USING SCOTLAND'S FORESTS TO HELP MITIGATE CLIMATE CHANGE

A REVIEW OF OPTIONS FOR MAXIMISING THE ROLE OF THE NATIONAL FOREST ESTATE

Summary

- Scottish forests can make a significant contribution to the urgent need to tackle climate change. Important opportunities for further action are to increase the rate of woodland creation and to encourage more use of wood for fuel.

- The national forest estate (NFE) is a large and valuable publicly owned asset, delivering a wide range of public benefits. This options review considers ways to use this asset to help fund forest-related climate change measures, while safeguarding the public benefits.

- There is considerable potential to increase revenue from the development of renewable energy projects (wind and hydro), including through joint ventures. After about 5-10 years this should provide the additional funds needed (about £10-15 million per year) to expand programmes for woodland creation and woodfuel.

- The option of leasing about 25% of the NFE for 75 years has been considered in detail. While (in net terms) this could yield some £10 million per year for 12 years (from 2012), there is a significant risk that – in the light of widespread public concern – Parliament will not agree the necessary powers. There is also a risk of being unable to agree on terms for a lease which adequately address stakeholders' concerns, meet the investment objectives of a suitable lessee and secure value for money for the tax-payer.

- Another option for the next 5 years would be increase funding from repositioning of the estate through carefully selected sales of forests. A doubling of the current level of sales would yield an additional £15 million per year. Alternatives would be to divert proceeds from the existing repositioning programme, or to seek additional funding from the Scottish Government.

- There is range of other actions that could help stimulate woodland creation. Measures to improve delivery of the Scotland Rural Development Programme are already in hand. The development of a carbon-offset market has medium to long term potential for providing increased funding. Trading body status could give Forest Enterprise Scotland more financial flexibility. And pressure could be brought on the UK Government to use the tax regime to encourage woodland creation.

Contents

A. Opportunities for mitigating climate change

1. Introduction

1.1 There is an urgent need to tackle climate change through early, effective action. The Climate Change (Scotland) Bill[1] includes a target to reduce emissions by 80% (compared with 1990 levels) by 2050.

1.2 The substantial potential for using forests, and associated land, to help mitigate climate change by reducing net greenhouse gas emissions and storing (sequestrating) carbon was highlighted in the 2006 Stern Report on the Economics of Climate Change[2]. The Intergovernmental Panel on Climate Change's 2007 report on Mitigation of Climate Change[3] identified mitigation options available to the forest sector. The prevention of deforestation is extremely important at a global level, but is not a major issue in Scotland, where there is a largely effective legal framework to prevent deforestation[4]. However, there are other important opportunities for Scottish forests to contribute to mitigation.

1.3 A report for the Scottish Government by AEA Technology on *Mitigating Against Climate Change in Scotland: Identification and Initial Assessment of Policy Options*[5] identified grant support for biomass and increasing forest area as high priority policies. The first report of the Committee on Climate Change[6] said that the forestry sector can make a potentially significant contribution to emissions reduction "by afforesting previously unforested areas, increasing the time a forest is kept standing before it is chopped down, and optimising forest density". It also highlighted the potential use of biomass from forests, in energy supply and substitution for energy-intensive products in construction.

1.4 The Climate Change Action Plan 2009-2011[7] prepared by Forestry Commission Scotland (FCS) examines forest-related measures that can contribute to

Scotland's green-house gas reduction targets. In addition to woodland creation, it highlights a wide range of actions, including managing existing forests to conserve carbon stocks (eg through continuous cover forestry and extended rotation lengths), adaptation measures, reducing the sector's carbon footprint and promoting the use of sustainably produced wood for construction and energy.

1.5 There is a good case for increased funding to create more woodland and to promote greater use of wood for energy in order to help mitigate climate change. The Stern Report provides a justification for using public money in this way and for strong, early action, but – especially in the current economic circumstances – identifying the necessary sources of new funding is a challenge.

1.6 Scottish Ministers have asked FCS to consider options for using the assets of the national forest estate (NFE) to help fund forest-related climate change mitigation measures, while safeguarding other public benefits delivered by the estate. Some of the potential options would require legislative change, and a consultation paper[8] was published on 4 November with proposals for including such measures in the Climate Change (Scotland) Bill.

1.7 The consultation period closed on 27 January 2009 and a summary of the responses is given in Annex 1.

2. Woodland creation

Rationale

2.1 Woodland can absorb carbon dioxide (CO_2) from the atmosphere through photosynthesis and convert some of it to wood[9]. The Scottish Forestry Strategy includes an aspiration to reach 25% woodland cover in Scotland by the second half of this century, which would mean creating about 10,000 hectares of new woodlands each year. Achieving this would lock up an additional 0.7 million tonnes (Mt) per year of CO_2 by 2020 and an additional 4.4 Mt per year of CO_2 by 2050[10]. This would make a significant contribution to the 80% reduction target; the total figure for net greenhouse gas emissions in Scotland in 2006 was 59 million tonnes. A larger programme, of perhaps 15,000 hectares per year by 2014, would clearly increase this contribution. Work undertaken in relation to the Scottish Government's strategic overview of abatement options is showing that woodland creation is a cost effective way to reduce net emissions, with an estimated cost of £20 per tonne CO_2 before co-benefits are taken into consideration.

2.2 While responses to the consultation showed that there is a broad level of support for well-targeted woodland expansion, some respondents highlighted the need to consider this in the broader land use context, expressing concern (for example) about potential loss of agricultural production. Other views included the need to "avoid the mistakes of the past" and to recognise that carbon sequestration is but one element of multi-purpose forestry. Reference was also made to a scoping study[11]; this identified 33% of Scotland as suitable for trees from both a biological and land use planning perspective, but added that 25% forest cover is unlikely to

be achievable by 2050, without significant changes in the economic attractiveness of woodlands relative to agriculture.

2.3 The *Scottish Government's Rationale for Woodland Expansion*[12] recognises that certain sites (such as prime agricultural land, deep peats and other sensitive habitats) are unsuitable for extensive woodland creation. It also recognises that carbon sequestration should not be the sole driver for woodland expansion and that it is important to capture other potential environmental, economic and social benefits. Woodland expansion should include native woodlands, mixed woodlands, softwood forests and energy forests, all of which contribute to climate change mitigation. To avoid negative impacts, woodland creation should be based on best practice guidance. Indicative Forestry Strategies are an important regional tool for focusing the right types of woodlands towards the most appropriate places and revised guidance is being developed to increase their effectiveness. In addition, FCS has reviewed Environmental Impact Assessment guidance.

Current progress

2.4 While there was substantial woodland creation in the 1970s and 1980s, in recent years progress in woodland expansion has been significantly less than 10,000 hectares per year[13]:

Average levels of new woodland creation per year ('000 ha/ year)

Years	Grant aided on private land	National forest estate	Total
1973-78	9.8	14.5	24.3
1978-83	8.3	10.7	19.0
1983-88	16.8	5.2	22.0
1988-93	12.8	3.3	16.1
1993-98	10.9	0.6	11.5
1998-03	9.4	0.1	9.5
2003-08	5.4	0.1	5.5

2.5 Prior to 1982, most woodland creation was undertaken directly by the Forestry Commission, buying land and planting trees. Since then it has been the policy of successive governments to encourage the private sector to undertake most of the new planting in Scotland, except where there are good reasons for public sector activity. Woodland creation on privately owned land was supported through a combination of grant aid and taxation arrangements until 1988, when the taxation arrangements were changed[14]. At that time the Woodland Grant Scheme (WGS) was introduced. The WGS underwent two major revisions before being replaced, in 2003, by the Scottish Forestry Grant Scheme (SFGS).

