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Árainn Mhór

COMMUNITY ENERGY PROGRAM

A Partnership Initiative

digrenenergy.ie

Project Overview

Sustainability and energy conservation are at the forefront of this project. The recent 'energy crisis' has people focusing on how best to save energy and reduce costs. Reducing energy consumption is only one aspect, however, trying to reduce costs is another issue all together. This can only be achieved if you are in a position to generate your own energy.

Our proposal is for the Arranmore Co-Operative to effectively, generate, store, own and operate the energy for the entire island. The completed project would mean that the Island would significantly lower it's carbon footprint and have a source of clean renewable energy with no negative impact on the environment.

The purpose of this brochure is to give an overview of the project and an overview of why we have selected Árainn Mhór Island as the ideal location to implement this project.

Léargas ar an Tionscadal

Tá inbhuanaitheacht agus caomhnú fuinnimh chun tosaigh sa tionscadal seo. Leis an ‘géarchéim fuinnimh’ tá daoine ag díriú ar an bhealach is fearr le fuinneamh a shábháil agus costais a laghdú. Níl ann ach gné amháin úsáid fuinnimh a laghdú, áfach, ceist eile é iarracht a dhéanamh costais a laghdú. Ní féidir é seo a bhaint amach ach amháin má tá tú in ann do chuid fuinnimh féin a ghiniúint.

Is é an moladh atá againn ná go ndéanfadh Comharchumann Árainn Mhór an fuinneamh don oileán ar fad a ghiniúint, a stóráil, agus úinéireacht a ghlacadh air. Mar thoradh ar an tionscadal, laghdódh an tOileán a lorg carbóin go mór agus beadh foinse fuinnimh in-athnuaite glan ag an oileán nach bhfuil aon tionchar diúltach aige ar an chomhshaol.

Is é cuspóir an bhróisiúir seo ná leargas a thabhairt ar an tionscadal agus léargas ar an fáth ar roghnaigh muid Oileán Árainn Mhór mar an suíomh idéalach chun an tionscadal seo a chur i bhfeidhm.

Island & Community Profile
Próifíl an Oileáin agus an Phobail

Próifíl an Oileáin
Island Profile

Achar Iomlán Talaimh / Total Land Area
18.1 km cr. An dara hoileán is mó in Éirinn (Achar & daonra)
18.1 Km sq The second largest island in Ireland (Size & population)

Cósta/Coast 28km

Pointe is airde / Highest Point
Cnoc an Iolair (227 méadar os cionn cothrom farraige)
Cnoc an Iolair (227 meters above sea level)

Fad ó thír mór/Distance from mainland
5km

Rochtain / Access
Turas 20 bomaite ar bhád farantóireachta carr/paisinéirí ó Ailt an Chorráin
20 Minute car/passenger ferry from Burtonport Harbour

Daonra/Population
469 bunaithe ar daonáireamh 2016
469 based on Census 2016
238 fireannach/males
231 baineannach/females

Teanga/Languages Spoken
Gaeilge & Béarla / Irish & English

Bailte Fearainn/Townlands
- An Leadhb Gharbh
- Poll an Mhadaidh
- Screig an tSeabhaic
- Na Goirt Ghearra
- Na Clocha Corra
- Fál an Ghabhann
- Baile an tSratha
- Baile Ard
- Uilleann
- Plochóg
- Leadhb Reannagh
- Athphort
- Na Tuarthaí

Próifíl an Phobail
Community Profile

Figiúr 1: Próifíl Déimeagrafach Oileán Árainn Mhór 2016
Figure 1: Arranmore Island Demographic Profile 2016

Foinse: An Phríomhoifig Staidrimh, staitisticí Limistéir Pleanála Teanga
Source: Central Statistics Office, Language Planning Areas statistics

Tá próífíl phobail an oileáin bunaithe ar staitisticí oifigiúla ón Daonáireamh 2016. Tá todhchaí an oileáin ag brath go mór ar dhaonra buan a choinneáil ina gcónaí ar an oileán. Chun mharsantacht an oileáin a chinntiú, tá gá le daonra óg fuinniúil a choinneáil ann.

