



Ullapool Community Trust

Lael Forest Community Hydro Project - Info Pack



More project information is available at www.ullapoolcommunity.org.

Please feel welcome to contact UCT's Local Development Officer Ewan Young to discuss this opportunity further, raise any concerns or issues you may have or if you would like to be involved in the project. Ewan can be contacted via sustain@ullapoolcommunity.org or 613 132

Hydro Technology

What is hydroelectric power?

- Hydroelectricity converts water's potential energy into electrical energy.
- Hydro is one of the oldest methods of producing power. Originally it was used mechanically (such as mills with waterwheels) but for the last few hundred years it has also been used to generate electricity.
- The first large scale hydroelectric scheme in Scotland was built in the 1890s. There is now almost 1400MW of installed hydro capacity throughout Scotland.
- Hydroelectric schemes have a long operating life (typically over 50 years).
- Hydro currently produces around 17% of world's electricity and 90% of the world's renewable energy.
- Hydroelectric projects often have a low environmental impact.

Main Types of hydro schemes

1. Large scale impoundment – involves artificially creating a reservoir (such as Loch Glascarnoch).
2. Small-medium scale impoundment – a scaled down version of large scale impoundment with an opportunity to use naturally forming water bodies within the landscape.
3. Run-of-river – diverts a proportion of a river/burn through a pipe to a turbine (such as Rhidoroch Estate).

What type of scheme is being proposed at Lael?

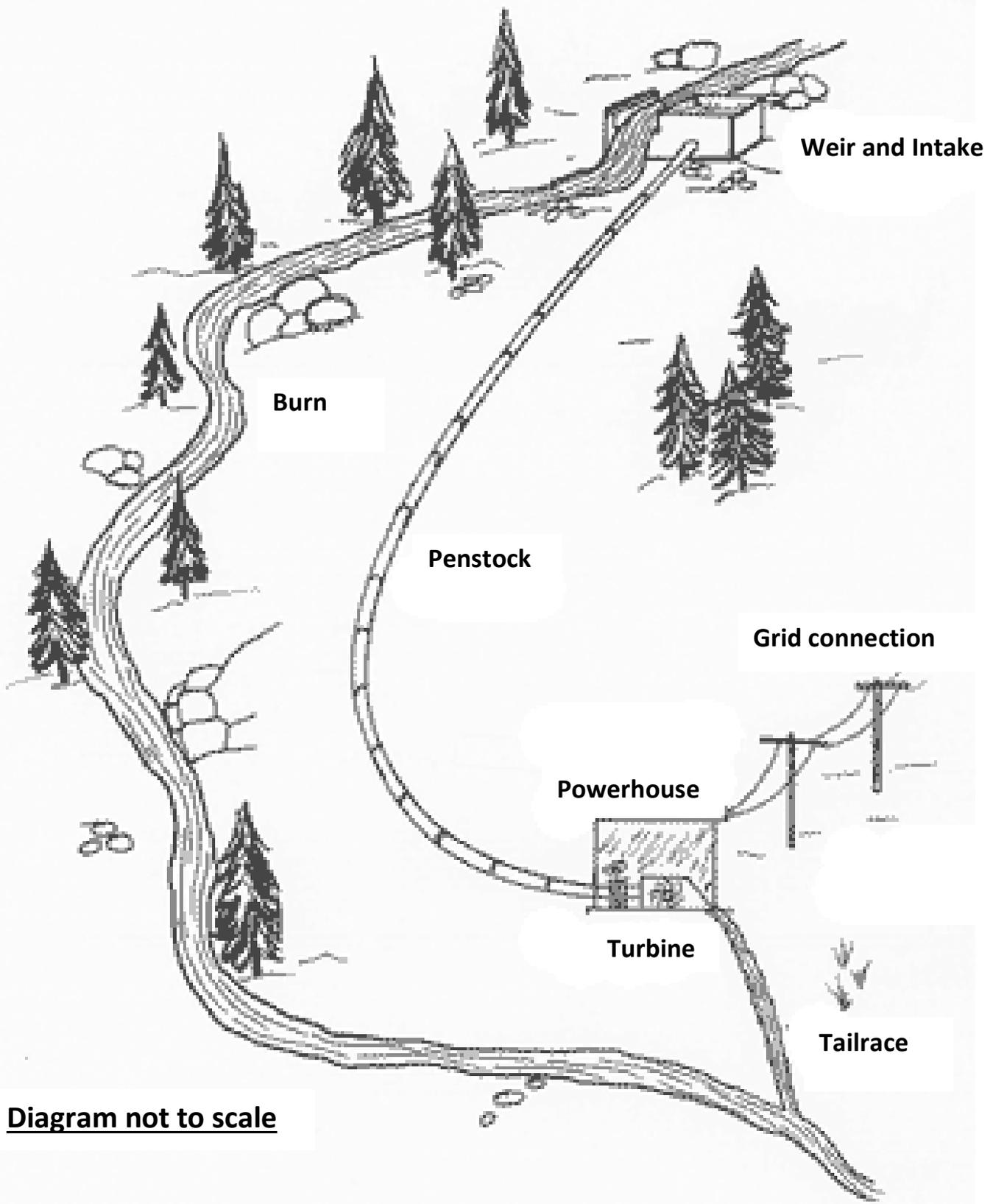
A small-scale run-of-river scheme.

