WHY WE NEED AN ENERGY CROPS SCHEME 3

POSITION PAPER

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WHY WE NEED AN ENERGY CROPS SCHEME 3

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The Energy Crops Scheme (ECS) closes to new applications at the end of August 2013. This position paper sets out the need for an improved policy framework for the woody energy crops sector and as well as a third round of the ECS. The report includes a critical appraisal of the first two ECS schemes and provides our views on how improvements might be made. We conclude with a wish list of 10 key elements that should be considered as part of an improved and fully integrated ECS 3.

The Energy Crops Scheme

The ECS offers grants to farmers in England for establishing miscanthus grass and short rotation coppice (SRC) for use in biomass heating systems, combined heat and power plants and power stations. The total funding pot set aside for ECS 1 (2000 -2006) and ECS2 (2007-2013) was £76 million but both schemes have been significantly undersubscribed. To date the total spend from ECS 2 is less than £2.39 million from an available fund of £47 million.

As a result of this low take up there appears to be a lack of political will to support a third programme. However, virtually every report looking forward to 2050 suggests a major role for woody energy crops in helping us meet our sustainable energy and climate change targets[1],[2],[3]. The UK Bioenergy Strategy recognises this potential (see box) and states that the Government will explore ways to remove barriers to energy crop production. Despite this aspiration there is still no specific energy crops strategy and action plan that will kick start the industry.

Tables 1-4 and Figure 1 show the breakdown of planting areas miscanthus and SRC in the seven English regions from 2000-2013. Miscanthus has up to now been the most favoured crop.

Based on the figures obtained from Natural England[4] the two schemes (ECS 1 and 2) have so far:

- Supported the planting of 12,128 hectares of energy crops in total
- Supported the planting of 9,631 hectares of miscanthus (79% of the total)
- Supported the planting of 2,497 hectares of SRC (21% of the total)

The majority of planting has occurred in areas close to power markets in East Midlands and Yorkshire & Humber. East Midlands is the region with the largest area of planting with 2,576 hectares of miscanthus (27% of total) and 916 hectares of SRC (37% of the total). Yorkshire & Humber also has relatively high planting levels with 2,307 hectares of miscanthus (24% of total) and 620 hectares of SRC (25% of the total). The North East (228 hectares) and North West (503 hectares) have had the lowest take up.

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[1] 2050 Pathways Analysis. HM Government July 2010. This report suggests that three scenarios in which bioenergy crops occupy 350,000 hectares, 1.2 million hectares (5% of UK land) and 2.4 million hectares (10% of UK land). https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/42562/216-2050-pathways-analysis-report.pdf

[2] Estimating the supply of biomass from short-rotation coppice in England, given social, economic and environmental constraints to land availability. Matthew J Aylott, Eric Casella, Kate Farrall & Gail Taylor. Biofuels (2010) 1(5), 719–727. http://www.emlub.com/wp-content/uploads/2010/08/Taylor_Estimating-the-supply-of-biomass.pdf. This report suggests that 0.8 million ha of energy crops could be grown almost entirely on poor quality marginal lands.

[3] Smith, P. et al. (2013) Introduction to special feature on Spatial Modelling of Bioenergy in Great Britain to 2050. *Global Change Biology Bioenergy* (special issue, in review).

[4] Energy Crops Scheme 1: http://www.naturalengland.org.uk/Images/ECS1_tcm6-26820.pdf .
Energy Crops Scheme 2: http://www.naturalengland.org.uk/Images/ECS2_tcm6-26821.pdf
Additional information provided by Katie Vowles and Christine St Leger Chambers, Natural England.

Table 1: Area of Miscanthus (in hectares) claimed under Energy Crops Scheme 1. (*Source: Katie Vowles and Christine St Leger Chambers, Natural England*)

Region	2001	2002	2003	2004	2005	2006	2007	2008	Total
East Midlands	0.00	0.00	0.00	23.85	53.52	812.34	777.20	222.97	1889.88
East of England	0.00	48.10	0.00	175.86	90.89	40.83	24.99	0.00	380.67
North East	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North West	0.00	0.00	0.00	0.00	29.69	32.86	0.00	0.00	62.55
South East	0.00	0.00	0.00	0.00	0.00	46.26	211.66	47.41	305.33
South West	0.00	0.00	0.00	0.00	154.24	34.88	677.19	169.79	1036.10
West Midlands	0.00	3.46	0.00	95.91	177.59	315.32	176.12	90.49	858.89
Yorks and Humber	0.00	0.00	0.00	6.33	152.01	1062.48	546.21	75.64	1842.67
Total	**0.00**	**51.56**	**0.00**	**301.95**	**657.94**	**2344.97**	**2413.37**	**606.30**	**6376.09**

