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**Your project outline:**

Give us an executive summary of your project plan

**Aims**

Our overall, long term 5 year aim is fourfold:

1. Ensure that all buildings in the community are insulated to the highest specifications currently available.
2. Develop renewable energy by fuel supplied from key stakeholders in the community
3. Sell any excess energy back to the grid developing revenue income for energy credits by the community.
4. Develop charitable funding stream based around renewable income from electrical incentives ROC's and heat tariffs.

**Strategy**

To run the process as a business, a 'community' will be defined not only by local residents but by including key stakeholders i.e. school, farming community, local businesses and public houses/hotels. When the community has been defined a baseline assessment will be carried out to identify current energy demands, use and wastage.

A feasibility study will be developed around the development of a community energy centre; this could be located in the present school by replacing the existing power plant, or in partnership with the local farming community at an agreed location.

The energy developed would be from renewable fuels: biomass or waste to produce energy through a biomass boiler, anaerobic digestion to CHP.

**Objectives**

Our immediate objectives are:

1. Define our community including key stakeholders
2. Gain community buy-in to the proposed strategy
3. Identify the demographics of the village.
4. Create an enthusiastic, highly effective working party to take the project forwards
5. Conduct a carbon footprint estimate of the village.

In the event of our application being successful we will:-

1. Liaise with British Gas experts to ensure that our information is up to date
2. Produce a detailed action plan to take project forwards.

## Your idea in detail:

Tell us about the technologies you'll be using, the reasons why they're suitable, your community infrastructure and relevant buildings

**1. Technology options we will consider are** – Biomass boilers, anaerobic digesters, CHP, thermal boiler to ORC, solar/photovoltaic, GSHP, Hydro and building insulation to reduce heat loss in the first instance.

**2. Reasons why they're suitable** – being a rural community there is opportunity to develop a strategy around energy crops to use as fuel. We include a viable farming community that would be interested in discussing opportunities to diversify their agri-business enterprises; this could open up the possibility of using anaerobic digestion to develop bio-methane to run a CHP from farm and food waste. There is also land available for the system, though planning permission would need to be sought.

Within this community is a diverse private housing stock: also, commercial enterprises that consist of schools, a caravan park, garage and shop, and public house/hotel that all require heat and electricity but probably waste it as well. There are opportunities to utilize photovoltaic to produce electricity in some of their locations, with government incentives on tariffs. With vacuum-filled solar panels there are further opportunities, albeit on a smaller scale, to utilize this form of energy generation for under floor heating in more isolated homes and premises.

With GSHP we have the potential for heating communal buildings, that have existing space to facilitate the system.

Hydro-electric power is also a possibility. Casterton is situated under the lea of surrounding fells, producing a significant head for water power but this would need to be investigated further to consider fully its potential.

However, the one key strategy that underpins the whole proposal is to reduce the loss of heat: the vital importance of ensuring effective building insulation is a high priority, in the first instance.

### 3. Community Infrastructure and relevant buildings

The community infrastructure is made up of the following sectors:

- a) Residential housing
- b) School
- c) Public House
- d) Caravan park
- e) Farms
- f) Church
- g) Village Hall
- H) Garage
- l) Golf club

## Your expected outcome:

What do you expect your project to achieve?

At the end of the project we would expect the following:

- to have lowered the carbon footprint of the village by the maximum achievable
- develop a centralized energy source for use by the village community, including revenue development.
- use this revenue stream to lower the community's energy bills.
- support a charitable enterprise from the revenue stream.
- develop community engagement and understanding of the need to reduce dependence on fossil fuels.
- engage with other communities and pass our experiences to support their own initiatives.

## Your community information:

Tell us about your community - who will this impact and how, what's the potential scale/reach, who is already involved and how do you gauge their passion/enthusiasm

Casterton village is a small rural community located in the southern most part of Cumbria. Geographically, it spans over 15 square miles: there are two major population areas, Low and High Casterton which has evolved from a number of scattered, but clustered, houses which were associated historically with farming.

The community consists of:-

- 125 households, of which 43% are retired and 27% of households have dependent children. (Census 2001)
- a private school which has charitable status with approximately 300 pupils of which around 50 are day pupils: the remainder board within 8 houses all in the school grounds. The school is one of largest local employers in the locality.
- a variety of SME's operate within the village: local amenities of a garage and village shop; a hotel; other businesses associated with tourism and recreation, one being a holiday park which is part of a larger business enterprise in the South Lakeland, and another a golf course which provides employment and tied housing for young employees. There are three family owned sheep farms who own the majority of land within the parish; also Underlay Estate, who own managed woodlands.
- there is a high car dependency as public transport is minimal.
- In the past Casterton has experienced a high volume of blackouts when electricity has been cut off. The last episode was some five years ago when the village electricity supply was cut off for several days. Both the school and some householders have invested in their own generators to ensure a constant electricity supply.
- there is reliance on oil or LPG for heating in 50% of private dwellings not on mains gas.

This is the first project that encourages participation from all sections of the community, in all geographic locations of the parish. By working together as a community we all wish to be responsible for the impact our current energy requirements may have on our environment, now and in the future.

Opportunities arise, not only for the benefit of residents but a wider charitable network, to

contribute to the national energy pool with a supply of clean energy, reducing the long term cost of energy production and changing a mind set of a minority that should value the natural resources in our immediate surroundings. Through our experiences, we may also provide a working blue print for other communities to follow if so inclined. Additional employment and business opportunities may arise, also.

The school actively participates in the 'Eco schools' Project which is supported enthusiastically by students of all ages.

The community has an active Village Hall Committee and Women's Institute: both organisations have been involved in recycling projects and help with dissemination of information to the wider community.