How do small-scale run-of-river hydroelectric schemes work?

As demonstrated by the diagram this type of hydro scheme has several basic components –

1. One or more **weir and intake** which diverts some water from a river into a pipe
2. A **penstock** which carries the water to the turbine
3. A **turbine** which generates electricity and is normally located within a **powerhouse**
4. A **tail race** where the water is channelled back into the river.
5. A **grid connection** to export electricity.

Run-of-river hydro scheme basic diagram



Lael Forest Community Hydro Proposal

Generating Income by Generating Electricity

In June local people voted in support of progressing the project which could generate £50 000 a year for the community. As a result Ullapool Community Trust (UCT) was able to secure two sites from the Forestry Commission Scotland for hydro schemes. The Trust is now going to further investigate the feasibility of generating hydroelectric power on the sites and develop the project if it they are found to be viable and suitable for hydro schemes and the community remain in favour of the opportunity.

Which burns?

The burns are the Allt a' Mhuilinn and Allt a' Bhraighe in Lael Forest. Please see the map on page 11 for details.

Why is UCT investigating hydro opportunities?

UCT consulted the community about what they wanted to see in the Community Growth Plan which was adopted in 2012. The responses encouraged the Trust to develop renewable energy projects to generate income for the community.

Since then UCT have investigated opportunities in the Ullapool area on behalf of the community. This has included local Forestry Commission Scotland sites.

What stage is the project at and what are the next steps?

A preliminary assessment shows that both burns offer potentially viable locations for small scale community hydro projects. The community has also demonstrated support for the project and UCT has secured the burns from the Forestry Commission Scotland. The next step is to carry out detailed feasibility work. Please see the timeline on page 12 for an outline on the project steps.

What type of and size of hydro scheme is proposed?

The schemes would be small run-of-river systems which don't need a reservoir. The preliminary assessment shows that schemes between 100kW and 460kW are possible, particularly if agreements can be made with the owners of neighbouring estates.

How will the schemes affect local residents?

The Trust has contacted all Lael residents and their feedback has been very positive. One burn had a hydro scheme on it in the past which powered a sawmill.

If the schemes are developed there would be some short-term disruption to traffic on the A835, alongside some construction and additional traffic noise. Longer term impacts could include new road entrances for construction and powerhouse access, visibility of the powerhouses (which are around 6 meters by 6 meters) and potentially some background noise from the turbines. Mitigation measures for these and other impacts would be closely examined during the detailed feasibility study.

What would the environmental impacts be?

From the preliminary assessment environmental impacts appear to be limited. Both burns are on a steep hillside within commercial forestry. Further investigation work and surveys to check on environmental impacts will be completed before the schemes could be built. The planning process would also examine environmental impacts and both SEPA and SNH will have the opportunity to comment on the project.

Lael Forest borders the Beinn Dearg Special Area of Conservation and Site of Special Scientific Interest so any impacts would be carefully assessed. As the schemes would be run-of-river there would be no increased flooding risk and only a percentage of the river's flow, agreed with SEPA, would be extracted.

Project Finance

UCT has a good track record of attracting funding/loans as shown by the diagram on page 13 but nothing is certain. One of the reasons for developing income generating projects is so that the community can self-finance future initiatives.

How much would the Lael project cost?

