (39,000 ha) is in woodlands under 20 ha. If woodlands under 2 ha. were included this proportion increases to 57% (65,000 ha.) of the non-FC woodland resource in the region.
- 2.4 FC woodland has a mean wood size of 230 ha. whilst the mean for non-FC woodlands is 11.3 ha. (woodlands > 2 ha. only) or 2.2 ha. (all woodlands > 0.1 ha.).
- 2.5 70% of FC woodland area in the region is conifer compared to 11% of non-FC woodland.
- 2.6 Woodland ownership, beyond the broad FC/private/other public categories, is not known in detail. In the more rural counties it follows the traditional pattern of estates and farms, but in areas closer to the more prosperous urban settlements there is anecdotal evidence of increased ownership by previously non-landowning individuals.
- 2.7 Estimates of the total amount of woodland currently in some form of management are complicated by potential for double counting within various grant schemes and incomplete knowledge of woodland outside of approved grant schemes. Recent work by the FC has indicated that approximately 78,000 ha. are under formal management, leaving 61,000 ha. unmanaged (all woodlands > 0.1 ha. including recently planted woodland not yet managed). As it is assumed for the purposes of this work that all FC woodland is managed, 61,000 ha. represents approximately 54% of non-FC woodlands in the region.

Timber Production & Economic Value

- 2.8 Theoretical annual timber production in the East of England Region is estimated to be in the region of 450,000 cubic metres (cu m) per year, rising to a potential 520,000 cu m by 2040.
- 2.9 Current timber production in the region is estimated to be less than 300,000 cu m¹⁰. The Report 'Woodfuel in the East of England: Prospects & Potential'¹¹

⁹ National Inventory of Woodland and Trees (2002) Forestry Commission www.forestry.gov.uk

¹⁰ Woodland for Life – Regional Woodland Strategy for the East of England (2003) www.woodlandforlife.net

indicated that the estimated annual production of small roundwood in the region is approximately 205,000 tonnes. This does not include the residue fraction (i.e. branches and tops over 7cm diameter) which is normally left on site after harvesting and which could amount to an additional 10% – 20%. Forest Enterprise production within Thetford Forest District is currently 125,000 cu m.

- 2.10 Timber available from woodlands is one part of the potential woodfuel resource in the region. Renewables East have estimated that there is as much as 740,000 tonnes of available wood waste generated each year in the East of England. A significant proportion (635,000t) of this material is construction and demolition waste and is thus generated primarily within the urban and growth areas. All of this is technically utilisable in woodfuel installations, although the implications of using such waste depends on whether it is classified as 'clean' i.e. untreated, no fixings, or contaminated i.e. treated with paint or preservative, meta fixings etc..
- 2.11 The Forest, Woodland and Timber Sector employs approximately 49,000 people in the East of England Region¹², with 1250 of these being employed in forestry and primary wood processing¹³
- 2.12 Apart from one contractor who harvests large volumes (c 50,000t) of timber and forest residues from FC woodland, of which a proportion is destined for woodfuel, the processing of timber into woodfuel in the region is in an embryonic state. With the exception of Anglian Woodfuels and its members (see 2.13) the supply chain consists of a number of small enterprises and individuals who supply wood fuel primarily as an adjunct to their existing business. This includes arboricultural companies processing arisings and woodland owners processing fuel for their own needs.
- 2.13 A woodfuel producer group, Anglia Woodfuels, supported by a DEFRA Bio-energy Infrastructure Grant, has been created to '... develop a woodfuel supply chain throughout the eastern region through a membership scheme that offers a woodfuel chipping service, technical advice and support ...'. The group have purchased a chipper which is available for hire by members and works with a variety of landowners, contractors, agents and suppliers to build a 'diverse customer base' through offering advice and support in addition to fuel supply. Anglia Woodfuels is a non-profit distributing company with the secretariat and financial provision being supplied by Anglian Farmers Ltd. Funding through the Bio-energy Infrastructure Grant Scheme is on a reducing basis and is due to end by 2008. A substantial proportion of the advocacy work of the company is undertaken by Directors and other advisors on an unpaid basis.
- 2.14 Anglia Woodfuels has been instrumental in supporting the creation of a private company, Eastern Woodfuels, who are based at Rendlesham in East Suffolk and who have developed a wood fuel supply 'starter' business based on the presence of a number of local boilers. It hires in the Anglia

¹¹ Woodfuel in the East of England: Prospects and Potential, Anglia WoodNet Ltd. (2003) www.woodlandforlife.net

¹² Woodland and Forest Sector in England (2005) Jaako Poyry Consulting www.efip.org.uk

¹³ Employment in Forestry and Primary Wood Processing 1998/1999, Forestry Commission, www.forestry.gov.uk

Woodfuels chipper, has a lorry with blower unit capable of handling both chip and pellets and extensive storage facilities.

Woodfuel Installations

- 2.15 As elsewhere in the UK, the East of England Region is serviced by a relatively small number (≈ 6) of biomass boiler installers. Two of these are based within the region and have extended to achieve further national coverage, whilst the others are national companies who have regional offices or representatives. All but one of these companies import boilers made outside of the UK and in most cases have exclusive UK distribution rights for that make of boiler.
- 2.16 All installers report significantly increased interest in biomass boilers in the last 12 months, in most cases in excess of 100%.¹⁴ There is some evidence of difficulties within the sector of building adequate capacity to service this interest, with particular concern regarding the skills shortages in the plumbing industry. This relates especially to the smaller (e.g. <100 kW) installations where the main agents in some cases act as suppliers only.
- 2.17 The capital cost of a woodfuel installation is significantly more than a fossil fuel equivalent, possibly as much as three to four times the cost. Payback periods are determined by the price differential between wood and the fuel source that would otherwise have been used. In recent years with oil at historically high rates this has reduced, in some cases, to five years or less.
- 2.18 The pattern of existing woodfuel installations varies across the region. Whilst they are present within all sectors (public, private, NGO) the most significant growth in recent years has come from within the public sector. Most notable amongst these is the emerging cluster (see 2.14) around east Suffolk where Suffolk County Council has installed six woodfuel boilers in schools.
- 2.19 Investment in this sector in the last 2 – 3 years has been primarily private sector led, in response to the relatively modest availability of capital aid for the installation of wood fuel boilers, and more recently the increased cost of fossil fuels.

Advice & Advocacy

- 2.20 Advice and advocacy relating to woodfuel within the East of England region is currently undertaken by a number of organisations, some regional and some national. Such activity is essentially opportunistic and there is little or no co-ordination throughout the region. Most notable amongst the national organisations are the Biomass Energy Centre (BEC), an initiative of the Forestry Commission, and another outcome of the Government's response to the Biomass Task Force Report (see 1.6). BEC has been active for less than 12 months but reports significant interest in woodfuel uptake across England, including the East of England Region. Whilst it does aim to provide support across the supply chain, its capacity to do so is limited and it relies on local delivery partners to undertake much of the detailed support. In

¹⁴ Interviews with author, October 2006 – March 2007 (Appendix II)

addition to telephone support BEC's main mechanism for providing support is through its website at www.biomassenergycentre.org.uk.

- 2.21 Renewables East, the agency for renewable energy in the East of England region, was established to '... to champion renewable energy in the East of England, and our goal is to secure economic, social and environmental benefits for the region'. It is a not-for-profit company formed by a partnership of private and public sector organisations and funded exclusively by the East of England Development Authority during its first three years. It exists to facilitate entry to and growth in all renewable energy fields and is active in promoting biomass as an option across a wide range of end users and suppliers.
- 2.22 The previously mentioned Anglia Woodfuels have undertaken an extensive programme of awareness raising across the region in conjunction with a number of partners including the Anglian Woodland Project, Country Land & Business Association (CLA) Suffolk County Council and the Norfolk Coast and Dedham Vale AONB's. Its individual Directors and members have also been very active in providing advice and promoting woodfuel on a voluntary basis.
- 2.23 In addition to the above a number of other organisations promote woodfuel through their activities. These include the AONB's, Community Forests, Government Office for East England, Natural England and local authorities. This activity, which is not co-ordinated at a regional level, generally takes the form of generic promotion of and support for renewable energy rather than woodfuel in particular, often as a means to achieving other outcomes such as sustainable rural development, diversification or landscape protection.
- 2.24 The Forestry Commission has taken the strategic lead on woodfuel at a national level. It is required to take an increased and leading role in this sector in implementing the national Woodfuel Strategy at the regional level. As well as commissioning this report and the three reports mentioned in 1.12, the FC has led on discussions with regional partners over potential Rural Development Plan funding.