Table 2: Area of SRC (in hectares) claimed under Energy Crops Scheme 1. (*Source: Katie Vowles and Christine St Leger Chambers, Natural England*)

Region	2001	2002	2003	2004	2005	2006	2007	2008	Total
East Midlands	104.16	8.48	76.76	10.71	117.17	69.31	156.37	66.35	609.31
East of England	61.22	14.28	0.00	0.00	0.00	0.00	0.00	0.00	75.50
North East	0.00	6.00	0.00	20.08	39.17	85.33	32.38	45.19	228.15
North West	0.00	0.00	0.00	0.00	11.00	57.15	56.51	0.00	124.66
South East	0.00	0.00	16.95	26.95	43.79	92.45	56.64	19.84	256.62
South West	0.00	0.00	0.00	0.00	9.41	21.11	0.00	0.00	30.52
West Midlands	6.00	0.00	0.00	0.00	0.00	0.00	17.46	3.12	26.58
Yorks and Humber	61.81	35.74	0.00	48.73	69.56	65.38	182.38	0.00	463.60
Total	**233.19**	**64.50**	**93.71**	**106.47**	**290.10**	**390.73**	**501.74**	**134.50**	**1814.94**
Total energy crops	**233.19**	**116.06**	**93.71**	**408.42**	**948.04**	**2735.70**	**2915.11**	**740.80**	**8191.03**

Total energy crops planted under the scheme (hectares)	8191.03
Total grant paid for miscanthus	£5,860,906
Total grant paid for SRC	£1,811,548
Total grant spend	£7,672,454
Total budget	£29,000,000
Underspend	£21,327,547

Table 3: Area of Miscanthus (in hectares) claimed under Energy Crops Scheme 2. (*Source: Katie Vowles and Christine St Leger Chambers, Natural England*)

Region	2008	2009	2010	2011	2012	2013	Total
East Midlands	44.53	100.20	91.26	119.19	241.54	89.19	685.91
East of England	0.00	0.00	33.88	82.55	67.41	59.00	242.84
North East	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North West	0.00	0.00	0.00	13.80	13.80	212.42	240.02
South East	8.81	36.40	42.24	21.40	42.06	147.14	298.05
South West	21.50	211.44	113.68	40.45	20.80	53.33	461.20
West Midlands	23.52	90.20	80.46	180.23	375.76	112.08	862.25
Yorks and Humber	31.71	42.56	83.08	132.19	102.29	72.74	464.57
Total	**130.07**	**480.80**	**444.60**	**589.91**	**863.66**	**745.90**	**3254.84**