The capital cost of the project will depend on the size of hydro scheme developed. However it is estimated that development costs will be between £500 000 and £1 million per burn.

How have communities financed renewable energy projects?

Community renewable energy projects are normally funded by –

- Loans
- Grants
- Equity (investment from the community and/or social investors)
- Community fundraising
- A mix of the above

Who would fund the project?

Pre-development work (detailed feasibility study, reports, etc): UCT are applying for a Scottish Government Community and Renewable Energy Scheme (CARES) loan. A CARES loan can pay for 95% of pre-development costs up to £150 000 and can become a grant if the project is not considered viable.

Installations: UCT would apply for loan finance from one of the ethical banks which fund community projects such as Tridos or the Co-op as well as working to attract equity investment.

Would a loan be the best way to fund the project?

If the project uses loan finance the community could claim Feed-in-Tariff (FIT) payments. FIT is a government payment which can be claimed by renewable energy producers for the first 20 years of a project's life. Currently FIT payments for hydro projects are 20.21 pence per kW hour for schemes between 15 and 100kW and 15.98 pence per kW hour for schemes between 100 and 500kW.

The FIT payments and income from selling electricity to the grid would be used to repay the loan and estimates show that the projects would still make a profit of around £25 000 a year per burn. After the loan has been repaid the profit and income should increase.

Project Income

How much income will be generated?

The preliminary assessment has identified a number of possible schemes, some of which would require agreements with neighbouring estates to maximise power. It will be easier to estimate the income that could be generated by the schemes once detailed feasibility and design work is complete. At this stage annual income is around £25 000 per burn.

What will it be spent on and how will it be distributed?

Income would be used to support local groups and initiatives and the Ullapool Community Growth Plan. Generating income could mean that the community is less reliant on grants or public funding.

There would be no financial gain for the UCT directors who are volunteers.

The community are still to decide whether or not the project proceeds so there have been no decisions made regarding exactly how any income would be distributed. If it does go ahead it is likely that local groups will be invited to apply for funding from the hydro project with applications considered by an elected panel.

Examples of how other communities use income is shown on page 10.

National Forest Land Scheme and Community Ballot

What is the National Forest Land Scheme (NFLS) and why is it required?

The NFLS is the Community Right to Buy/Lease process for state owned woodland. As the burns are within Forestry Commission Scotland (FCS) land the community needed to complete an NFLS application to secure rights to the burns and progress the project. Since the application was approved the community now has an 18 month option on the burns. During this time the Trust will investigate the opportunity further. Then the community can decide whether or not to lease the land and develop the hydro schemes.

Why was a ballot held?

The ballot was required as part of the NFLS process as it demonstrates to the FCS whether or not there is local support for the proposals.

What was the ballot question?

'Do you support UCT's proposals for hydro schemes at Lael Forest?'

How many responses were needed to show community support?

A response rate of over 51% is required with a majority voting in favour of the proposals. The ballot for the project was returned by over 58% of voters with 96.5% voting in favour of the proposal.

Who administered the ballot?

Highland Council's Election Office.

Ullapool Community Trust

Who are UCT?

UCT is a members-led community organisation. It is a company limited by guarantee and a registered charity. UCT employs several members of staff who are taking forward a range of community projects with volunteers. An elected board of directors oversee the running of the Trust and its activities. The current directors are –

- Chrissy Boyd
- Jan Breckenridge
- Diane Campbell
- George Farlow
- Noel Hawkins
- Susan Leslie
- Gillian Meighan
- Becky Thomson.

UCT membership forms are available from staff and directors as well as from the Trust's website and office.

What does UCT do?

UCT develops projects to benefit people living the coastal area from Gruinard to Elphin, including Dundonnell, Braemore, Lochbroom, Strathkanaird and Ullapool. The Trust is presently focussing on implementing the Ullapool Community Growth Plan (copies available). Current initiatives include improving housing and broadband provision, assisting the youth committee to establish a youth space and taking forward renewable energy and energy efficiency projects. The Trust can work with residents, community groups, the Community Council, the Highland Council and other organisations.

As shown by the 'Funding secured by UCT' diagram on page 13 the Trust has been successful in securing significant investment for the Ullapool area.

Why are UCT investigating a hydro project in Lael Forest?

UCT held a community consultation and local people told us that developing community renewable energy projects is a priority. As a result UCT have been investigating opportunities for community renewable projects in the Ullapool area. This has included the land at the Lael Forest for a possible hydro project.