Funding

- 2.25 Current funding provision for woodfuel in the East of England is nationally (England) provided, although in some cases via regional or sub-regional facilities. A number of grant aid sources closed at the end of the 06/07 financial year and these are not included in the following summary.
- 2.26 The DEFRA funded Bio-energy Capital Grants Scheme supports the installation of biomass fuelled heat and combined heat and power projects in the industrial, community and commercial sectors. Although the most recent round closed on 9th March 2007 it is hoped to hold another application round, subject to availability of funding. In addition, a number of boiler installers have secured funding under this scheme which is to be allocated to end users by a certain deadline (depending on the round under which the funding was allocated and subject to demand) and which at the time of writing is still available.

- 2.27 The DTi funded Low Carbon Buildings Programme was launched in 2006 and replaced the Clear Skies Grant Schemes (amongst others). It has two phases, Phase 1 which supports householders and community organisations (Stream One) and medium and large microgeneration projects by public, not-for-profit and commercial organisations (Stream two) and Phase 2 which supports the installation of microgeneration technologies for public sector and charitable bodies. The Phase 1 Stream One householder scheme received additional funding in the 2007 Budget and has recently been relaunched.
- 2.28 Funding is also available through the Norfolk Broads and AONB Sustainable Development Funds (DEFRA) to support some activities across the woodfuel supply chain. AONB SDF's have funded on a limited scale the installation of boilers, machinery and promotional activity where this has coincided with wider sustainable development projects. SDF priorities vary across areas and funding is subject to availability throughout the financial year. It is proposed to consolidate SDF funding within core National Park/AONB funding as from April 2008 and therefore there is some uncertainty as to whether this particular source of funds will continue to be available.
- 2.29 Various other funding has been made available for woodfuel installations in the East of England, such as charitable foundations and local authorities, but this is allocated on a project specific basis and its applicability is limited.
- 2.30 All sources of funding require an element of match funding to be supplied by the applicant, usually at least 50%. In the case of public sector applicants this can include other public sector funds but private sector applicants are restricted in most cases to 30% or 40%. Thus the applicant will in most cases be the largest single funder of installations and supply chain investment.
- 2.31 Relative to the point above, other financial and fiscal incentives such as the UK Treasury Enhanced Capital Allowance Scheme are available. This scheme allows businesses to write off the whole of the capital cost of investment in certain technologies (including biomass boilers on an approved list) against taxable profits in the first year.

Planning & Legislation

- 2.32 There are a number of planning and legislative issues which whilst not specific to woodfuel do provide context within which it operates.
- 2.33 Planning Policy is generally supportive of renewable energy (see 1.12) primarily through Planning Policy Statements (PPS) such as PPS22 Renewable Energy, although the focus is on electricity rather than heat. Local authorities are increasingly adopting local development plans that require a specified element of renewable energy in new developments (the 'Merton Principle', see 3.46).
- 2.34 Planning permission for woodfuel boilers is only required where their installation requires new or adapted buildings. Planning permission will be required for new storage facilities and hard standing etc. where these are external to the wood or forest where they were produced. In most circumstances forest roads and hard standing are exempted from the need

for planning permission although they require determination under the Forestry Environmental Impact Assessment Regulations¹⁵. Development control is currently neutral to renewable energy in that it makes no special allowances for it.

- 2.35 Building Regulations Part J (Combustion Appliances and Fuel Storage Systems) govern energy combustion appliances, fuel storage facilities, flues, fire safety, ventilation etc., and Part L (Conservation of Fuel and Power) is advantageous to biomass in that it sets targets on the total carbon output for new buildings, which woodfuel is well suited to meet.
- 2.36 The Clean Air Act (1993) requires that any fuels, including wood based fuels, used in a smoke control area can only be burned in an exempt appliance that has been tested and approved under the Act.
- 2.37 Wood wastes (excluding those which have been treated with coatings or preservatives) are exempted from the Waste Incineration Directive (WID). The disposal of ash, from any wood source, is not covered by the WID but may, depending on the quantities involved, be covered by other legislation such as the Landfill Directive. Forestry arisings i.e. those parts of the tree not normally removed from the harvesting site, are not considered to be waste under the terms of the WID.
- 2.38 The felling of trees is controlled by the Forestry Commission through the Forestry Act¹⁶, with further protection of trees given by local authorities through Tree Preservation Orders under the Town and Country Planning Act¹⁷.

¹⁵ www.forestry.gov.uk/forestry/inf-d-6dfkbc

¹⁶ www.forestry.gov.uk/forestry/inf-d-6dfkbc

¹⁷ www.opsi.gov.uk/acts/acts1990/Ukpga_19900008_en_1.htm

3.0 Defining the Issues

- 3.1 The discussion below outlines the issues which are considered to be relevant to the successful creation of a sustainable wood fuel supply chain in the East of England. It draws on the information outlined in Section 2 'Setting the Scene' and extensive consultation with the sector. It is broadly laid out in the same series of topics.

Woodland Resource

- 3.2 The East of England woodland resource is similar to the average for England (7.3%/8.4%) and in that it is scattered and fragmented. Even excluding woodland under 2 ha. there are approaching 8000 woodlands in the region, nearly 7800 of them in non-FC ownership. 6000 of these, representing 77% of the area, are of under 10 ha.
- 3.3 There is clearly much woodland in the East of England that is not under any form of management. The most rudimentary analysis of the statistics suggests that in excess of 60000 ha. is outwith any grant scheme and thus unlikely to be in positive stewardship.
- 3.4 What these statistics mask is the extent to which woodlands which are in some form of grant scheme are undermanaged. Given the reduction in timber prices since 1996 (in the order of 60%) many private woodland owners are no longer able or willing to thin woodlands in accordance with appropriate silvicultural treatment and clear fellings are delayed beyond the maximum mean annual increment¹⁸ of a stand.
- 3.5 National and regional policy and extensive research outlines the variety of public benefits arising from woodlands, and the extent to which these benefits may be maximised through their active management. Biodiversity, carbon sequestration and recreational values are all significantly increased in woodlands which are under sustainable management¹⁹ and conversely lost or reduced in under or un-managed woodlands. The recently published England Woodfuel Strategy underlines the potential for the management of woodlands to contribute towards 'one planet living' and the opportunities it presents for achievement of related targets such as the recently revised Habitat Action Plan for native woodland.
- 3.6 The statistics available outline a situation characterised by a fragmented woodland resource in many different ownerships, all of which are likely to have competing demands on resources and drivers for what may instigate management. This has important implications for any project that seeks to stimulate woodfuel production.
- 3.7 Much of the woodland resource will be owned by farmers, who have limited skills in, and knowledge of, woodland management. To their benefit they do have transferable skills which can be utilised and often possess machinery and buildings which can be adapted for use in woodland management.

¹⁸ The point within a rotation at which production, on average, is at a peak and at which clear felling should take place in order to maintain the sites productivity.

¹⁹ Woodland Management for Timber and Wood Products: The Impact on Public Goods Output, University of Gloucestershire Countryside and Community Research Unit (2006) www.forestry.gsi.gov.uk

They will also have an appreciation of and sympathy with the need to manage most land use types if they are to maintain their biological and economic productivity.

- 3.8 Conversely, the recent trend for purchase of woodland amongst non-traditional owners – so called ‘hobby’ owners – represents different issues. Given that their main interest in owning wood is ‘lifestyle’ orientated they may be opposed to, or at best ignorant of, the need to actively manage woodlands; anecdotal evidence suggests that many wish to ‘do the right thing’ for their woodland but lack the necessary knowledge or skills or know where to obtain such information.
- 3.9 The lack of adequate woodland access (for management purposes) was considered to be an important issue for certain key woodlands in the region i.e. those of high relative biodiversity value or within fragile landscape types. There were also a number of other circumstances under which investment in improved access would be desirable, namely where estates had significant areas of woodland in inaccessible locations or where there were ‘clusters’ of small woodlands that could benefit from joint access or hard standing.
- 3.10 There was consensus amongst those involved in this part of the supply chain that most owners will not, as is the case at present, undertake management works where there is not a financial incentive to do so. Whilst most owners and agents wanted to proactively manage their woodlands, they could not afford, or justify to clients, the necessary investment to do so given current market conditions and thus any new supply chain needed to recognise this from the outset.