2.6 Grant aid for woodland creation is justified on the grounds that woodlands deliver public benefits and there is a need to compensate (eg) farmers for loss of alternative income from the land. Both the WGS and SFGS included a number of

targeted supplements (challenge funds and locational supplements/premia). In addition, native woodland creation has received additional support from lottery money, in particular through the Millennium Forest for Scotland in the late 1990s[15].

Stimulating increased activity through the SRDP Rural Priorities

2.7 At present, woodland creation on private land is supported through the Scotland Rural Development Programme (SRDP)[16] which operates within the framework set by the EC Rural Development Regulation[17]. The SRDP currently allocates £165 million for afforestation over the seven-year period 2007-13. The target level of afforestation set in the SRDP was 60,000 hectares over the seven years, implying an average cost of £2,750 per hectare. However, experience since the SRDP was approved in 2008 suggests that, without further active intervention, it is likely that woodland creation will average only about 5,000 hectares per year. Reasons for this are complex and include economic and cultural constraints on land use change and difficulty in acquiring land for planting. However, a significant number of respondents to the consultation exercise also emphasised the importance of improving implementation of SRDP, eg by streamlining the application process, as well as increasing levels of grant.

2.8 There are good prospects for increasing activity under SRDP, although any increases in grant rate will have funding implications. Measures already in hand, or under consideration, are:

- streamlining the application process;
- increasing standard costs;
- increasing aid intensity (ie the percentage of costs covered by grant) from 70% to 80% in LFAs.

The 200 hectare upper limit for farmland premium payments has been removed. In addition, the recent Health Check of the Common Agricultural Policy (CAP) recognised woodland creation as means of helping to tackle climate change. Land that is afforested under the SRDP is now regarded as eligible land for activating Single Farm Payment entitlements[18]. From 1 January 2010, it will also be possible to increase aid intensity for woodland expansion in LFAs to 90%[19]. State aids approval would be required for any proposal to offer aid intensity greater than that allowable under the Rural Development Regulation.

Introducing a tender scheme

2.9 Subject to funding being made available, it would be possible to achieve further progress through a tender scheme. The SRDP includes provision for such a scheme, under which prospective bidders could be invited to tender for the creation of packages of (say) 500-1000 hectares of woodland creation. The intervention rate offered through the woodland creation tender scheme could not, however, exceed the maxima laid down in the Rural Development Regulation. Introducing a tender scheme remains an option, if additional funding becomes available.

Activity by Forest Enterprise Scotland

2.10 The Scottish Government's Spending Review 2007 included provision to raise an additional £15 million a year (over the period 2008/09 - 2010/11) from strategic sales of the national forest estate to reinvest in woodland creation[20]. This "repositioning programme" was expected to fund around 2,000 hectares per year of woodland creation[21] on the national forest, implying an average cost of £7,500 per hectare, over half of which represents the cost of land. The relatively high cost of woodland creation can be justified on the grounds that this programme is aimed at increasing woodland cover in areas (for example, in and around towns) where it brings high levels of social benefit. A significant lead-in time is needed to achieve results because of the difficulties of identifying and acquiring suitable land, combined with the time taken to develop proposals, consult and (if necessary) carry out Environmental Impact Assessments.

2.11 It is important to consider the relative cost-effectiveness of achieving woodland creation objectives through grant-support or through FES activity. The cost for FES currently averages £7,500 per hectare, but this would be reduced if FES became more active on cheaper land and if FES sold on the established plantations, say after 5 -10 years. For example, if FES were able to establish woodlands at a cost of £6,500 per hectare and sell them a few years later at £1,500 per hectare, the net cost would be reduced to £5,000 per hectare. There will be a continuing need to examine this issue of relative cost-effectiveness.

Activity by a trust established for this purpose

2.12 The consultation paper suggested that a not-for profit trust could be used to promote woodland expansion. The primary source of funding would be assets released from the NFE and then transferred to a trust, subject to approval by Parliament and State aids clearance. The main advantage of such a trust is that it would provide a mechanism for "ring-fencing" additional funds for specified purposes (such as woodland creation). A trust might also be able to attract voluntary donations; for example, the US Forest Service is working with the not-for profit National Forest Foundation to use voluntarily donated funds (carbon offsets) to plant trees in naturally deforested areas, in order to sequester carbon and provide other benefits[22].

2.13 However, a majority of respondents to the consultation exercise expressed negative views about creating a trust to help achieve increased woodland expansion. This was largely on the grounds that it would be unnecessary given the other mechanisms and institutions that already exist. There were also concerns about increased administrative costs, and accountability. On the other hand, a number of respondents highlighted the continuing value of many existing trusts.

Taxation

2.14 Prior to the changes to the tax regime in 1988, tax incentives provided an effective means of promoting woodland creation. At that time they were heavily criticised, partly because of the lack of environmental controls. The situation is now very different and a good many respondents to the consultation exercise

suggested that there should be a review of how tax incentives could be used to encourage woodland creation. This is a reserved mater, but the Scottish Government could present a case to the UK Government for action. FCS has separately commissioned work on how this might best be achieved. However, it will probably take time to achieve changes in the tax regime, so this should be regarded as a medium to long-term, rather than a short-term, strategy for increasing the rate of woodland expansion.

Conclusions on woodland creation

2.15 With present levels of funding, grant-aided woodland creation is likely to be around 5,000 hectares per year. However, with increased funding for the SRDP of £10 million per year it should be possible to increase this to 8,000 hectares per year. This assumes about 4,000 hectares of productive conifer woodland, 3,000 hectares of native woodland (including 1,000 hectares of natural regeneration) and 1,000 hectares of broadleaved and mixed woodland.

2.16 Continuing the planned level of woodland expansion under the FES repositioning programme would deliver a further 2,000 hectares per year.

2.17 Work should continue to improve delivery of the SRDP, and to examine changes to the tax regime. In addition, the relative cost-effectiveness of grant-aided activity and activity by FES should be kept under review.

3. Using wood for renewable energy

3.1 The Scottish Government aims to build a commercially viable, diverse renewable heat industry and its recent consultation paper on a renewable energy framework[23] proposed a target that 11% of heat demand should be sourced from renewables by 2020. As a country with a significant forest resource, Scotland is well placed to develop the use of forest biomass to generate electricity and produce heat, substituting for fossil fuels. Examples of progress to date include the 45 MW wood fuelled plant at Lockerbie as well as funding of smaller-scale projects to stimulate the wood and pellet supply chain and the installation of boilers.

3.2 The potential for wood fuel to contribute to the green-house gas reduction target is considerable. For example, if woodland expansion increased to 15,000 hectares per year (from 2014) then production of woodfuel could account for 3.44 Mt per year of CO_2 by 2050. The AEA Technology Report identified biomass support as a high priority action; like woodland creation it provides a cost-effective means of reducing net CO_2 emissions. The Wood Fuel Task Force[24] has indicated that there are significant volumes of biomass material, although further progress could be achieved if there was more woodland. The Scottish Government has launched a Scottish Biomass Heat Scheme[25], with funding of £2 million from April 2009 to March 2011. This builds on the success of the Scottish Biomass Support Scheme (which ran in 2007/08) and offers grants for installation of biomass heating systems in small-medium scale enterprises (SMEs).