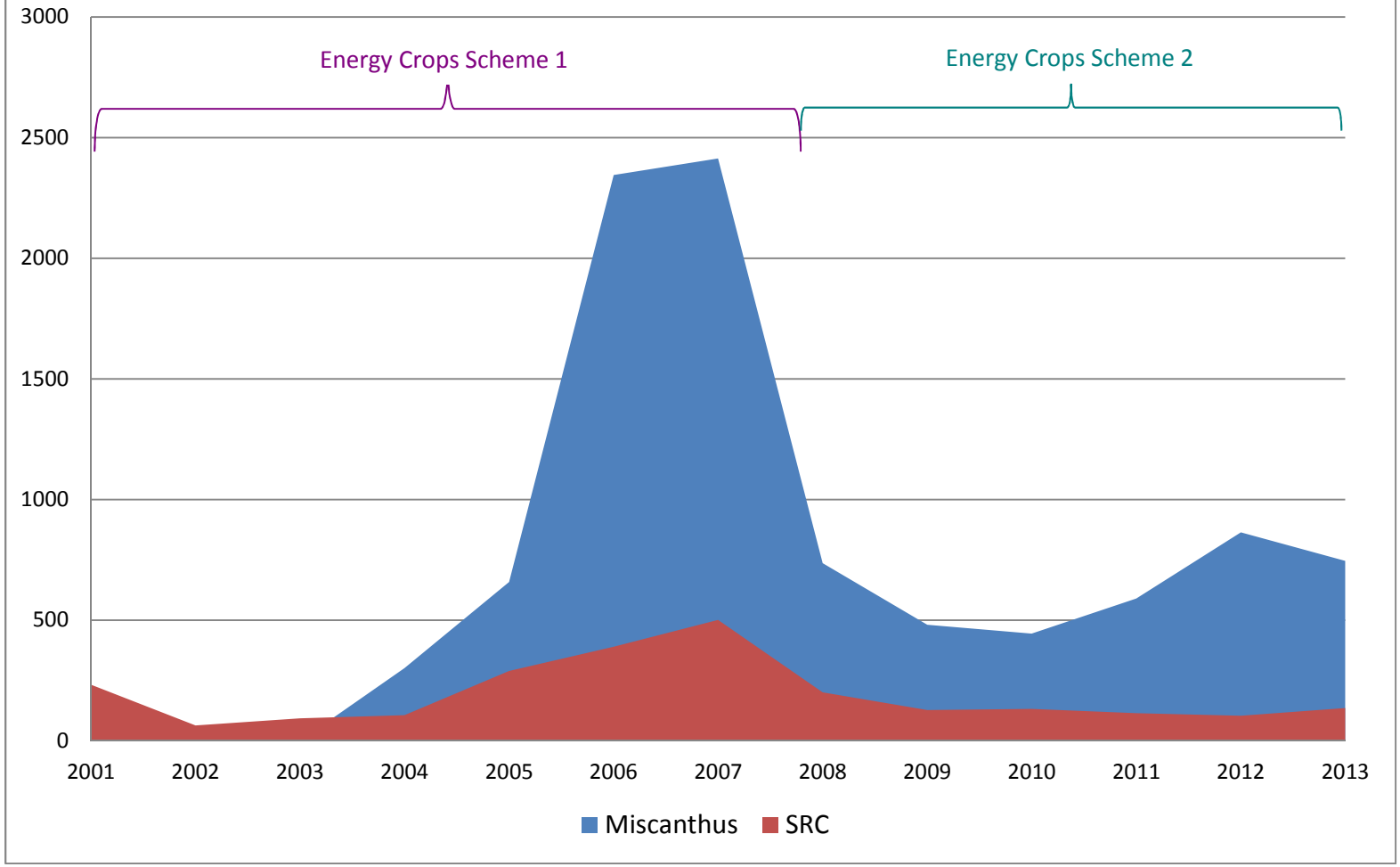
Table 4: Area of SRC (in hectares) claimed under Energy Crops Scheme 2. (*Source: Katie Vowles and Christine St Leger Chambers, Natural England*)

Region	2008	2009	2010	2011	2012	2013	Total
East Midlands	49.29	90.92	90.64	33.59	42.08	0.00	306.52
East of England	0.00	13.37	6.10	20.62	29.55	14.64	84.28
North East	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North West	0.00	0.00	0.00	0.00	0.00	76.23	76.23
South East	3.00	14.70	4.57	0.00	0.00	22.18	44.45
South West	3.00	5.40	2.40	0.00	0.00	3.62	14.42
West Midlands	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yorks and Humber	11.26	3.00	28.88	61.08	32.67	19.17	156.06
Total	**66.55**	**127.39**	**132.59**	**115.29**	**104.30**	**135.84**	**681.96**
Total energy crops	**196.62**	**608.19**	**577.19**	**705.10**	**967.96**	**881.74**	**3936.80**

2013 figures are provisional and represent approved applications

Total energy crops planted under the scheme 2008-2012 (hectares)	3055.06
Total grant spend to date	£2,381,590
Total budget	£47,000,000
Underspend	£44,618,410

Figure 1: Energy crops planting levels in England (hectares) from 2001-2013



UK Bioenergy Strategy

The strategy was published jointly by DECC, Defra and the Department for Transport in April 2012. It says:

"The benefits of energy crops for bioenergy include not only their use for biomass heat and electricity but also their ability to prevent soil erosion, improve biodiversity in the right location and help ensure fuel security."