Timber Production

- 3.11 The brief for this study indicates a target for the production from the regions woodlands of an additional 110,000 tonnes of timber by 2013. Current figures suggest there is a gap between actual and potential harvestable quantities of at least 150,000 tonnes per annum. This does not include forest arisings, which under some circumstances may be recoverable in a woodfuel harvesting system and could add an additional 45,000 – 90,000 tonnes to this figure. The productive capacity of the regions woodlands is increasing and will add another 70,000 to 84,000 tonnes (if arisings are included) by 2040. Clearly then this is not a limiting factor in achieving this target.
- 3.12 Timber volumes from FC woodlands are currently fully committed and there is little opportunity for them to contribute to this target in the next 5 years. There may be some potential in the increased management of small areas of broadleaves and increased recovery of arisings from stands elsewhere than Thetford Forest, but the quantities involved are not significant.
- 3.13 An additional 110,000 tonnes of timber harvested from the regions woodlands equates to approximately 330,000 cu m of woodchip. The potential energy output of this quantity of timber is 135MW (thermal) of installed capacity. The actual output will vary depending on a wide range of factors, but assuming normal operating conditions and efficiencies and an average woodfuel installation of 150kw with a full load equivalent of 1800 hours this would provide adequate fuelstocks for over 900 such installations.

- 3.14 Such an increase in production is bound to require a significant increase in the associated supply chain elements. The existing numbers employed in forestry and primary processing relative to the area managed reflects the fact that a majority of this activity is undertaken in the relatively large and productive (i.e. species, access etc.) woodlands managed by the FC and a small number of estates where mechanisation is possible. Like for like increase in productive capacity will therefore require an above proportion increase in labour.
- 3.15 Falls in timber prices in the last decade have seen significant numbers leaving the forest industry²⁰ and there has been a commensurate fall in skills capacity. There is anecdotal evidence to suggest an increase in average age and reported difficulties in recruitment of new entrants and retention of existing staff. Forestry offers below UK average wage levels²¹ and is not alone in the land use sector in being perceived as an unattractive career option²².
- 3.16 Principal expansion in this part of the supply chain will be in two elements (a) harvesting and (b) processing. As indicated above, much of the existing harvesting capacity (in volume terms) is highly mechanised and not necessarily widely appropriate for working in the smaller woodlands that will have to be managed if the necessary volumes are to be achieved. Conversely, it is unlikely that adequate new entrants would be forthcoming to envisage a large proportion of this volume being brought forward by traditional 'motor manual' methods (i.e. operator with chainsaw). Therefore it is probable that investment in semi-mechanised systems with machinery suitable for working in smaller woodlands will be necessary.
- 3.17 The second of these elements, processing, will also require significant expansion. In this context processing primarily concerns the chipping of timber to the required specification, but also the directly associated supply chain elements e.g. haulage & delivery mechanisms. Whilst there is currently some spare capacity within the region for chip processing, this could be quickly taken up by the increased number of installations already in the planning stage. Currently the chippers that do exist have to be transported long distances, adding cost and increasing non-productive time. In addition, transporting chip large distances (most quoted in excess of 20 – 30 miles) is unproductive given its high volume to weight ratio.
- 3.18 Evaluation of the FC Woodland Harvesting, Processing and Marketing Grant Scheme (WHPMGS), run as a pilot in 2005/06 in selected English regions, indicated that the forestry sectors ability to take advantage of business support mechanisms was hampered by small business size (giving little time for management to focus on business development rather than operations) and a general disengagement with such programmes²³.
- 3.19 The WHPMGS evaluation also outlined a particular difficulty facing the forestry sector in securing match funding for grant aided investment. Unlike the owner occupier farming sector, which generally has a low loan to asset

²⁰ Employment in Forestry and Primary Wood Processing 1998/1999, Forestry Commission, www.forestry.gov.uk

²¹ The Annual Survey of Hours and Earnings (ASHE) 2006, National Statistics Office www.statistics.gov.uk

²² Woodland and Forest Sector in England (2005) Jaako Poyry Consulting www.efip.org.uk

²³ Evaluation of the WHPMGS (2006) Martin Glynn FICFor, www.forestry.gov.uk

gearing ratio and can thus usually obtain private finance on relatively favourable terms, most forestry businesses have very low assets and thus cannot obtain finance on such terms. Hence most forestry businesses finance business investment through lease purchase or similar, which is not eligible for most forms of public business support programmes.

- 3.20 Training for woodfuel producers was raised by a number of interviewees. Whilst many of the core skills required are not new to the forestry sector, the need for consistency of standards and quality of product was stressed by both producers and consumers. Most reported system failures, or sub-optimal operation, had occurred where fuel types did not match the requirements of the boiler. This need for a focus on the quality needs of the end user is not common place in a sector where the traditional output is an unfinished product (e.g. log for sawmilling).
- 3.21 Given that the woodfuel supply chain is a new one, an indirect, but nevertheless important, product of training was considered to be the degree of confidence that it gave to both producer and consumer that this was a reputable sector to become involved in. This has implications for training providers in ensuring that training is not only relevant to the sectors needs and of high quality, but visibly so, possibly through appropriate certification or accreditation.
- 3.22 It is also widely recognised that woodfuel, whilst of great promise to the regions forest industry in terms of harvested volume and consequent ability to bring woodland into management, was essentially a low value added product. The typical prices being quoted, whilst adequate to cover basic cost of harvesting, processing and haulage (assuming short distances), were not sufficient to cover the increased costs of harvesting in small woodlands or where specialist equipment for haulage or delivery were required. It is thus essential that every opportunity is taken to reduce, or eliminate altogether, cost within the supply chain.
- 3.23 The timber that will feed into the wood fuel supply chain will generally be the smaller dimension material arising as a result of early thinnings or from the unused parts of later thinnings and final fellings. Such thinning operations are an essential requirement in the production of higher quality sawlogs, which have a higher value and are primarily processed within the region (softwoods only), with the consequent creation of local employment and wealth. Material of this specification is increasingly being used within the construction sector as it has a significantly lower embedded carbon value than steel or concrete leading to further carbon savings and the meeting of other Government priorities. Thus the successful creation of a woodfuel supply chain can contribute to valuable economic and environmental benefits external to the supply chain.
- 3.24 Although the focus of this report, highlighted in the England Woodfuel Strategy and for the reasons outlined in 3.5, is the desire to increase the utilisation of timber from currently undermanaged woodlands, existing waste streams (2.10) produce significant quantities of potential woodfuel stocks. For reasons of location (urban, as opposed to most woodland which is in rural areas) and type (probably much lower moisture content and may be classified as waste) this fuel stock is likely to enter a different supply chain

(possibly to larger installations, associated with commercial developments, often as pellets). The use of waste wood also does not provide the other environmental and rural development benefits associated with bringing unmanaged woodland back into sustainable management. Nevertheless the resource is complimentary in that it provides a much larger fuel stock than the forestry sector can on its own and could lead to increased security of supply and synergies within both supply chains and markets.

Woodfuel Installations

- 3.25 Although payback periods have reduced in recent years, the capital cost of a woodfuel boiler is still significantly more than a fossil fuel equivalent and this is a major disincentive to potential users. Short-term cashflow constraints frequently determine that a woodfuel installation is not the preferred option even though the longer term revenue projections are attractive.
- 3.26 Installers of biomass boilers have made considerable investment in their businesses in recent years. There now appears to be a sufficient mass within the UK, and the East of England Region, to provide adequate choice for most potential customers.
- 3.27 Some (but not all) installers reported challenges in serving the increased demand in the short term if it continued to increase at current levels. Medium to long term prospects appeared less problematic given recent and ongoing investment in manufacturing facilities in Europe.
- 3.28 Nevertheless there is an issue, not particular to the region but widely perceived by many in the sector, that installations of a certain size (approximately less than 100 kW) were proving less attractive to installers given the limited opportunities to obtain the margins necessary to finance the investments made in recent years. This is opening up a 'sub-sector' which needs to be filled if woodfuel is to be an attractive and viable option for the domestic and small scale commercial/institutional sector.
- 3.29 Some installers also expressed concern regarding the limited availability of accredited plumbers to install and service equipment. Whilst this was an issue limited to some areas and types of installations, it is nevertheless an issue which is likely to become more significant if demand continues to increase at current levels.
- 3.30 A number of installers indicated that they were receiving a large number of enquiries, many of which did not progress beyond initial enquiry stage. Whilst a number had overcome this problem by 'filtering' enquiries during initial telephone conversation stage (with the intention of deciding at this stage who to progress to a visit and who to just send relevant information to, perhaps with an outline quotation), there was concern that the proportion of enquiries which did not proceed were impacting adversely on resources and overall profitability.
- 3.31 Installers reported concern regarding security of fuel supply amongst potential customers; indeed some of them cited this as being the single biggest concern of most potential customers. Whilst most installers considered this primarily a problem of perception, given the low number of

existing installations, they recognised that if these were to grow even marginally it would become a reality.

