



Garmony Hydro Scheme

Business Plan

October 2013



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Garmony Hydro Scheme

Business Plan

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1. Development opportunity

The idea

The Mull and Iona Community Trust (“MICT”) has set up an Industrial and Provident Society, Green Energy Mull (“the Business”) to own and operate a mini hydro-electric scheme (“the Scheme”). The Scheme will be based on the Allt Achadh na Moine watercourse near Garmony, on the eastern side of the Isle of Mull.

The Scheme will be community led via Green Energy Mull (i.e. managed and owned by the community) with the resultant surplus cash flow re-invested back into the local area for the long term social benefit of its residents. The plan is for an independent charity (The Waterfall Fund) to be set up. Net profits from the Business will be gift aided to the Waterfall Fund. The fund will have a committee who will assess the fund applications and distribute the grants.

All relevant planning permissions, licences and consents have been obtained from the regulatory bodies and connection to the National Grid has also been granted. All of the land on which the proposed development will take place is owned by the Forestry Commission. The Forestry Commission Lease is ready to be assigned once the registration process for the Business has been completed.

The model

The Scheme will generate revenue by selling green hydro-electricity to the national grid. It will generate approximately 1,136 MWH of electricity per year and its income will be derived from the Feed in Tariff and a Power Purchase Agreement (“PPA”) with an energy supplier. The Feed in tariff is guaranteed for 20 years and a copy of an indicative PPA proposal is provided at Appendix 1.

The Scheme is expected to be fully operational by December 2014 and is estimated to generate income of £209k in its first full year of activity (FY16). As income will be index linked, revenue is forecast to grow annually and reach £359k in FY33. All income is based on a generation capacity of 36.5%.

With the exception of start-up expenditure, operating and service costs will be minimal.

The surplus generated from the Scheme will allow the Waterfall Fund to contribute to other projects and initiatives within the Isle of Mull area.

Key milestones

The Business is working to the following timeline:

Activity	Date
Apply for commercial funding	Oct-13
Obtain commercial funding approval	Nov-13
Design and management project start	Nov-13
Community share offer	Nov-13
Obtain investment from community share offer and drawdown commercial funding	Apr-14

Activity	Date
Construction start	Apr-14
Grid connection	Oct-14
Scheme fully operational and revenue generating	Dec-14

The ask

To date, £40k has been spent on planning and development costs. This has been funded by MICT, Community Energy Scotland and Highlands and Islands Enterprise.

The design and management project (£128k) commencing in November 2013, will be funded by a Community and Renewable Energy Scheme (CARES) loan, a development grant from Highlands and Islands Enterprise (HIE) and funds from Mull and Iona Community Trust.

To enable the Business to set up the hydro-electric scheme and commence construction in April 2014, it is seeking an investment of £972k. Specifically, the funds will be used to meet the initial capital cost of the Scheme including all construction, external contractor, project management and commission costs.

The business is seeking to source the funding requirement from the following:

Community share offer - £324k

Whilst the investment is primarily a social investment in the community and its environment, investors can expect a reasonable rate of return on their investment. The level of interest will be set by the board of the Business annually. The maximum level of interest will be set at 4%. The shares have to remain invested for at least 3 years.

Commercial loan - £648k

It is assumed the loan will be repaid over 15 years with interest payable of 8% per annum.

The Scheme will incur a minimal level of administration costs and require little maintenance once constructed. Given this, cash flows generated will not only be sufficient to cover operating costs and loan repayments but will result in a healthy surplus which will be re-invested into the local community for future benefit. In addition, it will offer investors a good return on their investment.

The funding needs to be in place before a contractor can undertake the construction of the Scheme.