The population profile of the island is based on official statistics from the 2016 Census. The future of the island is highly dependent on keeping a permanent population living on the island. To ensure the sustainability of the island, it will be necessary to keep a young and energetic population there.

An Suíomh Geografach/ The Geographical Location

Tá méid, suíomh geografach agus rochtain ag cur le stádas Árainn Mhór mar an dara hoileán is mó in Éirinn maidir le daonra.

Is é Árainn Mhór an dara hoileán is mó achair in Éirinn, i ndiaidh Inis Mór. Tá Árainn Mhór suite 5km ón tír mór. Tá dhá chomhlacht farantóireacht ag freastal ar an oileán. Glacann an turas 20 bomaite. Bíonn ag dhá chomhlacht farantóireachta ag feidhmiú gach lá i rith na bliana.

Arranmore's status as Ireland's second largest island in terms of population is enhanced by its size, geographic location and its accessibility.

Arranmore is the second largest island in Ireland, after Inis Mór. Árainn Mhór is located 5km from the mainland. There are two ferry companies serving the island. every day throughout the year. The ferry journey takes 20 minutes.

Mhór

Comharchumann Oileán Árainn Mhór CTR /Island Co-operative

Árainn Mhór Island Co-operative is a long-established cooperative, serving the Árainn Mhór community since 1976. The objectives of the cooperative are the economic, social and cultural development of the island. Developments are undertaken for the benefit of the entire community. The cooperative connects with the appropriate authorities and can access agencies and funding directly. The Co-operative is funded by Údarás na Gaeltachta under the Gaeltacht Co-operative Scheme. There are approximately six employees in the Co-operative.

The Co-operative has implemented a broad community development work program which includes running a hard goods store, running a holiday home & sports facilities, running a Cultural Centre, Cafe & services for tourists, training courses and much more - a work program that is under the responsibility of the manager of the Cooperative who operates under the direction of the management committee of the Cooperative. In addition, the Co-operative was appointed as the Chief Language Planning Organization in 2014. A language plan was prepared and there is a period of seven years to implement the plan.

Is comharchumann fad-bhunaithe é Comharchumann Oileán Árainn Mhór, atá ag freastal ar phobal Árainn Mhór ó bhí 1976 ann. Is forbairt eacnamaíoch, shóisialta, chultúrtha an oileáin cuspóirí an chomharchumainn. Tugtar faoi fhorbairtí ar mhaite don phobal uilig. Déanann an comharchumann ceangal leis na húdaráis chuí agus is féidir a theacht ar ghníomhaireachtaí agus ar mhaoiniú go díreach. Tá an Comharchumann á mhaoiniú ag Údarás na Gaeltachta faoi Scéim na gComharchumann Gaeltachta. Tá tuairim is seisear fostaithe sa Chomharchumann.

Ta clár oibre leathan forbartha pobail a chur i bhfeidhm ag an Chomharchumann ar a n-áirítear reáchtáil stór crua earraí, reáchtáil baile saoire & áiseanna spóirt, reáchtáil Cultúrlann, Caifé & seirbhísí do thurasóirí, cúrsaí oiliúna agus go leor eile – clár oibre atá faoi chúram bainisteoir an Chomharchumainn a fheidhmíonn faoi stiúir coiste bainistíochta an Chomharchumainn. Lena chois sin, ceapadh an Comharchumann mar Cheanneagraíocht Pleanála Teanga in 2014. Ullmhaíodh plean teanga agus tá tréimhse seacht mbliana chun an plean a chur i bhfeidhm.

Island Infrastructure

The island was among the last in the nation to gain uniformly dependable piped water (in 1973–75) and an automatic phone exchange, despite being the first offshore island in Ireland to receive power from the Rural Electrification Scheme, run by the E.S.B. (in 1986).