How do other communities use their income?

Fintry

The community own 1/15 of a nearby windfarm and currently generate around £50 000 per annum which will increase to £400 000 a year when the loan is paid off. Income has been used to support initiatives that lower carbon emissions and energy bills including –

- offering free insulation to local householders
- new low energy lighting, heaters and other measures in a local sports club and community hall

Westray

The community own a single wind turbine on the most northerly island in Orkney. The turbine, which was installed in 2009, has generated income that has been used to support well over 30 projects and initiatives. Small grants (up to £1000) and larger grants are available. Supported projects include –

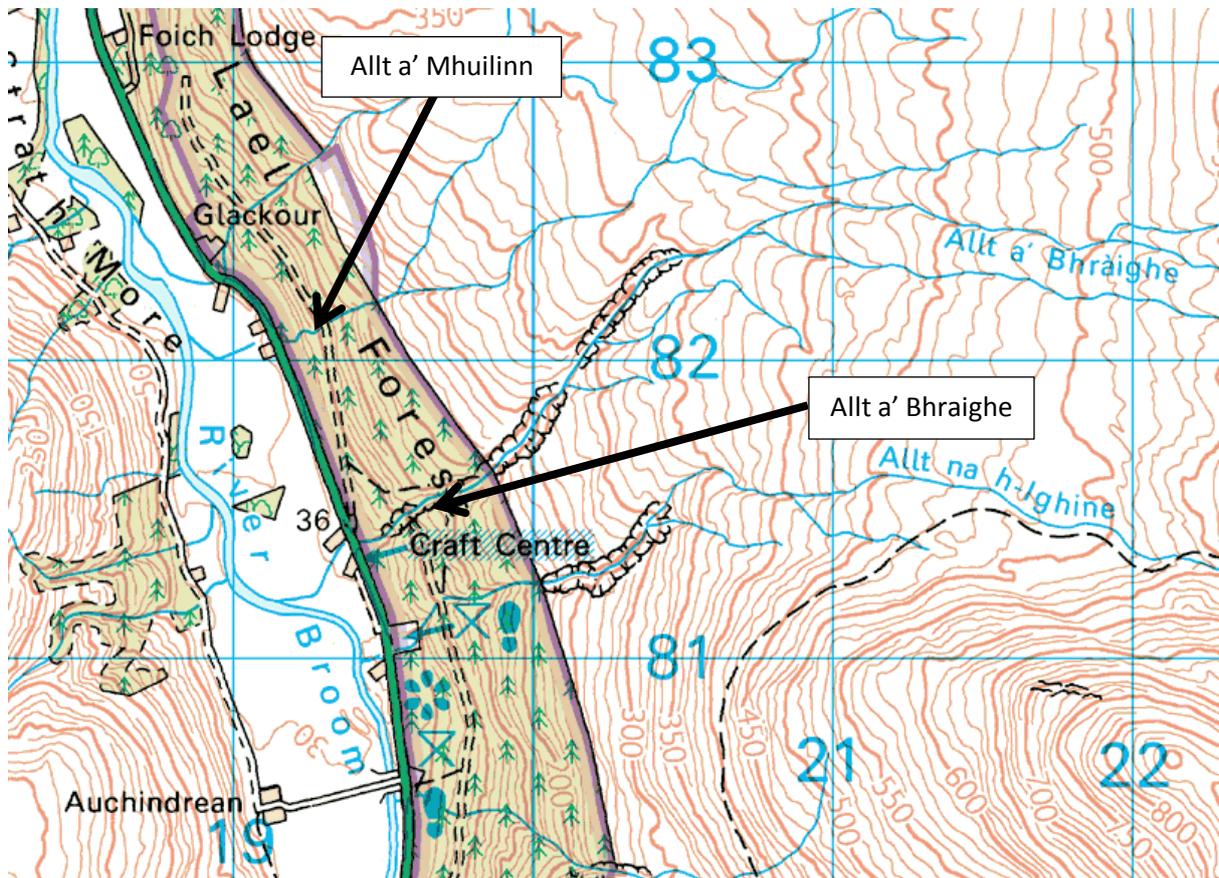
- Upgrading and extending a youth centre
- Learn to swim classes and other swim club sessions
- Local Heritage Trust publication
- Play park equipment