"….the use of wood and energy crops for bioenergy is a good carbon reduction option compared to alternative uses of the resource in certain circumstances…"

"The greatest growth in domestic biomass supply is expected to come from agricultural residues and perennial energy crops."

"…improvements in energy crop yields, particularly of woody/ grassy crops suited to UK conditions, could lead to significant increases in the availability of sustainable resources."

"…perennial energy crops, such as short rotation coppice and miscanthus, if cultivated in the right place and in the right way, can be better for biodiversity and water quality than arable crops such as wheat and maize."

BUT

"The potential to upscale is currently restricted by UK planting and harvesting capacity, grower acceptance, economics, technology compatibility and social resistance related to concerns around long-term land use change."

It proposes that:

☑ Government will explore ways of removing barriers to energy crop production and steering growth in ways which enhance the wider environment (DEFRA / DECC)

☑ Government departments will work with industry to explore further opportunities for boosting domestic supplies across a range of feedstocks (DEFRA/Forestry Commission)

Why we need energy crops

Our view, set out in our publication "Why we need energy crops in the SW" [5] is that in order to gain the maximum potential from our limited land resource we should be growing energy crops for small to medium heat only and combined heat and power (CHP) projects. This would mean that energy crops would be more widespread in the countryside rather than concentrated in just a few areas. This opinion is shared by the European Environment Agency[6].

The rising costs of fossil fuels and the rebates offered through the Renewable Heat Incentive (RHI) are increasing the demand for woodfuel. This is increasing the price for superior sources of woodfuel and should open up the market for cheaper woodfuel from energy crops. We will start to see indigenous supplies of woodfuel (e.g. undermanaged woodland, arboricultural arisings, clean waste wood) running short in just a few years (see SW case study). Furthermore, a lot of the woodfuel resource is a long way from end users, difficult to access and expensive to transport. By contrast energy crops can be planted closer to the area where they are needed. It is therefore essential that we create the right policy framework immediately to incentivise farmers to diversify into this sector.

The RHI is creating a market pull but there also needs to be a helping push through targeted support measures. Instead of less funding for energy crops we need more. In the last two years in the SW we have seen solar photovoltaic (PV) installations increase from 3,546 [7] to 65,223 [8]. This step change was brought about by the attractive returns provided through the Feed in Tariffs (FITs). This illustrates what can be achieved in a very short time. Biomass supply and use is much more complicated than solar PV. Nevertheless, in order to achieve a similar change in farmer attitudes and user acceptance we need to achieve a similar financial tipping point.

What's wrong with the Energy Crops Scheme?

ECS 2 was designed to stimulate the planting of around 40,000 hectares of energy crops. This would have created a critical mass which would enable the industry to stand on its own without subsidies. The reality is that ECS 2 has so far led to less than 4,000 hectares of planting and measured on this basis it has been a resounding failure.

The scheme has many flaws which are outlined below. However, the lack of uptake of energy crops by farmers is a result of many linked factors. The most important of these are:

- the lack of lucrative local markets
- the failure of high profile projects (e.g. Arbre, Winbeg, Ambient Energy etc.)
- competition from alternative crops with better returns and/or shorter paybacks
- the lack of a supportive policy framework
- the lack of market advantage for an emerging sector - the withdrawal of the energy crops uplift for co-firing[9] means that local and sustainably grown energy crops have to compete on price with imported and waste biomass
- the lack of infrastructure which keeps establishment and harvesting costs high.

A follow up scheme needs to learn the lessons from ECS 2 so that we get it right and finally achieve a self-sustaining industry.

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[5] Why we need energy crops in the SW. Crops for Energy. June 2012. http://www.crops4energy.co.uk/files/pdfs/WhyWeNeedEnergyCropsintheSW-Main_Report.pdf

[6] EU Bioenergy potential from a resource-efficiency perspective. European Environmental Agency. Report No 6/2013. http://www.eea.europa.eu/publications/eu-bioenergy-potential

[7] Regen SW Annual Report 2011. http://regensw.s3.amazonaws.com/regen_2011_survey_web_7dc475ef5cb3b5d3.pdf

[8] Regen SW Annual Report 2013 http://regensw.s3.amazonaws.com/2013_progress_report_web_793ba17b9235bc20.pdf

[9] The energy crop uplift was introduced in 2009 as part of reforms to the Renewables Obligation. This provided generators co-firing energy crops with coal with an additional 0.5 Renewable Obligation Certificates (ROCs) for each megawatt hour of electricity generated. The uplift was withdrawn on 1 April 2013.