- 3.32 Whilst statistics at a regional level prove that the fuel stocks exist in the regions woodlands, there is also an issue of the ready availability of credible information at a local level. Woodfuel installations depend on fuel harvested and produced within a relatively short distance in order to maximise their cost and carbon efficiency and thus given the implications of importing fuel from further afield both installers and consumers will increasingly look to fuel availability within that area.

Advice & Advocacy

- 3.33 Within broad limits there was much agreement on what form such advice and advocacy should take. Nearly all interviewees considered there was a need for greater promotion of wood fuel to potential users. The few exceptions occurred where there was concern about the sectors ability to respond to the increased capacity and that instead growth should be allowed to occur 'naturally'. Whilst the latter view does have some merit, not least in terms of the public intervention cost, it does little to build capacity along the supply chain in order to cope with increased demand and could give rise to a situation where real demand is being limited by, for example, lack of fuel supply.
- 3.34 Promotional activities are continuing to take place in the region and there is opportunity for future activity to co-ordinate and build on these and benefit from the experience gained. A common view amongst people active in the supply chain was that rarely (if ever) did a customer opt to install a woodfuel boiler without having seen one in operation before doing so. Whilst some parts of the region have sites that could act as potential host sites, and even as examples of best practice, coverage throughout the region is not consistent and thus could limit uptake in some areas.
- 3.35 Conversely where previous installations had failed (rarely) or operated sub-optimally (occasionally), this had created a bad impression of woodfuel in the locality and efforts needed to be directed to ensuring that not only did this not happen in the future but that promotional activities took account of such situations and were able to counter negative stories.
- 3.36 Experience within the region and with other wood fuel promotion projects in the UK indicated that there was much value in focussing promotional activities on certain interest groups. For example, events or materials produced for architects needs to be different to that produced for landowners or contractors. Some projects held multiple events on the same site on the same day but invited particular groups to each. This way the concerns and interests of different professions were able to be aired properly, and importantly people were able to express themselves in company they were familiar with and felt at ease in.
- 3.37 As with the need to address distinct interest segments so there is considered a need to recognise the different geographical demands of the region. Relatively rural areas with less intense development pressures were felt to

have different opportunities, demands and challenges than areas close to both existing large settlements and the new growth areas.

- 3.38 There are a number of instances both within the region and elsewhere where the public sector, especially local government, has played a lead role in the development of the supply chain by installing woodfuel boilers. This stimulates growth in processing capacity and promotes both learning and confidence in the sector, following on from which private sector led investment can build. Some local authorities appear less committed to this process than others and there is a need to encourage and enable all to follow the best practice set by a number.

Funding

- 3.39 As described in the previous section there is limited funding available to various elements of the supply chain – but not all. Whilst there has been some streamlining within recent months there is still felt to be unnecessary complexity in many programmes. There is a widespread perception that the requirements of many funding streams were out of proportion to the costs and benefits involved. This is especially the case with smaller domestic applications. Whilst the region is unlikely to be able to influence such matters, at least in the short term, it does have important implications for the level of support and advice available to potential applicants.
- 3.40 There were mixed views on to what extent any project should become involved in undertaking funding applications on behalf of potential users. Some considered that this was an essential part of the service that needed to be provided, and that without it growth in the sector would be limited, whilst others felt this was a justifiable role for the installation companies to be expected to take on. It should be noted that where an installer has obtained funding through the Bioenergy Capital Grant Scheme the cost of the installation is offered net of grant, and thus in effect the company has already undertaken this role.
- 3.41 With regard to the issues of high capital costs outlined in 3.25, consideration should be given to the provision of soft loans that would enable users to offset these increased costs. This is recognised in the National Woodfuel Strategy and may be a source of funding that could be provided or influenced at a regional level.
- 3.42 Most interviewees considered that the critical link in the supply chain was the creation of sufficient demand, that is, the installation of woodfuel boilers, and that this would need significant incentivisation. Without these the other elements of the supply chain would not be created. However, it was recognised that following on from this would be the need for investment in the supply chain and if this was to keep pace with demand there would be a need for proactive intervention. This would also be important in ensuring that investment was directed to activities that were able to provide sustainable growth. This was felt to only be achievable if there was a focus on quality and standards, whilst at the same time recognising and dealing with legitimate concerns regarding the potentially negative impacts on biodiversity and landscape through the management of previously

neglected woodlands. Both of these outcomes required additional investment.

- 3.43 There is currently no region wide source of funding for investment in supply chain activities (such as chippers, haulage, drying, woodland access etc.), pending the launch of the Rural Development Plan for England. This includes a number of measures which could provide support to the sector and the Draft Regional Implementation Plan takes a very positive stance towards it. Unfortunately the implementation of the RDPE has been delayed and an application is unlikely to be submitted before late summer 2007. This is of fundamental importance to the future of any woodfuel project in the East of England and will heavily influence most if not all of the issues discussed in this study.

Planning & Legislation

- 3.44 Most interviewees did not consider that planning and legislation presented any significant hurdles to the development of a woodfuel supply chain. What hurdles did exist were primarily nationally imposed and therefore any regional response should be about coping with rather than seeking to change such issues. Examples of these were the need for each type of boiler to be certified in order to be eligible for grant aid or smoke control zones.
- 3.45 Whilst not considering planning to be a hurdle as such, there was a widely held view that planning policy and implementation, on a regional and sub-regional basis, was not as positive to woodfuel as it could be. It was considered that most planning officers are unaware of the opportunities offered through woodfuel and that there was a need to raise awareness within the profession.
- 3.46 The Regional Spatial Strategy for the East of England²⁴ requires the region to accommodate an additional 478,000 new dwellings between 2001 and 2021. A significant proportion of these will be built in the Growth Areas. Wider adoption of the 'Merton Principle' whereby a proportion (10%) of the energy requirements for all new developments were expected to come from renewable sources was cited as being a potential major stimulant for the woodfuel industry. Again this has implications for the role of a regional woodfuel project.

²⁴ East of England Plan, East of England Regional Assembly, www.eera.gov.uk

4.0 A Woodfuel Project for the East of England

- 4.1 All interviewees agreed with the need for an increased focus on woodfuel and a means to stimulate actions at various points along the supply chain. A wide variety of options as to what, and how, should be achieved were forthcoming. These are reflected in the section below.

Project Activities

- 4.2 The National Woodfuel Strategy, and the Implementation Plan that will detail the delivery framework for the strategy, outlines a clear focus on the sourcing of woodfuel from currently undermanaged woodlands. Given the marked differences from the waste wood stream, in terms of scale, sources, processing and markets, it is considered that the project under consideration would not be responsible for developing this element of the supply chain. Nevertheless, given the many complimentary features of the fuel stocks, it should maintain strong links with those organisations, such as Renewables East, who will be developing and driving these elements. It should also be noted that the project would include within its remit the utilisation of forest and primary processing residues, which are considered to be within the supply chain. This latter activity is an area which requires further investigation given the potential scale of the resource which has to be balanced against the technical issues involved in their use.
- 4.3 As discussed in previous sections there are a number of actions required along the supply chain. These are outlined below but one overall decision that needs to be made is whether or not all of these activities should be undertaken by one project or if there should be allocation of duties across a range of organisations. This could be brought together under a steering group or some such arrangement, so that in effect the project was a virtual one with little, or no, core resource.
- 4.4 One issue that may inform the answer to the above point was that many people considered that woodfuel remained a confusing and unfamiliar issue to many end users and one where there were many drop off points where such users could be 'lost' to the sector. To counter this it was considered important that the project, in whatever form or capacity, provided an 'end to end' service so that individual hurdles could be overcome, lost contacts picked up and momentum maintained in the progress of any enquiry.
- 4.5 Promotion of woodfuel as an option for end users is the most obvious activity for the project to undertake. This will need to build on what is already happening and initially make use of existing installations, case studies and networks, but rapidly create its own portfolio of promotional materials and opportunities. Much emphasis has been placed on the need to get potential users onto site to see existing installations and this is likely to constitute a major part of the projects activities. This not only requires time for the activity itself but also ensuring there is adequate regional spread of installations, supporting materials and fostering good relationships with users, installers and contractors.
- 4.6 There is patently a need to facilitate the management of extensive additional areas of non-FC woodland in the region. Even assuming a

financially viable market exists, this will require a number of actions. Some owners will require reassurance that this is the right thing to do, management plans will need drawing up and woodlands will require entering into the appropriate grant scheme or felling licence. Much, if not all, of this work can be undertaken by external advisers but nevertheless there will be a need to coordinate this work and ensure standards are being maintained and marginal opportunities are not being unnecessarily missed. Financial support will be required for this activity given that, by definition, much of it will be occurring in woodlands where there is little or no current financial incentive to introduce management.