Profit available for community

It is expected the following profits will be available for the community:-



2. The proposed scheme

Summary

The proposed scheme will be run-of-river (little or no water storage is provided) and will be designed with an approximate installed capacity up to 400kW. It will feature the following infrastructure:

- a primary intake structure on the Allt Achadh na Moine watercourse;
- a minor diversion intake structure on the tributary, Allt Beinn nam Meann;
- a powerhouse containing the turbine, generator and associated equipment;
- a buried pipeline, and associated converting of un-named tributary, connecting the intakes to the powerhouse;
- a pipe bridge across the Allt Achadh na Moine;
- an open tailrace channel and screened discharge structure;
- access tracks to the powerhouse and along the pipeline to the intake locations; and
- overhead and buried power line linking the powerhouse to the local electricity distribution network

Water will be conveyed from intakes on the Allt Achadh na Moine and a minor tributary, through buried pipelines, to a powerhouse located adjacent to the Allt Achadh na Moine, approximately 1km downstream. Water will be returned to the river via a short tailrace channel downstream of the powerhouse. The total catchment area upstream of the intakes is approximately 2.8km², and upstream of the powerhouse is approximately 3.8km². The water supply is secured by the large amount of peat that covers the area which feeds the water course. This ensures the burn never dries up.

The proposed development lies within the jurisdiction of Argyll and Bute Council. The Scheme is in keeping with the relevant national, regional and local plans and policies to meet sustainable development objectives and to increase the amount of renewable energy that is generated.

Mott MacDonald survey

A study was undertaken by Mott MacDonald, environmental consultants, to identify key issues associated with the proposed hydro scheme. The study identified ecology and nature conservation and hydrology as topics requiring further investigation. From this investigation, it was concluded there would be no potential adverse impacts as a result of the development of the proposed hydro scheme.

In the event that the proposed scheme is decommissioned, the powerhouse could be removed or reused as a shelter and the intakes removed with minimal impact. Buried assets would be made secure and where appropriate left in-situ undisturbed.

A copy of this report and other planning documents can be made available on request.

Income

Income generated through the Feed in Tariff scheme is guaranteed by legislation. It is paid by electricity companies under the terms of their distribution and supply licences. The electricity companies recover the costs by adding it to charges which they make to customers. As a result, the income forecasts are robust and there is little or no risk of bad debt.

Premises, plant and equipment

The Business will operate from land owned by the Forestry Commission. Planning permission has already been obtained. The Forestry Commission lease is ready to be assigned once the registration process for the Business has been completed.

The construction will commence in Spring 2014 and will be completed within one year to allow the scheme to be fully up and running by December 2014.

3. The market

Overview

Small hydroelectric power schemes are commonplace in the uplands of Scotland given the wet climate and mountainous terrain. These factors make the country well placed to take advantage of this renewable technology on a large scale. Indeed, hydro-electricity is a secure and safe form of energy generation which has been in existence for over 100 years. Currently around 10% of Scotland's electricity is produced from hydro power but this proportion is set to grow with the Scottish Government's ambitious target for 80% of all electricity consumption to be derived from renewable sources by 2020. This hydropower scheme proposed by MICT and owned by the Business can contribute towards achieving this goal.

Market needs

Renewable energy has a key role to play in addressing the key issues of climate change and security of supply. The continuing government strategy has created an opportunity both to contribute to the Government's objectives and to establish a commercial enterprise capable of delivering attractive return to its investors.

Benefits of the proposed scheme

A successful hydro power scheme will provide an income to the Mull and Iona Communities which will be retained for investment in community projects in the area. The estimated electricity generated will be between 925Mh/year and 1,136Mh/year based on 33-37% capacity. By supplying this to the national grid it will help the UK to satisfy its energy requirements and meet its renewables targets.

Local residents will benefit from increased energy efficiency and become more aware of the issues of climate change and renewable energy. In addition, a number of initiatives and local projects will be undertaken following the success of the scheme.

4. The team

Management

The team will be as follows:-

Moray Finch

Moray is a chartered mechanical engineer with senior management experience of international engineering and manufacturing businesses. With a wealth of experience managing engineering and construction projects, Moray is used to balancing the demands of time, cost and quality which together contribute to a successful project outcome. Moray has worked on a number of community development projects in his spare time and has brought these skills together in his current role as General Manager of the Mull and Iona Community Trust.