There is not enough indigenous woodfuel resource to meet future demand

Case study: The SW of England

The UK has a 12% target for renewable heat by 2020. This is particularly pressing in the SW of England as 16% of the region's 2.1 million homes are off the gas grid (336,000 homes). As a result residents are paying extra for expensive alternatives like oil and electric heating. The predicted heat consumption for the SW in 2020 is 58.6 terawatt hours (TWh)[10]. 12% of this is 7.03 TWh and if woodfuel heating contributes 50% then 3.52 TWh needs to be made available. In order to meet this demand, 804,532[11] oven dry tonnes (odt) of wood would be required per year. The predicted woodfuel resource in the SW is only 685,340 odt/yr[12]. This includes sustainable supplies from woodland, existing energy crops, arboricultural arisings, co-products from sawmills and clean recycled wood waste. So, based on these figures, even if all the currently available resource was made available, it would not be possible to meet the predicted demand.

Table 5 below provides various scenarios for achieving 12% heating in the SW based on contributions from different renewable sources. It is obvious that energy crops will almost certainly have a large part to play in the future energy mix in the SW. Five of the six scenarios suggest that between 21,000 and 66,000 hectares (ha) of land in the SW will be required for growing energy crops. Although this seems like a large area, in fact, only 1.2-3.5% of the available agricultural land would be required. Without energy crops being planted it is likely that a significant quantity of woodfuel will need to be imported. The UK is already a net importer of fossil fuels so we should be focusing on ways to maximize indigenous and secure supply of biomass for the future.

Table 5: Potential market for energy crops in the SW of England (*see Ref 4 for assumptions*).

Scenario	Contribution towards the 12%			Amount of energy crops required			% of SW agricultural land
	Indigenous woodfuel	Energy crops	Other renewables	TWh/yr	Oven dry tonnes/yr	Area (hectares)	
1	4.5	0	7.5	0	0	0	0
2	4.5	1.5	6.0	0.88	205,532	21,865	1.2
3	4.5	3.0	4.5	1.76	411,063	43,730	2.3
4	2.75	1.5	7.75	0.88	205,532	21,865	1.2
5	2.75	3.0	6.25	1.76	411,063	43,730	2.3
6	2.75	4.5	4.75	2.64	616,595	65,595	3.5

[10] The Road to 2020. An analysis of renewable energy options in the South West of England. A report by Regen SW, in association with the South West RDA. September 2008. www.regensw.co.uk/projects/archived-projects/the-road-to-2020

[11] Based on a conversion efficiency of 85% and a calorific value of 5,140 kWh/tonne.

[12] Woodfuel Resource in Britain. Final Report, B/W3/00787/Rep, Urn03/1436. Funded By Dti, Scottish Enterprise, Welsh Assembly Government and The Forestry Commission. H. Mckay. December 2003.

The ECS provides no incentive to growers

The ECS pays a 50% establishment grant but no annual payments. As a result farmers must wait 4-7 years for the investment to be paid back. This presents a poor investment compared to alternative options. Many on farm renewable energy schemes provide a return on interest of 20%. There is therefore a fundamental need for additional incentives in the first six years that would help reduce the up-front risk and financial burden of these crops.

A large body of research suggests that energy crops in general and SRC in particular can significantly increase biodiversity on farms[13]. The crops and the surrounding headlands provide food and habitats for birds, butterflies and other invertebrates. Unfortunately, despite the benefits to wildlife there has been no incentive made available to energy crop growers through environmental schemes.

In addition, there are no financial incentives for planting energy crops for the benefits that they might provide in terms of flood defence and nitrate pollution control. The coppice nature of these crops provides hydraulic roughness which enhances sediment retention and slows down the flow of flood water. They could therefore reduce the likelihood of floods downstream and increase the time available for issuing flood warnings. Using appropriately planted energy crops could provide a low cost option for areas that are too small to justify expensive flood defence measures. Furthermore, appropriately sited energy crop plantations could provide an effective local measure for reducing nitrate pollution by providing useful barrier strips which intercept sediment and absorb nitrates from the water. Other benefits of energy crops include the creation of biosecurity corridors and carbon sequestration.