- 4.7 Increased demand for agents, contractors and suppliers will necessitate additional recruitment to the industry, training of those who are already in it, and support for businesses to ensure they maintain their long term viability. Whilst existing business support mechanisms may be able to provide much of the generic business support, again there will be a need for the promotion and co-ordination of this work and for the identification of issues specific to the sector and their fulfilment.
- 4.8 Investment in machinery will be required which will potentially both require financial support and additional business planning advice. This may be possible through the RDPE, as previously outlined, and whilst this cannot be confirmed until an application is approved it is intended that the project will be able to offer such support, possibly via a delegated grants approach.
- 4.9 An activity widely undertaken elsewhere is the provision of 'pre-feasibility' inspections and reports. These aim to deal with the situation whereby a large number of potential sites are coming forward, only for them to be found unsuitable due to one or more insurmountable problem. The project would aim to provide an initial assessment of the situation, ensure no such problems exist, possibly prepare some initial drawings and costings (depending on the extent of the service) and then forward this information to installers who could be sure this represented a 'real' opportunity. Offering such a service would be resource intensive and would have to be implemented to a high standard and with the broad agreement of the sector if it is to be effective. Some interviewees, primarily the installation companies, had concerns about the project undertaking such activity, given their desire to be 'close' to the customer from an early stage. Nevertheless it should be a priority for the project to monitor the need for such a service and work with installers to ensure any resulting activity creates additional investment in the region.
- 4.10 Involvement in securing funding for installations has been discussed in the previous section. The preparation and submission of such funding applications can be a very time consuming business and there was some concern that this may not be a productive or legitimate use of the projects resources. Whilst this may be the case, it is also true that capital costs are the single biggest hurdle to the uptake of woodfuel installations. It will therefore be essential for the project to at very least ensure there is adequate assistance for applicants, either from installers, other agencies, consultants or possibly itself. The latter could be provided via making available commonly required information for funding applications, such as model answers, standard conversion information etc.

- 4.11 The extent to which clusters and pathfinders should be adopted by the project received mixed responses. Whilst there is some confusion as to the respective roles of each other, one widespread view was that they are both associated with 'experimental' or 'pilot' schemes which was an image that all in the sector were keen to dispel and move on from.
- 4.12 Clusters are reasonably well understood as a concentration of activity, at different points along the supply chain, within a geographically distinct area. Clusters are one of the most commonly occurring models of economic growth and thus could be expected to occur regardless of what a wood fuel project does. An example already exists in the east Suffolk Woodfuel Cluster based around Rendlesham. Whilst many thought this was a desirable way to proceed, given the potential for shared learning and economies of scale, all felt this was something that could not be dictated from top down and almost always occurred from the bottom up. So although a woodfuel project could seek to locate potential cluster areas and promote activity, this could not be to the exclusion of other areas.
- 4.13 A potentially positive method of stimulating and enabling clusters is to work with the public sector to consider installing woodfuel boilers. The most beneficial candidates will be those who have a large building estate, such as local authorities. By working at a number of levels e.g. with members, officers and potential suppliers, and highlighting the benefits of woodfuel in the policy arena and potential for meeting service delivery targets, the project could seek to create embryonic clusters. Focus should be given to those geographic areas where the other elements of the supply chain (e.g. undermanaged woodland) are present and could capitalise on, and benefit from, such development.
- 4.14 Pathfinders are more about testing practical ways forward and finding models for growth that work. They are not necessarily geographically distinct (although normally are, simply due to funding). There is greater scope for pathfinders to be associated with an image of 'experimental' than with clusters. Pathfinders already exist in the region, in effect, but have perhaps not been capitalised on by having the experiences shared and built on. There is undoubtedly scope for a new woodfuel project to do this, although some considered that pathfinders could actually restrict growth by repeating previous work and not being sufficiently ambitious.
- 4.15 Notwithstanding previous comments made regarding the critical aspect of ensuring there is sufficient installed boiler capacity, such activity is essentially led by the raising of awareness amongst potential users, the availability of funding, and the technical aspects of system installation. Whilst the capital cost of the associated investments can be significant it involves relatively few people and much work of a similar nature. This is compared with the other aspects of the supply chain, such as bringing woodland into management, training and equipping contractors and providing for adequate delivery mechanisms, where the number of people may be much higher and the variety of task greater. Thus the focus of the projects activities, in terms of time and complexity, are likely to be on the earlier stages (supply) of the supply chain rather than the later ones (demand).

Project Structure & Management

- 4.16 There are numerous options for project structure, many of which are utilised by woodfuel projects across the UK. Whilst some are located within the private sector, most are in the public or not-for-profit sector. A number exist as independent bodies and others as part of a larger organisation.
- 4.17 Whatever structure is decided it is vital that it has support across the sector. This will be achieved by selecting the most appropriate structure in the first instance, but also by ensuring that the project is accountable, to an extent appropriate to the status of the project, to the sector. This could be achieved through a Steering Group made up of representatives from all parts of the supply chain, or it could be a board of directors if a standalone form was selected. This situation could be mutually beneficial in that exchange of information could, and should, go both ways, and it should be, and seen to be, truly effective accountability.
- 4.18 Whilst deciding on the correct structure is important, not least to ensure support for the project across the supply chain, there is widespread recognition that what is of utmost importance is to resource the project with people with the appropriate skills and experience. The focus of the project will be on delivery and therefore it needs to be rooted in the practicalities of the sector. Where previous projects (woodfuel focussed and others) had perceived to have failed this was frequently put down to an inability to identify with the core concerns and opportunities in the relevant sector.
- 4.19 Whether to locate the project within the private or public sector was one of the issues discussed with interviewees. There are advantages, and disadvantages to both, which are well recognised by all involved. Public sector hosting was considered by many to be beneficial as it would provide a greater perception of impartiality and being aligned with the interests of the user of the service. Conversely some felt that the strictures imposed on a private sector organisation were more likely to produce an effective and efficient service. The reality of it is that the choice is will be heavily influenced by availability of funding and what opportunities or constraints this offers.
- 4.20 Given the case outlined in 4.15, there is logic in basing the project closer to the supply than the demand end of the supply chain. This will provide for greater understanding of the critical issues, the means by which to overcome hurdles and will enable the project to maximise its resources on the greatest areas of need whilst increasing the likelihood of it maintaining credibility with those whom it seeks to influence.
- 4.21 A vital element taken into account by potential funders will be the potential risk associated with the project in terms of its ability to maintain appropriate financial, management and monitoring systems, its financial stability given the implications of retrospective expenditure grant claims, and the capacity to absorb short term changes in personnel and resources.
- 4.22 There was widespread opinion that the project should be a 'task and finish' entity and must not take on a life of its own beyond its defined purposes. It is expected by most in the sector that at an undefined point in the future the woodfuel industry will reach the scale at which it no longer needs such

support and therefore the project should be seen as 'short term'. Quite what is meant by short term was less easy to define, although most estimated it to be at least 5 - 10 years. The England Woodfuel Strategy outlines a case for public intervention over a 25 year period, peaking in years 4 - 10, with capital support for supply (e.g. woodland management) ceasing after year 9. The RDPE covers the period to 2013, or years 1 - 6 if a start was made in 2008.

- 4.23 There was also a commonly held perception that there were already too many 'projects' competing for attention of both funders and users and that to create another one would be counter productive. This has important implications for where the project is hosted, its identity and branding and its relationship with core stakeholders.
- 4.24 There is clearly a case for the project to be undertaking different activities in different parts of the region, but whether it will be possible to resource these independently will depend on what funding is available. Many people felt that users had strongest allegiance to, and identified with, a county based structure and this would be the ideal situation, but did recognise the cost implications of this.
- 4.25 Prior to the project coming into being there will be a period when further development work is required. This will include, amongst other responsibilities, detailing of the project governance and reporting structures, securing the necessary funding and the recruitment of staff and other resources. Such work will require the commitment of significant staff time and organisational support. The National Woodfuel Strategy recognises that core funding for the development of the sector is required, in addition to project specific expenditure.