Andrew Robertson.

Andrew currently runs his own Hydraulic and Pneumatic Company. With over 25 years experience in the fluid power industry at both manufacturing and distribution level. Andrew is used to dealing with all levels of management plus dealing with Banks and Accountants and local authorities. Andrew has had involvement with Nuclear, Offshore and general engineering projects where quality, time and cost have resulted in a successful conclusion.

Richard Thorne

Richard and his family moved to Mull in 2007. Richard spent the first five years on Mull building up a property maintenance and repair company. In 2012 Richard changed direction and started working for Mull and Iona Community Trust as Operations and Development Manager and now manages the hydro project full time. Richard has significant experience in growing and running a business. Prior to moving to Mull Richard worked within the electronics and finance industry in both business management and marketing roles.

Andy Knight

Andy Knight is the Managing Director and majority shareholder of TSL Contractors Ltd, the largest private Company based on the Isle of Mull.

Brought up and educated on the Isle of Mull, Andy left school at 16 and joined his parents small quarry business providing aggregates to the construction industry on Mull, at that time the business was operated entirely by the three family members.

Over the course of the next few years the business gradually expanded and around 1990 Andy assumed operational control and diversified into the construction market, a mainland Argyll ready-mix concrete and construction business was established around the Millennium and various other activities were added all of which have synergies with each other.

Today TSL Contractors Ltd is a major player in the Argyll construction industry; it has around 80 full time employees, owns and operates a modern plant fleet and carries out a wide range of contracts for many different clients.

Chris Baker

Chris Baker is a time served engineer who moved his engineering business to Mull in 1972.

He has been advocating alternative energy since the late '70s, without much success due to lack of financial incentives.

He advised on technical setup aspects of a water turbine that has been running since 1984 for a private house on Mull, which he continues to maintain.

In 1993 he was contracted to undertake feasibility studies for the design of a 190Kw turbine installation. This covered all aspects from theoretical calculations on water flow through design and planning to installation and commissioning. The installation has exceeded the customers' expectations.

Chris is used to working closely with contractors and utilities.

5. Financial

Summary

Financial forecasts for the twenty years ending 31 March 2033 are provided at Appendix 2 together with detailed forecast for the first five years of operation. A summary of the underlying assumptions used in the projections is provided at Appendix 3.

A summary of the Business's forecast financial performance from FY15 (Year 1 to Year 20) is shown below:

Profit and loss account

	Year 1 FY14 £'000	Year 2 FY15 £'000	Year 3 FY16 £'000	Year 4 FY17 £'000	Year 5 FY18 £'000	Year 10 FY23 £'000	Year 15 FY28 £'000	Year 20 FY33 £'000
Income	-	68	209	213	223	268	312	359
EBIT	(1)	43	151	155	163	201	241	279
Loan interest	(3)	(51)	(49)	(47)	(45)	(28)	(6)	-
Community share interest	-	-	-	(13)	(13)	(9)	-	-
Pre-tax (loss)/profit	(4)	(8)	102	95	106	163	234	279

EBIT = earnings before interest and tax.

EBIT is calculated after deduction of maintenance and service, operations and admin and lease costs.

A repair fund of 10% of net profit will be retained by the business to meet future maintenance requirements. It is expected there will be no taxation charge as the Business has agreed to gift aid any taxable profit to charity. An analysis of funds available for gift aid over the life of the project is shown at Appendix 4.