Udny

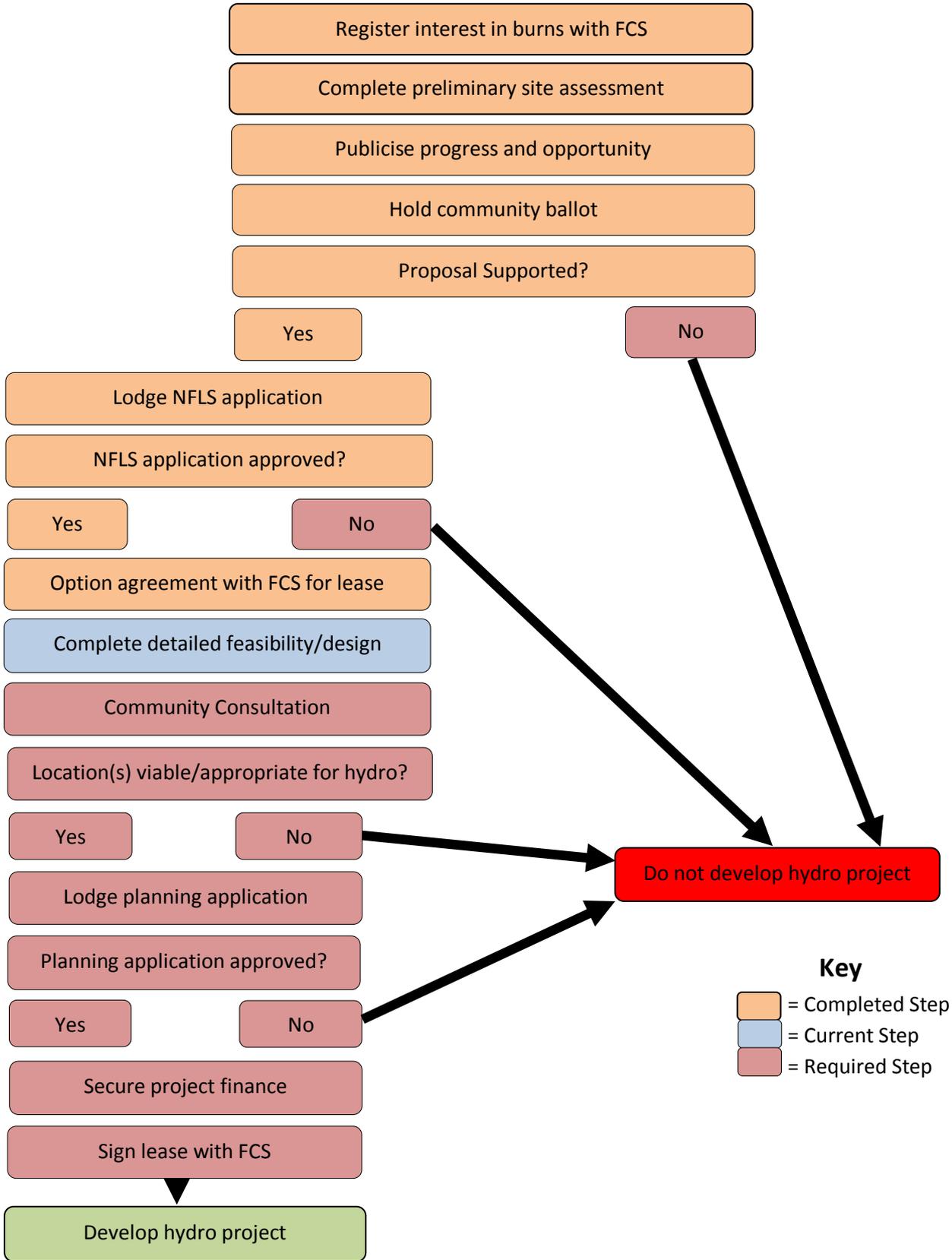
A single turbine project was delivered by the community in 2012. There are simple application forms for grants of up to £500 and more detailed forms for grants over £500. A range of initiatives, projects and groups have been supported including –

- A music festival
- Play groups and mother and toddler groups
- Local church, football team, bowling club, tennis club and sailing club

Map showing the Allt a' Mhuilinn and Allt a' Bhràighe



Project Timeline



Funding secured by UCT since 2009