3.3 A number of respondents to the consultation exercise welcomed further investment in wood fuel infrastructure, especially at local level. However, others

stressed that woodland creation should be the priority for any additional funding and a number of respondents expressed concern about the potential impact on the wood processing industry of a significant increase in the use of biomass for energy production.

Conclusions on wood for renewable energy

3.4 Subject to availability of funding, increased resources should be made available for the Scottish Biomass Heat Scheme. An additional £5 million per year would have a considerable impact.

B. Funding from the national forest estate

4. The national forest estate (NFE)

4.1 The area of the NFE is 665,000 hectares, of which two-thirds is forest. Scottish Ministers own the NFE and it is the largest public land resource held by the Scottish Government. In legal terms, Scottish Ministers put the NFE at the disposal of the Forestry Commissioners, and it is managed by Forest Enterprise Scotland (FES) which is an Agency of Forestry Commission Scotland (FCS)[26]. FES employs 923 staff. The Forestry Act 1967 allows land to be leased for non-forest purposes (such as agriculture, or renewable developments), but land may not be leased for forestry, as FCS has no powers to delegate its forest management functions[27].

4.2 Although originally established to produce timber, the estate is now highly valued for other benefits, including recreation, wildlife conservation and community engagement. An independent economic study carried out in 2004 estimated that the value of these social and environmental benefits was £40 million per year, including £14 million attributed to benefits from sequestered carbon[28]. The continuing importance of the social and environmental benefits from the NFE was highlighted by a large number of respondents to the consultation exercise, many of whom also emphasised the associated economic benefits through tourism.

4.3 The FCS Corporate Plan (2008-11)[29] shows that Scottish Government spending plans include £23 million per year for the net cash cost of managing the NFE. This includes provision of around £20 million per year for recreation, conservation (including deer management and heritage) and community involvement.

4.4 In addition, there is a charge for the notional cost of capital. This is currently charged at 3.5% and, following revaluation of the estate, is expected to rise to £30 million per year by 2010/11. HM Treasury is considering proposals to remove the cost of capital charges, but this is not certain and any such change would not be implemented before April 2010[30]. Removal of this charge would, however, probably be accompanied by a commensurate reduction in the Block Grant.

4.5 The Scottish Forestry Strategy (2006)[31] identified a need to reposition the NFE to address the following priorities through acquisition and sales:

- safeguard ‘national forestry treasures’;

- deliver forestry for people and rural development benefits where people live and work;

- manage landscape-scale core areas for threatened species and habitats;

- retain sufficient timber production potential to facilitate market stability and development;

- use acquisition/disposal, partnerships and other arrangements to generate a greater scale and pace of change; and

- sustain sufficient regional presence to exercise policy development, exemplar and leadership roles.

A portfolio analysis tool was developed to assess the economic and non-market benefits currently derived from different parts of the NFE [32].

4.6 The capital value of the NFE is about £850 million and the consultation paper sought views on options for releasing value from the estate in order to help fund climate change related measures. Specific options for releasing value (including joint ventures for renewable energy, leasing and repositioning) are considered below. More generally, however, many respondents to the consultation exercise expressed concern that additional funds raised in this way might not necessarily be used in the forestry sector. While funds generated as a result of action taken under powers derived from the Climate Change (Scotland) Bill could only be used for climate change purposes, future Ministers would have discretion about whether or not to use them solely for forest-related measures.

5. Increasing revenue from joint ventures in renewable energy

5.1 The consultation paper sought views on using powers provided for through the Climate Change (Scotland) Bill to allow Forestry Commissioners to enter into joint ventures, with the intention of participating in renewable energy programmes on the NFE. In Ireland, the state forest company Coillte is already pursuing this opportunity.

5.2 The Scottish Government's consultation paper on the renewable energy framework[33] explains that, over the next few years, the vast bulk of new capacity in renewable electricity generation will be delivered by additional onshore wind power stations. Installed capacity could increase from the current level of 1.3 GW to about 5-7 GW by 2011. The potential for hydro development is put at about 650 MW, with most schemes being relatively small-scale at between 100 kW and 5 MW.

5.3 The NFE has the potential to make a significant contribution to the Scottish Government target of generating 50% of electricity in Scotland from renewable sources by 2020; joint ventures would offer the prospect of enhanced returns, and provide a mechanism for offering local communities a stake in the developments. The consultation paper recognises that the design and location of

these developments will need careful planning to minimise visual impact and avoid damage to sensitive habitats.

5.4 A majority of respondents to the consultation exercise expressed positive views about FCS having powers to use joint ventures for wind and hydro power schemes, although some questioned whether FCS has the necessary expertise. There was considerable enthusiasm for involving local communities. A number of respondents said that FCS should not enter into joint ventures for large-scale biomass projects because of the potential conflict of interest over wood supplies to processors.

5.5 At present, FES leases suitable sites for wind farms to developers, with 239 MW of installed wind power capacity on the NFE. There is another 1367 MW either committed or subject to option agreements. Further opportunities, for wind and hydro-power, which have recently been assessed by WS Atkins and the FREDS Hydro Subgroup respectively, run to several gigawatts (GW). At current gross bundled electricity prices[34] and a 30% capacity factor each GW installed could generate around £300 million gross income per annum. Even allowing for operating and capital costs, this represents a significant commercial opportunity. . Each 150 MW windfarm should deliver at least £3 million per year (based on 7% gross revenue). The development of hydro-power represents a further opportunity.

5.6 Annual net income potential for FES could reach perhaps £10 million per year by 2012 and perhaps £30 million per year by 2020. This would, however, be subject to negotiations with development partners and future trends in the price of renewable energy. The option to enter into joint ventures[35] would strengthen the negotiating position of FCS, which could offer use of the land as equity in order to seek a higher return. If powers under the Climate Change (Scotland) Bill allowed, FCS could also set up a company to take forward renewable development in a focussed way, borrowing and carrying forward funds as necessary.

5.7 As well as generating more income from the NFE, joint ventures for wind farms could provide a vehicle for allowing local communities to have a stake in the development. Subject to negotiation with the development partner, it would for example be possible to offer the local authority, or a local community development company, an opportunity to participate.

6. Leasing

Consultation

6.1 The consultation paper also sought views on using powers provided for through the Climate Change (Scotland) Bill to allow Forestry Commissioners to delegate their management functions. This would make it possible to lease parts of the NFE. The terms of the lease would be used to safeguard social and environmental benefits from the NFE, and the premium and/or rent from the lease would provide a means of releasing value.

6.2 Leasing has been the most controversial aspect of the proposals in the consultation, paper generating considerable discussion. In addition to concern

that income from the lease would not be re-invested in forest-related climate change measures, respondents were worried about the impact on FCS staff, loss of social and environmental benefits, the implications for wood supply and value for money.

6.3 Ministers have said that if the leasing option goes ahead, there will be no compulsory redundancies; and any staff transferred along with the woodlands would have the protection of the Transfer of Undertakings Protection of Employment (TUPE) Regulations. This guarantee of no compulsory redundancies is a policy position adopted by the Scottish Government[36]; it does not form part of the terms and conditions of service of FCS staff, so it would not transfer under TUPE. To help address this concern, Ministers have asked the Forestry Commission to make the strongest efforts to ensure that any individual who did not want to transfer to any new management company would be able to stay with the Commission.

6.4 In relation to social and environmental benefits, it has been suggested that, notwithstanding the responsible right of access[37] and the statutory biodiversity duty placed on public bodies[38], a lessee might adopt a minimalist approach to recreation, conservation and community engagement. It has also been suggested that, under private sector management, a change in felling patterns could reduce the amount of carbon stored in the forest[39]. On the other hand, a number of owners and managers in the private sector have pointed out that there are good examples of privately owned forests delivering high levels of social and environmental benefit (generally with incentives through grants). In any event, before entering into a leasing arrangement, FCS will need to be satisfied that it continued to fulfil its duty of balancing the interests of timber production and conservation[40].