There is general interest for this project with particular enthusiasm from some senior ranking village personalities, younger village members who wish to secure a sustainable future for their children, and other less active residents who are engaged and willing to help.

## **Your project finances:**

Outline your budget - show workings, expected financial benefits (buy back etc), funding already agreed, local business engagement/support

We would be looking for 40-50% funding from the following areas:

### **Low Carbon Buildings Programme (LCBP) Phase 2**

Which allows householders, community organisations, and public and non-profit sector groups to apply for grants for the installation of micro-generation technology such as photovoltaic, solar thermal hot water, and bio-energy.

### **Bio-energy Capital Grant Scheme**

This is the Bio-energy Capital Grants Scheme, funded by the Department for Energy and Climate Change, It promotes the efficient use of biomass for energy and heat generation. Capital grants are awarded towards equipment costs that may include biomass heat boilers, CHP, and anaerobic digesters.

### **The Renewables Obligation and Microgenerators**

The Renewables Obligation is a scheme designed to incentivize electricity generation from renewable sources in the UK. It requires licensed electricity suppliers to source a percentage of their energy from renewable sources. Suppliers meet their obligation by surrendering the requisite number of Renewable Obligation Certificates (ROCs) to the regulator.

10-20% Community/Business Investment

30-40% Business Loan

Expected pay back 10 years

A Detailed Financial model can be produced but this would be done following a detailed feasibility study.

### **Local business engagement/support**

The analysis conducted by the Independent consultants NEA (find report on [HYPERLINK "http://www.casterton.org.uk" www.casterton.org.uk](http://www.casterton.org.uk)) earlier this year included a local business, Lake District Estates who own Woodclose Caravan Park, and a local agricultural business Other businesses have expressed an interest: the local golf club, the garage and the pub/hotel. The school was actively involved in the analysis and the Chair of Governors is very keen to progress the issue.

## Your KPI's:

Tell us how you propose to measure your project's success

To develop our KPI's we would first establish the community's base line, in that we would compare with the UK's National expected targets.

We would discuss any discrepancies with community representatives and work together to gain agreement on any improvements that could be achievable.

To measure the KPI's we would generate a reporting system that the community could contribute to by agreement, based on utility bills. Within the village we have a simple web-based reporting system that residents and businesses can log into. If any person is not computer literate then we can address this through community training programs.

These KPI's would be based around utility usage reduction, oil, gas, electricity, water and would be targeted as percentage reduction, comparing three-monthly periods.

Other targets would be focused on the carbon footprint, establishing the baseline and again monitoring reductions by comparing three-monthly periods.

Any concerns by voluntary participants would be directed towards the issue causing the problem: any good practice will be noted for future reference.

There would be a common agreement across the community regarding reporting the results: this is envisaged through regular meetings and via the village website.

## Other benefits:

Are there any other benefits to your project? E.g. Crime reduction, positive community spirit, waste management, local area rejuvenation etc

1. Pulling the entire community together in a focused, mutually-beneficial project
2. Involve local children (both from school and village) in the project, providing life-long learning.
3. Visitors to our local tourist/leisure centres may be influenced positively by this scheme and wish to replicate it within their own local communities
4. Promoting and implementing better use of household waste
5. Ensures the village has sustainable local employment so that young people may have job security and prospects within the rural community.

## Your communication plan:

How do you plan to engage your community?

A survey was conducted within our small community in January 2009 that investigated the carbon footprint of six homes, and a further four homes were similarly visited in July; hence, 9% of householders in this village were and are fully informed regarding their energy consumption and self-sufficiency. The school and a large local business were also involved. We have the full support of the Chair of the Governors and the business manager of Lakeland Estates, both of whom are prepared to be members of any future working party. Energy issues have been debated at each meeting of Casterton Parish Council (CPC) since the survey was completed: the general level of understanding regarding the importance and value of insulation and energy production is already proven and individuals are keen to build on this. In our opinion, around 60% of the village will be involved in the project.

The Chair of CPC has agreed to represent the Parish Council on a working party, that will consist of all interested parties representing a broad community base providing various levels of expertise and competence which will benefit greatly the project.

Our Member of Parliament, Tim Farron, has already asked questions of government Ministers on our behalf and is very willing to become involved, as are our County and District Councillors.

Should this preliminary application be successful, an open meeting will be called so that all who wish to be involved are included, and details of the project can be discussed fully.

## Your experience:

Do you, or any of the other people involved, have any experience in this area?

We have people who have experience in the design of renewable systems, they actively work on a daily basis managing the design of CHP and Biomass energy centres. One of their current projects is designing a 5 MW Biomass system for a residential community development in Scotland that includes a number of small commercial businesses and also a prestigious Tri generation energy centre project based in Manchester. This experience also involves daily communications with utility companies and financial modelling to justify energy schemes.

We also have individuals who have worked at senior management and director level within a number of business sectors, construction, education and the professions.

## Why should we choose you?

This is your chance to tell us anything else you think we should know to help with our decision.

As a small rural community we have a great respect for our natural resources and are committed to ensuring that they are not squandered. We believe our aims are very much in line with current government policy and commerce-rate with Regional, County and District objectives. There is widespread support through out the community with active political support at all levels, from the Parish, our District Cllrs McPherson and Woof, County Cllr Lancaster and our MP, Tim Farron. A well-known charity, Age Concern, fully supports this application in support of the more senior residents in the village.

This village wants to develop a working template that will reduce our community's overall carbon footprint, our dependency on fossil fuels, and provide a facility for energy generation that will benefit the whole community through a charitable funding stream, generated by revenue income from our "**Village Power Station**".