5.0 Recommendations

Project Activities

- 5.1 The matrix at Appendix I indicates those activities where the project can and should have a role to play. It includes the various elements of the supply chain, from the woodland owner through to users of woodfuel, and the generic activity types that will need to be undertaken. Although elements of the supply chain will enter and leave this process at different points, the activities are laid out in a logical sequence (Awareness > Advice > Facilitation > Training > Capital Investment) that will broadly characterise the progressive nature of support provided to the sector.
- 5.2 Whilst the delivery mechanisms vary and the project itself is only actually responsible for a small proportion of delivery, it is strongly recommended that the project assumes a lead role in the co-ordination of all activity. Only in this way can it ensure that woodfuel related activity is undertaken in a cost effective and efficient manner. The project should lead people through the various stages of activity, monitor the effectiveness of various actions and providers, pick up dropped contacts where necessary and identify where processes and procedures need to adapt to changing circumstances.
- 5.3 Whilst a number of delivery providers (consultants, contractors, organisations etc.) are already active in the region, the intended level of activity will require significantly higher capacity than currently exists. This will have implications for the recruitment and development of such providers, and the maintenance of appropriate standards. Building capacity in the provision of services will take a significant lead in time and should be an early priority for the project, even though the immediate demand may not exist.
- 5.4 Similarly, whilst there is activity of this nature already taking place this is restricted to those instances where financial returns enable or encourage investment. By definition those instances that the project will be dealing with will be those which do not currently fall into this category, and thus there will be a demand for additional funding of these activities. The project should seek to invest in those providers who exhibit greatest ability to develop financially self-sustaining enterprises in the longer term, thus fulfilling the 'task and finish' approach previously outlined.
- 5.5 A key operating area for the project across the supply chain should be awareness raising. This can be done through a co-ordinated programme of regional events including site visits, workshops, a presence at agricultural shows, media channels and demonstration woodlands and installations.
- 5.6 Although the project should take a lead role in instigating and co-ordinating such activity, it should be implemented, at least partially, through a broad range of partner organisations in order to access the wide variety of recipients of the message. Anglia Woodfuels have extensive experience of such activity in the region and should be a key partner in the provision of events and site visits. Historically this activity has been undertaken with much voluntary provision of resources. Whilst the project should always seek to be cost effective, relying on such support does not enable its expansion throughout the region on a sustainable basis. There is a need for the project

to draw down funding with which it can finance an inclusive and ambitious programme of awareness raising.

- 5.7 Following on from awareness raising, for those participants who wish to take matters further, the provision of advice is also of fundamental importance, although delivery methods will need to be different. The project should support the creation of a network of demonstration sites (woodland management, processing, installations), the publication of case studies and on-site and 'one to one' advice. It should work with existing providers of such services to ensure duplication is minimised and instead builds on best practice. Demonstration sites should be 'real' working sites in order to maintain credibility and there may thus be a constantly changing list of such facilities as sites move through the development phase to realisation.
- 5.8 Advice would not necessarily be provided directly by the project or to the whole supply chain. Regarding the latter, there is for example little apparent need or opportunity for the project to offer advice to installers. It will instead concentrate on woodland owners and managers (including contractors) and potential users of woodfuel. Much of the advice should be provided through third parties, either partner organisations or consultants. The latter will require funding, certainly in the early stages of the project when the supply chain is still in an embryonic phase and has yet to drive the market for timber and woodfuel to an extent where it becomes financially self-sustaining.
- 5.9 For those supply chain participants who decide to act on the advice provided there will be a need for the facilitation of various processes. Facilitation differs from advice in that it is almost always provided on a one to one basis and is only associated with schemes or sites which have moved beyond on the aspirational stage. Again much of the facilitation will be provided by others, with, for example, Business Link being utilised for generic business support. In some circumstances there will be a need for the project to act as 'project champion', overseeing the range of activities necessary to achieve successful implementation of an installation. The correct identification of when such an approach is necessary will be an important function of project staff. This could be aided by the development of a risk based decision tree that would indicate when users could require such support, and when it is unnecessary.
- 5.10 The projects involvement in training (across the supply chain, apart from the possible exception of users, unless they are also woodfuel producers or wish to maintain their own systems) will focus on the identification of needs (at both an individual and sectoral level), brokering and facilitation, with delivery being restricted to those situations where there is no current provision. The project should work with existing training providers, Higher Education colleges (especially those providing land based courses) and LANTRA to map training provision relevant to the woodfuel sector and to produce a strategy for building capacity and filling gaps.
- 5.11 Proactive involvement in the development of clusters should be directly linked to and supportive of market or near-market activity within the supply chain, for example where embryonic entrepreneurial activity can be aided through a programme of focussed awareness raising amongst potential

users. Emphasis should also be given to working with public bodies to stimulate the supply chain through the creation of 'consumer clusters' such as that in east Suffolk.

- 5.12 Notwithstanding the comments above, the project should seek to rapidly develop spatial information which when exhibited on a Geographic Information System (GIS) could both direct the projects activities towards 'opportunity areas' and provide information in support of specific projects. For example it should be possible to plot areas of unmanaged woodland against 'off-mains gas' areas (given that woodfuels economic advantage is strongest against solid fuels) and areas of habitation (perhaps with schools and other public buildings) to show where awareness raising could be especially beneficial. Similarly a system allowing rapid indication of available fuelstocks within a given distance of a proposed installation would aid decision making by users and installers.
- 5.13 As discussed throughout the study and outlined in the National Woodfuel Strategy there is a significant and fundamental need for additional capital investment in the sector. Indeed the projects very existence relies on such investment. The actual role of the project will be twofold in this respect. Firstly, dependent on the submission and approval of an application to the RDPE, it should be responsible for the delivery of grant aid to woodland owners and contractors for investment in harvesting and processing capacity. Secondly, it should signpost applicants to other sources of funding, such as the FC EWGS or DTi LCBP, which will support investment in woodland management and the installation of woodfuel systems. In addition to signposting there will also be instances where there is a need for the project to actually undertake such grant applications on behalf of applicants, although much of this should come under the heading of facilitation by third parties.
- 5.14 Whilst the project will focus on wood fuel, and the merits of such focus are widely recognised, it is important that it develops and maintains close working relationships with other national and regional projects and initiatives relating to woodlands and timber usage. Wood fuel will in the main be only part of the product mix from the regions woodlands and the sector as a whole will derive maximum benefit from ensuring the different market segments are complimentary and support each other.

Project Structure & Management

- 5.15 It is recommended that the project be closely allied to an existing organisation rather than the creation of an entirely new entity, which would have little or no support from the sector. An existing organisation will have the ability to scale up to the necessary size much more quickly than a new one and in the longer term should have less conflicts in achieving the 'task and finish' approach.
- 5.16 The host organisation needs to have the capacity to support the project during its development phase, to have the necessary existing financial, management and reporting procedures and to be accepted as low risk option for funders. It should also be sectorally located closest to the end of

the supply chain where the greatest level of activity is required i.e. woodland management and the harvesting and processing sectors – although this should not conflict with the imperative of increasing installed boiler capacity.

- 5.17 One element essential to the success of the project will be ongoing allocation to the project of core resources, thereby allowing project staff to focus on output delivery rather than on identifying and drawing down funding. The FC, given its national role and the outputs expected of it through the National Woodfuel Strategy, is in a good position to do this.
- 5.18 After due consideration of the various alternatives it is considered that there are two organisations who broadly satisfy the criteria given – Anglia Farmers (the current host of Anglia Woodfuels) and the Forestry Commission. Anglia Farmers, the UK's leading agricultural purchasing co-operative with a turnover of in excess of £85m, has extensive expertise in co-operative working and the potential for economies of scale. The FC has complimentary statutory and grant-giving roles and considerable expertise in the management of woodland.
- 5.19 In recommending these options it is recognised that for the project to be most effective it needs to engage widely with the wider sector and to be truly accountable to it (within the constraints of funding requirements and relevant legislation). It is thus recommended that irrespective of which option is finally chosen the project is treated as a collaborative partnership and formally constituted. Broadly speaking the structural arrangements would follow the same pattern in either case, but with the necessary (and significant) different legal forms as dictated by the respective host organisation.
- 5.20 If Anglia Farmers act as the host it would be possible to create a new company, limited by guarantee and constituted as a not-for-profit organisation. This could be achieved at low cost and utilise the existing administrative, financial and office facilities of Anglia Farmers whilst being able to draw on the expertise and reputational legacy of Anglia Woodfuels. A Board of Directors, drawn from and representative of the forestry and wood fuel sectors should be recruited on fixed term appointments and with clearly defined responsibilities.
- 5.21 In the case of the FC acting as host the project could, for example, be constituted as an Unincorporated Association which is again a low cost option and able to benefit from the FC's existing management, financial and administrative arrangements. In this case the project would be overseen by a Steering Group made up of representatives from the sector.
- 5.22 In both cases the Board of Directors/Steering Group should have access to project staff and records and be able to formally receive reports on project activity and outputs. There should be a Memorandum of Agreement between the wider partnership and a Service Level Agreement between the host organisation and the partnership relating to support services such as administration, accounts, payroll etc.