6.5 Many of Scotland's wood processors have expressed serious concern about leasing leading to a loss of confidence in investment in wood processing. At present, FCS publishes timber production forecasts for the NFE covering the coming 15 years. There is a commitment to encourage continued investment in timber processing by sustaining a predictable and stable supply of good quality timber. This is placed on the market according to published schedules, and there is an open marketing process. In difficult times, FCS enters into constructive dialogue with customers to help ensure that temporary difficulties do not jeopardise the long-term viability of their business[41].

6.6 While lessees could be expected to have a long-term interest in securing the profitability and sustainability of Scotland's wood processing industry, individual wood processors fear that a lessee might enter into a strategic partnership with a competitor. When assessing potential investments (which may amount to tens of million of pounds, or more) processors have been keen to secure wood supply guarantees over a 15 to 25 year term, so they look to FCS for as long a period of comfort as possible. This has normally been dealt with through 5 year long term contracts, with the option to renew for a further 5 years. To date, the private sector has not offered commitments of this sort. Another fear is that a lessee might withdraw timber from the market when prices are poor.

Selection of sites

6.7 In order to examine the practical implications of a lease, FCS has worked up a proposal involving 25% of productive forests on the NFE. Potential leasing areas were selected from land that scored under 20 for social and environmental benefits under the portfolio analysis. This was further refined to exclude forests that had significant constraints (such as access problems) and to develop a package that was likely to be of interest to a potential lessee. Consideration was given to the option of identifying entire management units (such as Forest Districts) for leasing; while this would bring some practical advantages, it was ruled out on the grounds that it would be unacceptable to lease any areas of (eg) high recreational value. Another option would have been to select sites from throughout Scotland; this would reduce the impact (eg on timber supply) locally, but would create a more geographically dispersed package that might be harder to market.

6.8 As a result of these considerations, an area of about 115,000 hectares of productive forest in the south and west of Scotland was identified. This is about 25% of the total forest area and comprises about 48% of West Argyll Forest District, 44% of Borders Forest District and 37% of Galloway Forest District. Key recreational areas, such as those associated with the 7 stanes mountain biking development, were excluded from the leasing area. The average annual production from the area identified for leasing is about 1.1 million m^3 per year; this is one third of total production from the NFE. There is also a significant roading requirement of 487 kilometres (again representing a third of the total requirement on the NFE).

6.9 Wood production from these forests accounts for about 16% of total Scottish wood production, but is more significant locally and accounts for perhaps 30 - 40% of production in south and west Scotland. Ministers have made a commitment to honour existing timber supply contracts. At present, those contracts with at least five years to run relate to some 500,000 cubic metres per year (or about half the production from the leased area).

6.10 These forests have a number of informal recreation facilities, for walking, cycling, horse riding and picnics. Some are used for car rallies; there are a few bothies; and a number of community partnerships. In addition, there are SSSIs, scheduled and unscheduled ancient monuments, important UKBAP habitats and species (such as red squirrel and black grouse) and fisheries interests. Some have shooting rights leased to third parties and one area is itself leased from an estate. Neighbours have interests in shared accesses, private water supplies and fences. A number of forests form part of timber transport networks, designed to reduce the volume of timber traffic on public roads. The Ministry of Defence uses some of the forests for training and Forest Research use some for research purposes. There is significant development potential including wind and hydro-power, as well as minerals and housing. These are all matters that will require careful consideration in drawing up a lease.

6.11 If the leasing option is taken forward, then there will need to be an opportunity for stakeholder groups to be consulted on the selected areas. Ministers have said, for example, that communities would be able to suggest areas that they would

like removed from the lease so that they can take advantage of the National Forest Land Scheme.

Terms of a lease

6.12 In setting the terms of a lease, it will be necessary to strike a balance between allowing flexibility for the lessee (in order to maximise the value of the lease) and imposing constraints (aimed at addressing concerns of stakeholders). Professional advisers in the private sector have suggested that lessees would prefer as long a lease as possible and would be concerned about any constraints affecting their freedom to market timber (over and above current requirements for, eg, long-term forest plans, approved by FCS). On the other hand, the general view was that other requirements, such as securing certification under a recognised scheme, facilitating recreation, furthering the conservation of biodiversity, and providing opportunities for community engagement are unlikely to have a material impact on the value of a lease.

6.13 Ministers have said that, if the leasing option is taken forward, then heads of terms of the lease will be discussed with an expert panel of stakeholders. However, in order to assist in the consideration of this option, the following suggested framework has been developed.

6.14 The lease would include provisions relating to the need to manage the forests in accordance with the aims of Scottish Government forestry strategies and policies, and to accept the responsibilities associated with statutory duties (such as the biodiversity duty).

6.15 The lease would assign existing wood supply contracts to the lessee. In addition, FCS would retain a right to gather the information required for producing accurate timber production forecasts. Neither of these requirements is likely to detract significantly from the value of a lease. However, in responding to the consultation exercise, the wood processors have requested more stringent conditions about timber marketing which are likely to reduce the value of a lease.

6.16 The leased land would have considerable development potential, eg for renewable energy, minerals and possibly housing[42]. The consultation paper suggested that the lease should ensure that returns from such developments should be shared equitably between the lessee and lessor. This would increase the attractiveness of the lease to a potential lessee. However, careful drafting of the lease would be needed to minimise the risk of a lessee circumventing any clawback provision (eg by carrying out development through a related company). The lease should also be clear about how any future “carbon value” in the timber should be shared.

6.17 It is likely that the lessee would be a corporate entity. The lease could prohibit assignment, sub-letting or change of control without FCS consent. Nevertheless, there remains the risk that the owners of the leasing company would withdraw assets from the company and so prevent effective remedy from the lessee for deterioration in the condition of the forests. This might be overcome through the use of a bond, but that would tend to reduce the value of a lease.

6.18 Arrangements for dealing with disputes and breaches of lease conditions should be clear. As a last resort, irritancy (forfeiture) would terminate the whole contract. In addition, the lease could include provisions allowing for partial resumption where specified breaches occur over defined geographical areas. In either case, the lessee could request time to remedy the breach. It should also be noted that the law allows a tenant to ask the Lands Tribunal to vary the terms of the lease, where there is a good reason, such as a change in circumstances over time.

6.19 It would be necessary to set out in detail the desired state of the forests at the end of the lease, and milestones for getting there. A management plan could provide a useful vehicle for dialogue with the lessee. By providing that the lessee "puts and keeps the property in an acceptable condition", there would be no obligation to pay the lessee for improvements or investments (eg) in roads. On the other hand, it is assumed that the lessee would receive grants similar to those available to forest managers in the private sector; it is estimated that this would cost about £2 million per year[43].

6.20 The working assumption is that the lease should be for 75 years, although the law would allow a lease for up to 175 years[44]. Careful thought must be given to arrangements for dealing with termination of the lease (either at the end of 75 years, or earlier if it is surrendered or terminated as a result of a serious breach). It would need to be made clear that no compensation would be payable to the lessee at expiry or earlier termination of the lease, or otherwise a future government would face a significant financial burden.

