

## United Kingdom Country Report

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### Recent History of SRC in the UK

After the short rotation coppice (SRC) site/clone interaction trials of the late 1980s and early 1990s conducted by the Forestry Commission and ETSU, the late nineties saw a boom time for SRC and medium-scale biomass plants in the UK. Companies such as First Renewables, Border Biofuels and Ambient Energy were awarded NFFO contracts for a variety of biomass developments, most of which proposed using advanced technologies such as gasification or pyrolysis with a commitment to draw on a combination of forestry residues and SRC.

Delays occurred to many of the projects for various reasons, for example the Border Biofuels plant had technical difficulties with road access to their facility and the cost of road improvements soon became so high that the project stalled commercially. Ambient Energy had two identical 5.5 MWe biomass gasification projects planned for Cricklade in Wiltshire and Eye in Suffolk. Unfortunately neither project proceeded: Cricklade because it failed to achieve success in the planning process and Eye, although receiving planning permission, was never built due to a changed company policy (a new parent with different priorities).

Finally, there was Project ARBRE (ARable Biomass Renewable Energy) which was to be an 8MWe gasification plant utilising combined cycle technology and sited in Eggborough, Yorkshire. Both the DTI (Department of Trade and Industry) and the European Commission agreed grant funding of £3m and £10m respectively, with the remainder of the finance coming from private companies.

Project ARBRE was estimated to require 43,000 odt (oven dried tonnes) of wood chip per annum and it was planned to utilise biomass fuels from two main sources: forestry residues and SRC. As a result of this perceived need, farmers in a 40 mile radius of the plant were encouraged to plant SRC and were awarded contracts to guarantee a market for the fuel grown. In total over 1500 hectares of short rotation coppice was planted within a 40 mile radius of the plant. A growers' group was established to enable farmers to pool their resources and to ensure efficient production of fuel. The first harvest was due in Autumn 2003.

Unfortunately, in 2002, the developers of Project ARBRE pulled out of the programme due to long delays in commissioning and the many technical problems encountered. As a result ARBRE has been inactive for over a year and although it now has a new owner there has as yet, been no resolution on how to bring the plant to commercial production. Many rumours are circulating about companies interested in purchasing and moving the

plant abroad and some that would operate the plant in its current location but would import cheaper forestry residues from Scandinavian and Baltic countries rather than utilising the SRC originally established for the project. The bottom line is little movement and substantial uncertainty created in the minds of UK farmers thinking of diversifying into SRC.

## Drivers for SRC Development

At the present time in the UK there are a number of key policy drivers for the development of SRC for bioenergy, namely:

- The creation of a low carbon economy (linked to international obligations), so reducing greenhouse gas emissions and meeting renewable energy targets (10% of the UK's electricity to come from renewables by 2010 and increasing thereafter)
- Providing diversification opportunities for farmers and growers
- Creating a more sustainable and environmentally balanced countryside (in the process reducing the need for subsidies to farmers and growers)
- Creating opportunities for rural employment

To assist with getting farmers and growers interested in growing SRC, Defra (Department for Environment, Food and Rural Affairs) runs the 'Energy Crops Scheme' (ECS) which has two main streams of funding. The first relates to Establishment Grants that aim to cover approximately 50% of the cost of establishing SRC. In the UK, the two main energy crops are willow coppice and miscanthus. For willow coppice the grant available is £1600/hectare on ex-livestock land and £1000/hectare on all other land. For miscanthus, the establishment grant available is £920/hectare. In addition to the Establishment Grant there is also Producer Group funding available. This scheme can provide 50% of the costs of establishing a grower group up to a maximum of £200k per group. The aim of establishing grower groups is to enable growers to work together to harvest and supply crops to an end market, sharing the risk and the profits to be made.

Another key driver for change in the UK is the amendment to the 'co-firing rules' as part of the Renewable Obligation Order (RO). Under the RO, existing fossil fuel power stations can claim ROCs (Renewable Obligation Certificates) through the co-firing of fossil fuel with biomass up until 2016. Until 2009 there is no requirement to burn a proportion of energy crops; subsequently however, the following must be adhered to in order to qualify for ROCs:

Period	Minimum % of Energy Crops
1 <sup>st</sup> April 2009 – 31 <sup>st</sup> March 2010	25%
1 <sup>st</sup> April 2010 – 31 <sup>st</sup> March 2011	50%
1 <sup>st</sup> April 2011 – 31 <sup>st</sup> March 2016	75%

The aim of these rules is to encourage the early and large-scale development of energy crops (and related infrastructure) in the UK by ensuring a guaranteed market for the fuel. This 'market enabling measure' will then, it is believed, catalyse the supply of fuel to dedicated biomass plants post-2016 when the amount of SRC required for co-firing is likely to diminish.