An improved ECS should reward growers for these environmental benefits with interim payments during the first 5-6 years of the crop to allow for lost income and improve cash flow. The ECS should be more closely incorporated into improved Environmental Stewardship and Higher Level Stewardship schemes. Points and payments should be weighted to favour the targeting of these crops to the most effective location within the farmed landscape where they can provide the greatest impact on biodiversity, water quality and flood defence.

The ECS application process is too bureaucratic

It is not unusual for an ECS application and the supporting maps and evidence to run to 20-25 pages. This needs to be streamlined to make it easier for growers. The annotated maps required for the application are complicated and open to different interpretation. In many cases the final approved area differs from that applied for. ECS2 requires applicants to submit invoices for all works carried out and then pays 50% of the eligible costs. This involves a lot of paperwork and calculations.

ECS1 paid growers a standard flat grant rate per hectare. A return to this would be simpler for farmers and reduce administration time by the awarding body. The maps should be completed by the officer from the awarding body during the farm visit – this will avoid any confusion and reduce the farmer's time input.

The ECS agreement is too prescriptive

Support under ECS2 requires the grower to have an end user contract in place at the time of planting or shortly after – this forces growers into taking what's on offer rather than developing their own more lucrative, local markets.

[13] The Effects on Flora and Fauna of Converting Grassland to Short Rotation Coppice. Four year study involving wildlife monitoring of commercial SRC plantations planted on grassland and grassland control plots. DTI Technology Programme: New and Renewable Energy Contract Number B/W2/00738/00/00.
http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/files/file30621.pdf

Woodland for Water: Woodland Measures for meeting Water Framework Directive objectives

This report produced by Forest Research in July 2011 suggests that strategically placed energy crops could provide an effective way of delivering WFD objectives. The report says:

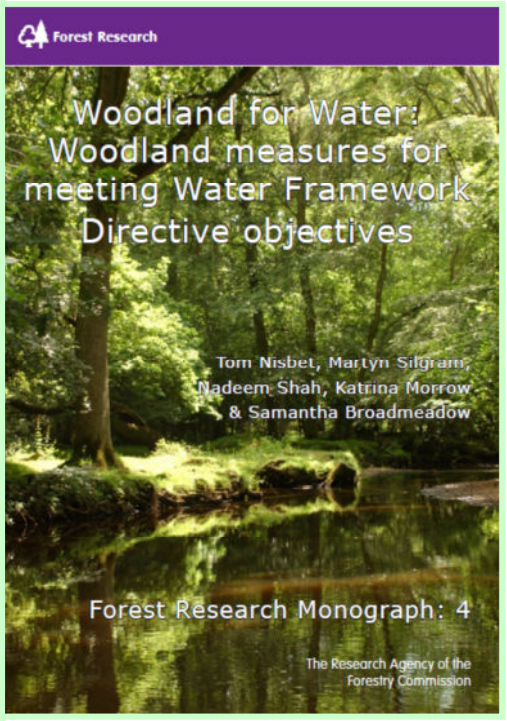
> "*Energy woodland crops such as SRC could be a particularly attractive option for mitigating nitrate leaching in NVZs by maximising nitrogen uptake and providing a high yielding crop for farmers*."
>
> *"….the rapid growth and multi-stemmed nature of these crops makes them ideally suited to flood risk management."*
>
> *"……energy crops can offer additional advantages for water protection, flood risk management and climate change mitigation by enhancing pollutant uptake and sediment retention, more rapid establishment of vegetation roughness (especially for SRC) and increased carbon sequestration, as well as a more attractive and faster economic return for landowners*."

BUT

> "***….there is no incentive to plant (energy) crops where they could benefit water most.***"

It proposes that:

- ☑ Woodland creation and management for mitigating diffuse pollution needs to be given greater prominence in River Basin Management Plans and underpinned by stronger and targeted financial incentives in national Rural Development Programmes, including greater support for riparian woodland buffers.
- ☑ Potential improvements to both Environmental Stewardship and Higher Level Stewardship schemes could consider:
  - Incentives (points or payments) for the creation of tree shelterbelts, hedgerows and riparian woodland buffer areas
  - Weighting of the points system to favour the targeting of these measures to the most effective location within farm landscapes



The minimum planting area for energy crops planted under the ECS is 3 hectares – this makes sense in terms of the economics of planting and harvesting but is in many cases is too big an area for farmers looking to self-supply. This will certainly be the case with the forthcoming domestic RHI which limits the boiler installation size to 45 kilowatts (kW). Several of our clients are currently intending to plant SRC at wider spacings and harvest manually in *lieu* of suitable harvesting machinery becoming locally available. This should be encouraged.