6.21 After about 30 years, when the lease has only 45 years to run, the lessee will no longer be able to anticipate benefiting from harvesting the areas that they restock. This means that there will probably need to be a provision relating to a possible renewal of the lease, on the understanding that this would be negotiated after (say) 25 years. Possibilities include extending the lease; FCS paying for the cost of restocking by the lessee (expensive and might breach State aid rules); resuming land after clear-felling (also expensive, and messy in practical management terms); or offering a lessee a share in any premium from a further lease at the end of 75 years. Before offering a lease, it would be important at least to establish the general principles for the mid-term negotiation as this could materially affect the value of a lease.

Identifying a lessee

6.22 If the leasing option is taken forward then, subject to securing powers through the Climate Change (Scotland) Bill, the next stage would be to draw up more detailed schedules of forests for leasing together with heads of terms of a lease. Following discussion with stakeholders and examination of the title deeds, this would then form part of a prospectus that would go to prospective bidders. The prospectus should also give details of other important requirements, such as TUPE. Thereafter, following a pre-qualification sift, the process used to reach an agreement with a lessee would be competitive dialogue[45]. Prospective bidders could include institutional investors, such as timber investment management organisations (TIMOs). This sector's main interest in forest investments stems from the diversification potential that forests provide for portfolio holders, potential increases in timber and other revenues and the possibility of hedging unexpected

inflation[46]. Views differ on the impact of the current economic downturn: there is an argument that forestry can become relatively more attractive as an investment when the general economic climate is difficult.

6.23 The task of preparing the prospectus and dealing with due diligence enquiries will be substantial, requiring additional land agency staff and legal/financial professional advice. Prospective lessees can be expected to scrutinise access rights with particular care. In addition, professional advice may be required to assist in the process of competitive dialogue. FCS will also need to carry out its own due diligence on prospective lessees. In addition to examining their financial strength, this could include more wide ranging examination of their track record – for example in demonstrating commitment to principles of sustainable forest management, in responsible timber marketing and in dealing with social and environmental issues. The importance of these considerations would need to be made clear in the prospectus. The total cost of this work could be in the order of £1 million.

6.24 For working purposes, it is assumed that there will be only one (or possibly two) leases. The main reason for this is that the TIMOs who are the most likely potential investors are generally not interested in assets worth significantly less than about £50-100 million. There may, however, be benefit in offering the lease in a number of lots – allowing investors to bid for the whole, or parts, of the package.

6.25 During preparation of the prospectus, and in discussions with prospective lessees another vital consideration will be making detailed arrangements for staff, including trying to find alternative work within the Commission for those unwilling to transfer. There would need to be a separate agreement covering TUPE (and related matters such as pension provisions). In addition, FES will probably wish to explore the scope for managing the leased forests on a contractual basis, at least for the first few years, or (as a variant) supplying services relating to (eg) recreation and conservation development.

6.26 In terms of timing, it is unlikely that subordinate legislation giving FCS the necessary powers would be come into force before mid 2010. This means that the earliest date for issuing a prospectus would be in the second half of 2010 and, realistically, it is unlikely that a lease would commence until 2012. While the premium for the lease could be requested as a single lump sum, it would be more easily managed for its intended purpose of funding forest-related climate change mitigation measures if it were paid in (say) 10-12 equal annual instalments.

Staff

6.27 TUPE rules provide a basis for determining which staff should potentially transfer to a lessee. Broadly, this is based upon whether or not they spend 50% of their time in the leased area, although for some people (eg office staff) this is not clear cut. Ministers have said that FCS should make strongest efforts to ensure that any individuals who do not want to transfer to a new employer would be able to stay in a Forestry Commission job. If, however, an employee expressed a preference to remain with the Forestry Commission and an alternative role could

not be found, then the employee would be deemed to have resigned if they did not transfer, and there would be no grounds for voluntary redundancy.

6.28 Until a lessee is identified, it is difficult to know how many staff would be taken on under TUPE, and how many staff would want this. On a pro-rata basis for the Forest Districts affected, and including also engineering staff, the number of full-time equivalent (FTE) posts likely to be affected by the lease is about 150. However, about 50 of these (FTE) posts are already funded through recreation, conservation and heritage budgets that will not be significantly affected by the lease. In addition, there will be some scope to reploy staff, and there will be a certain amount of natural wastage. On this basis a lease could affect about 100 FTE posts. FC Trade Unions fear that, in practice, there would be detrimental changes to terms and conditions of service following a transfer.

6.29 Public sector employees who are transferred under TUPE are entitled to pension arrangements equivalent to their existing provision. They would also have the option of crystallising the transfer value of their accrued pension rights, or retaining preserved pension rights for previous service. The new employer would be unable to dismiss an employee because of the transfer, or a reason connected with the transfer (unless that reason is an economic, technical or organisational reason entailing changes in the workforce). All the TUPE requirements will need to be set out in the prospectus and can be expected to reduce the amount that a lessee would be willing to pay for a lease.

Impact on Forest Enterprise Scotland

6.30 A lease of this sort would have a major impact on FES, moving it further in the direction of being an organisation focussed on delivering public non-market benefits from woodland management, as opposed to being a commercial operator. It would, nevertheless, continue to manage a very substantial forest estate and be responsible for about one third of total wood production (public and private sector) in Scotland.

6.31 Net expenditure by FES on recreation, conservation and heritage activities should be largely unaffected by the lease, as this money is used in the parts of the estate that will remain under direct FES management. Similarly, a lease is likely to have little impact on potential income from tourism and recreation because the areas selected are those with least potential. However, this only holds true if this budget is not reduced during Spending Review negotiations (for example on the grounds that the lease offers a new source of income).

6.32 In addition, FES would need to give detailed consideration to implications for its management structure.

Financial implications

6.33 Setting a reserve price will require professional advice, including discussion with Audit Scotland. In particular, judgements will need to be made about future timber prices and future income from renewables. Annex 2 presents a model for analysing the financial implications of a lease. Assuming (i) that timber prices revert to their average for 2002/03-07/08, (ii) that renewables income averages

£15 million per year for the first 5 years and £35 million per year thereafter, and (iii) grants of £2 million per year are paid to a lessee, then the reserve price (at a 3.5% discount rate) would be £180 million. A lessee wanting a 6% (tax free) return would only pay this if they made more optimistic assumptions (eg timber prices rising by at least £2.50/m3).

6.34 In net terms (after allowing for additional costs and other impacts on cash-flow), £180 million would give FCS an additional £10 million per year for 12 years, but £6 million per year less thereafter. This "bringing forward" of cash flow could be justified by the argument that early action is required to tackle climate change and that this money would be used to achieve that.

6.35 There is also the impact on the capital charge. This will depend upon how the balance sheet valuation of the lease is apportioned between lessor and lessee. Under the assumptions in Annex 2, the capital vale would be reduced from £850 million to £673 million, reducing the capital charge by £6 million per year. The reduction in value would appear in the accounts as a capital loss at the time of the transaction.

6.36 Advice from forestry investment advisers is that, in practice, a TIMO or similar organisation taking a strategic approach to its investment portfolio might be willing to pay around £200 million for a 75 year lease over 25% of the NFE.

Possible role of trust as landlord

6.37 The consultation paper sought views on a suggestion that the landlord's interest in the land be transferred to a not-for profit trust, subject to Parliamentary approval and State aids clearance. As the trust could not be created as a new a public body without breaching the Scottish Government's policy against creating new public bodies, it would need to be a voluntary body, constituted with appropriate objectives and governance arrangements.

6.38 As noted above, a majority of respondents in the consultation exercise expressed negative views about a trust. Indeed some respondents, who could accept the possibility of a trust to promote woodland expansion, were opposed to the idea of a trust acting as landlord. This was on the grounds that there would be greater public accountability if Scottish Ministers/FCS continued to act as landlord.