- 5.23 In order to further increase the accountability of the project it is recommended that it should be chaired by an independent person who has a formal relationship with both the host organisation and the wider partnership. Any member of the Board of Directors/Steering Group should have the right to nominate the Chair and they should be appointed on the basis of a defined period.
- 5.24 The Board of Directors/Steering Group should oversee the strategic direction of the project and set detailed outputs and activities in an annual Business Plan – although in effect much of this detail will be determined by the detail of funding agreements. It is recommended that the Board of Directors/Steering Group meets not more than four times and not less than twice per year.
- 5.25 The detailed operation of the project should be overseen by an executive committee of the Board of Directors/Steering Group which should be made up of the Chair (or another director/steering group member, if agreed), a representative of the host organisation and the project manager. This committee should meet on a more frequent basis (perhaps as much as monthly in the first instance) and ensure the effective implementation of the business plan as determined by the Board of Directors/Steering Group, to whom it will report.
- 5.26 In recognition of the considerable time input that will be required by a Chair, and to further increase their accountability to the Board of Directors/Steering Group, it is recommended they should receive a modest honorarium or similar from project funds. Advice will need to be taken on the implications of this with regard to e.g. employment law and the ability to elect (and, by default, dismiss) this person.
- 5.27 In order to promote both the visibility and impartiality of the project it should have its own identity, established through a project name and 'brand'. This should be used in all promotional and communications materials, on the website and in recruiting staff. The partnership supporting the project should also be widely acknowledged in order to give it credibility across the supply chain and for users to have confidence in it. The identity of the project should make a clear statement regarding its regional coverage and not just the traditional 'Anglian' counties.
- 5.28 Staff for the project should be recruited according to an agreed person and job specification. Remuneration details will be determined by standard practice within the host organisation and by the details of the funding. Whilst employees of the host organisation should be able to apply for these posts they should be open to all applicants (other possibly than posts at a clerical and administrative level) given the imperative of employing people with the correct skills and aptitudes.
- 5.29 In terms of scale of the project staffing this will again be determined by availability of funding, but the recommendation is that it should aspire, in the early stages, to the following: -
- Regional Project Manager – Full Time
 - One Project Officer per County for Norfolk, Suffolk & Essex – Full Time

- One Project Officer shared between Cambridgeshire, Bedfordshire and Hertfordshire – Full Time
- Administrator – Full Time

This structure should be viewed as indicative of the scale and not necessarily fixed in terms of job descriptions, full or part time etc. An alternative allocation of duties for the project officers could, for example, be on a thematic basis rather than geographic, if particular issues or skills emerged.

- 5.30 Whilst the project outputs will to a large extent be determined by the detail of funding agreements, the project should at the outset compile a list of core targets which are relevant to its essential purpose – that is, the bringing into management additional areas of woodland and the harvesting of timber in the region. A list of potential target types is included in Appendix II. These are divided into Primary (those which are directly relevant to the project's purposes) and Secondary (those which indicate activity in support of the primary targets). Only primary targets should be treated as success criteria.
- 5.31 Consideration should be given in the initial phases of the project to the means by which these targets will be monitored and reported. The headline target i.e. tonnes timber harvested per annum, will be extremely difficult to monitor in a meaningful manner, given the myriad elements of the supply chain involved and that many of the installations will be closed systems (i.e. woodland owners growing, harvesting, processing and using their own wood fuel). It will therefore be necessary to set directly relevant measurement criteria that will inform this target, for example the area of woodland to be thinned or felled under EWGS, and/or the KW rating of installed capacity in the region.
- 5.32 The use of a project management framework should be considered in order to provide to project staff, the steering group and funders an unambiguous set of milestones and activities against which progress of the project can be recorded. Formal project management experience and skills should be an essential requirement for the project manager and/or significant elements of the steering group.

Project Funding

- 5.33 The Project Activity Matrix at Appendix I outlines potential funding sources for the generic activity types and the supply chain elements. As project development continues this area of the matrix will be expanded and utilised to direct potential funding sources and the existence of gaps.
- 5.34 The case for providing a holistic project which co-ordinates and oversees delivery has been made previously. The project will itself deliver a proportion of the awareness raising, advice, facilitation and training activities and therefore the cost of this will fall to the revenue budgets of the project (primarily staff time). The remaining delivery will be by partner organisations, external agencies and private sector providers.

- 5.35 Capital Investment is also outlined in the Project Activity Matrix and is listed below. These estimates are total project lifetime requirements given a target of 110,000 tones of timber to be harvested per annum.
- 5.36 Woodland Management costs assume that after initial intervention the woodland is financially self-sustaining. Therefore this cost will only occur for the period of time necessary to bring the area of woodland into management that could provide a sustained additional harvest of 110,000t p.a. It is estimated that this will be in the region of 8 – 10 years.
- 5.37 Outline budgets are provided in Appendix III, listed below are the main budget headings: -

<u>Budget Heading</u>	<u>£</u>
Year1 Start Up	£30,700
Project Core (Revenue) P.A.	£250,250
Awareness Raising, Advice, Facilitation & Training (Revenue) P.A.	£87,000
Capital Investment (Total Project Lifetime)	£6,125,000
Woodland Management P.A. (by 2013)	£1,441,675

Appendix I



East of England Woodfuel Project Scoping Study



Project Activity Matrix

Project Beneficiaries ▶		Woodland Owners 	Agents & Consultants 	Contractors 	Installers 	Users
Examples▶		Estates, Farmers, LA's, NGO's	Foresters, Land Agents	Forestry Contractors, Hauliers, Processors	Boiler Installers, Plumbers	Property Owners, Architects, Project Managers, Facility Managers
Activity▼						
Awareness	What?	Opportunities for & benefits of woodland management & woodfuel production	Opportunities for woodfuel production	New market opportunities, collaboration	New market opportunities for plumbers	Benefits of & opportunities for woodfuel
	How?	Demo woods, case studies, events, media	Demo woods, case studies, events, media	Events, case studies, media	Demo sites, case studies, media	Demo sites, case studies, events, media
	Project Role?	✓	✓	✓	✓	✓
	Funding	RDPE	RDPE	RDPE	ESF	ERDF
Advice	What?	Management techniques, environmental standards and certification, using consultants & contractors.	Woodfuel production, standards & specification	Woodfuel production, standards & specification	Types of systems, benefits, fuel supply, installation best practice	Types of systems, benefits, fuel supply
	How?	Demo sites, on site advice, media	Demo sites, examples, media	Demo sites, examples, media	Demo installations, case studies, media	Demo installations, case studies, media
	Project Role?	✓ (through consultants)	✓	✓	?	✓ (through consultants?)
	Funding	RDPE	RDPE	RDPE	ESF	ERDF

Project Beneficiaries ▶		Woodland Owners 	Agents & Consultants 	Contractors 	Installers 	Users 
Examples▶		Estates, Farmers, LA's, NGO's	Foresters, Land Agents	Forestry Contractors, Hauliers, Processors	Boiler Installers, Plumbers	Property Owners, Architects, Project Managers, Facility Managers
Activity▼						
Facilitation	What?	Silvicultural management plans, EIA, planning permission grant aid & licences	Brokering contacts	Business planning, funding applications	Forming networks, franchising	Design & specification, funding applications, project management
	How?	One to one	One to one	One to one	One to one	'Project Champion'
	Project Role?	√ (through consultants)	√	√ (but Business Link to provide general business advice)	√	√
	Funding	RDPE	RDPE	RDPE	ESF	ERDF
Training	What?	Woodland management techniques, H&S	Woodfuel production, standards & specification	Woodfuel production, standards & specification, marketing, H&S	Boiler installation & maintenance, HETAS Accreditation	Maintaining boilers
	How?	Courses, events, workshops	Courses, events, workshops	Courses, events, workshops	Courses, events, workshops	One to one
	Project Role?	√ (brokers, facilitates and fills gaps)	√ (brokers, facilitates and fills gaps)	√ (brokers, facilitates and fills gaps)	√ (brokers, facilitates and fills gaps)	?
	Funding	RDPE	RDPE	RDPE, ESF	ESF	?
Capital Investment	What?	Machinery (processors, chippers, trailers etc.), roads, hardstanding, storage & drying, thinning, restocking		Machinery(processors, chippers, trailers etc.), storage & drying		Boiler installations, woodfuel storage facilities
	How?	Grants		Grants, soft loans		Grants
	Project Role?	√		√		√ (Signposting)
	Funding	EWGS, RDPE		RDPE		LCBP, DEFRA BIS

Appendix II

Indicative Project Target Types

Primary Targets

- (i) Additional tonnes of timber harvested
- (ii) Area of woodland brought into management
- (iii) KW capacity of woodfuel installations
- (iv) Tonnes of carbon emissions saved

Secondary Targets

- (i) Numbers of awareness raising events held
- (ii) Number attending awareness raising events
- (iii) Numbers (of woodland owners, contractors, users etc.) provided with advice
- (iv) Number of plans/applications (EWGS, Felling Licences, LCBP etc.) approved
- (v) Number of training days
- (vi) Capital investment secured – private & public sector

Appendix III

Outline Project Budgets²⁵

The following outline budgets assume a target of an additional 110,000 tonnes of timber to be harvested by 2013 with the commensurate increase in woodfuel installations and supply chain capacity.