The island's primary sources of income are tourism and the traditional Gaeltacht summer schools; up until the 1980s, fishing was the island's primary source of income. A local development cooperative has promoted the growth of new companies on the island recently, including a call center and teacher preparation for Irish teachers. The several lakes on the island offer options for rod fishing.

A co-working facility was opened in 2019 in partnership with 3 Ireland, providing high-speed internet access which the island did not previously have. 3 Ireland have produced a major marketing campaign "The Island" based on this.

The island has a purpose-built An Post post office. Despite population falling below the 500 level which An Post's 2018 review required, all island post offices have been retained

Bhí an t-oileán i measc na n-oileán deireanach sa tír a fuair uisce píopaí iontaofa go haonfhoirmeach (idir 1973 - 75) agus malartán teileafóin, in ainneoin gurbh é an chéad oileán amach ón chósta in Éirinn a fuair cumhacht ón Scéim Leictriúcháin Tuaithe, arna reáchtáil ag an E.S.B (in 1986).

Is iad an turasóireacht agus na scoileanna samhraidh traidisiúnta Gaeltachta príomhfhoinsí ioncam an oileáin; go dtí na 1980idí ba í an iascaireacht príomhfhoinse ioncaim an oileáin. Cuireann roinnt lochanna ar an oileán roghanna ar fáil le haghaidh iascaireachta slat.

Osclaíodh áis chomhoibre in 2019 i gcomhpháirtíocht le 3 Ireland, ag soláthar rochtain idirlín ardluais nach raibh ag an oileán roimhe sin. Tá 3 Ireland tar éis ollfheachtas margaíochta “An t-Oileán” a chur le chéile bunaithe air seo.

Tá oifig phoist An Post ar an oileán. In ainneoin gur thit daonra faoi bhun an leibhéil 500, a raibh athbhreithniú An Post 2018 ag teastáil ina leith, tá gach oifig phoist ar an oileán go fóill ann.

Simulated EV Rapid chargers

PROPOSED INITIATIVE

Digren energy in conjunction with Arbarr Electronics, Dundalk Institute of Technology and Chomharchumann Oileán Árainn Mhór propose to establish a complete co-op operated energy supply for the island.

This would comprise the following key components:

- **Solar PV**
- **Vertical wind Turbine**
- **Battery Storage**
- **Prime and Sub Metering**

TOGRA BEARTAITHE

Tá sé i gceist ag Fuinneamh Digren i gcomhar le Arbarr Electronics, Institiúid Teicneolaíochta Dhún Dealgan agus Comharchumann Oileán Árainn Mhór, soláthar iomlán fuinnimh comharchumann a bhunú don oileán.

Bheadh na príomhghnéithe seo a leanas i gceist:

- **Fótavoltachas gréine**
- **Tuirbín gaoithe ingearach**
- **Stóras cadhnra**
- **Príomhmhéadrú agus fo-mhéadrú**

Simulated image of properties with solar PV and turbine

Benefit to the Islanders

Effectively this becomes a district energy scheme whereby, the home owners only pay for what they use, albeit, at a significantly lower price than mains grid supply.

The home owners do not benefit from any ‘free energy’ generated from their property. However, the home owner pays no capital cost toward the microgeneration equipment

The coop manages the power on the island and can issue rates, in conjunction with Pinergy with different Tariffs. For example, a community tariff, commercial tariff, permanent resident tariff and holiday home tariff.

All tariffs would be less expensive than main providers. At the same time the coop is generating a revenue stream for continued investment on the island.

Tairbhe do na hOileánaigh

Go héifeachtúil is scéim fuinnimh ceantair é seo a chiallaíonn nach n-íocann úinéirí tí ach as an mhéid a úsáideann siad, bíodh is go bhfuil sé ar phraghas i bhfad níos ísle ná soláthar greille an phríomhlíonra.