Community leases

6.39 A number of respondents who opposed large-scale leases suggested that there should nevertheless be powers to allow for small scale leasing to communities. However, given that any powers under the Climate Change (Scotland) Bill could only be used in relation to climate change, this is something that could be better addressed through a different legislative vehicle.

7. Enhancing the repositioning programme

7.1 As noted in paragraph 4.5, FES runs a repositioning programme. Under the current programme, it sells about £15 million worth of woods each year and

reinvests the money in the acquisition of bare land for woodland creation. On average this means selling 5,000 hectares and buying 2,000 hectares each year.

7.2 Indications from forestry agents are that the market would stand an extension to and an increase in this programme. Such an approach received support from some respondents to the consultation exercise, although others who commented on this possibility were more guarded. While it would not be possible to introduce any of the safeguards achievable through a lease, the legal right of responsible access would continue to apply to these woods.

7.3 If the programme were doubled to £30 million per year for the next 5 years, this would require the sale of 10,000 hectares per year (a total of 50,000 hectares). Assuming that £15 million was still recycled into woodland creation by FES, then an additional £15 million would become available. Subject to being allowed to use capital receipts to fund grants, this money could be used to support planting under SRPD and biomass. Under this option, 10,000 hectares would be acquired and so the net reduction in the size of the NFE would be 40,000 hectares (or 6%).

7.4 An alternative, which would avoid increasing the sales programme, would be to divert the existing £15 million to SRDP and biomass support. This would mean that FES would not use these funds to make a contribution to woodland expansion. Under this option, which also depends on using capital receipts for grants, the net reduction in the size of the NFE would be less (25,000 hectares) but the FES contribution to woodland creation would be lost.

7.5 At present, properties sold under the repositioning programme are placed on the market gradually, on the grounds that this secures better for value for money. A counter-argument is that a single offer of (say) 50,000 hectares might achieve better value for money as it would attract a different class of investor (such as a TIMO). It would only be possible to test this in the market place by offering a substantial package of this sort. However, during the consultation process, Ministers have stressed the distinction between leasing and freehold sale. While a short-term enhanced repositioning programme, might be acceptable to stakeholders as being preferable to large-scale leasing, a large-scale disposals programme could well raise the same concerns as leasing.

8. Improving current arrangements

FES

8.1 A number of respondents to the consultation exercise said that it would be possible to develop a more innovative and commercially focussed approach to managing the NFE. This could include increasing revenues from recreation developments, making wider use of competitive tendering (eg for management) and giving FES trading body status. Changing the status of FES, and allowing it to operate as a more commercially focused body, with an explicit contract with the Scottish Government for the purchase of key social and environmental programmes, could release funds in the medium-term. This would also help overcome the difficulty of managing the current repositioning programme without

the ability to hold over receipts from one financial year for reinvestment during the next financial year.

8.2 One model would be to change FES status from that of an Agency to that of a Public Corporation. Its remit would be clearly defined in its Memorandum and Articles of Association, with greater flexibility to take advantage of commercial opportunities. A key aspect of this would be the ability to retain capital receipts for later use, and possibly the ability to borrow. This could help reduce the net cost of management and provide a means of dealing with fluctuating timber prices.

8.3 The British Waterways Board has a similar multi-functional remit, operating commercially while at the same time providing recreational and conservation benefits. The Finnish forest management agency, Metsähallitus, is a state enterprise that administers more than 12 million hectares of state-owned land and water areas for the benefit of Finnish society – running business activities while also delivering public benefits[47].

8.4 In order to set FES up as an independent trading body, it would be necessary for it to be given a distinct legal entity. At present, FES is part of the Forestry Commission and has no independent legal personality. The Forestry Act 1967 would need to be amended to set up the new body and set out the position in relation to its finances and accounting, and also to transfer functions which are currently exercised in statute by the Forestry Commission to the new body. This could probably achieved by the Scottish Parliament, without involving Westminster. However, as the Forestry Commission is a UK body, specified as a cross-border public authority, although it would be within legislative competence for the Scottish Parliament to transfer devolved functions relating to forestry to the new body, the Scottish Parliament could not alter the constitution or status of the Forestry Commission as a matter of English law. Also, it is unlikely that it could be done under a single topic Bill such as the Climate Change (Scotland) Bill.

Carbon offsets

8.5 The FCS Climate Change Action Plan 2009-2011 recognises the potential of the carbon offset market and highlights the urgent need for to provide a consistent, verifiable and transparent framework. While this market will not offer a significant source of income for FES in the short-term, there is longer-term potential as the value of carbon is likely to increase over time.

C. Conclusions

9.1 This paper considers how new resources could increase the contribution of the forestry sector to climate change mitigation, and bring wider benefits. FCS studies, the work by AEA Technology and the first report of the Climate Change Committee confirm that increased woodland creation could make an effective contribution to meeting Scottish Government targets for green house gas emission. Increasing the use of wood for fuel is another cost-effective climate change mitigation measure that would benefit from increased support. In addition, there is a range of forest-related climate change measures identified in

the FCS Climate Change Action Plan; while important, these do not require significant levels of additional funding at this time.

9.2 Work is already in hand to improve delivery of the SRDP. Beyond this, an additional £10-15 million per year over the next 10-12 years could make a significant contribution to meeting the challenge of climate change mitigation, using about £10 million for woodland creation (paragraph 2.15), and any balance for biomass support (paragraph 3.4). The options for funding this increased activity are:

- Additional funding from the Scottish Government, recognising that woodland creation and biomass support are identified as high priority measures in the AEA Technology Report;

- Using additional income from renewable developments. This could be substantial, but is only likely to reach £10-15 million per year over the next 5-10 years (paragraphs 5.1 – 5.7);

- Enhanced repositioning, which could yield an additional £15 million per year for the next 5 years. This would mean doubling the current level of sales of NFE properties. An alternative is to continue sales at the existing level (£15 million per year) and divert proceeds to woodland creation through SRDP and biomass support (paragraphs 7.1 – 7.5);

- Leasing. While (in net terms) this could yield some £10 million per year over 12 years (from 2012), there is a significant risk that – in the light of widespread public concern – Parliament will not agree to the necessary powers. There is also a risk of being unable to agree on terms for a lease which adequately address stakeholders' concerns, meet the investment objectives of a suitable lessee and secure value for money for the tax-payer (paragraphs 6.1 – 6.39).

9.3 There are other medium-term actions that should also be pursued in order to stimulate more woodland creation, and to help release funds from the NFE for forest-related climate change measures. These are efforts to modify the UK tax regime for forestry (paragraph 2.14); investigating changes in the status of FES (paragraphs 8.1 – 8.4); and promoting a carbon-offset market (paragraph 8.5).

Forestry Commission Scotland
February 2009

ANNEX 1 – OUTCOME FROM CONSULTATION EXERCISE

1. There were over 500 responses to the consultation[48], from a wide variety of organisations and individuals.

2. A majority had positive views on joint ventures for renewable energy programmes. There were, however, differences of view about whether or not this should include biomass-related projects. There was also interest in using joint venture powers for local, small-scale, projects as well as larger-scale projects.

3. A majority had negative views on leasing parts of the national forest estate. Concerns included the about diversion of funds way from forest sector; loss of social and environmental benefits; adverse impact on staff and local employment; adverse impact on wood supply; and poor value for money. There was a wide range of suggestions about requirements that should be built into any leases.