An ECS application can be rejected on the basis of the roots of SRC affecting archaeological remains. This is unfair. Landowners can plant what they like, where they like if they don't apply for the grant. Other crops such as maize and oilseed rape have deep roots that could affect archaeological remains so energy crops should not be considered any different.

The awarding body should be given more power to deal with applications on a case by case basis. The evidence of end use letter provides the applicant with the opportunity to set out the aspiration they have for their crop. As miscanthus and SRC crops take 3-4 years to reach maturity growers should be given the full 5 years of the agreement to provide evidence that a boiler has been installed or a contract with an end user secured. The 3 hectare rule should be relaxed. To avoid the undue administrative burden of a glut of small applications, areas under 2ha outside the most sensitive designated areas (e.g. SSSIs) could be fast tracked.

The ECS application process takes too long

The ECS application is bureaucratic and time consuming with a minimum 3-4 month turnaround. The application process is further delayed for SRC by the need for the application to go on the Forestry Commission's public register for 28 days. During this period the application is put on hold. In reality, very few objections are made to proposed energy crop plantings. Furthermore, most applications for SRC are subject to an Environmental Impact Assessment (Forestry). Only plantations of less than 5 hectares on non-designated land are exempt. EIA's are carried out by the Forestry Commission and increase the application time considerably. One of our clients in the SW has been waiting nearly 7 months for a decision on an ECS application. This is far too long and needs to be radically improved. In many cases approval of the grant is given too late in the season and prevents the grower from being able to prepare land according to best practice guidelines. A poorly prepared site could potentially lose hundreds of tonnes of productivity over the crops lifetime.

As SRC is harvested on a 3 year rotation and usually attains a maximum height of around 7 m we question whether there is a need for this assessment in the first place. As before, a farmer can plant SRC anywhere they wish if they don't apply for the grant.

The application process should take a maximum of 12 weeks but where possible applications should be approved in 8 weeks. Small plantations should where possible be fast tracked. The performance of the awarding body should be judged on their ability to turn around applications in a set period (as is the case with Ofgem for RHI applications). The application process should not be delayed by the placement on the public register. The need for an EIA should be limited to large plantings (> 20 hectares) in sensitive designated areas only. If there is no getting round the need for an EIA then this should be carried out 'in house' by the body awarding the grant or sub-contracted out to trained consultants. Either way the application process would be streamlined.

The ECS is ring fenced for planting grants

The budget for ECS2 was too large. Many areas of the country lack the necessary markets or the infrastructure required to plant, harvest and process woodfuel produced from energy crops. It would have made sense for some of the £47 million budget to have been deployed to help understand the reasons for farmer indifference, create local heat markets and provide funding for

essential kit to help the sector grow. Unfortunately, the industry was repeatedly informed that the funding was ring fenced and specific to miscanthus and SRC establishment.

However, it appears that there was in fact a loop hole allowing the ECS funding to be spent on other activities but organisations within the energy crops sector were not consulted on this matter. Instead, the Forestry Commission (FC) were approached by DEFRA and DECC to explore the potential of utilising £10 million of the projected ECS underspend to support the delivery of their Woodfuel Strategy for England. The FC proposed a package of measures to provide support across four key activity areas: support for boiler installation; increasing the supply of timber; support for woodfuel businesses (equipment); and provide facilitation. This ultimately led to the setting up of the Woodfuel Woodland Improvement Grant (Woodfuel WIG).

It is unfortunate that this money was not used to support the ailing energy crops sector but was instead used to boost a part of the biomass industry that is already well funded. In 2010, a consortium led by C4E submitted a bid for funding under the Round 3 of the Bioenergy Infrastructure Scheme (BEIS) for a SRC harvesting header and woodchip grading facility to serve the 360 hectares of SRC planted in the south of England. This bid failed as a result of the BEIS being withdrawn as part of austerity measures. There is still no harvesting system for SRC located in the south of England. ECS funds could and should have been used to support the funding of this essential equipment.

