# New Project

## CP 096

Combined Horticultural Production and Energy Hubs

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| **Project Number:** | CP 096 |
| **Project Title:** | Combined Horticultural Production and Energy Hubs |
| **Project Leader:** | John Hall |
| **Contractor:** | West Sussex Growers Association |
| **Industry Representative:** | John Hall + Steering Group |
| **Start Date:** | 19 April 2012 |
| **End Date:** | 31 October 2012 |
| **Project Cost:** | £10,000 |

**Project Summary:**

**Phase 1: A Review of Existing Horticultural Production & Energy Hubs.**

a) Identify and review existing UK Horticultural Production & Energy Hubs and technologies.

b) Identify and review existing Horticultural Production & Energy Hubs and technologies from around the world.

c) Provide detailed Case Studies and identify Best Practice.

d) Evaluate and appraise existing schemes under the following headings:-

- Economic and socio-economic potential.
- Technical and operational implications of implementation.
- Impact on carbon emissions.
- Planning and environmental constraints.
- Possible sources of funding and grants.

- Make recommendations to Stakeholders.

**Phase 2: A Business Plan for Combined Horticultural Production & Energy Hubs**

Using the recommendations put forward and agreed by the Steering Group from Phase 1:

a) Identify potential stakeholders, mapping these to the supply chain associated with the planning, acquisition, installation and operation of the proposed Combined Horticultural Production & Energy Hubs; including both suppliers and consumers.
b) Develop the Scope, Socio-Economic & Business Case for the proposed Hubs.
c) Explore the potential structure that will oversee the funding, development, implementation and operation of Horticultural Production & Energy Hubs.
d) Special purpose vehicles, including joint ventures, should be considered.
e) Identify the economic costs and benefits of various schemes.
f) Identify constraints that could prevent the development of various schemes.
g) Make recommendations.
h) Present the Final Draft Report to a Workshop with the Steering Group.
i) Finalise the Report and make a presentation to invited Stakeholders.

**Aims & Objectives:**

(i) Project aim(s):

a) The aim is to provide Knowledge Transfer in the form of technical, operational and practical information and solutions (assuming that they exist) for Horticultural Businesses, Energy Companies, Local Authorities, Local Communities and other stakeholders for the sustainable integration of Combined Horticultural Production and Energy Hubs. Horticultural production will focus on the use of high-tech glasshouses for the growing of food crops, plants and flowers.

(ii) Project objective(s):

a) To ascertain whether it is commercially and operationally possible to create Combined Horticultural Production & Energy Hubs.
b) To consider the economic, social and environmental benefits for such development.
c) Not to reinvent the wheel, but to discover Best Practice from existing and planned installations in the UK, Europe and from around the world.
d) Produce Case Studies and make innovative recommendations as to the way forward for stakeholders.

**Benefits to industry**

The benefits to the Horticultural Industry and to the wider economic and social community could be substantial:-

- At International, European and National levels; there is great concern about Food, Plant and Energy Security.
- Climate Change continues to be a major concern of Government and many NGOs. Improvements in the efficiency of energy production and alternatives to fossil fuel use are continually being sought.
- Import substitution is a major issue for both the Energy and Horticultural Industries.
- The availability and cost of energy is a major economic driver.
- An increase in food, plant and energy production would have a major positive affect on the economy.
- Outcomes from this research are likely to create more permanent skilled jobs, including: Horticultural Management, Technical and Production positions. In addition; it is expected that IT, Engineering, Sales & Marketing and other ancillary jobs would be created.
- Surplus electricity would be exported to the National Grid.
- The potential to create community heating schemes.
- New apprenticeship schemes and training courses would be developed alongside the new and alternative energy technologies.
- Carbon Dioxide produced by Energy Hubs would be consumed in glasshouses for the production of horticultural crops.
- Benefits to the environment would include the reduction in food, plant and energy miles.
- In terms of Climate Change and Carbon Footprint it may be possible to achieve significant reductions in Carbon Dioxide and other pollutants.
- More local food and plants could be produced more efficiently.

- Opportunities exist for a strategic approach to more efficient use of water and increased opportunities for the protection of water quality.
- There are opportunities to better manage green waste from horticultural production units by converting the waste into energy e.g. the further development of Anaerobic Digesters for the production of methane gas to drive Combined Heat & Power plant to produce electricity for the National Grid, to consume waste Carbon Dioxide in the production of glasshouse crops and to consume waste heat in glasshouses, commercial buildings and/or residential and community heating schemes.
- Explore feedstock supply and continuity for AD plants and carry out a detailed feedstock availability analysis.

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## Further information

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