Balance sheet

	Year 1 FY14 £'000	Year 2 FY15 £'000	Year 3 FY16 £'000	Year 4 FY17 £'000	Year 5 FY18 £'000	Year 10 FY23 £'000	Year 15 FY28 £'000	Year 20 FY33 £'000
Fixed assets	127	891	873	855	837	746	682	618
Current assets	24	98	192	267	351	894	1,468	2,785
Current liabilities	(4)	(29)	(31)	(33)	(36)	(60)	(70)	(6)
Long term liabilities	(151)	(648)	(621)	(590)	(558)	(343)	(43)	(43)
Net assets	(4)	312	413	499	594	1,237	2,037	3,354

Included within current assets is the following cash surplus:

	Year 1 FY14 £'000	Year 2 FY15 £'000	Year 3 FY16 £'000	Year 4 FY17 £'000	Year 5 FY18 £'000	Year 10 FY23 £'000	Year 15 FY28 £'000	Year 20 FY33 £'000
Cash reserves	24	50	144	218	300	832	1,397	2,704

An analysis of the cash surplus over the life of the project is shown at Appendix 4.

The Business will commence the buy-back of shares in In FY17. A schedule of the proposed buy-back is outlined in the financial assumptions at Appendix 3.

Requirement

The Business is seeking external investment of £972k to enable it to set up the Scheme and commence commissioning.

Specifically, the funds will be used to meet the initial capital cost of the Scheme including all construction, external contractor, project management and commission costs.

The business is seeking to source the funding requirement from the following:

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It is assumed the loan will be repaid over 15 years with interest payable of 8% per annum.

The Scheme will incur a minimal level of administration costs and require very little maintenance once constructed. Given this, cash flows generated will not only be sufficient to cover operating costs and loan repayments but will result in a healthy surplus which will be re-invested into the local community for future benefit. In addition, it will offer investors a good return on their investment.

The funding needs to be in place before a contractor can undertake the construction of the Scheme.

Community share offer

Shares in the Business have to remain invested for at least three years after the Business starts trading. The shares are not transferrable and only the Business can purchase them from investors.

The shares will never go up in value but can have their value reduced to zero if the Business fails. The Business will buy shares back at the discretion of the board which will make decisions based on the financial situation.

Interest to members will be paid in accordance with the Business's aim to be of benefit to the community. Based on the assumptions of the financial model (see Appendix 2) about the likely pre-tax profits, the directors expect to be able to pay an annual interest on share capital of 4% per annum.

The planned financial return is not high nor is it directly linked to the surplus that the Business will generate. The actual rate will be within the parameters laid down in the share agreement. Annually the directors will recommend a rate of return for approval at a general meeting. The surplus will be generated through a charity vehicle to provide funding for other community schemes within the geographical area.

It is expected the scheme will generate an Internal Rate of Return of 21%.

6. Risk factors

Whilst there are risks attached to the project, MICT will manage and mitigate the following key risks:

Risk	Control
The price of electricity can go down as well as up.	The FIT is guaranteed for 20 years.
Changes in Government legislation may affect the scheme.	Current and any new government likely to continue to encourage the use of renewable energy.
The volume of water being released from the reservoir will vary which may reduce the flow of water.	The financial projections assume a capacity factor of 33% to allow for this variation.
The project may be delayed due to technical, financial or legal matters.	Timescale based on Mott MacDonald environmental reports.
There may be interruptions to generation of electricity caused by mechanical/electrical failure of equipment.	New equipment purchased from reputable supplier. The Business will have warranties and insurance in place to cover failure of equipment/loss of income. In addition, all equipment will be ROO-FIT accredited in order for the scheme to qualify for the Feed in Tariff.
The capital costs are based on estimates obtained prior to the share issue.	Any subsequent increase in capital costs will be met by monies raised by the share issue or by commercial finance. Furthermore a repair reserve fund will be held by the Business.
Raising finance is difficult in the current economy.	The Business has sought assistance from professional advisors.
Community share investment less than required amount.	The Business will seek to raise additional finance from commercial sources.

7. Appendices

- Appendix 1 Indicative PPA
- Appendix 2 Financial projections for the twenty years ended 31 March 2033
- Appendix 3 Financial assumptions
- Appendix 4 An analysis of reserves and cash

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