4. A majority had negative views about use of not-for profit trusts, considering them unnecessary.

5. Other views included:

- the need to regard woodland expansion as one of a range of opportunities for forestry in relation to climate change – others include sustainable use of timber and adaptation;

- the need to consider woodland expansion in broader context of rural land use in Scotland; in order to increase area of woodland, priority should be given to improving delivery of SRDP;

- the potential for an enhanced repositioning programme as one of a number measures that could increase funding from the national forest estate.

ANNEX 2 – FINANCIAL CONSIDERATIONS FOR A LEASE

Basic Information

1. Expected timber production

	Million m3/yr	Forest area (ha)	Road building (km)
Forest Enterprise (current)	3.3	426,391	1500
Leased area	1.1	114,581	487
Forest Enterprise (residue)	2.2	311810	1013

Notes: Based on information relating to leased area identified for purposes of Options Review. Total production Figure of 3.3 million m3 comes from production forecast; areas are Production High Forest; Road building is total programme, not annual programme

2. Information from 2009/10 Business Plans

(a) Forest Enterprise (current)

	£ million	**Unit income/cost**
Forestry Operations		
Income (1)	9.7	£2.9/m3
Expenses (2)	-32.1	-£9.7/m3
Estate Development		
Net income	5.6	
Recreation, Conservation, Heritage, Community Involvement		
Net expenditure	-15.7	
TOTAL	-32.5	

Notes: Forestry operations income is net income from harvesting and haulage of timber. Forestry operations expenditure is net expenditure on restocking, other forest protection and maintenance, roads maintenance, over/under recovery from business units, forest planning, roads construction and deer management

(b) Leased Area

	£ million	**Unit income/cost**
Forestry Operations		
Income	4.7	£4.3/m3
Expenses	-7.9	-£7.2/m3
Estate Development		
Net income	0.5	
Recreation, Conservation, Heritage, Community Involvement		
Net expenditure	- 0.4	
TOTAL	-3.1	

Notes: Calculated from Forest District Business Plans (Borders, Galloway, W. Argyll) on a prorata production basis for forest operations, a prorata area basis for estate development and assuming 10% of RCH expenditure is attributable to the leased areas. **NB Unit income is 50% higher in leased area, compared with average for FES.**

Future trends in forest operations income

1. Forest operations income is very sensitive to timber prices, and the impact on net income from timber. While the business plan figure (for net unit income) quoted above is £2.9/m3, the average figure over the period 2002/03 – 2007/08 was £4.66/m3, with a high of £6.79/m3 in 2007/08. For the purposes of this analysis, it is assumed that net timber income averages £4.66/m3 during the period of the lease, but is 50% higher in the leased area and consequently lower in the residual area.

2. The implications of these assumptions are shown below (in £/year over the period of the lease):

(a) FCS (current)

Forest operations income = 3.3 m. m3 @ £4.66/m3 =	£15.4 m.
Forest operation expenses	-£32.1 m.
Forest operations total	-£16.7 m.

(b) Leased area

Forest operations income = 1.1m. m3 @ £7/m3 =	£ 7.7 m.
Forest operation expenses	-£ 7.9 m.
Forest operations total	-£ 0.2 m

(c) FCS (remaining area)

Forest operations income = 2.2 m. m3 @ £3.5/m3 =	£ 7.7 m.
Forest operation expenses	-£24.2 m.
Forest operations total	-£16.5m.

Future trends in estate development income

3. If FCS is allowed to enter into joint ventures for renewable development projects, then it is assumed that this could increase annual net income potential to about £10 million per year (2012), reaching perhaps £30 million per year by 2020. Assuming that there is also some increase beyond 2020, then the average might be £15 million per year for the first 5 years and £35 million per year thereafter.

4. The income expected from the leased area, and the way in which this income is shared with the lessee will have a significant impact on the value of a lease. If 24% of the development income comes from the leased area, and the development income is shared equally, then the lessee would get 12% of any increase in development income.

5. The implications of these assumptions are:

   (a) FCS (current) – net development income:
   £15 m/yr in years 1-5; £35 m/yr in years 6-75

   (b) Leased area – net development income:
   £1.8 m/yr in years 1-5; £4.2 m/yr in years 6-75

   (c) FCS (remaining area) – net development income:
   £13.2 m/yr in years 1-5; £30.8 m/yr in years 6-75.

Impact on capital charge

6. The impact on the capital charge will depend upon how the balance sheet valuation of the lease is apportioned between lessor and lessee.. Assuming that this is 15%/85%, and the average current value is £2,500 per hectare in Ae/Borders, £2,300 and Galloway and £1,000 per hectare in West Argyll, then the impact on capital value is as follows:

	Value (£ million)	Capital charge (£m/yr)
Forest Enterprise (current)	850	30
Leased area (full value)	208	
(85% of value)	177	6
Forest Enterprise (residue)	673	24

The reduction in value would appear in the accounts as a capital loss at the time of the transaction.

Impact of grants and other costs

7. It assumed that the lessee will eligible for grants (eg for restructuring and investment in recreation, conservation and heritage) and that this would be about £2 million per year. This would be a cost to FCS and a benefit to the lessee.

8. In addition, FCS would have costs associated with leasing. It is assumed that these will higher initially, amounting to £0.3 million per year over the first 5 years, and £0.1 million per year thereafter.

Staff costs

9. The lessee will need to provide for additional TUPE and related costs (such as offering staff final salary pension schemes). Assuming that the cost of meeting these obligations would be £3,000 per employee, or £0.3 million per year for 100 staff for the first 5 years, falling to £0.1 million per year.

Income and expenditure model

10. The following model shows an income and expenditure model on an annual basis for the first 5 years and for the next 70 years.

£m/yr –**first 5 years**	Forest ops	Development	RCH	Grants and admin.	Staff cost (TUPE)	Total
FCS (current)	-16.7	15	-15.7	-	-	-17.4
Lease	-0.2	1.8	-0.4	2.0	-0.3	2.9
FCS (residue)	-16.5	13.2	-15.3	-2.3	-	-20.9

£m/yr – **next 70 years**	Forest ops	Development	RCH	Grants and admin.	Staff cost (TUPE)	Total
FCS (current)	-16.7	35	-15.7	-	-	2.6
Lease	- 0.2	4.2	-0.4	2.0	-0.1	5.5
FCS (residue)	-16.5	30.8	-15.3	-2.1	-	-3.1

15. From the perspective of a lessee seeking a 6% (tax free) rate of return, these figures would justify a payment of about £120 million, payable in 12 instalments over the first 12 years. In practice, the amount they would pay would obviously be influenced by their own judgement about future timber prices, development potential etc. For example a

£2.50/m3 increase in timber prices of would increase the payment to about £175 million, while a £2.50/m3 fall would reduce it to about £60 million.

16. Using the public sector discount rate of 3.5%, the net present value of this difference in cash flow is negative (at -£46 million). The lessee would need to pay about £180 million to achieve a 3.5% return for FCS from a leasing transaction. (The different discount rates used by private and public sector also affect the capitalisation of the £2 million per year grant. While it is "worth" £16 million to the private sector, it "costs" FCS £53 million.)

17. From the perspective of FCS, the impact on cash flow if £180 million were paid in 12 annual instalments, would be:

£ million/year	If there is a lease	Without a lease	Difference
Years 1 - 5	15 – 20.9 = - 10.9	-17.4	+ 11.2
Years 6 –12	15 – 3.1 = 6.9	2.6	+ 9.3
Years 13 - 75	-3.1	2.6	-5.7

18. The different discount rates used by private and public sector also affect the capitalisation of the £2 million per year grant. While it is "worth" £16 million to the private sector, it "costs" FCS £53 million.