Another important factor will be the reform of the Common Agriculture Policy (CAP) with implementation in the UK in 2005. The overall aim of the reform is to decouple subsidies and production through the introduction of a Single Farm Payment (SFP). This change in the way that subsidies are to be paid under CAP reform, releasing farmers from production of certain crops in order to gain subsidies, could have positive implications for SRC. It may open up markets to non-conventional crops and offer an economic way for farmers to diversify. In advance of the reform an annual aid payment for energy crops was introduced on 1<sup>st</sup> January 2004. This payment of €45/hectare is available to growers with energy crops planted on non set-aside land with a contract with an end user. CAP reform also introduces cross-compliance rules which enforce strict environmental protection measures on farmers. The use of crops and farming practices that are harmful to the environment will be disadvantaged by subsidy reductions. Since SRC farming generally has a low environmental impact, it may be adopted more readily under CAP reform. Hence a policy of 'carrot and stick' for farmers to contemplate!

## **Barriers to Implementation**

There remain many barriers to the introduction of large-scale SRC plantations in the UK, many of which are linked to uncertainties in the market. Underlining this national position is a constantly changing set of European policies and legislation relating not only to energy crop production, but also to farming directly and to related industries such as waste management. Cumulatively, these have a dramatic impact on the confidence of farmers and growers when contemplating diversifying into SRC for energy production.

Other biomass fuels, such as forestry and sawmill residues, are generally available at a lower cost than SRC (even after planting grants are taken into account). This is primarily because the SRC industry is still in its embryonic stage and the specialist equipment required to manage SRC is expensive and in short supply. Since energy producers have the option to purchase lower-priced alternatives, there is limited opportunity for the higher-priced SRC wood chips to compete. In such a disadvantageous position, volume cannot be increased or the concomitant economies of scale made allowing the industry to develop.

Ironically, changes in waste policy, which divert organic wastes from landfill along with improvements in waste separation technologies, could make this situation worse by creating an excess of very low-cost waste-derived biomass. If the quality of this waste biomass is high enough for dedicated biomass power plants to accept, there would be few if any economic or policy incentives for them to purchase SRC fuel. The resource is, of

course finite, and eventually SRC would be needed. But this day may be severely delayed as a consequence.

The RO and other drivers are expected to increase the market for SRC in the future. However, at the present time there is a lack of confirmed markets. Many large power producers have not yet committed to setting up co-firing contracts with growers, despite being required to use dedicated energy crops if they intend to claim ROCs from biomass co-firing after 2009. Dedicated biomass plants are also limited in number, and those that have been proposed struggle to be constructed, for various financial, regulatory and planning reasons.

Farmers and other land managers are slowly becoming aware of SRC as articles on all aspects of the crops appear more frequently in the popular farming press. They are equally aware of the difficulties that the ARBRE farmers have needed to overcome. This latter point has caused a great deal of distrust by farmers in the prospects for SRC as a 'diversification opportunity'. Added to this is the need for a long-term commitment to grow SRC to maximise return. Such changes are not easily made by traditional farmers.

Despite these barriers, there are a few examples of where the SRC industry is starting to develop in the UK, fuelled by the new drivers discussed above. New employment opportunities are being created, habitats diversified and a range of other benefits accrued. These are discussed below.

## **Current Status of SRC**

At present in the UK there are three Defra-funded SRC producer groups taking the lead in organising the wider-scale planting and production of SRC-based fuels. The first of the three is the Renewable Energy Growers (REG) Group, and was established around Project ARBRE with the aim of providing the fuel necessary to run the power station. Since Project ARBRE failed the group has been sourcing alternative end markets for the SRC and a number of the farmers have installed their own small-scale biomass heating systems in order to utilise the willow coppice on farm. Another exciting opportunity arose in March 2004 when Renewable Fuels Ltd announced an agreement between themselves and Drax Power Ltd to supply short rotation coppice to the 4,000MWe coal-fired power station. The bulk of the SRC fuel is to be sourced through the REG producer group.

The second producer group was formed in 2002 to supply SRC to the proposed 5.5MWe power station at Eye in Suffolk. The group, Anglia Encrops, has 6 members with approximately 80 hectares of willow coppice growing. Due to the failure of the Eye project the group is looking for alternative markets for the fuel. It is expected that the main market for the fuel will be a cluster of small-scale heating applications.

The most recent producer group to be formed is TV Bioenergy Coppice. This group was formed in 2003 and covers the region of the Thames Valley, Surrey and north Hampshire.

The group was established to provide SRC fuel to the existing 90MWe power station in Slough, the proposed biomass CHP plant at Bracknell and the developing small-scale heating market in the region. In addition, the group is researching opportunities to supply to fossil-fuelled power stations for co-firing such as the 2,000MWe plant at Didcot. To date the group has 5 members and approximately 45 hectares of SRC, but plans to expand considerably over the next 5 years. It is hoped that due to the existence of an existing biomass power station in the local area (which has strong connections with TV Bioenergy Coppice's parent company, TV Energy) the group will not run into the same problems as other producer groups in the UK.

*The views expressed in this report are those of TV Energy and do not necessarily represent those of DEFRA or the DTI.*