Ní bhaineann na húinéirí tí tairbhe as aon ‘fuinneamh saor in aisce’ a ghintear óna réadmhaoin. Mar sin féin, ní íocann an t-úinéir tí aon chostas caipitil i dtreo an trealaimh micreghiniúna.

Bainistíonn an comharchumann an chumhacht go léir ar an oileán agus is féidir rátaí a eisiúint, i gcomhar le Pinergy le taraif éagsúla. Mar shampla taraif chomhphobail, taraif thráchtála, taraif áitritheoir buan agus taraif theach saoire.

Bheadh na taraif go léir níos saoire ná na príomhsholáthraithe. Ag an am céanna tá sruth ioncaim á ghiniúint ag an chomharchumann d’infheistíocht leanúnach ar an oileán.

Benefit to the Island

The island would be moving toward carbon neutrality.

COOP – Manages the power on the island
COOP - Manages the rapid EV chargers on the Island. (One at Amphitheater and one at the holiday homes). These charges are powered by the Coop 2MW battery

Tairbhe don Oileán

Bheadh an t-oileán ag bogadh i dtreo neodracht carbóin.

Bainistíonn an Comharchumann an chumhacht ar an oileán.

Bainistíonn an Comharchumann na luchtairí fheithicil leictreach thapa ar an oileán. Bheadh na luchtairí seo á gcumhachtú ag cadhnra 2MW an chomharchumainn.

How it would work

Fit the Solar PV and turbine to each suitable dwelling on the island. Pinergy becomes the meter supplier to each property providing sub metering.

The energy generated through solar and wind effectively goes to the co-op battery and is sub metered back to each property at a significantly lower price than main grid supply.

The coop battery is 'topped up' / recharged through the mains supply at night rate charges.

Pinergy manage all the meters and billing for the coop.
Pinergy pays the coop for any excess power generated and sold back to the grid.

Cén dóigh a d'oibreodh sé

Bheadh Fótavoltachas Gréine agus tuirbíní gaoithe ingearacha tí 6Kva lonnaithe ar gach áit chónaithe oiriúnach ar an oileán. Is é Pinergy an soláthraí méadair do gach maoin a sholáthraíonn fo-mhéadrú.

Téann an fhuinnimh a ghintear trí ghrian agus trí ghaoth go héifeachtach chuig stóras cadhnra an Comharchumann agus déantar é a fho-mhéadrú agus a athdháileadh ar ais chuig gach maoin ar phraghas i bhfad níos ísle ná an príomhsholáthar eangaí.

Déantar cadhnra an Comharchumann a 'líonadh suas' / a sil-luchtú tríd an soláthar príomhlíonra ag táillí oíche.

Bainistíonn Pinergy na méadair agus billeála go léir don Chomharchumann. Íocann Pinergy an Comharchumann as aon chumhacht bhreise a ghintear agus a dhíoltar ar ais chuig an eangach.

Solar PV

To be installed on all suitable available space both residential and commercial. The panels on each individual property generate power which is stored in the islands 2MW battery operated by the co-op.

Fótavoltach Gréine

Le bheith suiteáilte ar gach spás oiriúnach atá ar fáil idir chónaithe agus thráchtála. Gineann na painéil ar gach aon mhaoin cumhacht a stóráiltear i gcadhnra 2MW na n-oileán a fheidhmíonn an Comharchumann.

Vertical Wind Turbine

Installed on every suitable property – capable of generating 6Kv. Generally, sufficient to power up to 80% of the power requirement for a 150sq.mt dwelling. As with the solar – all power generated would go to the co-op battery.

Tuirbín Gaoithe Ingearach

Suiteáilte ar gach maoin oiriúnach. Tá gach tuirbín in ann 6Kva a ghiniúint. Go ginearálta, go leor chun cumhacht suas le 80% den riachtanas cumhachta le haghaidh áitreabh 150 méadar cearnach. Mar aon leis an Fhótavoltach gréine – bheadh gach cumhacht a ghintear ag dul go dtí stóras cadhnra an Chomharchumainn.

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