Conclusions

19. Assuming timber prices revert to their average for 2002/03-07/08, that renewables income averages to £15 million/year for the first 5 years and £35 million/year thereafter, and grants of £2 million/year are paid to a lessee, then the reserve price would be £180 million. A lessee wanting a 6% return would only pay this if they made more optimistic assumptions (eg timber prices rising by at least £2.50/m^3). Allowing for additional costs and other impacts on cash flow, this would give FCS an additional £10 million/year for 12 years, and £6 million/year less thereafter. This "bringing forward" of cash flow could be justified by the argument that early action is required to tackle climate change and that this money would be used to achieve that.

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[3] http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-chapter9.pdf

[4] http://www.forestry.gov.uk/pdf/Policywoodlremovpdf.pdf/$FILE/Policywoodlremovpdf.pdf

[5] http://www.scotland.gov.uk/News/Releases/2008/11/14111123

[6] http://hmccc.s3.amazonaws.com/pdf/TSO-ClimateChange.pdf (page 351)

[7] http://www.forestry.gov.uk/pdf/ccActionPlan2009-2011.pdf/$FILE/ccActionPlan2009-2011.pdf

[8] http://www.forestry.gov.uk/pdf/forestryscottishclimatechangebill.pdf/$FILE/forestryscottishclimatechangebill.pdf

[9] Latitude also influences the net climate benefit of woodland creation. For example, higher rates of evapo-transpiration from woodland (compared with, say, grassland) will give a cooling effect; by contrast, the lower "albedo" of trees (about 12-14%) compared with grass (about 22-24%) means that less solar radiation is reflected back into the atmosphere, resulting in a slight warming. At Scottish latitudes the net effect of such factors is uncertain, but on balance is likely to result in cooling. The significance of these biophysical effects depends fairly directly on the area of land cover change.

[10] Report prepared for FCS by CEH using same methodology as National Inventory (LULUCF) – see http://www.edinburgh.ceh.ac.uk/ukcarbon/docs/2007/CHAPTER%204_Projections.pdf

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[14] A brief note of changes in the income and corporation tax regime is available at http://www.hmrc.gov.uk/manuals/bimmanual/BIM67701.htm.

[15] The Millennium Forest for Scotland restored some 22,257 hectares of native woodland – http://www.millenniumforest.co.uk/home.html.

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[25] http://www.scotland.gov.uk/Topics/Business-Industry/Energy/19185/20805/BioSupport/BioSupportIntro

[26] The forests are managed in accordance with the principles of sustainable forest management (as set out in the UK Forestry Standard) and are certified under the UK Woodland Assurance Standard.

[27] This interpretation of the Forestry Act 1967 is based on a number of opinions from Counsel. These take the view that Parliament's intention in the Forestry Act was that the Forestry Commission should manage the land put at its disposal for forestry purposes, that it had not been given powers to delegate this function, and that there should only be leases for non-forest related purposes. See, for example http://www.publications.parliament.uk/pa/cm200001/cmselect/cmagric/229/229ap08.htm

[28] see Economic Analysis of the Contribution of the Forest Estate Managed by Forestry Commission Scotland, CJC Consulting, April 2004. http://www.forestry.gov.uk/pdf/FCSforestestatefinal2.pdf/$FILE/FCSforestestatefinal2.pdf.

This study valued carbon sequestration at a much lower rate - £1.82 per tonne CO2, rising by 1% per year – than the current estimate of £25 per tonne CO2.

[29] http://www.forestry.gov.uk/pdf/fcs-corp-plan-2008.pdf/$FILE/fcs-corp-plan-2008.pdf

[30] see *Clear Line of Sight* http://www.hm-treasury.gov.uk/psr_clear_line_of_sight_intro.htm

[31] http://www.forestry.gov.uk/pdf/SFS2006fcfc101.pdf/$FILE/SFS2006fcfc101.pdf

[32] See draft Forest Enterprise Scotland Framework Strategic Plan http://www.forestry.gov.uk/pdf/x22531FESFSPINTFINAL.pdf/$FILE/x22531FESFSPINTFINAL.pdf

Under the portfolio analysis, there is a maximum score of 75 for attributes relating to conservation, recreation and community (but not historic environment) benefits. About 350,000 hectares (or just over 50% of the state) score less than 20 on this scale.

[33] *A framework for the development and deployment of renewable energy in Scotland* http://www.scotland.gov.uk/Publications/2008/10/refc

[34] the Gross Bundled Electricity Price represents the sum of all the revenue streams that a renewable scheme would receive. These include the wholesale electricity price, renewable obligation certificate price and climate change levy certificate price.

[35] Under the Scotland Act 1998, the "generation, transmission, distribution and supply of electricity" is reserved. Therefore, FCS would not be able to enter into a joint venture with an energy company to build **and run** a wind farm or a hydro electric scheme; but the Scottish Parliament could confer a function that would allow FCS to enter into a joint venture to build such a wind farm or scheme. This joint venture could be set up in a way that allowed FCS to benefit financially from the revenue stream flowing from the development.

[36] http://www.scotland.gov.uk/News/This-Week/Speeches/First-Minister/simplifyingpublicservices

[37] Under Part One of the Land Reform (Scotland) Act 2003.

[38] Under section 1 of Nature Conservation (Scotland) act 2004

[39] This is a complex issue, depending not only on the timing of felling, but also on the end-use to which harvested wood products are put (with, eg, sawnwood storing carbon for longer than paper products).

[40] Under section 3A of the Forestry Act 1967.

[41] For example, in November 2008 a package of measures was announced to help the Scottish forestry industry face the economic downturn including: continuing where ever possible to operate normal contract and credit arrangements; offering reasonable extensions to existing contracts; enabling customers to work high priced contracts alongside more recently purchased lower priced contracts in order to reduce their impact on cash flow; negotiating changes to payment profiles in exceptional circumstances; continuing to offer Sales Plan volumes to the market to ensure continuity of supply and retention of skills; setting sale reserves based on a realistic view of the market; and ensuring prompt payment of that harvesting contractors and hauliers.

[42] It should be noted that the existing agreement between FCS and Forest Holidays joint venture company already gives that company first refusal for the development of cabins and campsites on the NFE.

[43] At present, the SRDP allocation for forestry management grants is about £13 million/year – an average of £14.70/ha over the area currently managed by the private sector (884,000 hectares). This suggests grant payments £1.7 million/year for the leased area, which has been rounded up to £2 million/year. It should be noted, however, that under the EU Rural Development Regulation (EC 1698/2005, article 42), a lessee could not receive annual forest environment payments (measure 225), but could get woodland improvement grants (payments for non-productive investments relating to forest environment and/or amenity - measure 227).

[44] Section 67 of the Abolition of Feudal Tenure etc (Scotland) Act 2000

[45] Strictly speaking this would not be a procurement exercise; but guidance on competitive dialogue would provide a sound approach – see http://www.ogc.gov.uk/documents/guide_competitive_dialogue.pdf

[46] see, for example, article at page 81 in http://www.etfrn.org/etfrn/newsletter/news49/ETFRNews49.pdf.

[47] http://www.metsa.fi/sivustot/metsa/en/AboutUs/Sivut/AboutMetsahallitus.aspx

[48] Except where confidentiality has been requested, these have been published, along with an analysis, at: http://www.forestry.gov.uk/fcsclimateconsultation