Year 1 Set-Up

Item	Detail	£
Staff	Recruitment Advertising	£4000
Office	IT	£6500
	Telephones	£1200
	Furniture	£1500
Marketing	Website	£4000
	Display	£2500
	Printed Materials	£3000
	Launch	£2000
Equipment	Testing & Grading Equipment	£6000
	Total	£30,700

Project Core (Revenue) P.A.

Item	Detail	£
Staff	Project Manager	£37,000
	Project Officers (4)	£112,000
	Administrator	£17,000
	Travel & Subsistence	£28,000
	Training	£3500
	Pension, ENI & oncosts	£33200
Steering Group	Chair	£4000
	Room Hire	£800
Office	Rental	£7200
	Telephones	£1800
	Heat, Light & Power	£1000
	Services	£750
	Insurance	£2500
Supplies	Stationery	£1500
	Total	£250,250

²⁵ Author estimates & FC Standard Costings (www.forestry.gov.uk)

Awareness Raising, Advice, Facilitation & Training (Revenue) P.A.

Item	Detail	£
General	Website Update	£1500
	Promotional Materials	£5000
	Event Attendance (10)	£3500
	Case Studies (5)	£1500
Events	Venue Hire (20)	£5000
	Catering	£1500
	Publicity	£2000
	Demo Woods (10)	£10,000
External Providers	Consultants (300 days)	£105,000
	Trainers (50 days)	£17,500
	PR & Comm's (10 days)	£4500
	Total	£157,000

Capital Investment (Total Project Lifetime)

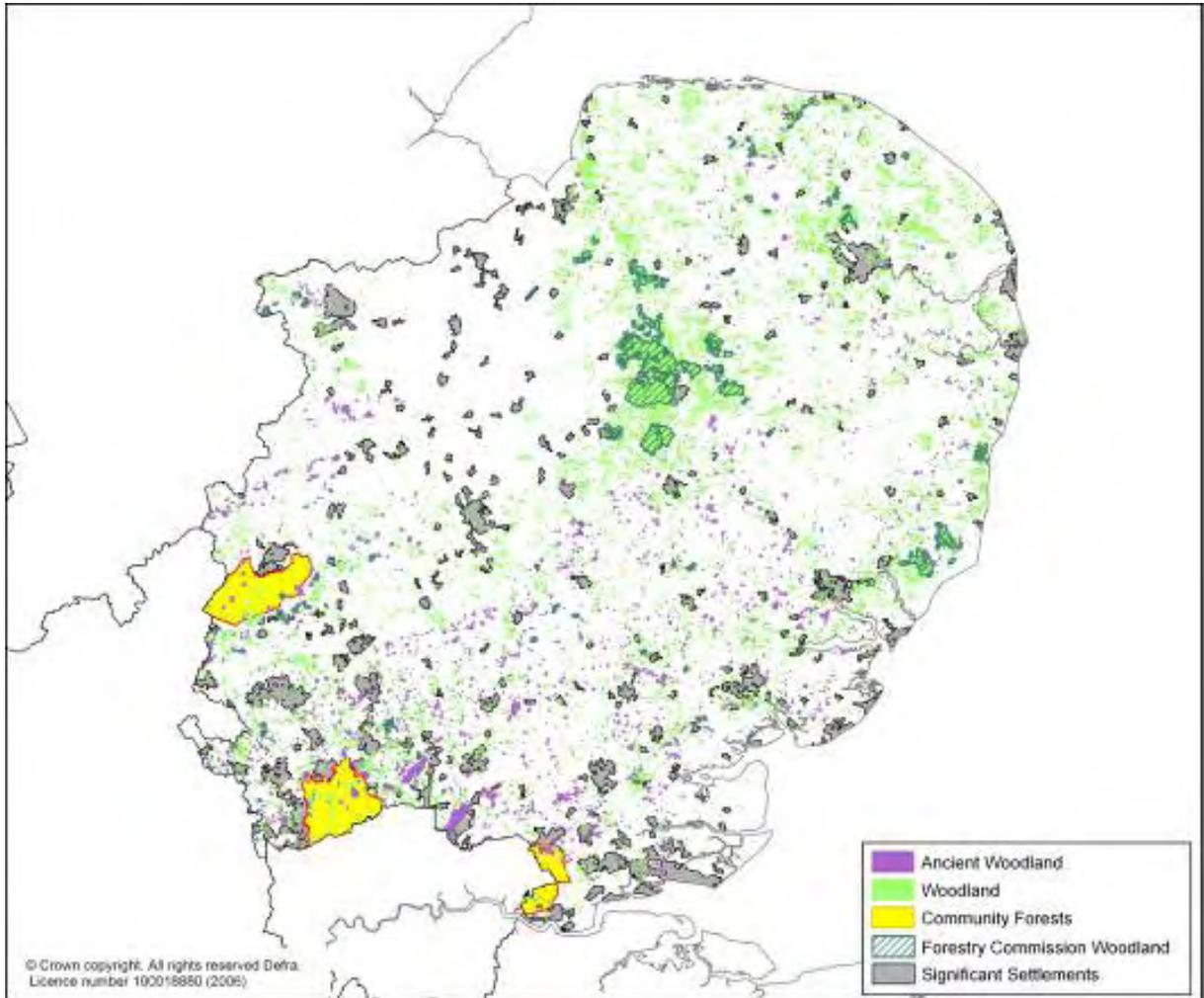
Item	Detail	£
Harvesting	9 mechanised harvesting teams @ £350,000 ea	£3,150,000
Road Haulage	6 road haulage units @ £120000 ea	£720,000
Processing & Storage	5 chippers & power units @ £135000 ea	£675,000
	20 delivery units @ £70000 ea	£1,400,000
	12 storage barns @ £15000 ea	£180,000
	Total	£6,125,000

Woodland Management (P.A., by 2013)

Item	Detail	£
Woodland Management	75% of target from thinning of plantation woodlands av. 11.3 ha @ £9.65/t net cost	£796,125
	25% of target from clearfell (PAWS etc.) av. 2.2ha @ £14.02/t net cost	£385,550
Access Improvements	Access tracks 5,000m @ £40/m	£200,000
	Hard Standings 20 @ £3000	£60,000
	Total	£1,441,675

Appendix IV

Map 1. Forests & Woodlands of the East of England Region



Appendix V

List of Interviewees

Surname	First Name	Organisation	Post
Aguss	Simon	Thames Chase Community Forest	Project Co-ordinator
Bacon	Nat	Energy Innovations	Director
Barnes	Gerry	Norfolk County Council	Environment Manager
Battell	Gary	Suffolk County Council	Forestry Officer
Bow	Chris	Working Woodlands	Director
Boyle	Stewart	Wood Energy Ltd.	Business Development Manager, Eastern England
Burch	Jane	CLA	Regional Adviser
Carr	Rebecca	FC Scotland	Woodfuel Project Officer
Farquhar	Jamie	ConFor	Director Scotland
Featherstone	Neil	Norfolk Coast Partnership (AONB)	Strategy & Projects Officer
Glynn	Hazel	Natural Light Partnership	BioMap Project Co- ordinator
Harrison	Neil	Northwoods / North East Biomass Facilitation Service	Director
Hooton	Simon	Suffolk Coast & Heaths Unit (AONB)	Manager
Kellett	Neil	Forest Enterprise	Area Manager
Kemball	Sarah	Eastern Woodfuels	Director
Morris	John	Chiltern Woodlands Project	Project Manager
Mumford	Justin	ConFor	Chairman, East England
Parker	Richard	Renewables East	Development Director - Bioenergy
Plumber	Paul	Norfolk Wood Recycling	Director
Render	Mike	Forestry Commission	Economic Development Advisor
Richardson	Will	Yorwoods/Dales Biomass Project	Director
Segrave	Justin	Consultant	
Daly			
Seville	Mike	CLA	Forestry & Woodlands Advisor
Tansey	Ben	Wood Energy Ltd.	Business Development Manager, Northern England
Tubby	Ian	Forest Research/BEC	Advisor

In addition to the above, meetings of the following organisations were attended: -

- Anglian Woodland Project
- FC East of England Regional Advisory Committee