A future ECS should include a dedicated grant scheme for energy crops infrastructure and processing projects. This could come in the form of a fourth round of the BEIS but be specific to energy crops with a 50/50 split in funding for SRC and miscanthus projects. The grant rate needs to be set high (50-75%) to overcome the current 'chicken and egg' situation and help achieve the economies of scale required.

How to improve the Energy Crops Scheme

Below is a wish list of activities that are required in order to create a more rounded ECS. Obviously outside of this sphere there is still the need for support in other policy areas. The emerging detail relating to the Direct Payments Regulations agreed under the Common Agricultural Policy (CAP) reforms provides a real opportunity for the energy crops sector particularly SRC.

30% of the regional average payment will depend on farmers observing agricultural practices which are deemed to provide environmental benefits. For instance, miscanthus and SRC could be grown as a crop diversification option. This ruling dictates that for claims over 30 hectares that three crops must be grown in rotation with one crop covering no more than 75% of arable land and two crops no more than 95%. A farmer with a 40 hectare arable holding could plant 2 hectares of miscanthus or SRC to satisfy these requirements. Such a commitment would produce ample biomass to self-supply heat to most small to medium farms.

SRC could also be picked as one of the options for Ecological Focus Areas (EFAs) on arable farms. Claims for over 15 hectares must ensure that at least 5% of the cropped area is given over to fallow land, buffer strips, catch crops, nitrogen fixing crops or SRC.

Crops for Energy Ltd has been arguing for an Energy Crops Roadmap for around 5 years. We still believe that such a document that sets out a long term strategy and action plan for the sector is essential if we are to work towards 2050 targets for sustainable energy and carbon reduction.

ENERGY CROPS SCHEME WISH LIST

1) **DEFRA to provide £1-2 million of transition funding for energy crops planting. This will guard against momentum being lost during the hiatus period between the closure of ECS2 and any follow up scheme.**

2) **DEFRA must look to maximise the potential for growing energy crops under new CAP reforms. Key policies include the inclusion of SRC and miscanthus as crop diversification options (article 30) and as an eligible planting option for Ecological Focus Areas (article 32).**

3) **The Energy Crops Scheme should be continued and provide flat rate establishment grants. This would simplify the system and reduce bureaucracy. The service should be made less restrictive. The link between Natural England and the Forestry Commission under ECS2 has been unsatisfactory. All aspects of the scheme should be carried out by one awarding body.**

4) **The ECS should grant aid planting material producers (SRC cuttings, miscanthus rhizomes, miscanthus seeds, miscanthus plugs) enabling them to multiply stocks with less financial risk and achieve greater economies of scale. This would enable quicker scale up of material and ultimately lead to lower establishment costs.**

5) **THE ECS should be more integrated with future Agri-environmental schemes and provide energy crop growers with annual payments that recognise the multifunctional benefits provided by these crops. A points system would ensure that energy crops are planted in the most suitable areas**.

6) **The ECS should be a national scheme but linked with regional priorities through Rural Development Programmes. This would enable certain regions to prioritise delivery, particularly those that are thought to have the greatest potential e.g. the south west and north west.**

7) **The ECS should cover short rotation forestry (SRF). There should be a higher grant rate for native species to reflect low yields and a lower grant rate for exotics to reflect high yields. Stricter landscape sensitivity analysis should apply for exotics to make sure they are appropriately sited.**

8) **A dedicated grant scheme for energy crops infrastructure (planting, harvesting machinery) and processing (grading, drying and densifying facilities) is required. Based on our findings, around £1.65 million of funding is required by the SW region alone from 2014-2020 to be able to plant and harvest 3,000 hectares per year and process 40,000 tonnes of biomass per year. Grants for initial infrastructure projects should be up to 75% of the capital costs**.

9) **Grants should be made available for harvesting oversize SRC (i.e. crops planted where there were no markets) and removing energy crops at the end of their useful lives.**

10) **An approved ECS application is seen by Ofgem as a measure of sustainability compliance for RHI and Renewables Obligation projects. A follow up ECS would enable continuity.**